Progress Energy

Serial: HNP-09-095
10 CFR 50.55a

SEP 2 4 2009

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

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING RELIEF REQUESTS 2R1-018, 2R1-019, 2R1-020, 2R1-021, 2R1-022, 2R2-009, 2R2-010, AND 2R2-011 FOR THE SECOND 10-YEAR INSERVICE INSPECTION PROGRAM (TAC NOS. ME0608, ME0609, ME0610, ME0166, ME0612, ME0613, ME0614, AND ME0615)

References: 1. Letter from D. H. Corlett to the Nuclear Regulatory Commission (SERIAL: HNP-08-045), "Second Ten-Year Interval Inservice Inspection Program – Final Documentation Including Requests for Relief in accordance with 10 CFR 50.55a," dated February 05, 2009

2. Letter from M. Vaaler, Nuclear Regulatory Commission, to C. L. Burton, "Request for Additional Information Regarding Relief Requests 2R1-018, 2R1-019, 2R1-020, 2R1-021, 2R1-022, 2R2-009, 2R2-010, and 2R2-011 For The Second 10-Year Inservice Inspection Program (TAC NOS. ME0608, ME0609, ME0610, ME0611, ME0612, ME0613, ME0614, and ME0615)," dated July 21, 2009

Ladies and Gentlemen:

On July 21, 2009, Harris Nuclear Plant (HNP) received a request from the NRC (Reference 2) for additional information needed to facilitate the review of proposed Second 10-Year Inservice Inspection Interval Relief Requests 2R1-018, 2R1-019, 2R1-020, 2R1-021, 2R1-022, 2R2-009, 2R2-010, and 2R2-011. HNP submitted this original request as Serial: HNP-08-045 (Reference 1).

Per discussions with Marlayna Vaaler (NRC HNP Project Manager), HNP was allowed an extension to the September 18, 2009, response date specified in Reference 2. Accordingly, the Enclosures to this letter provide the requested additional information for the Relief Requests.

This document contains no new or revised Regulatory Commitments.

Please refer any questions regarding this submittal to me at (919) 362-3137.

Progress Energy Carolinas, Inc.
Harris Nuclear Plant
P.O. Box 165
New Hill, NC 27562

A047
NRR

Sincerely,

D. H. Corlett
Supervisor – Licensing/Regulatory Programs
Harris Nuclear Plant

DHC/kms

Enclosures:
1. HNP's Response to the Request for Additional Information Regarding Relief Request I3R-02 for the Third 10-Year Inservice Inspection Interval
2. Inservice Inspection Relief Request 2R1-018 Response to Request for Additional Information
3. Inservice Inspection Relief Request 2R1-019 Response to Request for Additional Information
4. Inservice Inspection Relief Request 2R1-020 Response to Request for Additional Information
5. Inservice Inspection Relief Request 2R1-021 Response to Request for Additional Information
6. Inservice Inspection Relief Request 2R1-022 Response to Request for Additional Information
7. Inservice Inspection Relief Request 2R2-009 Response to Request for Additional Information
8. Inservice Inspection Relief Request 2R2-010 Response to Request for Additional Information
9. Inservice Inspection Relief Request 2R2-011 Response to Request for Additional Information

cc:
Mr. J. D. Austin, NRC Sr. Resident Inspector, HNP
Mr. L. A. Reyes, NRC Regional Administrator, Region II
Ms. N. C. Ritchie-Slaughter, Harris Plant Authorized Nuclear Inservice Inspector
Ms. M. G. Vaaler, NRC Project Manager, HNP

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Summary

Carolina Power & Light Company, now doing business as Progress Energy Carolinas, Inc., (PEC) (licensee) submitted Relief Requests (RRs) 2R1-018, 2R1-019, 2R1-020, 2R1-021, 2R1-022, 2R2-009, 2R2-010, and 2R2-011, for the Harris Nuclear Plant (HNP). The proposed RRs are for the second 10-year inservice inspection (ISI) interval, in which the licensee adopted the 1989 Edition of the ASME Code, Section XI, No Addenda, as the Code of Record.

The proposed RRs request relief in accordance with Title 10 of the *Code of Regulations* (10 CFR) Section 50.55a(g)(5)(iii) from applicable requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," related to inspection of welds with limited coverage in ASME Code examination Categories B-F, B-A, B-D, B-B, C-A, C-B, and C-A. The ASME Code requires that 100 percent of the examination volumes or surface areas described in ASME Code, Section XI, Tables IWB-2500 and IWC-2500, be inspected during each interval. The licensee stated that 100 percent of the ASME Code-required volumes or surface areas are impractical to obtain at HNP.

10 CFR 50.55a(g)(5)(iii) states that when licensees determine that conformance with ASME Code requirements is impractical at their facility, they shall submit information to support this determination. The U.S. Nuclear Regulatory Commission (NRC) will evaluate such requests based on impracticality, and may impose alternatives, giving due consideration to public safety and the burden imposed on the licensee.

Pacific Northwest National Laboratory and the NRC have reviewed the information submitted by the licensee and have determined the following information is required to complete the evaluation.

Request 1: General – Information Required on All Requests for Relief

In all cases, the licensee has provided only general information regarding the impracticality of obtaining ASME Code-required volumetric or surface examinations, as applicable. Statements such as "physical obstructions and geometric surface conditions," "design configurations," or "inner diameter counterbore and root configuration," are inadequate to explain the bases for not obtaining the ASME Code-required examination volumes. No sketches with dimensional information showing the causes of limited accessibility have been included.

Please submit detailed and specific information to support the bases for limited examination in all requests for relief in order to demonstrate impracticality. Specifically:

a) Include descriptions (written and/or sketches, as necessary) of the interferences present

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for applied nondestructive examination (NDE) techniques.

b) As applicable, describe NDE equipment (ultrasonic scanning apparatus), details of the listed obstructions (size, shape, proximity to the weld, etc.) to demonstrate accessibility limitations, and discuss whether alternative methods or advanced technologies could be employed to maximize ASME Code coverage.

c) Fully clarify the wave modality and insonification angles used for all ultrasonic examinations.

d) Provide cross-sectional coverage plots to describe the ASME Code volumes examined.

e) If not included, state whether any indications were discovered as a result of these examinations, and how these indications have been dispositioned.

Response: The requested information is summarized in the following Enclosures:

Enclosure 2	2R1-018
Enclosure 3	2R1-019
Enclosure 4	2R1-020
Enclosure 5	2R1-021
Enclosure 6	2R1-022
Enclosure 7	2R2-009
Enclosure 8	2R2-010
Enclosure 9	2R2-011

Request 2: Request for Relief 2R2-010, ASME Code, Section XI, Examination Category C-B, Item C2.21, Nozzle-to-Shell Weld

The licensee has requested relief from the requirement to examine 100 percent of the ASME Code-required inspection volume for two Boron Injection Tank nozzle-to-vessel welds: II-BIT-01NTHW-03 and II-BIT-01NTHW-04.

a) Please state whether the inspection techniques used to examine these welds included refracted longitudinal waves.

Response: Shear waves were used in all angle beam exams and longitudinal waves used in the 0 degree exam, as follows:

45 degree shear - ½ V
60 degree shear - ½ V
0 degree – longitudinal

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b) Please state the material used (austenitic or ferritic steel) and the wall thickness for each of these components.

Response: The material used is alloy steel – ASTM A 204 Standard Specification for Pressure Vessel Plates, Alloy Steel, Molybdenum with a 1.732" Thickness

Request 3: Request for Relief 2R1-018, ASME Code, Section XI, Examination Category B-F, Item B5.130, NPS 4 or Larger Dissimilar Metal Butt Welds

a) The licensee has requested relief from the requirement to examine 100 percent of the ASME Code-required inspection volume for the following dissimilar metal welds on the primary coolant system:

RVNOZCI-N-05SE	Inlet Nozzle DM weld at 95 degrees
RVNOZBI-N-03SE	Inlet Nozzle DM weld at 215 degrees
RVNOZAI-N-01SE	Inlet Nozzle DM weld at 335 degrees

It is unclear from the licensee's submittal why inlet nozzle welds RVNOZCI-N-05SE and RVNOZBI-N-03SE were not included in the previous 10-year ISI request for relief. Please submit information explaining why these welds were not included previously.

Response: As discussed in Section 8.1 ("Changes in Circumstances") of Relief Request Submittal (SERIAL: HNP-08-045), these examinations were performed by a different vendor during the first interval, resulting in different coverage limitations. Additionally, the second interval UT inspections were performed with examination personnel and examination procedures qualified to ASME Code, Appendix VIII, as administered by the EPRI Performance Demonstration Initiative (PDI). This improved method of examination also results in differing coverage limitations.

b) Please provide more detailed information on the ultrasonic testing (UT) inspections performed (i.e., probe type, incident angle, geometrical interference, scanned coverage, etc).

Response: Information is provided in Enclosure 2 of this response.

c) Please explain how the "Combined UT [Ultrasonic] Coverage Total Percentage" in Sections 6.1, 6.2, and 6.3 of 2R1-018 is obtained.

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Response: The Combined UT coverage totals as provided in Sections 6.1, 6.2 and 6.3 of 2R1-018 were obtained from averaging the individual (CCW, CS, UP, DOWN) 70° Longitudinal Wave Dual Scans as follows :

RVNOZC1-N-05SE: (69.15 + 69.15 + 100 + 100)/4 = 84.58
RVNOZB1-N-03SE: (76.67 + 76.67 + 100 + 100)/4 = 88.34
RVNOZA1-N-01SE: (70.29 + 70.29 + 100 + 100)/4 = 85.15

d) Please provide information regarding when the ultrasonic testing inspection for each weld was performed (e.g., what ASME Code criteria were required - Appendix VIII or Section V)?

Response: As discussed in Section 6.1 for RVNOZC1-N-05SE, Section 6.2 for RVNOZB1-N-03SE and Section 6.3 for RVNOZA1-N-01SE of the Relief Request Submittal (SERIAL: HNP-08-045), UT examinations were performed with examination personnel and examination procedures qualified to ASME Code, Appendix VIII, as administered by the EPRI Performance Demonstration Initiative (PDI).

e) Please provide more detailed information on the eddy current inspection methods performed, the inner diameter surface conditions of the affected welds, and an assessment of the ability to perform the eddy current testing exam effectively on these types of surface conditions.

Response: The Eddy Current procedure (provided separately) contains this information.

Request 4: Request for Relief 2R1-022, ASME Code, Section XI, Examination Category B-B, Item B2.40, Pressure Retaining Welds in Vessels Other than Reactor Vessels

The licensee has requested relief from the requirement to examine 100 percent of the ASME Code-required inspection volume for steam generator tubesheet-to-head weld II-SG-001SGA-TSTHW-06-1.

HNP is a 3-loop pressurized water reactor plant; there are three steam generators, each containing a tubesheet-to-head weld. The ASME Code states that "the examination may be limited to one vessel among the group of vessels performing similar functions."
Please clarify whether all three steam generator tubesheet-to-head welds were examined. Because the licensee was unable to meet the ASME Code-required inspection volume on tubesheet-to-head weld II-SG-001SGA-TSTHW-06-1, if the other tubesheet-to-head welds were examined, please describe whether the same coverage area limitations apply to these similar welds on the remaining two steam generators.

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Response: All three of HNP's steam generators have the same configuration and associated limitation. Since this examination category only requires one examination per similar vessel, only one of the steam generators was examined. Additionally, these steam generators were new in 2001.

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Examination Category B-F, Item B5.130, NPS 4 or Larger Dissimilar Metal Butt Welds

RAI	REQUEST	RESPONSE
1a	Description	(Reference Relief Request submittal HNP-08-045 Section 1.0). Welds are Cold leg elbow to nozzle weld.
1a	Sketch	Information follows in Enclosure.
1a	Interference/Obstruction	(Reference Relief Request submittal HNP-08-045 Section 5.0). Volumetric examination for the subject welds at HNP is restricted due to geometric surfaces (inner diameter surface counter-bore and root configuration) which limit accessibility and make the 100 percent volumetric examination impractical for these areas.
1b	NDE Equipment	The following procedures are provided separately: PDI-ISI-254-SE WDI-STD-146 WDI-STD-088
1b	Alternative Methods	(Reference Relief Request submittal HNP-08-045 Section 6.0). To supplement the UT, areas of limitation were fully scanned using eddy current testing (ET), which is effective in detecting surface breaking flaws. This combination of UT and ET further validates that the proposed alternative provides an acceptable level of quality and safety, since these completed examinations would have detected any existing patterns of degradation.
1c	Wave Modality/ Insonification Angles	Information follows in Enclosure ("70° Longitudinal Wave Dual Scan").
1d	Cross Sectional Coverage Plots to describe the ASME Code coverage	Information follows in Enclosure.
1e	Results of the Examination Indications / No Indications	No indications detected.

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3a	It is unclear from the licensee's submittal why inlet nozzle welds RVNOZCI N 05SE and RVNOZBI-N-03SE were not included in the previous 10 year ISI request for relief. Please submit information explaining why these welds were not included previously.	(Reference Relief Request submittal HNP-08-045 Section 8.1). During the first interval, these examinations were performed by a different vendor using different equipment, resulting in different coverage limitations. In addition, the second interval UT Examinations were performed with examination personnel and examination procedures qualified to ASME Code, Appendix VIII, as administered by the EPRI Performance Demonstration Initiative (PDI).
3b	Please provide more detailed information on the ultrasonic testing (UT) inspections performed (i.e., probe type, incident angle, geometrical interference, scanned coverage, etc).	Information follows in Enclosure.
3c	Please explain how the "Combined UT [Ultrasonic] Coverage Total Percentage" in Sections 6.1, 6.2, and 6.3 of 2R1-018 is obtained.	An averaging method is used.
3d	Please provide information regarding when the ultrasonic testing inspection for each weld was performed (e.g., what ASME Code criteria were required - Appendix VIII or Section V)?	(Reference Relief Request submittal HNP-08-045 Sections 6.1, 6.2 and 6.3). UT examinations were performed with examination personnel and examination procedures qualified to ASME Code, Appendix VIII, as administered by the EPRI Performance Demonstration Initiative (PDI).
3e	Please provide more detailed information on the eddy current inspection methods performed, the inner diameter surface conditions of the affected welds, and an assessment of the ability to perform the eddy current testing exam effectively on these types of surface conditions.	Eddy Current procedure provided separately: WDI-STD-146

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COMPONENT ID:	**RVNOZCI-N-05SE**	ASME CATEGORY:	B-F
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B5.130
CONFIGURATION:	ELBOW TO REACTOR VESSEL NOZZLE	% CRV ACHIEVED:	84.58 %
PROCEDURES:	PDI-ISI-254-SE WDI-STD-146 WDI-STD-088	MATERIAL	SS/CS
PDI TECHNIQUE USED:	YES		

70° LONGITUDINAL WAVE DUAL SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
CCW	69.15%	ELBOW TO NOZZLE WELD ID COUNTER-BORE AND ROOT CONFIGURATION
CW	69.15%	ELBOW TO NOZZLE WELD ID COUNTER-BORE AND ROOT CONFIGURATION
UP	100%	
DOWN	100%	

EDDY CURRENT SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
CCW	100%	
CW	100%	

The coverage achieved was the maximum extent practical with the elbow to nozzle weld ID counter-bore and root configuration obstructions in place and the results are representative of the entire weld.

UT COMBINED COVERAGE = 84.58 %

EXAMINATION RESULTS: NO INDICATIONS

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COMPONENT ID:	**RVNOZBI-N-03SE**	ASME CATEGORY:	B-F
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B5.130
CONFIGURATION:	ELBOW TO REACTOR VESSEL NOZZLE	% CRV ACHIEVED:	88.34 %
PROCEDURES:	PDI-ISI-254-SE WDI-STD-146 WDI-STD-088	MATERIAL	SS/CS
PDI TECHNIQUE USED:	YES		

70° LONGITUDINAL WAVE DUAL SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
CCW	76.67%	ELBOW TO NOZZLE WELD ID COUNTER-BORE AND ROOT CONFIGURATION
CW	76.67%	ELBOW TO NOZZLE WELD ID COUNTER-BORE AND ROOT CONFIGURATION
UP	100%	
DOWN	100%	

EDDY CURRENT SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
CCW	100%	
CW	100%	

The coverage achieved was the maximum extent practical with the elbow to nozzle weld ID counter-bore and root configuration obstructions in place and the results are representative of the entire weld.

UT COMBINED COVERAGE = 88.34 %

EXAMINATION RESULTS: NO INDICATIONS

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**RVNOZAI-N-01SE**	ASME CATEGORY:	B-F
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B5.130
CONFIGURATION:	ELBOW TO REACTOR VESSEL NOZZLE	% CRV ACHIEVED:	85.15 %
PROCEDURES:	PDI-ISI-254-SE WDI-STD-146 WDI-STD-088	MATERIAL	SS/CS
PDI TECHNIQUE USED:	YES		

70° LONGITUDINAL WAVE DUAL SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
CCW	70.29%	ELBOW TO NOZZLE WELD ID COUNTER-BORE AND ROOT CONFIGURATION
CW	70.29%	ELBOW TO NOZZLE WELD ID COUNTER-BORE AND ROOT CONFIGURATION
UP	100%	
DOWN	100%	

EDDY CURRENT SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
CCW	100%	
CW	100%	

The coverage achieved was the maximum extent practical with the elbow to nozzle weld ID counter-bore and root configuration obstructions in place and the results are representative of the entire weld.

UT COMBINED COVERAGE = 85.15 %

EXAMINATION RESULTS: NO INDICATIONS

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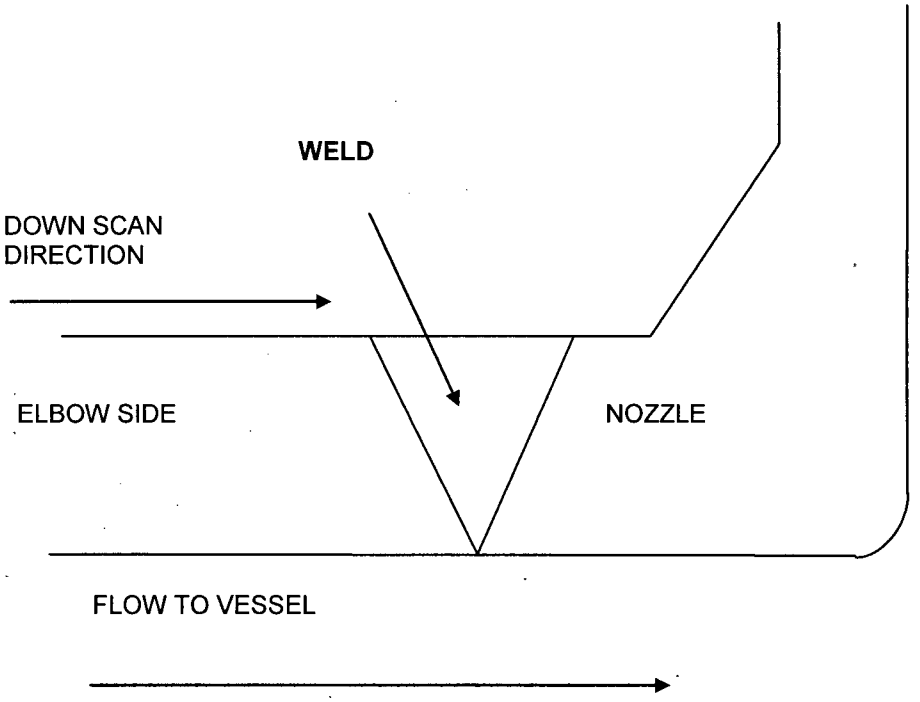
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

WELD CONFIGURATION IDENTIFICATION SHEET



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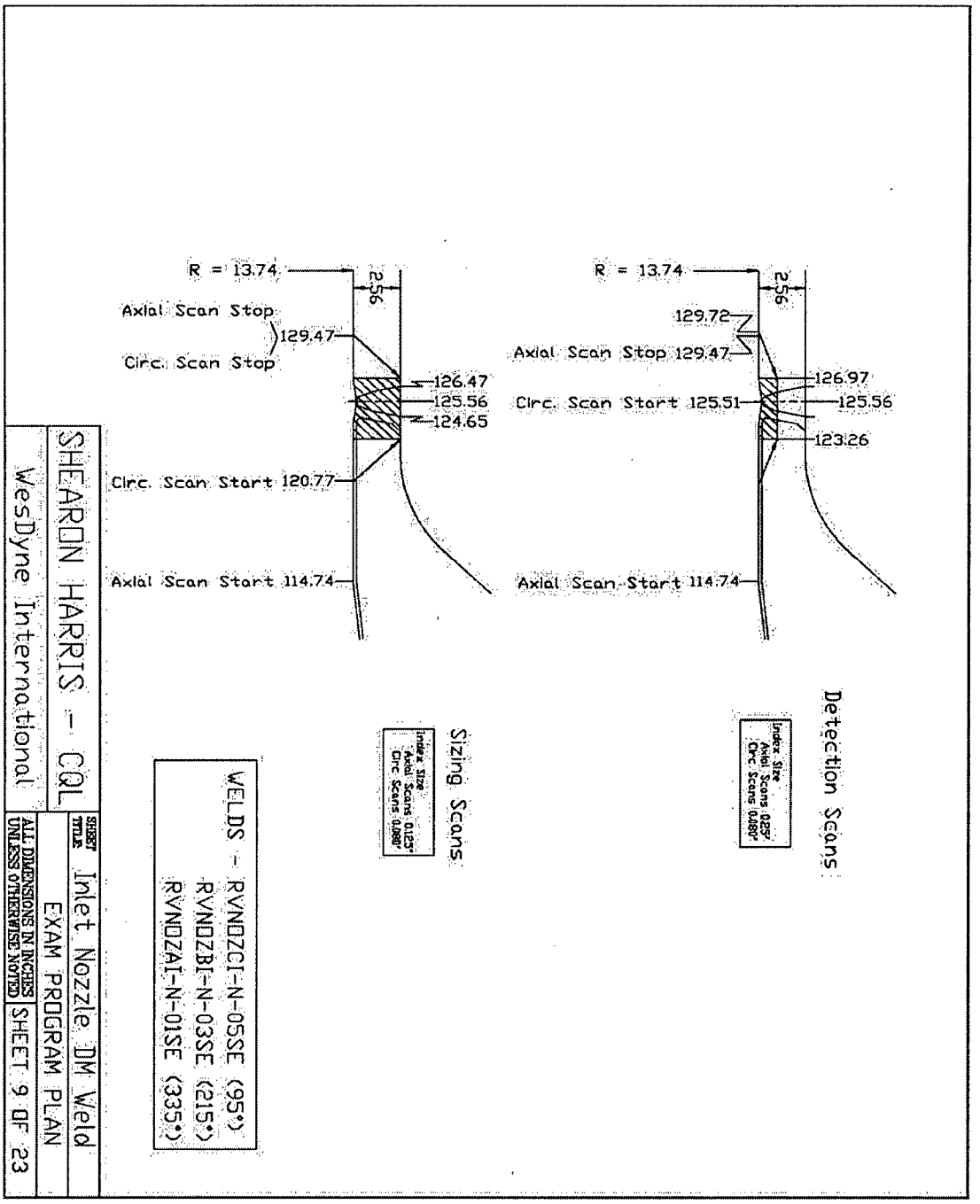
INLET NOZZLE DM WELD EXAM PROGRAM PLAN



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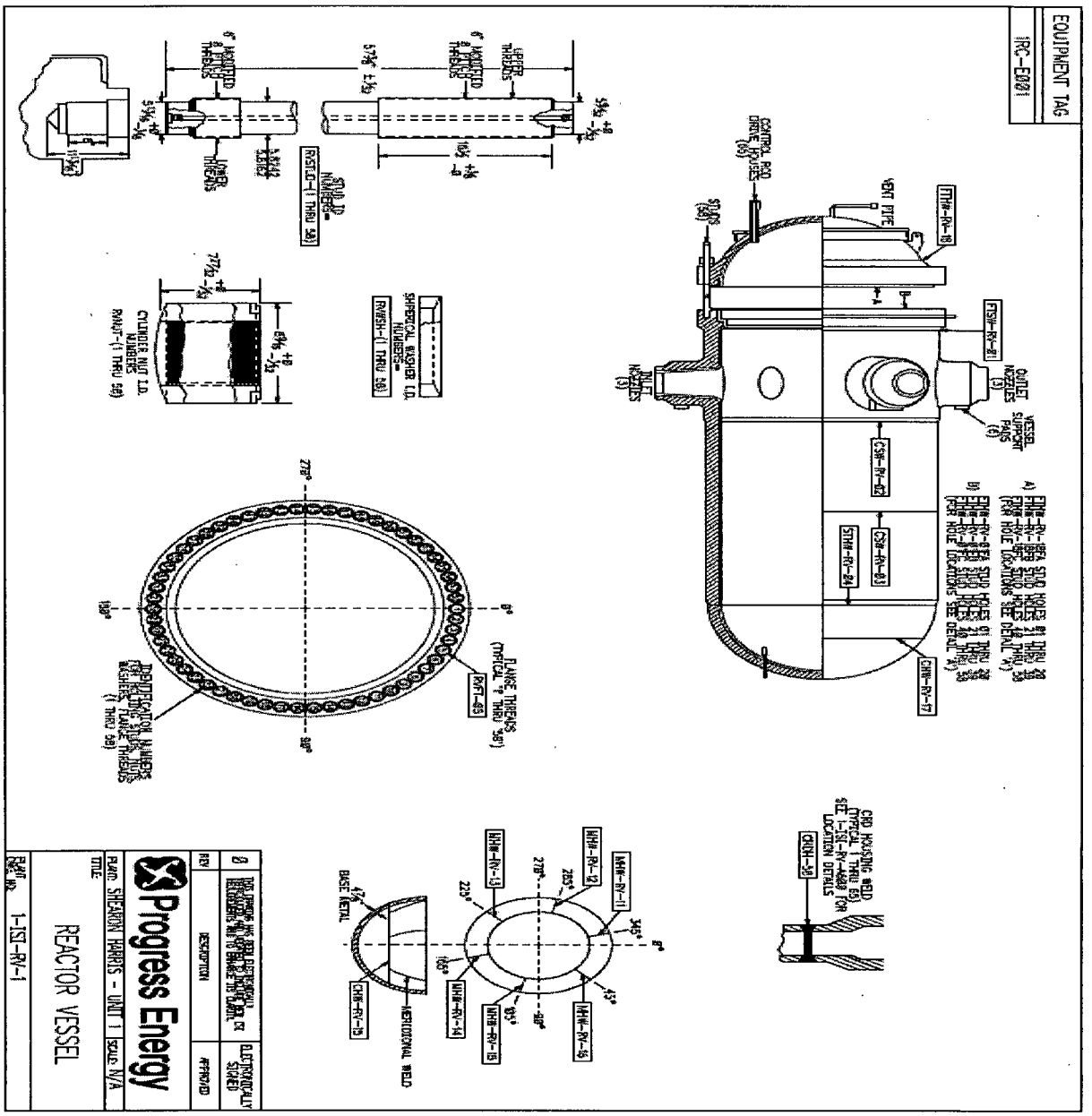
REACTOR VESSEL



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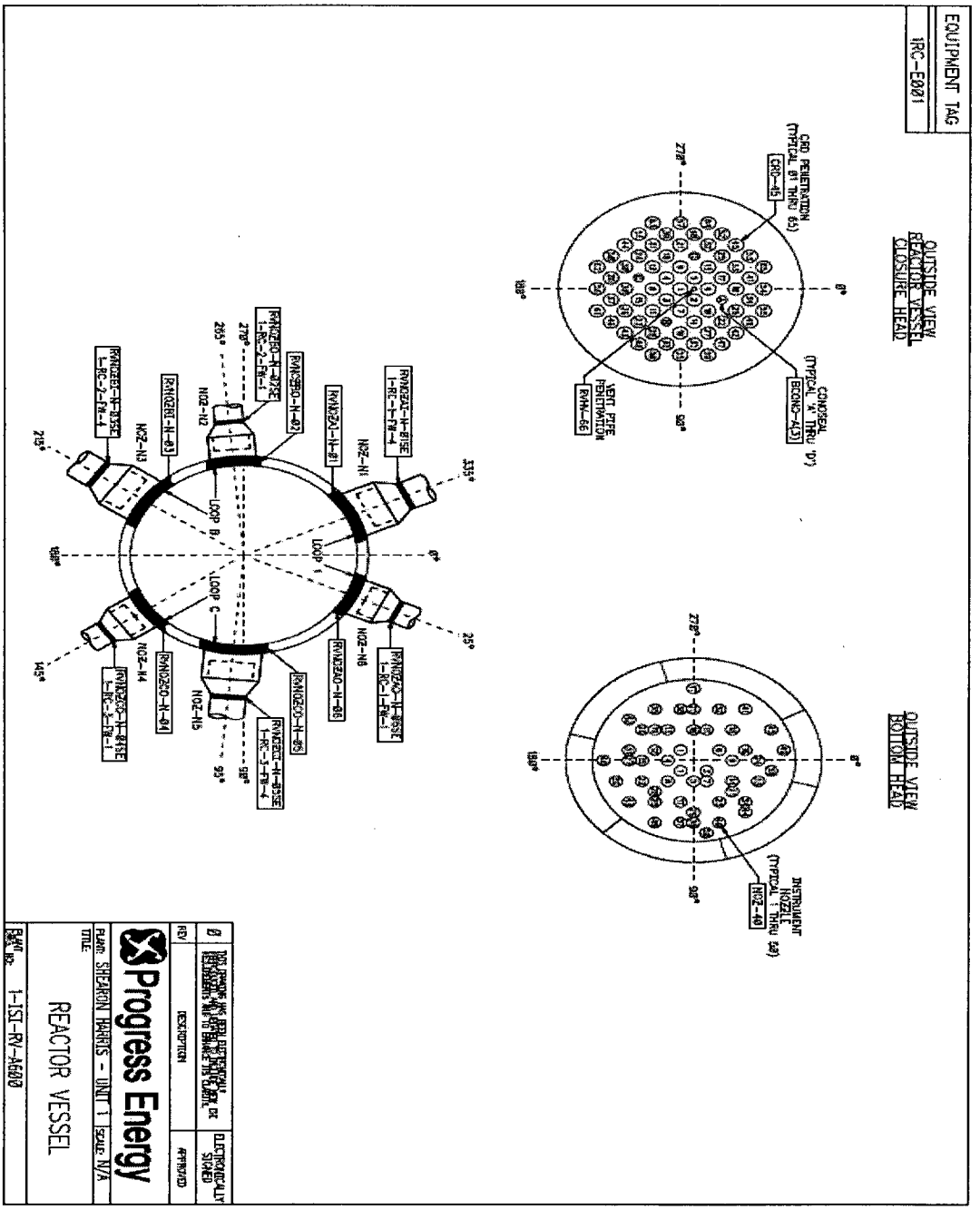
REACTOR VESSEL



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ATTACHMENTS:

A) Reactor Vessel Weld Results Summary RVNOZCI-N-05SE, including:
- Analysis Log # SE-95-1
- ET Analysis Log # SE-95-1
- Data Acquisition Log # SE-95-1
- RPV Coverage Estimate Breakdown NOZ @ 95°

B) Reactor Vessel Weld Results Summary RVNOZCI-N-03SE, including:
- Analysis Log # SE-215-1
- ET Analysis Log # SE-215-1
- Data Acquisition Log # SE-215-1
- RPV Coverage Estimate Breakdown NOZ @ 215°

C) Reactor Vessel Weld Results Summary RVNOZCI-N-01SE, including:
- Analysis Log # SE-335-1
- ET Analysis Log # SE-335-1
- Data Acquisition Log # SE-335-1
- RPV Coverage Estimate Breakdown NOZ @ 335°

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ATTACHMENT A
WesDyne International Reactor Vessel Weld Results Summary
RVNOZC1-N-05SE
(5 Pages)

WesDyne International
Reactor Vessel Weld Results Summary

SHEARON HARRIS UNIT 1

WELD NO.	RVNOZCI-N-05SE	DESCRIPTION	INLET NOZZLE DM WELD @ 95°

LIMITATIONS NO [ ] YES [X] **Coverage = 84.58%**
Weld Configuration

RESULTS NI [X] RI [ ]

NO. OF INDICATIONS **0**
STATUS **N/A**

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] ANALYSIS LOG	[ ] ASSESSMENT SHEET
[X] ACQUISITION LOG	[ ] PARAGON HARD COPY
[X] SCAN PRINTOUT	[ ] OTHER (specify)
[X] COVERAGE BREAKDOWN	

WESDYNE ANALYST

WESDYNE INTERNATIONAL

ANALYSIS LOG # SE-95-1

Utility:	Progress Energy	**Plant:**	Shearon Harris	**Unit:**	1	**Outage:**	RFO-13
Procedure No:	PDI-ISI-254-SE					**Procedure Rev. No.:**	2
Weld No:	RVNOZCI-N-05SE	**Weld Type:**	DM			**Exam. Surface:**	ID
Applicable Sensitivity Calibration Data Sheet No:	SE-01	**Acquisition Log No:**				**PARAGON Anal. Release:**	6.1.6
UT Examiner Signature:				**Level:**	II	**Date:**	4/18/06

Data File Name	UT Channel No.	Beam Angle / Beam Direction (In or out, CW or CCW)	NI	RI	RI Resolution / Comments / Limitations	Examiner ID / Date
WN95SEPARDETIN	1	CCW	X			CSW 4/18/06
WN95SEPARDETIN	2	CW	X			CSW 4/18/06
WN95SEPRPDETIN	1	IN	X			CSW 4/18/06
WN95SEPRPDETIN	2	OUT	X			CSW 4/18/06

WESDYNE INTERNATIONAL

ET Analysis Log: SE95-1

Utility: Progress Energy	Plant: Shearon Harris	Unit: 1	Outage: RFO13
Procedure No: WDI-STD-146		Procedure Rev. No.: 5	
Weld No. RVNOZCI-N-05SE	Weld Type: INLET DM WELD AT 95°		
Applicable Sensitivity Calibration Data Sheet No: ET-1		Acquisition Log No: SE-95-1	
ET Examiner Signature: Carl L Wyatt Level III		Date: 4/18/06	

Data File Name	ET Probe No.	ET Probe Scan Direction [Axial/Circ.]	NI	RI	RI Resolution / Comments / Limitations	Examiner ID / Date
WN95SEPARDETIN	1	CIRC	X			CSW 4/18/06
WN95SEPARDETIN	2	CIRC	X			CSW 4/18/06
WN95SEPRPDETIN	1	AX	X			CSW 4/18/06
WN95SEPRPDETIN	2	AX	X			CSW 4/18/06

WESDYNE INTERNATIONAL

DATA ACQUISITION LOG # SE-95-1

Utility:	Progress Energy	Plant:	Shearon Harris	Unit:	1	Outage:	RFO-13
Procedure No:	PDI-ISI-254-SE					Procedure Rev. No.:	2
Applicable Sensitivity Calibration Data Sheet No:	SE-01						
UT Examiner Signature:				Level:	II	Date:	4/18/06

Data File Name	Weld No.	Index Start	Scan Start	Total # of Sweeps	'AVE' Signal Amplitude	Gain Adj. (dB)	Operator Initials	Date (mm/dd/yy)	Time	Comments
WN95SEPARDETIN	N-05SE	125.51"	0°	54	16	0	ESO	4/18/06	1746	CHANNEL 1
WN95SEPARDETIN	N-05SE	125.51"	0°	54	17	0	ESO	4/18/06	1746	CHANNEL 2
WN95SEPRPDETIN	N-05SE	0°	114.74"	347	14	0	ESO	4/18/06	1842	CHANNEL 1
WN95SEPRPDETIN	N-05SE	0°	114.74"	347	12	0	ESO	4/18/06	1842	CHANNEL 2

SHEARON HARRIS #1

RPV COVERAGE ESTIMATE BREAKDOWNS

DIRECTION / ORIENTATION

PARALLEL SCANS CCW / CW

PERP. SCANS IN / OUT

ITEM / AREA INLET NOZZLE DM WELD @ 95°

WELD NO. RVNOZCI-N-05SE

Examination Probes

BEAM DIRECTION	70° Dual		*ET							
	Examination Volume		Examination Surface		WELD	VOLUME	WELD	VOLUME	WELD	VOLUME
CCW	69.15		100							
CW	69.15		100							
UP	100		-							
DOWN	100		-							
UT Combined Coverage = 84.58% UT & ET Combined Coverage = 100%										

Circ Scans limited as per procedure PDQS due to ID Counter-bore and Root configuration.
ET used to supplement exam for full coverage.

ANALYST

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-018
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

ATTACHMENT B
WesDyne International Reactor Vessel Weld Results Summary
RVNOZB1-N-03SE
(5 Pages)

WesDyne International
Reactor Vessel Weld Results Summary

SHEARON HARRIS UNIT 1

WELD NO. **RVNOZBI-N-3SE** DESCRIPTION **INLET NOZZLE DM WELD @ 215°**

LIMITATIONS NO [ ] YES [X] **Coverage = 88.34%**
Weld Configuration

RESULTS NI [X] RI [ ]

NO. OF INDICATIONS **0**
STATUS **N/A**

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] ANALYSIS LOG	[ ] ASSESSMENT SHEET
[X] ACQUISITION LOG	[ ] PARAGON HARD COPY
[X] SCAN PRINTOUT	[ ] OTHER (specify)
[X] COVERAGE BREAKDOWN	

WESDYNE ANALYST

WESDYNE INTERNATIONAL

ANALYSIS LOG # SE-215-1

Utility:	Progress Energy	**Plant:**	Shearon Harris	**Unit:**	1	**Outage:**	RFO-13
Procedure No:	PDI-ISI-254-SE					**Procedure Rev. No.:**	2
Weld No:	RVNOZBI-N-03SE	**Weld Type:**	INTLET-DM	**Exam. Surface:**	ID		
Applicable Sensitivity Calibration Data Sheet No:	SE-01	**Acquisition Log No:**	SE215-1	**PARAGON Anal. Release:**	6.1.6		
UT Examiner Signature:				**Level:**	II	**Date:**	4-18-06

Data File Name	UT Channel No.	Beam Angle / Beam Direction [in or out, CW or CCW]	NI	RI	RI Resolution / Comments / Limitations	Examiner ID / Date
WN215-SE-PAR-DET-IN	1	70° / CCW	X			CSW 4/18/06
WN215-SE-PAR-DET-IN	2	70° / CW	X			CSW 4/18/06
WN215-SE-PRP-DET-IN	1	70° / IN	X			CSW 4/18/06
WN215-SE-PRP-DET-IN	2	70° / OUT	X			CSW 4/18/06

WESDYNE INTERNATIONAL

ET Analysis Log: SE 215-1

Utility: Progress Energy	Plant: Shearon Harris	Unit: 1	Outage: 1R13
Procedure No: WDI-STD-146		Procedure Rev. No.: 5	
Weld No. RVNOZBI-N-03SE	Weld Type: INLET DM WELD AT 215°		
Applicable Sensitivity Calibration Data Sheet No: ET-1		Acquisition Log No: SE215-1	
ET Examiner Signature: C L Wyffels	Level III	Date: 4-19-06	

Data File Name	ET Probe No.	ET Probe Scan Direction [Axial/Circ.]	NI	RI	RI Resolution / Comments / Limitations	Examiner ID / Date
WN215SEPARDETIN	1	CIRC	X			CSW / 4-19-06
WN215SEPARDETIN	2	CIRC	X			CSW / 4-19-06
WN215SEPRPDETIN	1	AXIAL	X			CSW / 4-19-06
WN215SEPRPDETIN	2	AXIAL	X			CSW / 4-19-06

WESDYNE INTERNATIONAL

DATA ACQUISITION LOG # SE 215-1

Utility:	Progress Energy	Plant:	Shearon Harris	Unit:	1	Outage:	RFO-13
Procedure No:	PDI-ISI-254-SE					Procedure Rev. No.:	2
Applicable Sensitivity Calibration Data Sheet No:	SE-01						
UT Examiner Signature:				Level:	II	Date:	4-18-06

Data File Name	Weld No.	Index Start	Scan Start	Total # of Sweeps	'AVE' Signal Amplitude	Gain Adj. (dB)	Operator Initials	Date (mm/dd/yy)	Time	Comments
WN215-SE-PARDETIN	N-03SE	125.51"	0°	54	8	0	DS	4-18-06	22:26	CHANNEL 1
WN215-SE-PARDETIN	N-03SE	125.51"	0°	54	9	0	DS	4-18-06	22:26	CHANNEL 2
WN215-SE-PRPDETIN	N-03SE	0°	114.74"	346	15	0	DS	4-18-06	23:21	CHANNEL 1
WN215-SE-PRPDETIN	N-03SE	0°	114.74"	346	11	0	DS	4-18-06	23:21	CHANNEL 2

SHEARON HARRIS #1

RPV COVERAGE ESTIMATE BREAKDOWNS

DIRECTION / ORIENTATION

PARALLEL SCANS CCW / CW
PERP. SCANS IN / OUT

ITEM / AREA INLET NOZZLE DM WELD @ 215°

WELD NO. RVNOZBI-N-03SE

Examination Probes

BEAM DIRECTION	70° Dual		*ET							
	Examination Volume		Examination Surface		WELD	VOLUME	WELD	VOLUME	WELD	VOLUME
CCW	76.67		100							
CW	76.67		100							
UP	100		-							
DOWN	100		-							
UT Combined Coverage = 88.34% UT & ET Combined Coverage = 100%										

Circ Scans limited as per procedure PDQS due to ID Counter-bore and Root configuration.
ET used to supplement exam for full coverage.

ANALYST

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-018
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

ATTACHMENT C
WesDyne International Reactor Vessel Weld Results Summary
RVNOZA1-N-01SE
(5 Pages)

WesDyne International
Reactor Vessel Weld Results Summary

SHEARON HARRIS UNIT 1

WELD NO.	RVNOZAI-N-01SE	DESCRIPTION	INLET NOZZLE DM WELD @ 335°

LIMITATIONS NO [ ] YES [X] **Coverage = 85.15%**

Weld Configuration

RESULTS

NI	RI
X	

NO. OF INDICATIONS **0**

STATUS **N/A**

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] ANALYSIS LOG	[ ] ASSESSMENT SHEET
[X] ACQUISITION LOG	[ ] PARAGON HARD COPY
[X] SCAN PRINTOUT	[ ] OTHER (specify)
[X] COVERAGE BREAKDOWN	

WESDYNE ANALYST 

WESDYNE INTERNATIONAL

ANALYSIS LOG # SE-335-1

Utility:	Progress Energy	**Plant:**	Shearon Harris	**Unit:**	1	**Outage:**	RFO-13
Procedure No:	PDI-ISI-254-SE					**Procedure Rev. No.:**	2
Weld No:	RVNOZAI-N-01SE	**Weld Type:**	INLET-DM	**Exam. Surface:**	ID		
Applicable Sensitivity Calibration Data Sheet No:	SE-01	**Acquisition Log No:**	SE-335-1	**PARAGON Anal. Release:**	6.1.6		
UT Examiner Signature:				**Level:**	III	**Date:**	4-18-06

Data File Name	UT Channel No.	Beam Angle / Beam Direction (In or out, CW or CCW)	NI	RI	RI Resolution / Comments / Limitations	Examiner ID / Date
WN335-SE-PAR-DET-IN	1	70° / CCW	X			SAS 4/18/06
WN335-SE-PAR-DET-IN	2	70° / CW	X			SAS 4/18/06
WN335-SE-PRP-DET-IN	1	70° / IN	X			SAS 4/18/06
WN335-SE-PRP-DET-IN	2	70° / OUT	X			SAS 4/18/06

WESDYNE INTERNATIONAL

ET Analysis Log: SE335-1

Utility: Progress Energy	Plant: Shearon Harris	Unit: 1	Outage: 1R13
Procedure No: WDI-STD-146		Procedure Rev. No.: 5	
Weld No. RVNOZAI-N-O1SE	Weld Type: INLET DM WELD AT 335°		
Applicable Sensitivity Calibration Data Sheet No: ET-1		Acquisition Log No: SE335-1	
ET Examiner Signature: Carl L Wyl Level III		Date: 4-18-06	

Data File Name	ET Probe No.	ET Probe Scan Direction (Axial/Circ.)	NI	RI	RI Resolution / Comments / Limitations	Examiner ID / Date
WN335SEPARDETINA	1	CIRC	X			CSW / 4-18-06
WN335SEPARDETINA	2	CIRC	X			CSW / 4-18-06
WN335SEPRPDETIN	1	AXIAL	X			CSW / 4-18-06
WN335SEPRPDETIN	2	AXIAL	X			CSW / 4-18-06

WESDYNE INTERNATIONAL

DATA ACQUISITION LOG # SE335-1

Utility:	Progress Energy	Plant:	Shearon Harris	Unit:	1	Outage:	RFO-13
Procedure No:	PDI-ISI-254-SE					Procedure Rev. No.:	2
Applicable Sensitivity Calibration Data Sheet No:	SE-01						
UT Examiner Signature:				Level:	II	Date:	4-18-06

Data File Name	Weld No.	Index Start	Scan Start	Total # of Sweeps	'AVE' Signal Amplitude	Gain Adj. (dB)	Operator Initials	Date (mm/dd/yy)	Time	Comments
WN335SEPARDEINA	N-01SE	122.49"	0°	52	17	0	CSW	4-18-06	0600	CHANNEL 1
WN335SEPARDEINA	N-01SE	122.49"	0°	52	14	0	CSW	4-18-06	0600	CHANNEL 2
WN335SEPRPDEIN	N-01SE	0°	114.74"	348	7	0	DS	4-18-06	0730	CHANNEL 1
WN335SEPRPDEIN	N-01SE	0°	114.74"	348	12	0	DS	4-18-06	0730	CHANNEL 2

SHEARON HARRIS #1

RPV COVERAGE ESTIMATE BREAKDOWNS

DIRECTION / ORIENTATION

PARALLEL SCANS CCW / CW

PERP. SCANS IN / OUT

ITEM / AREA INLET NOZZLE DM WELD @ 335° WELD NO. RVNOZAI-N-01SE

Examination Probes

BEAM DIRECTION	70° Dual		*ET							
	Examination Volume		Examination Surface		WELD	VOLUME	WELD	VOLUME	WELD	VOLUME
CCW	70.29		100							
CW	70.29		100							
UP	100		-							
DOWN	100		-							
UT Combined Coverage = 85.15% UT & ET Combined Coverage = 100%										

Circ Scans limited as per procedure PDQS due to ID Counter-bore and Root configuration.
ET used to supplement exam for full coverage.

ANALYST

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Examination Category B-A, Item B1.11 and B1.21, Circumferential Shell/Head Welds

RAI	REQUEST	RESPONSE
1a	Description	(Reference Relief Request submittal HNP-08-045 Section 1.0). Welds are Lower shell to lower circumferential shell weld and lower head circumferential weld.
1a	Sketch	Information follows in Enclosure.
1a	Interference/Obstruction	(Reference Relief Request submittal HNP-08-045 Section 5.0). The limitation for Reactor Vessel Lower Head to Lower Shell Circumferential Weld STHW-RV-04 was due to the four core support lugs integrally attached to the reactor vessel. The limitation for Reactor Vessel Lower Head Circumferential Weld CHW-RV-17 was due to peripherally located Bottom Mounted Instrumentation (BMI) tubes integrally attached to the reactor vessel.
1b	NDE Equipment	The following procedure is provided separately: PDI-ISI-254
1b	Alternative Methods	(Reference Relief Request submittal HNP-08-045 Section 6.0). HNP is proposing to volumetrically UT examine the RPV pressure retaining welds STHW-RV-04 and CHW-RV-17 to the maximum extent possible in accordance with the Inservice Inspection Program schedule. A significant portion of the subject welds have been examined, obtaining 83.9% for weld STHW-RV-04 and 81.77% for weld CHW-RV-17. In addition, the subject welds are subject to visual (VT-2) system Leakage test during each refueling outage.
1c	Wave Modality/ Insonification Angles	Information follows in Enclosure ("45° Longitudinal Wave Dual Scan", "45° Longitudinal Wave Single Element Scan", "45° Shear Wave Scan").
1d	Cross Sectional Coverage Plots to describe the ASME Code coverage	Information follows in Enclosure.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

1e	Results of the Examination Indications / No Indications	Information follows in Enclosure.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**STHW-RV-04**	ASME CATEGORY:	B-A
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B1.11
CONFIGURATION:	CIRCUMFERENTIAL SHELL WELD	% CRV ACHIEVED:	83.90 %
PROCEDURES:	PDI-ISI-254	MATERIAL	CS/CS
PDI TECHNIQUE USED:	YES		

45° LONGITUDINAL WAVE DUAL SCAN

SCAN	% WELD VOLUME ACHIEVED	% VOLUME ACHIEVED	LIMITATION
CCW	75.56%	84.41%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL
CW	75.56%	84.41%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL
UP	79.11%	79.11%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL
DOWN	79.11%	79.11%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

45° LONGITUDINAL WAVE SINGLE ELEMENT SCAN

SCAN	% WELD VOLUME ACHIEVED	% VOLUME ACHIEVED	LIMITATION
CCW	82.04%	84.41%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL
CW	82.04%	84.41%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL
UP	79.11%	79.11%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL
DOWN	79.11%	79.11%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL

45° SHEAR WAVE SCAN

SCAN	% WELD VOLUME ACHIEVED	% VOLUME ACHIEVED	LIMITATION
CCW	82.04%	84.41%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL
CW	82.04%	84.41%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL
UP	100%	97.46%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL
DOWN	100%	97.46%	FOUR CORE SUPPORT LUGS INTEGRALLY ATTACHED TO THE REACTOR VESSEL

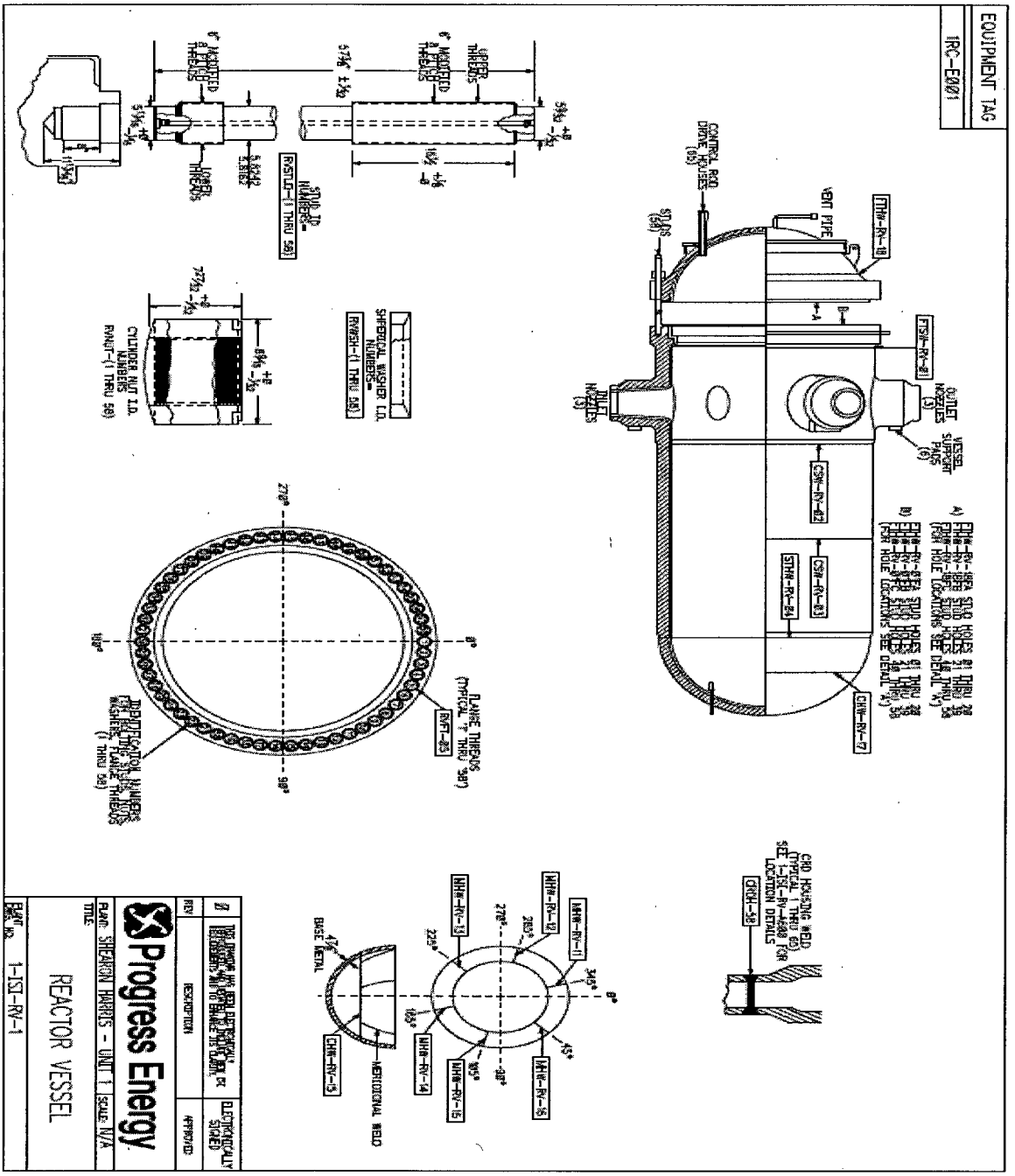
The coverage achieved was the maximum extent practical with the four core support lug obstructions in place and the results are representative of the entire weld.

UT COMBINED COVERAGE = 83.90 %

EXAMINATION RESULTS: ONE RECORDABLE INDICATION ALLOWABLE PER ASME SECTION XI 1989, IWB-3510-1

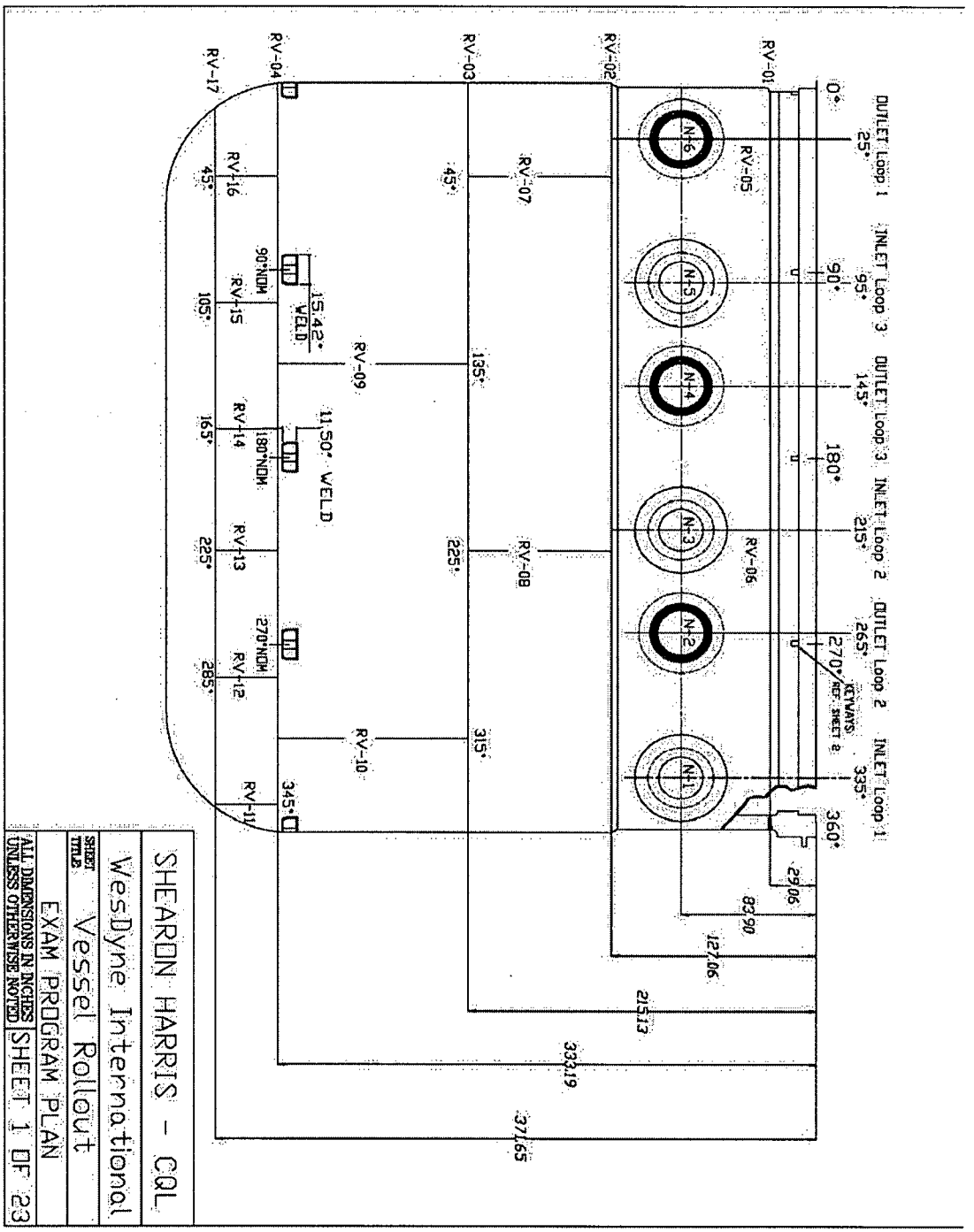
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

REACTOR VESSEL



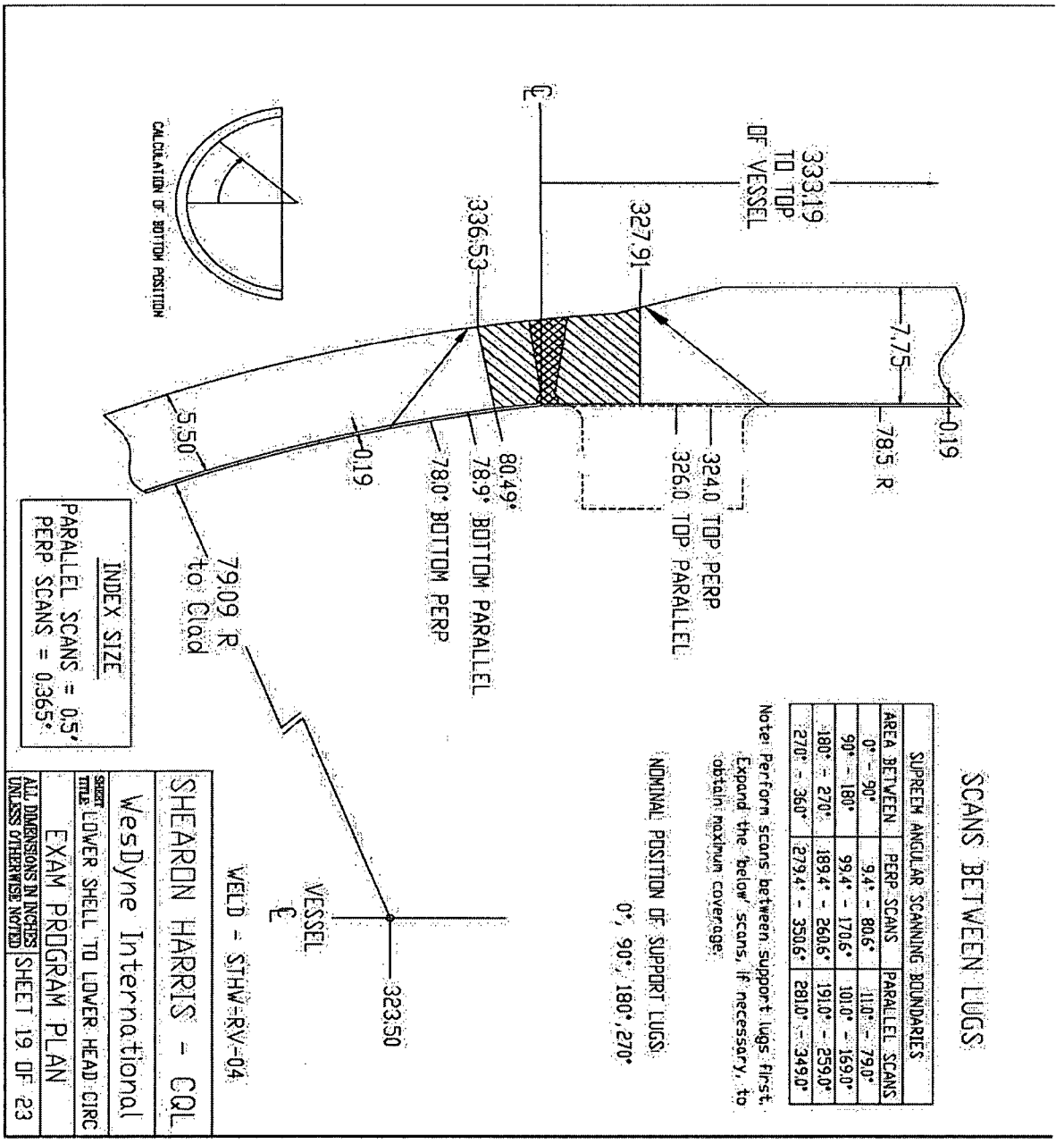
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

VESSEL ROLLOUT DRAWING #1



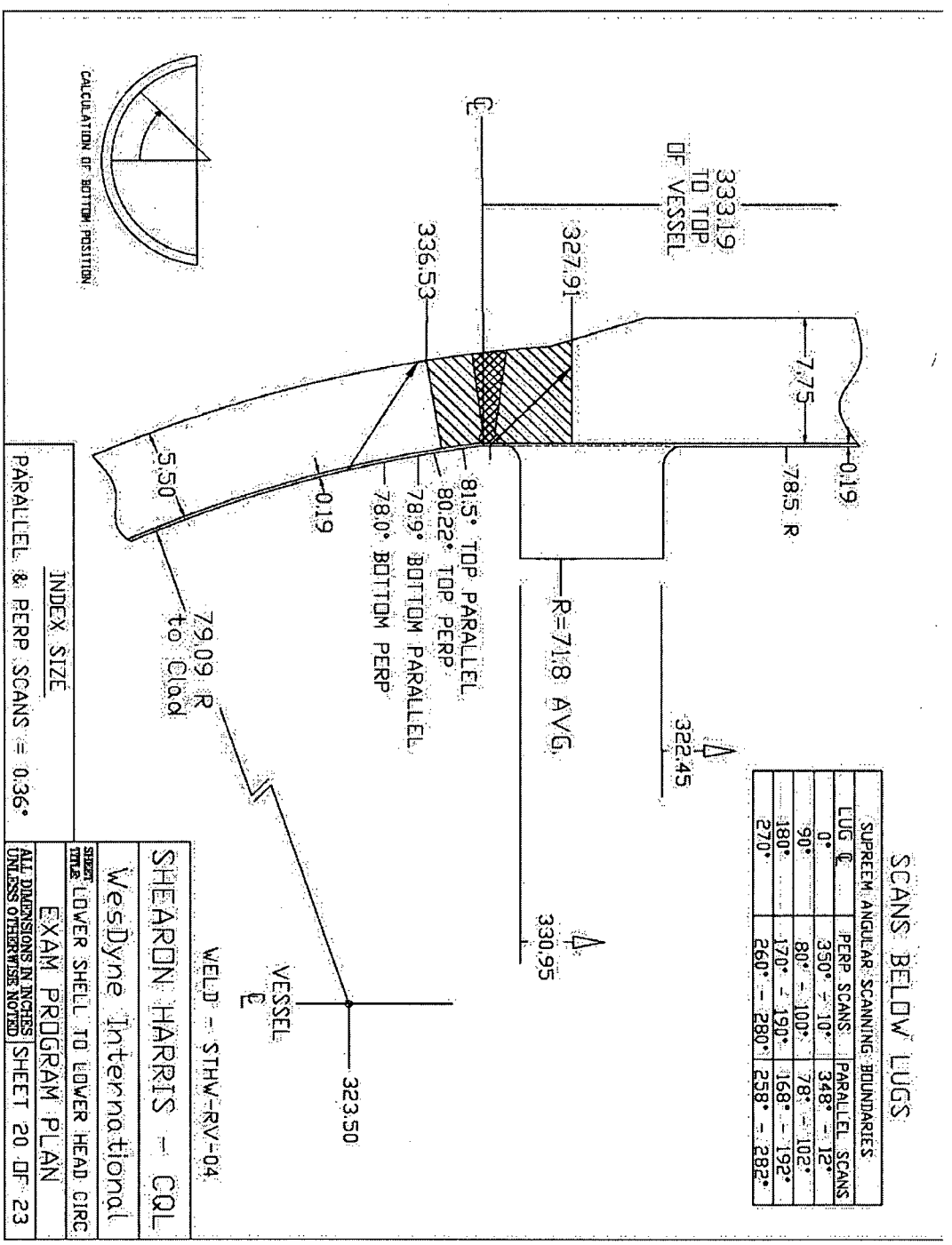
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

LOWER SHELL TO LOWER HEAD CIRC WELD
DRAWING # 19



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

LOWER SHELL TO LOWER HEAD CIRC WELD
DRAWING # 20



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**CHW-RV-17**	ASME CATEGORY:	B-A
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B1.21
CONFIGURATION:	CIRCUMFERENTIAL HEAD WELDS	% CRV ACHIEVED:	81.77 %
PROCEDURES:	PDI-ISI-254	MATERIAL	CS/CS
PDI TECHNIQUE USED:	YES		

45° LONGITUDINAL WAVE DUAL SCAN

SCAN	% WELD VOLUME ACHIEVED	% VOLUME ACHIEVED	LIMITATION
CCW	88.15%	88.15%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL
CW	88.15%	88.15%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL
UP	75.38%	75.38%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL
DOWN	75.38%	75.38%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

45° LONGITUDINAL WAVE SINGLE ELEMENT SCAN

SCAN	% WELD VOLUME ACHIEVED	% VOLUME ACHIEVED	LIMITATION
CCW	88.15%	88.15%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL
CW	88.15%	88.15%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL
UP	75.38%	75.38%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL
DOWN	75.38%	75.38%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

45° SHEAR WAVE SCAN

SCAN	% WELD VOLUME ACHIEVED	% VOLUME ACHIEVED	LIMITATION
CCW	88.15%	88.15%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL
CW	88.15%	88.15%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL
UP	75.38%	75.38%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL
DOWN	75.38%	75.38%	PERIPHERALLY LOCATED BOTTOM MOUNTED INSTRUMENTATION (BMI) TUBES INTEGRALLY ATTACHED TO THE REACTOR VESSEL

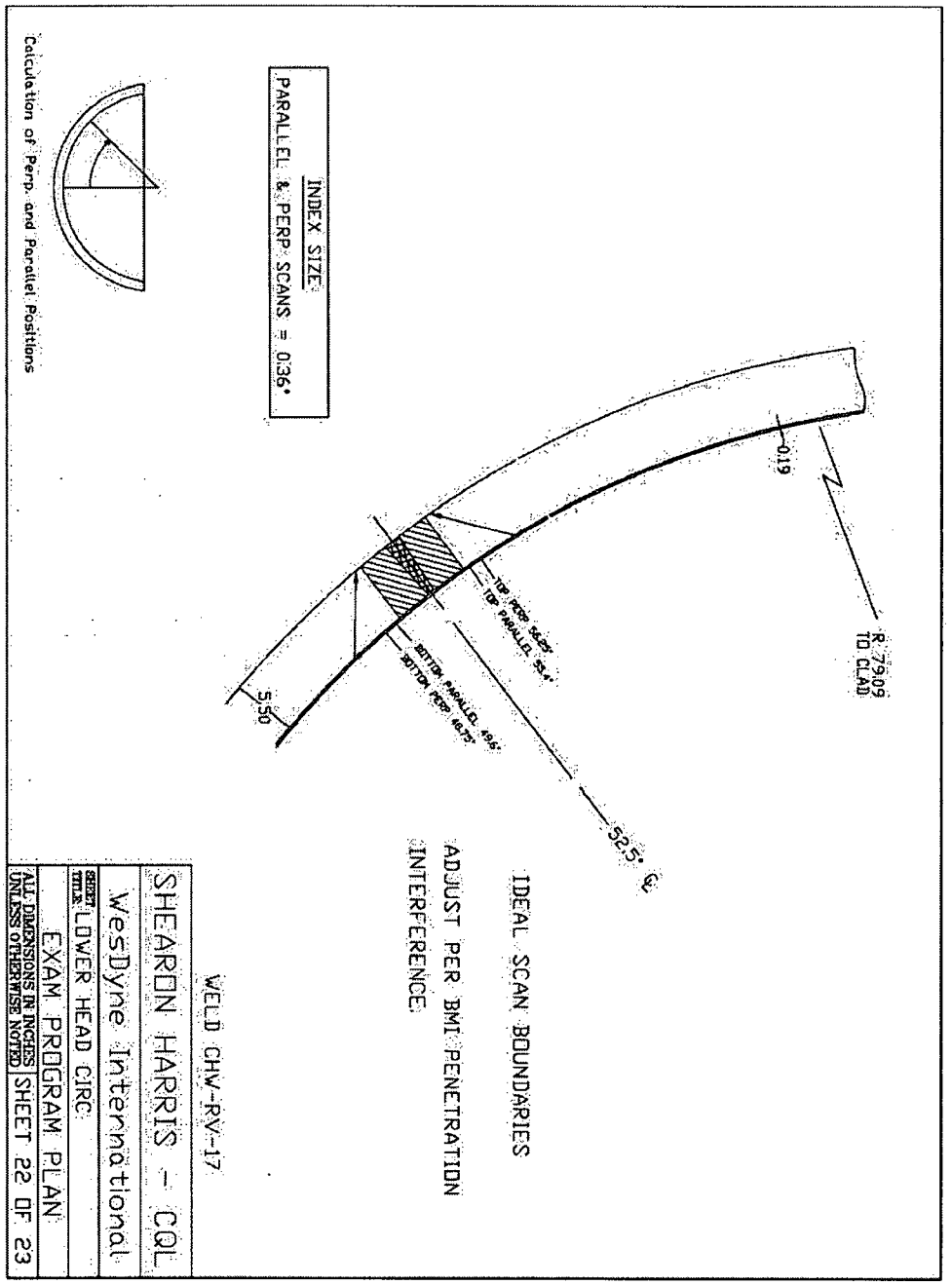
The coverage achieved was the maximum extent practical with the bottom mounted instrumentation tube obstructions in place and the results are representative of the entire weld.

UT COMBINED COVERAGE = 81.77 %

EXAMINATION RESULTS: ONE RECORDABLE INDICATION ALLOWABLE PER ASME SECTION XI 1989, IWB-3512-1

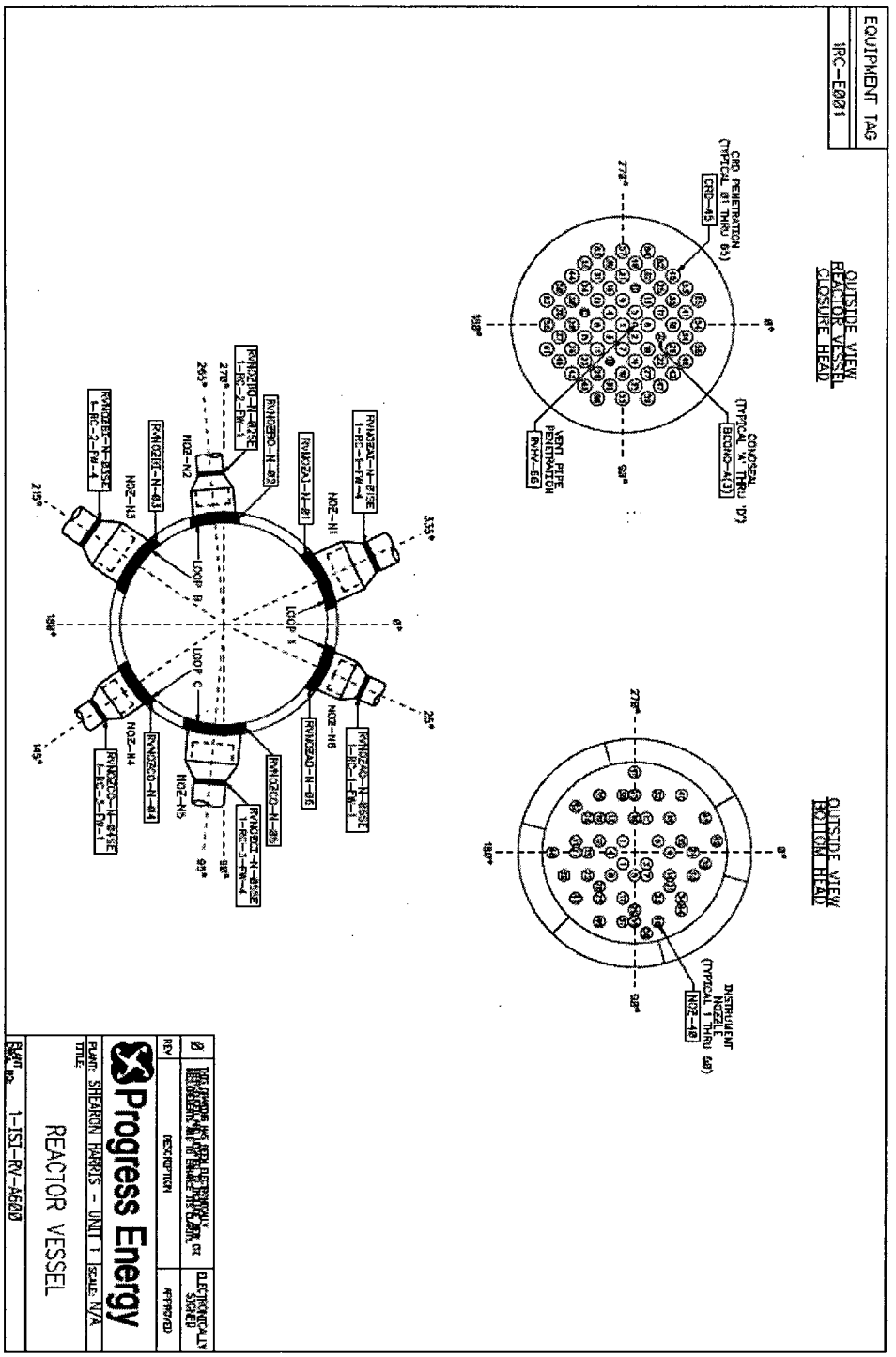
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

LOWER HEAD CIRC WELD
DRAWING # 22



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-019
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

REACTOR VESSEL



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Examination Category B-A, Item B1.30, Shell to Flange Weld, and Item B 1.40, Head to Flange Weld

RAI	REQUEST	RESPONSE
1a	Description	(Reference Relief Request submittal HNP-08-045 Section 1.0). Welds are Vessel Flange to Upper shell weld and Vessel Flange to Head weld.
1a	Sketch	Information follows in Enclosure.
1a	Interference/Obstruction	(Reference Relief Request submittal HNP-08-045 Section 5.0). The limitation that reduces the amount of UT examination coverage for Vessel Flange to Upper Shell Weld FTSW-RV-01 is the vessel configuration at the flange. The limitations for the Vessel Flange to Head Weld FTHW-RV-18 is due to the component configuration (flange directly adjacent to the weld) and the vessel head lifting lugs.
1b	NDE Equipment	The following procedures are provided separately: PDI-ISI-254 (FTSW-RV-01) WDI-STD-146, WDI-STD-088 (FTHW-RV-18)
1b	Alternative Methods	(Reference Relief Request submittal HNP-08-045 Section 6.0). HNP is proposing to volumetrically UT examine the RPV pressure retaining welds FTSW-RV-01 and FTHW-RV-18 to the maximum extent possible in accordance with the Inservice Inspection Program schedule. In addition, the subject welds are subject to visual (VT-2) system Leakage test during each refueling outage. For FTHW-RV-18 Vessel Flange to Head Weld, the Code required MT Examination was also performed in accordance with the ASME Code Section XI.
1c	Wave Modality/ Insonification Angles	Information follows in Enclosure ("45° Longitudinal Wave Dual Scan", 45° Longitudinal Wave Single Element Scan", "45° Shear Wave Scan", "Longitudinal Wave Manual Scans from Flange Face", 0° Longitudinal Wave Scan", 45° and 60° Shear Wave ½ Vee Scan").
1d	Cross Sectional Coverage Plots to describe the ASME Code coverage	Information follows in Enclosure.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

1e	Results of the Examination Indications / No Indications	No indications detected.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**FTSW-RV-01**	ASME CATEGORY:	B-A
ASME CODE FIGURE:	IWB-2500-4	ASME ITEM NUMBER:	B1.30
CONFIGURATION:	VESSEL FLANGE TO UPPER SHELL WELD	% CRV ACHIEVED:	87.5 %
PROCEDURES:	PDI-ISI-254 WDI-SSP-1063	MATERIAL	CS/CS
PDI TECHNIQUE USED:	YES		

45° LONGITUDINAL WAVE DUAL SCAN

SCAN	% WELD VOLUME ACHIEVED	% VOLUME ACHIEVED	LIMITATION
CCW	100%	50%	VESSEL CONFIGURATION AT THE FLANGE
CW	100%	50%	VESSEL CONFIGURATION AT THE FLANGE
UP	100%	100%	
DOWN	100%	100%	

45° LONGITUDINAL WAVE SINGLE ELEMENT SCAN

SCAN	% WELD VOLUME ACHIEVED	% VOLUME ACHIEVED	LIMITATION
CCW	100%	50%	VESSEL CONFIGURATION AT THE FLANGE
CW	100%	50%	VESSEL CONFIGURATION AT THE FLANGE
UP	100%	100%	
DOWN	100%	100%	

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
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45° SHEAR WAVE SCAN

SCAN	% WELD VOLUME ACHIEVED	% VOLUME ACHIEVED	LIMITATION
CCW	100%	50%	VESSEL CONFIGURATION AT THE FLANGE
CW	100%	50%	VESSEL CONFIGURATION AT THE FLANGE
UP	100%	100%	
DOWN	100%	100%	

0°, 6° in, 6° out, 12° out and 16° out LONGITUDINAL WAVE MANUAL SCANS FROM FLANGE FACE

SCAN	% WELD VOLUME ACHIEVED	% VOLUME ACHIEVED	LIMITATION
DOWN	100%	100%	

The coverage achieved was the maximum extent practical due to the vessel configuration at the flange and the results are representative of the entire weld.

UT COMBINED COVERAGE = 87.5 %

EXAMINATION RESULTS: ONE RECORDABLE INDICATION ALLOWABLE PER ASME SECTION XI 1989, IWB-3510-1

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
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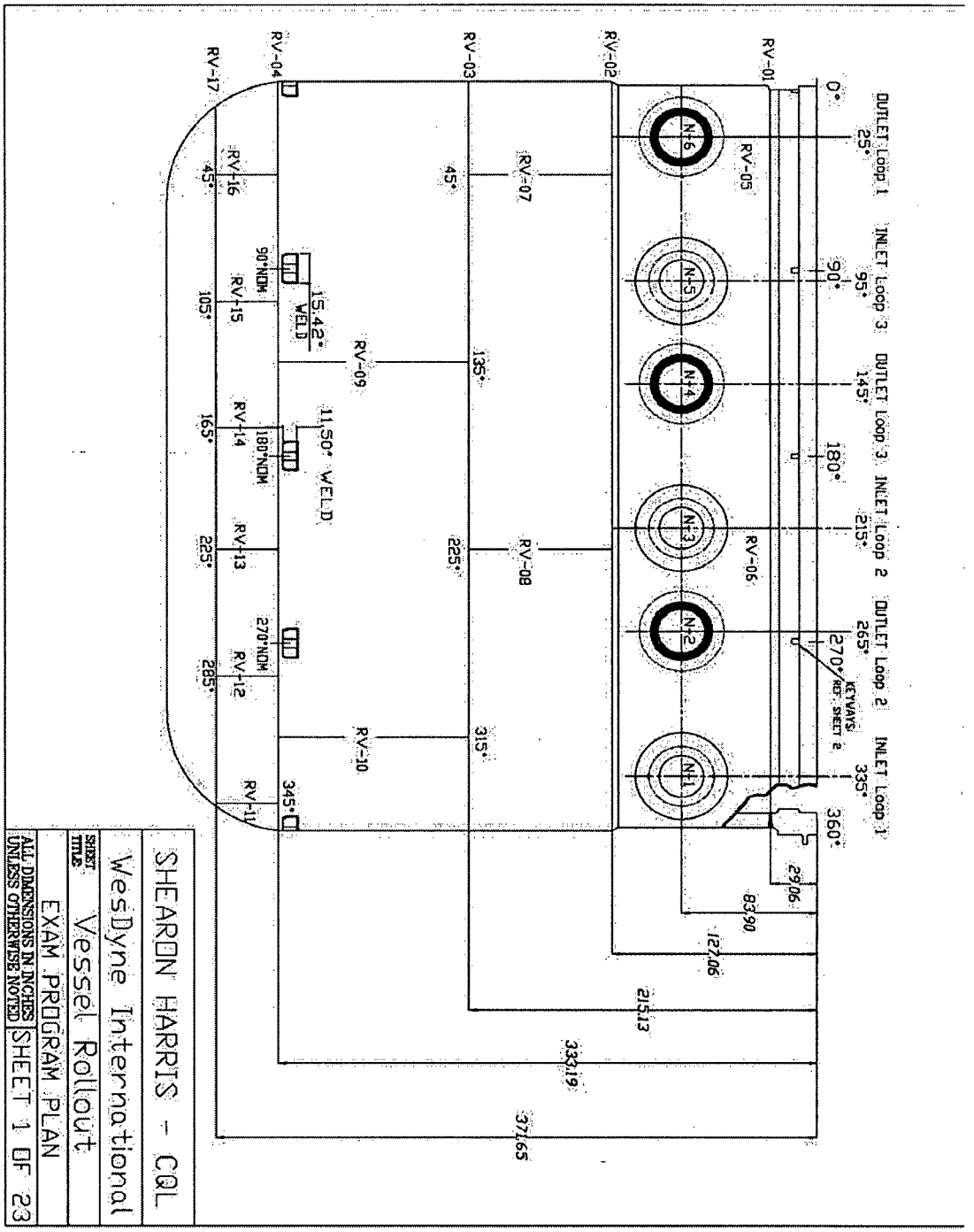
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

VESSEL ROLLOUT
DRAWING #1



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
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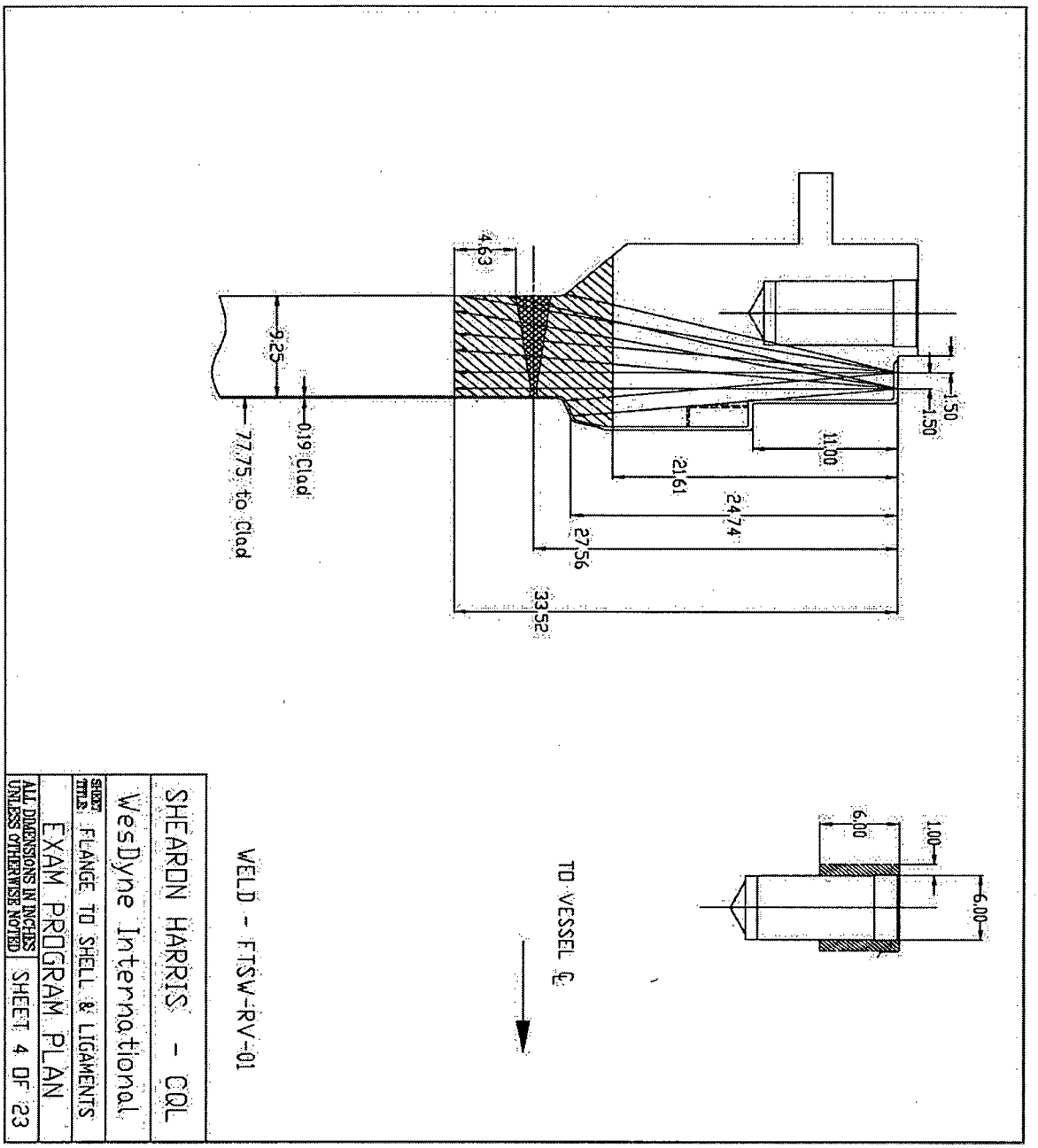
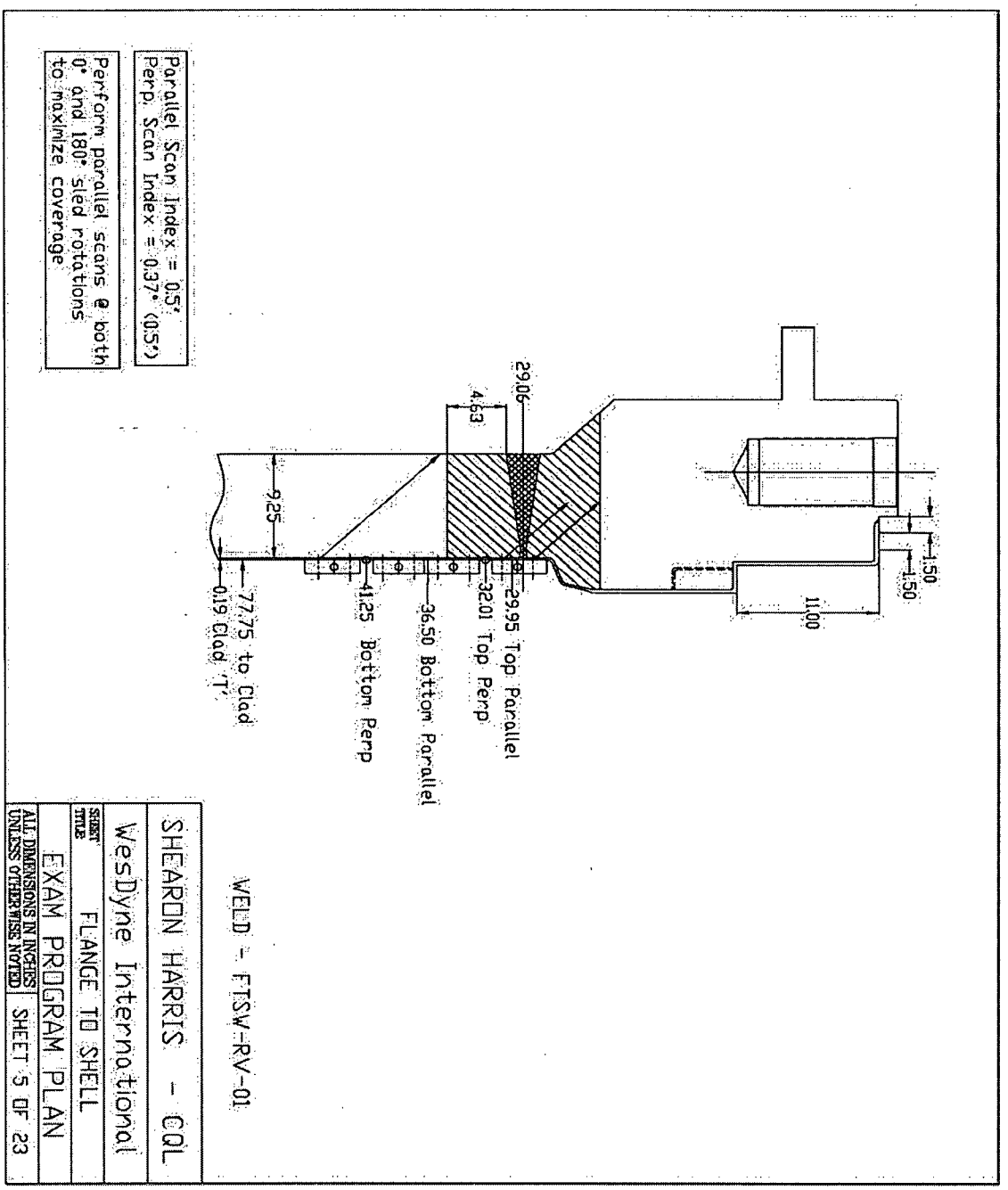
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FLANGE TO SHELL
DRAWING #4



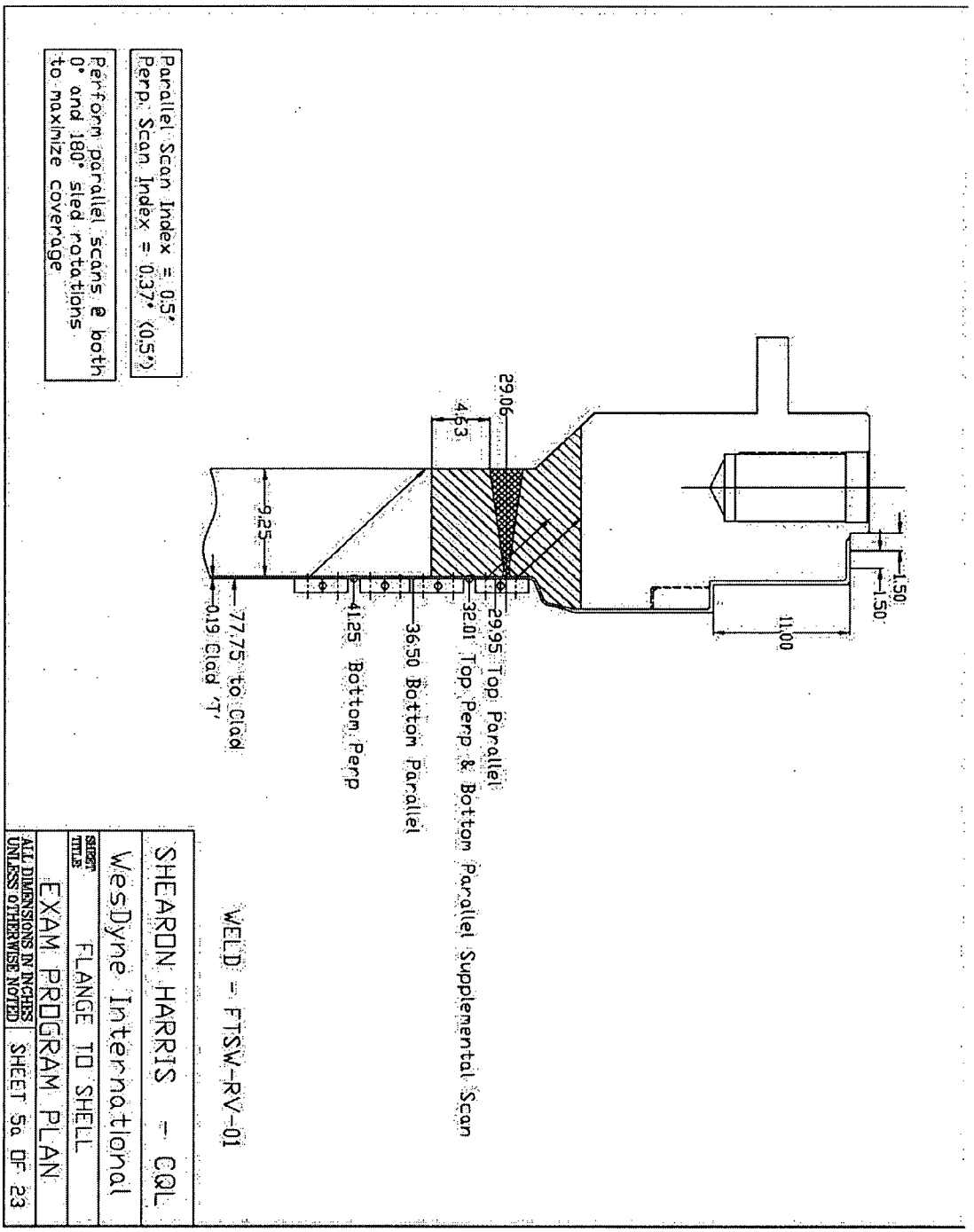
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FLANGE TO SHELL
DRAWING #5



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FLANGE TO SHELL
DRAWING #5a



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**FTHW-RV-18**	ASME CATEGORY:	B-A
ASME CODE FIGURE:	IWB-2500-5	ASME ITEM NUMBER:	B1.40
CONFIGURATION:	HEAD TO FLANGE WELD	% CRV ACHIEVED:	71.7 %
PROCEDURES:	ISI-210-T WDI-STD-146 WDI-STD-088	MATERIAL	CS/CS
PDI TECHNIQUE USED:	YES		

0° LONGITUDINAL WAVE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	65%	VESSEL HEAD CONFIGURATION AT THE FLANGE

45° and 60° SHEAR WAVE ½ VEE SCAN

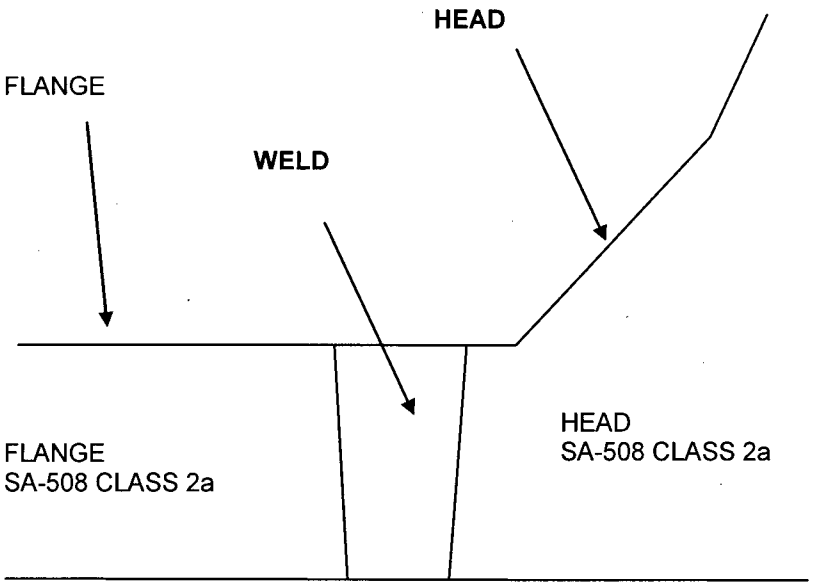
SCAN	% VOLUME ACHIEVED	LIMITATION
CIRCUMFERENTIAL SCAN	65%	VESSEL HEAD CONFIGURATION AT THE FLANGE
AXIAL SCAN	85%	VESSEL HEAD CONFIGURATION AT THE FLANGE

UT COMBINED COVERAGE = 71.7 %

EXAMINATION RESULTS: NO INDICATIONS

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

REACTOR VESSEL TOP HEAD TO FLANGE WELD MATERIAL AND WELD IDENTIFICATION SHEET



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FTHW-RV-18 SKETCH "A"

Data Sheet 210T-00-002

SUPPLEMENTAL ULTRASONIC SHEET

FTHW-RV-18 FA,B,C

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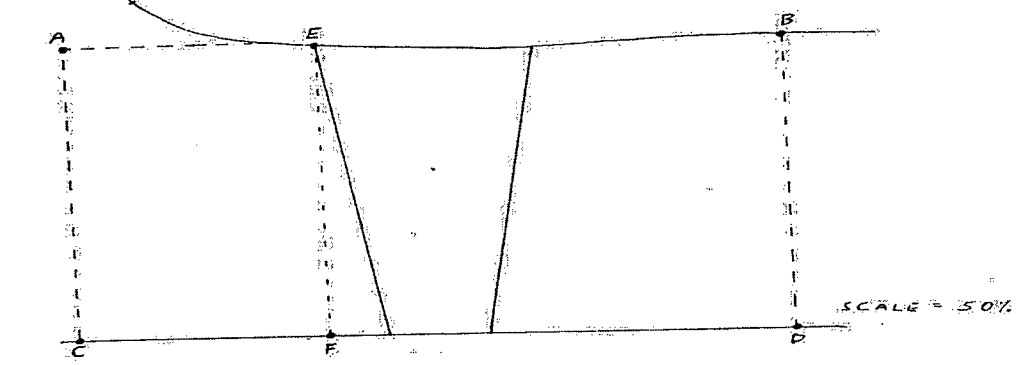
SKETCH "A" 0° COVERAGE



EXAM AREA
• (A B C D) = 7" X 10" = 70 in.²

0° EXAM
• (E B F D) = 7" X 6.5" = 45.5 in.²
• 45.5 / 70 = 65%

EXAMINER [signature] LEVEL II DATE 4/21/00
EXAMINER [signature] LEVEL II DATE 4/20/00
[signature] 4/24/00

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FTHW-RV-18 SKETCH "B"

Data Sheet 210T-00-7002

SUPPLEMENTAL ULTRASONIC SHEET

ETHW-RV-18 FA BC

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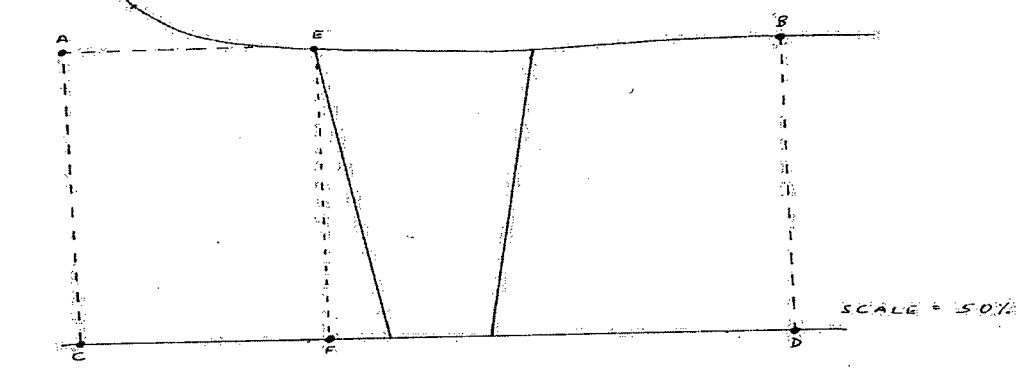
SKETCH "B" CIRC EXAM COVERAGE 45° + 60°



EXAM AREA
• (ABCD) = 7" x 10" = 70 in²

CIRC EXAM.
• (EBFD) = 7" x 6.5" = 45.5 in²
• 45.5 / 70 = 6.5%

EXAMINER [illegible] LEVEL II DATE 4/21/00
EXAMINER [illegible] LEVEL II DATE 4/21/00

Deb Murdock 4/21/00

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FTHW-RV-18 SKETCH "C"

Data Sheet 21 of 60702

SUPPLEMENTAL ULTRASONIC SHEET

FTHW-RV-18 E A B C

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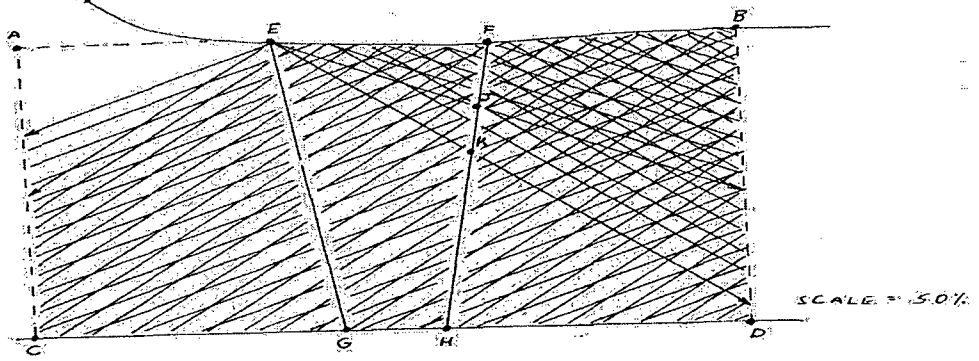
SKETCH "C" AXIAL EXAM OF WELD 45°+60°



EXAM AREA
- (A B C D) = 7" x 10" = 70 in²

WELD AREA
- (E F G H) = 7 [(3" + 1.4")/2] = 15.4 in²
- 15.4 / 70 = 0.22
- WELD AREA = 22% OF EXAM AREA

EXAMINER [signature] LEVEL II DATE 4/21/00
EXAMINER [signature] LEVEL II DATE 4/21/00

[signature] 4/24/00

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FTHW-RV-18 SKETCH "D"

Data sheet 210F-00-0002

SUPPLEMENTAL ULTRASONIC SHEET

FTHW-RV-18 F A,B,C

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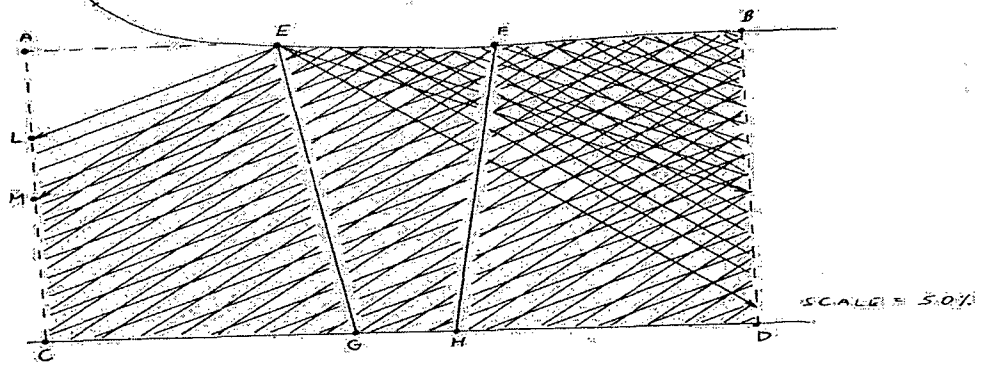
SKETCH "D" AXIAL EXAM OF BASE METAL 45°+60°



EXAM AREA
• (A B C D) = 7" x 10" = 70 in²

BASE METAL AREA
• (A E C G) + (F B H D) = 70 in² - WELD AREA = 54.6 in²
• BASE METAL = 78% OF EXAM AREA

EXAMINER [signature] LEVEL II DATE 4/21/00
EXAMINER [signature] LEVEL II DATE 4/21/00
[signature] 4/24/00

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FTHW-RV-18 COVERAGE CALC.

Data sheet 210T-00-0002

SUPPLEMENTAL ULTRASONIC SHEET

FTHW-RV-18 F.A.B.C.

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AXIAL EXAM COVERAGE CALC.

WELD: REQUIREMENT = 2 ANGLES x 2 DIRECTIONS = 4 BEAMS

EXAM AREA (SKETCH "C") = 15.4 in²

- 4 BEAMS (E F J) = (3.2 x 1.4") / 2 = 2.24 in²
  2.24 / 15.4 = 15%. 15% x 4/4 BEAMS = 15%
- 3 BEAMS (E J K) = (4" x 0.8") / 2 = 3.20 in²
  3.20 / 15.4 = 21% 21% x 3/4 BEAMS = 16%
- 2 BEAMS (E K G H) = 100% - 15% - 21% = 64%
  64% x 2/4 BEAMS = 32%
- TOTAL = 15% + 16% + 32% = 63%

BASE METAL: REQUIREMENT = ANY COMBINATION ANGLES/DIRECTIONS = 2 BEAMS

EXAM AREA: (SKETCH "D") = 54.6 in²

- UNEXAMINED (A E L) = (3.5" x 2") / 2 = 3.5 in²
  3.5 / 54.6 = 6%
- 1 BEAM (L E M) = (5" x 1") / 2 = 2.5 in²
  2.5 / 54.6 = 5% 5% x 1/2 BEAMS = 2.5%
- 2 BEAMS = (M E C G) + (F B N D) = 100% - 6% - 5% = 89%
- TOTAL = 2.5% + 89% = 91.5%

EXAMINER [signature] LEVEL II DATE 4/21/00
EXAMINER [signature] LEVEL II DATE 4/21/00
[signature] 4/21/00

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-020
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FTHW-RV-18 COVERAGE SUMMARY

Data sheet 210T-00-002

SUPPLEMENTAL ULTRASONIC SHEET

FTHW-RV-18 FA, B, C.

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COVERAGE SUMMARY

0° (SKETCH "A") = 65%

CIRC EXAM (SKETCH B) = 65%

AXIAL EXAM
- WELD (SKETCH "C") = 63%
- BASE METAL (SKETCH "D") = 91.5%
- TOTAL = (63% x 22%) + (91.5% x 78%) = 85%

Total Coverage = $\frac{65+65+85}{3}$ = 71.7%

EXAMINER Simon Crotts LEVEL II DATE 4/21/00
EXAMINER Michael S. Pike LEVEL II DATE 4/21/00
Del Mankat 4/27/00

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Examination Category B-D, Item B3.110, Pressurizer Nozzle-to-Vessel Welds

RAI	REQUEST	RESPONSE
1a	Description	(Reference Relief Request submittal HNP-08-045 Section 1.0). Welds are Pressurizer Nozzle to Head Welds.
1a	Sketch	Information follows in Enclosure.
1a	Interference/Obstruction	(Reference Relief Request submittal HNP-08-045 Section 5.0). Nozzle to vessel welds are not conducive to two-sided volumetric examinations due to nozzle configurations.
1b	NDE Equipment	Information follows in Enclosure.
1b	Alternative Methods	(Reference Relief Request submittal HNP-08-045 Section 6.0). HNP is proposing to volumetrically UT examine the pressurizer nozzle welds NTHW-08/-09/-10/-11/-12/-13 to the maximum extent possible in accordance with the Inservice Inspection Program schedule. In addition, the welds are subject to visual (VT-2) tests during each refueling outage.
1c	Wave Modality/ Insonification Angles	Information follows in Enclosure ("0° Longitudinal Wave Scan", "45° and 60° Shear Wave ½ Vee Scan").
1d	Cross Sectional Coverage Plots to describe the ASME Code coverage	Information follows in Enclosure Attachments 1 through 5.
1e	Results of the Examination Indications / No Indications	No indications detected.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**NTHW-08**	ASME CATEGORY:	B-D
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B3.110
CONFIGURATION:	PRESSURIZER NOZZLE-TO-VESSEL WELD	% CRV ACHIEVED:	66 %
PROCEDURES:	ISI-210-T	MATERIAL	CS/CS
PDI TECHNIQUE USED:	YES		

0° LONGITUDINAL WAVE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	79.6%	NOZZLE TO SHELL CONFIGURATION AND THE PRESSURIZER HEATER OBSTRUCTIONS

45° and 60° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
PARALLEL SCAN	79.6%	NOZZLE TO SHELL CONFIGURATION AND THE PRESSURIZER HEATER OBSTRUCTIONS
AXIAL SCAN	38.7%	NOZZLE TO SHELL CONFIGURATION AND THE PRESSURIZER HEATER OBSTRUCTIONS

The coverage achieved was the maximum extent practical with the nozzle to shell configuration and the pressurizer heater obstructions in place and the results are representative of the entire weld.

UT COMBINED COVERAGE = 66 %

EXAMINATION RESULTS: NO INDICATIONS

NDE EQUIPMENT: STAVELEY, SONIC-136, WITH KBA 1.0", 2.25MHZ, LONGITUDINAL 0°, KBA 0.5" x 1.0", 2.25MHZ, SHEAR 45° AND KBA 0.5" x 1.0", 2.25MHZ, SHEAR 60°

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
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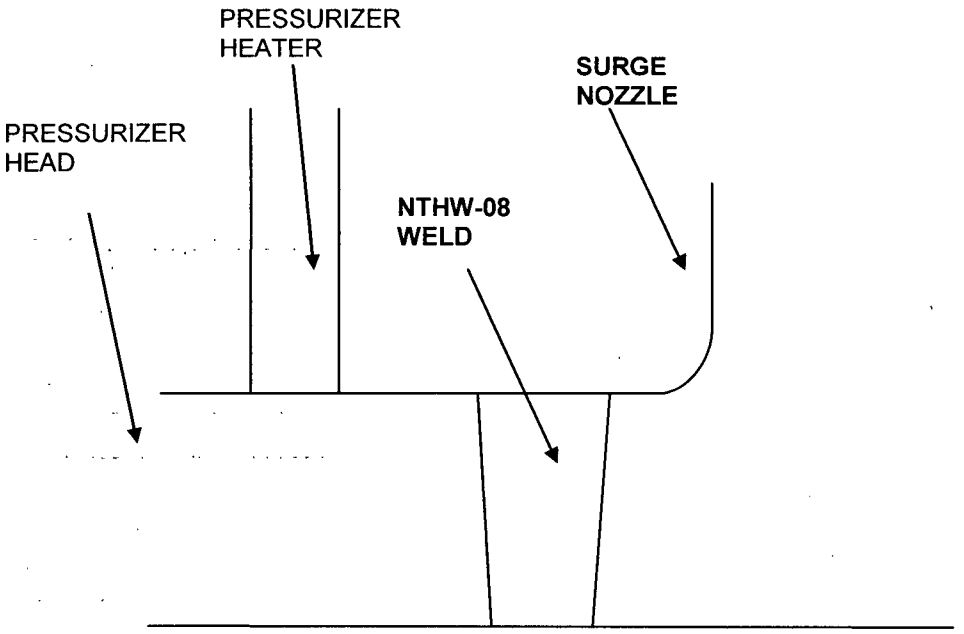
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

PRESSURIZER SURGE NOZZLE TO HEAD WELD CONFIGURATION IDENTIFICATION SHEET



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**NTHW-09**	ASME CATEGORY:	B-D
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B3.110
CONFIGURATION:	PRESSURIZER NOZZLE-TO-VESSEL WELD	% CRV ACHIEVED:	67.14 %
PROCEDURES:	ISI-210-T	MATERIAL	CS/CS
PDI TECHNIQUE USED:	YES		

0° LONGITUDINAL WAVE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	66.31%	NOZZLE TO SHELL CONFIGURATION

45° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	67.85%	NOZZLE TO SHELL CONFIGURATION

60° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	67.26%	NOZZLE TO SHELL CONFIGURATION

The coverage achieved was the maximum extent practical with the nozzle to shell configuration and the results are representative of the entire weld.

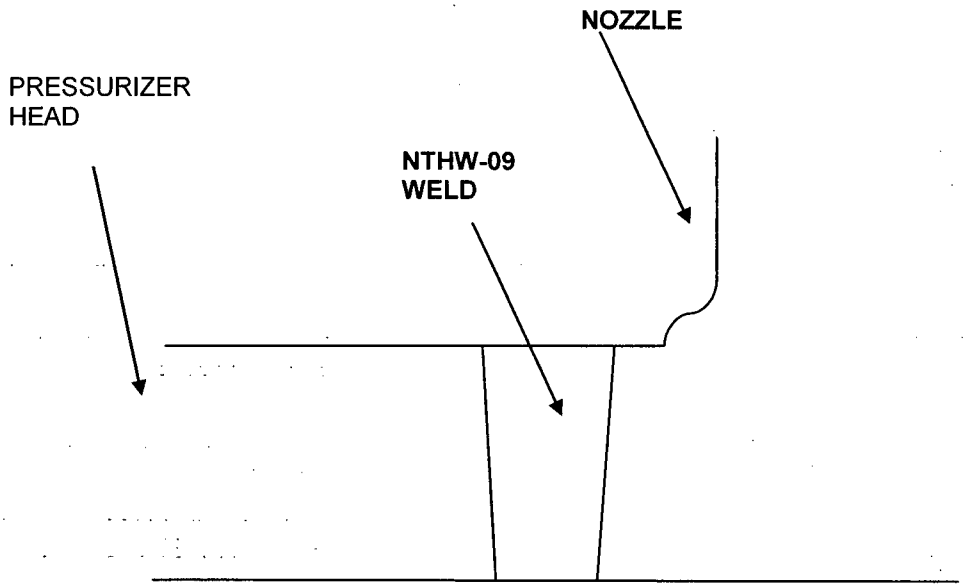
UT COMBINED COVERAGE = 67.14 %

EXAMINATION RESULTS: NO INDICATIONS

NDE EQUIPMENT: STAVELEY, SONIC-136, WITH AEROTECH 1.0", 2.25MHZ, LONGITUDINAL 0°, KBA 0.5" x 1.0", 2.25MHZ, SHEAR 45° AND KBA 0.5" x 1.0", 2.25MHZ, SHEAR 60°

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

PRESSURIZER NOZZLE TO HEAD WELDS
CONFIGURATION IDENTIFICATION SHEET



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**NTHW-10**	ASME CATEGORY:	B-D
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B3.110
CONFIGURATION:	PRESSURIZER NOZZLE-TO-VESSEL WELD	% CRV ACHIEVED:	67.14 %
PROCEDURES:	ISI-210-T	MATERIAL	CS/CS
PDI TECHNIQUE USED:	YES		

0° LONGITUDINAL WAVE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	66.31%	NOZZLE TO SHELL CONFIGURATION

45° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	67.85%	NOZZLE TO SHELL CONFIGURATION

60° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	67.26%	NOZZLE TO SHELL CONFIGURATION

The coverage achieved was the maximum extent practical with the nozzle to shell configuration and the results are representative of the entire weld.

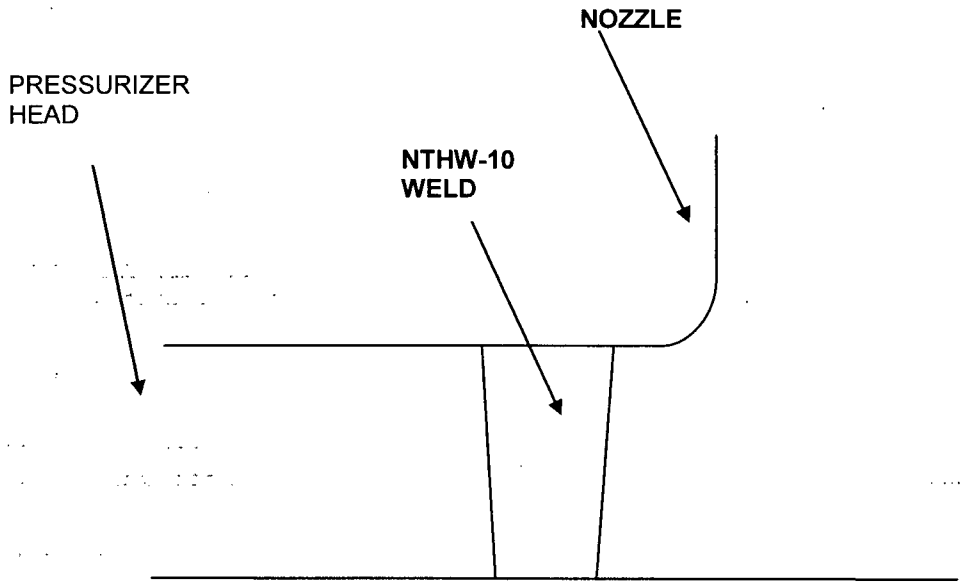
UT COMBINED COVERAGE = 67.14 %

EXAMINATION RESULTS: NO INDICATIONS

NDE EQUIPMENT: STAVELEY, SONIC-136, WITH AEROTECH 1.0", 2.25MHZ, LONGITUDINAL 0°, KBA 0.5" x 1.0", 2.25MHZ, SHEAR 45° AND KBA 0.5" x 1.0", 2.25MHZ, SHEAR 60°

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

PRESSURIZER NOZZLE TO HEAD WELDS
CONFIGURATION IDENTIFICATION SHEET
(TYPICAL)



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**NTHW-11**	ASME CATEGORY:	B-D
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B3.110
CONFIGURATION:	PRESSURIZER NOZZLE-TO-VESSEL WELD	% CRV ACHIEVED:	67.14 %
PROCEDURES:	ISI-210-T	MATERIAL	CS/CS
PDI TECHNIQUE USED:	YES		

0° LONGITUDINAL WAVE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	66.31%	NOZZLE TO SHELL CONFIGURATION

45° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	67.85%	NOZZLE TO SHELL CONFIGURATION

60° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	67.26%	NOZZLE TO SHELL CONFIGURATION

The coverage achieved was the maximum extent practical with the nozzle to shell configuration and the results are representative of the entire weld.

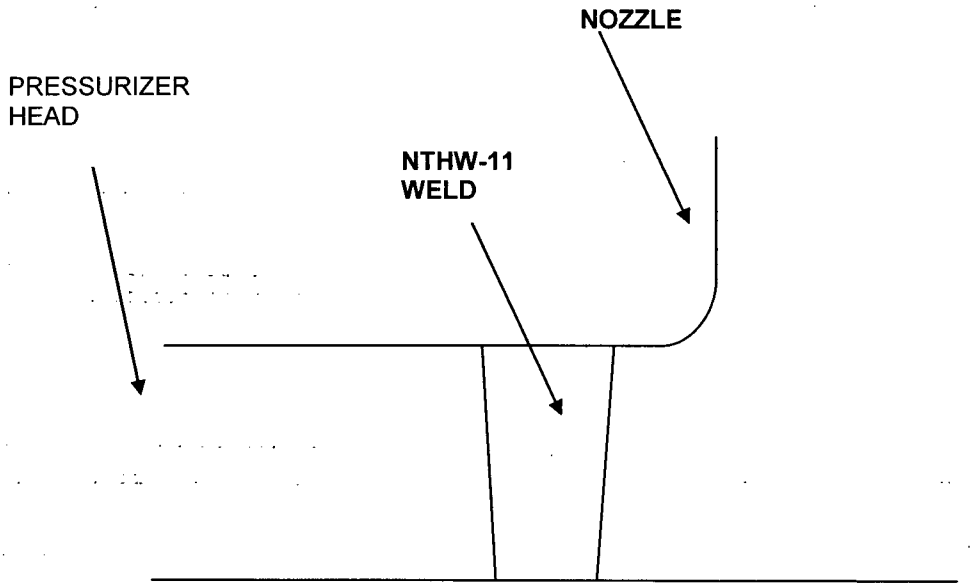
UT COMBINED COVERAGE = 67.14 %

EXAMINATION RESULTS: NO INDICATIONS

NDE EQUIPMENT: STAVELEY, SONIC-136, WITH AEROTECH 1.0", 2.25MHZ, LONGITUDINAL 0°, KBA 0.5" x 1.0", 2.25MHZ, SHEAR 45° AND KBA 0.5" x 1.0", 2.25MHZ, SHEAR 60°

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

PRESSURIZER NOZZLE TO HEAD WELDS
CONFIGURATION IDENTIFICATION SHEET
(TYPICAL)



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**NTHW-12**	ASME CATEGORY:	B-D
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B3.110
CONFIGURATION:	PRESSURIZER NOZZLE-TO-VESSEL WELD	% CRV ACHIEVED:	67.14 %
PROCEDURES:	ISI-210-T	MATERIAL	CS/CS
PDI TECHNIQUE USED:	YES		

0° LONGITUDINAL WAVE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	66.31%	NOZZLE TO SHELL CONFIGURATION

45° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	67.85%	NOZZLE TO SHELL CONFIGURATION

60° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	67.26%	NOZZLE TO SHELL CONFIGURATION

The coverage achieved was the maximum extent practical with the nozzle to shell configuration and the results are representative of the entire weld.

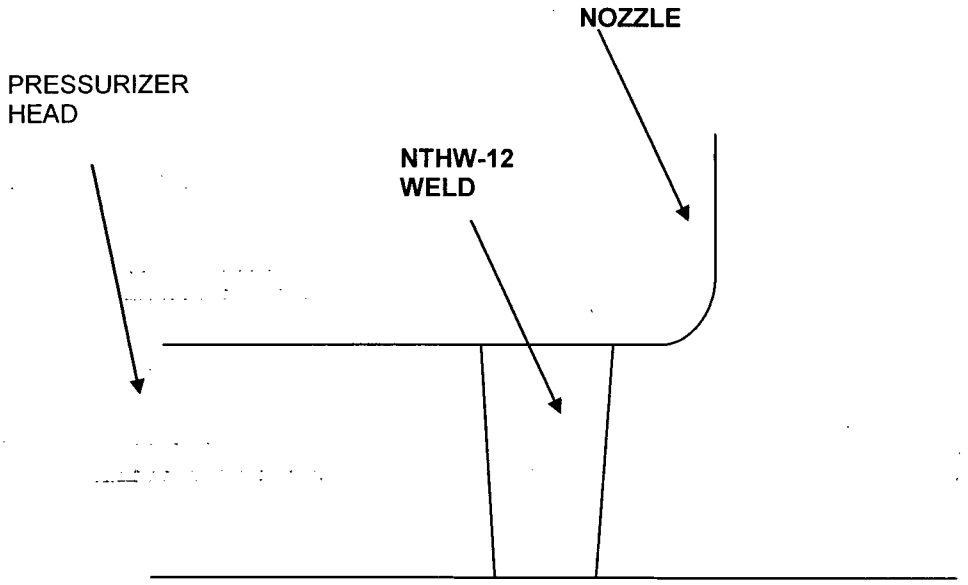
UT COMBINED COVERAGE = 67.14 %

EXAMINATION RESULTS: NO INDICATIONS

NDE EQUIPMENT: STAVELEY, SONIC-136, WITH AEROTECH 1.0", 2.25MHZ, LONGITUDINAL 0°, KBA 0.5" x 1.0", 2.25MHZ, SHEAR 45° AND KBA 0.5" x 1.0", 2.25MHZ, SHEAR 60°

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

PRESSURIZER NOZZLE TO HEAD WELDS
CONFIGURATION IDENTIFICATION SHEET
(TYPICAL)



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**NTHW-13**	ASME CATEGORY:	B-D
ASME CODE FIGURE:	IWB-2500-8	ASME ITEM NUMBER:	B3.110
CONFIGURATION:	PRESSURIZER NOZZLE-TO-VESSEL WELD	% CRV ACHIEVED:	67.14 %
PROCEDURES:	ISI-210-T	MATERIAL	CS/CS
PDI TECHNIQUE USED:	YES		

0° LONGITUDINAL WAVE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	66.31%	NOZZLE TO SHELL CONFIGURATION

45° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	67.85%	NOZZLE TO SHELL CONFIGURATION

60° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	67.26%	NOZZLE TO SHELL CONFIGURATION

The coverage achieved was the maximum extent practical with the nozzle to shell configuration and the results are representative of the entire weld.

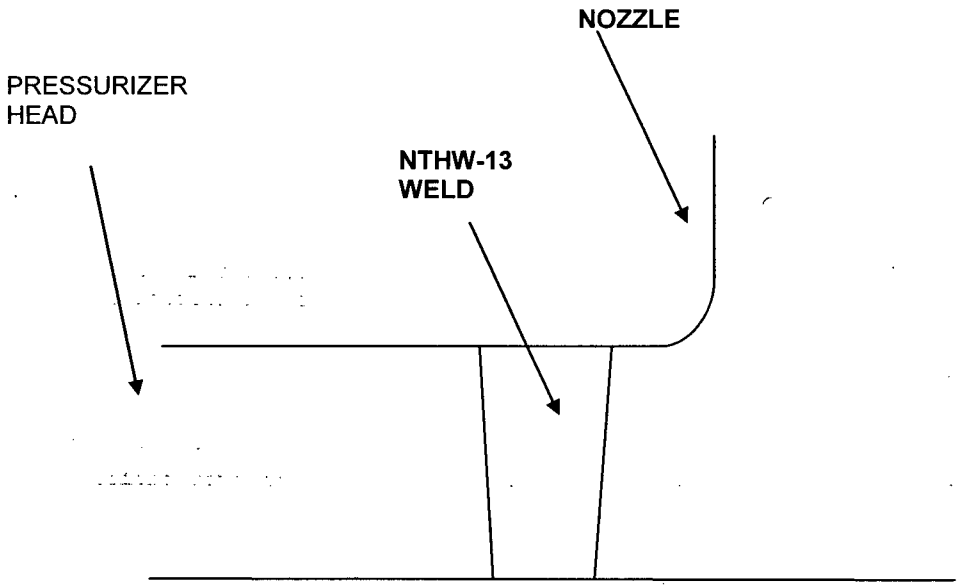
UT COMBINED COVERAGE = 67.14 %

EXAMINATION RESULTS: NO INDICATIONS

NDE EQUIPMENT: STAVELEY, SONIC-136, WITH AEROTECH 1.0", 2.25MHZ, LONGITUDINAL 0°, KBA 0.5" x 1.0", 2.25MHZ, SHEAR 45° AND KBA 0.5" x 1.0", 2.25MHZ, SHEAR 60°

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

PRESSURIZER NOZZLE TO HEAD WELDS
CONFIGURATION IDENTIFICATION SHEET
(TYPICAL)



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

ATTACHMENTS:

A. Supplemental Ultrasonic Sheets NTHW-08
B. Supplemental Ultrasonic Sheets NTHW-09
C. Supplemental Ultrasonic Sheets NTHW-10
D. Supplemental Ultrasonic Sheets NTHW-11
E. Supplemental Ultrasonic Sheets NTHW-12
F. Supplemental Ultrasonic Sheets NTHW-13

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

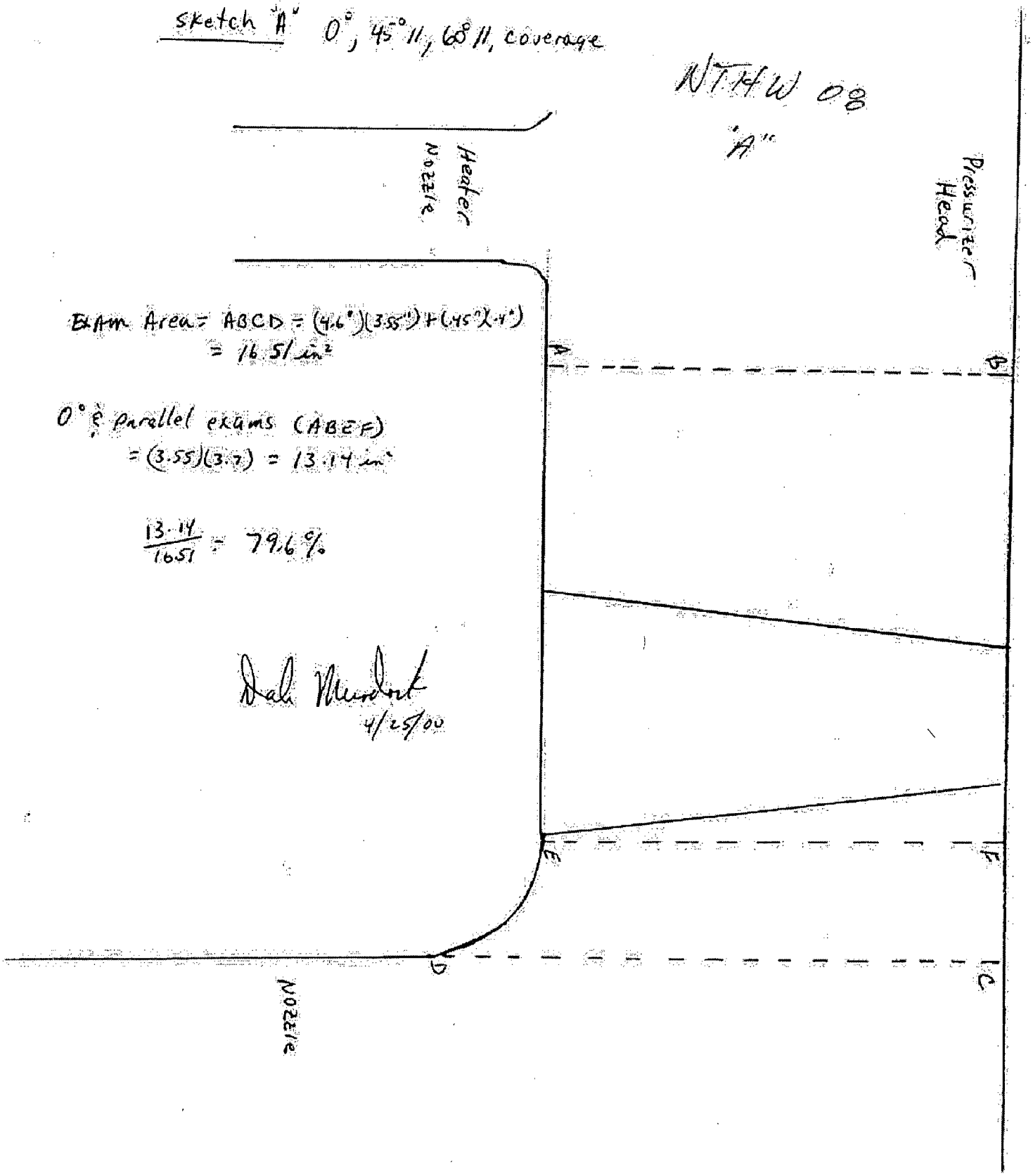
ATTACHMENT A
Supplemental Ultrasonic Sheets
NTHW-08
(4 Pages)

SUPPLEMENTAL ULTRASONIC SHEET

PAGE 4 OF 7

Sketch "A" 0°, 45° 11, 68 11, coverage

NTHW 08
"A"



Exam Area = ABCD = (4.6")(3.55") + (45°)(4°)
= 16.51 in²

0° & parallel exams (ABEF)
= (3.55)(3.7) = 13.14 in²

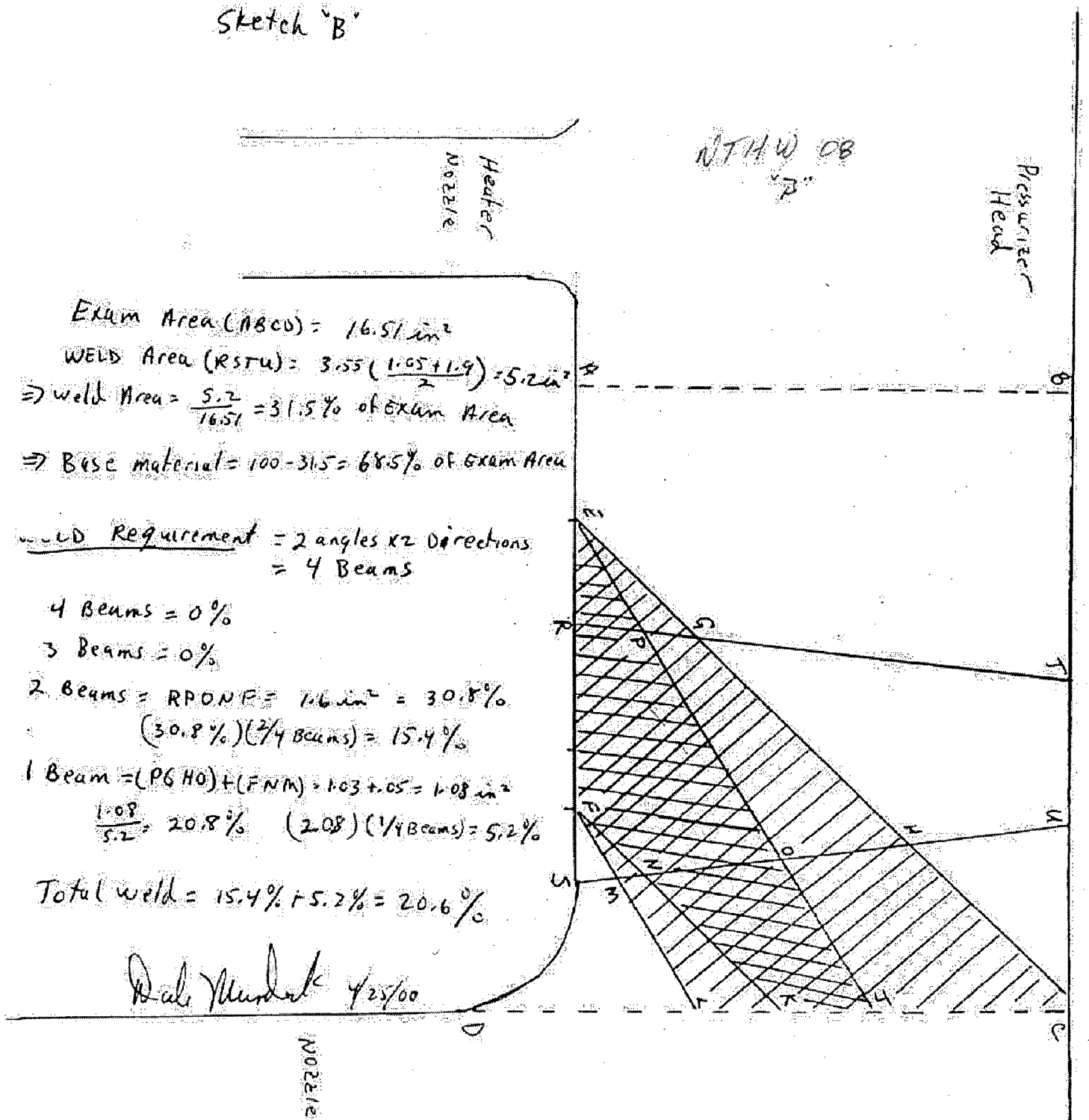
$\frac{13.14}{16.51}$ = 79.6%

Dale Mundorf
4/25/00

SUPPLEMENTAL ULTRASONIC SHEET

PAGE 5 OF 7

Sketch "B"



Exam Area (ABCD) = 16.51 in²

WELD Area (RSTU) = 3.55 ($\frac{1.05+1.9}{2}$) = 5.2 in²

⇒ Weld Area = $\frac{5.2}{16.51}$ = 31.5% of Exam Area

⇒ Base material = 100 - 31.5 = 68.5% of Exam Area

WELD Requirement = 2 angles x 2 Directions
= 4 Beams

4 Beams = 0%

3 Beams = 0%

2 Beams = RPONF = 1.6 in² = 30.8%

(30.8%)(2/4 Beams) = 15.4%

1 Beam = (PGHO) + (FNM) = 1.03 + .05 = 1.08 in²

$\frac{1.08}{5.2}$ = 20.8% (20.8)(1/4 Beams) = 5.2%

Total weld = 15.4% + 5.2% = 20.6%

Dale Mundorf 4/25/00

Data sheet: 210T-00-001

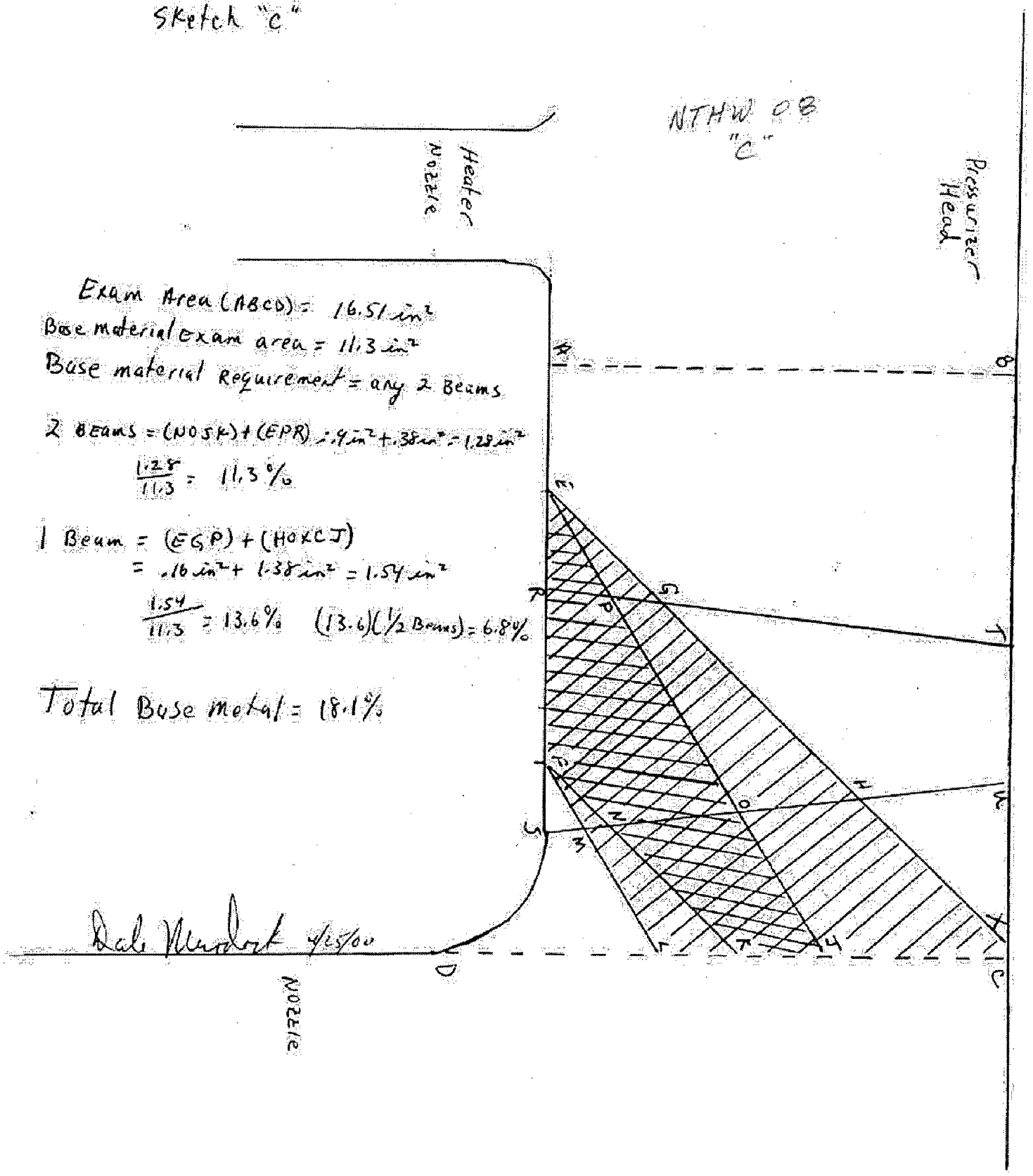
Pg ___ of ___

SUPPLEMENTAL ULTRASONIC SHEET

PAGE 6 OF 7

Sketch "C"

NTHW OB "C"



Exam Area (ABCD) = 16.51 in²

Base material exam area = 11.3 in²

Base material Requirement = any 2 Beams

2 Beams = (NOSK) + (EPR) = .9 in² + .38 in² = 1.28 in²

$\frac{1.28}{11.3}$ = 11.3%

1 Beam = (EGP) + (HOXCJ)

= .16 in² + 1.38 in² = 1.54 in²

$\frac{1.54}{11.3}$ = 13.6% (13.6)(½ Beams) = 6.8%

Total Base metal = 18.1%

Dale Murdock 4/25/00

Data sheet 210T-00-001

SUPPLEMENTAL ULTRASONIC SHEET

PAGE 7 OF 7

NTHW 08 Coverage Summary

Total Coverage

0° - sketch "A" - 79.6 %

Parallel Exams - sketch "A" - 79.6 %

Axial Exams - sketches B & C

Weld 20.6 %
BM 18.1 %
38.7 %

66 % OV

⇒ Total Coverage = $\frac{79.6 + 79.6 + 38.7}{3}$ = 70 %

Dale Murdock 4/25/00

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

ATTACHMENT B
Supplemental Ultrasonic Sheets
NTHW-09
(10 Pages)

NES, Inc.

WELD LENGTH = 40.05 in

REQUIRED EXAM VOLUME = (ABEF)(40.05) = 637.2 in^3

VOLUME NOT EXAMINED = (ABCD)(40.05) = 214.7 in^3

% INCOMPLETE = $\left[\frac{214.7}{637.2}\right]100$ = 33.7%

% COMPLETE = 100 - 33.7 = 66.3

DATA SHEET # 210-98-01

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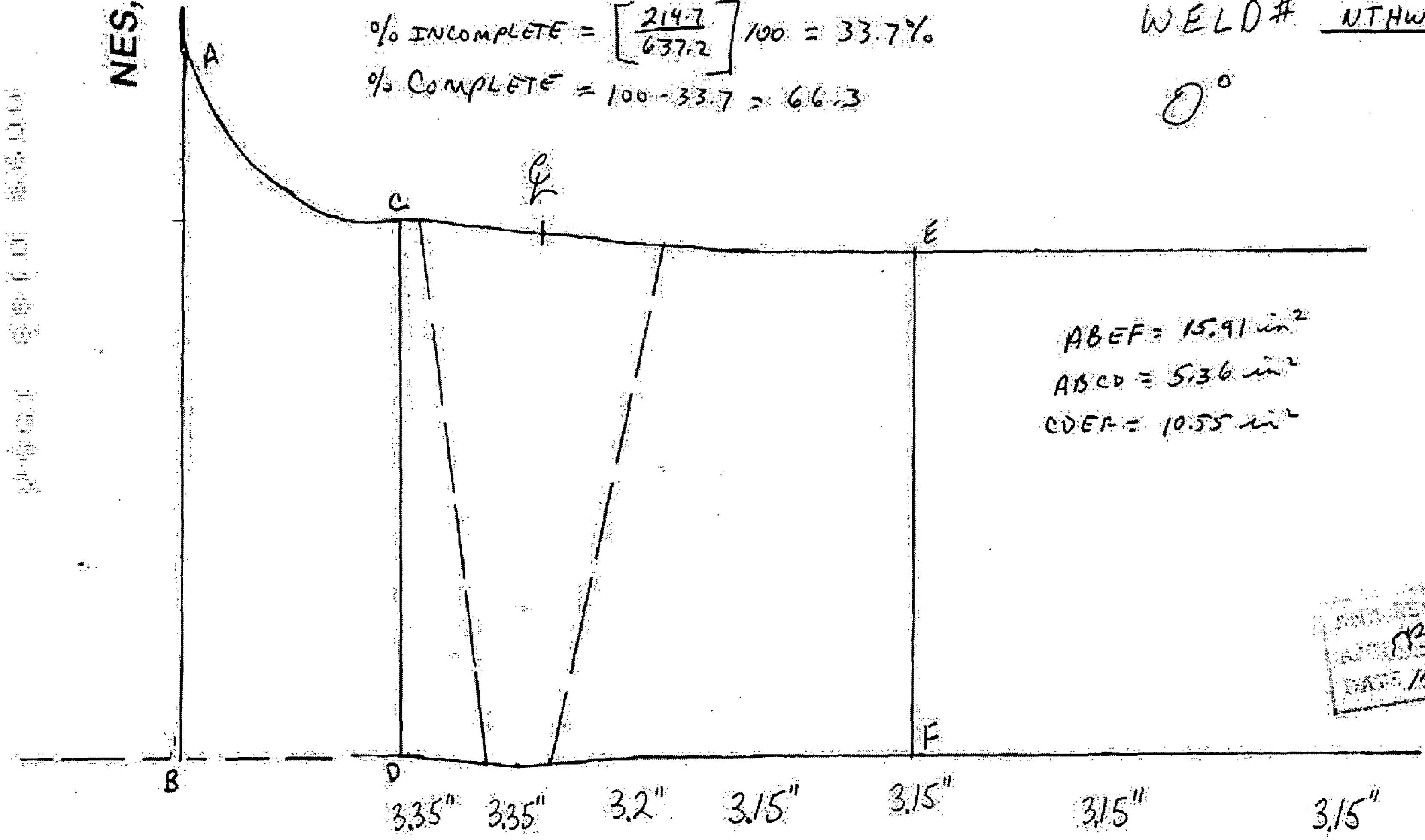
ISO # 1-ISI-PZR-1

WELD # NTHW-09

0°



ABEF = 15.91 in^2

ABCD = 5.36 in^2

CDEF = 10.55 in^2

09 Profile Sketch

ANII REVIEW [signature] DATE 11-25-98

EXAMINER [signature] LEVEL II DATE 10-30-98

EXAMINER [signature] LEVEL III DATE 10/3/98

REVIEWER [signature] LEVEL III DATE 11-3-98

[initials] 11-19-98

ISO # 1-ISI-PZR-1
DATA SHT # 210-98-01

WELD NO.: NTHW-09							0 DEGREE ONLY						
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
HEAD SIDE BASE MATERIAL AXIAL COVERAGE	40.06	40.05	100.00%	0	0.00%	15.91	10.55	66.31%	0	0.00%	66.31%	0.00%	66.31%

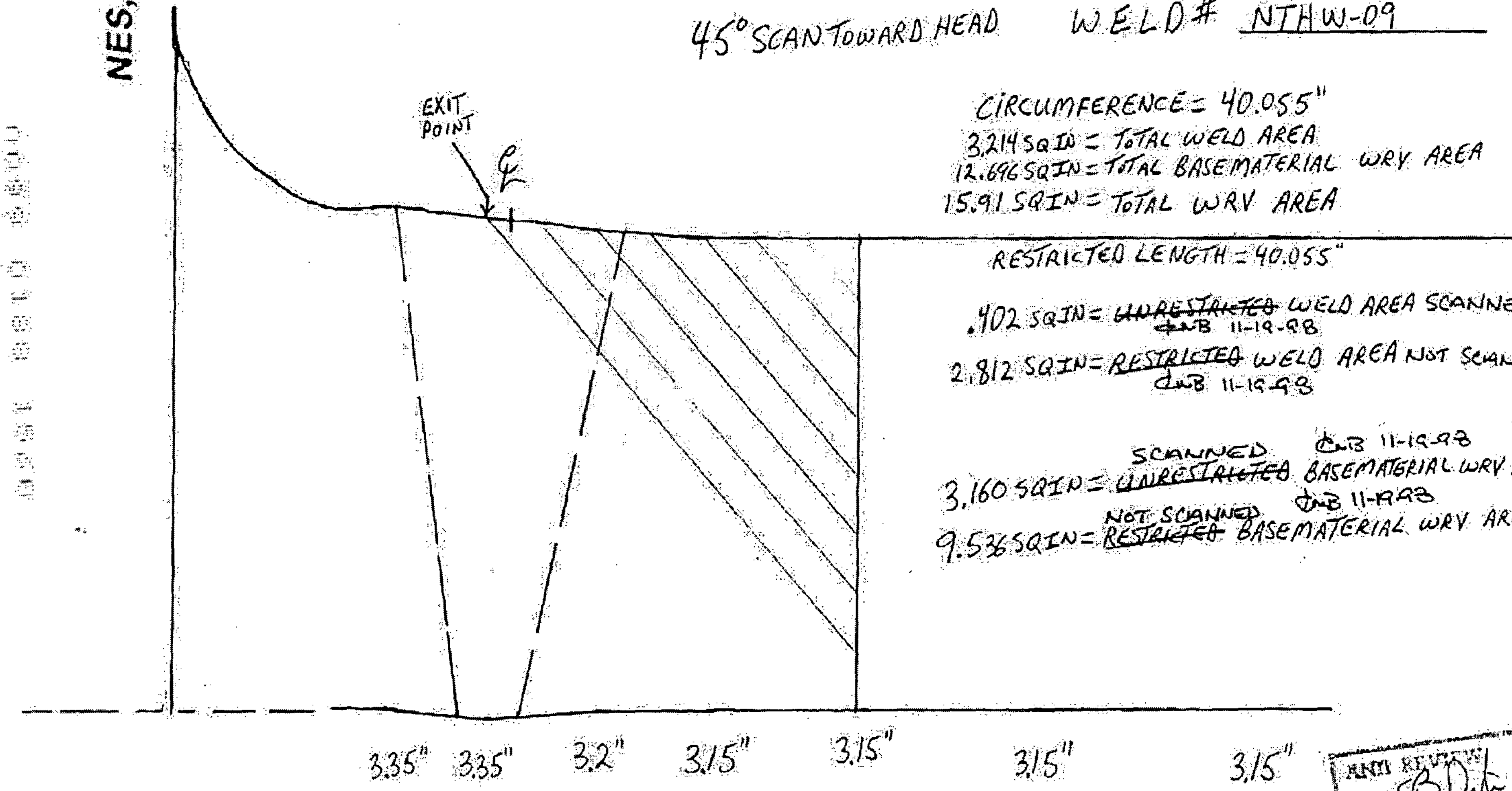
Edwin Block, CPL LIII, 11-19-98

ANII REVIEW
ANII EBD
DATE 11-25-98

NES, Inc.

DATA SHEET # 210-98-5 01
PAGE 6 OF 13
ISO# 1-ISI-PZR-1
WELD# NTHW-09

45° SCAN TOWARD HEAD



CIRCUMFERENCE = 40.055"
3.214 SQIN = TOTAL WELD AREA
12.696 SQIN = TOTAL BASEMATERIAL WRV AREA
15.91 SQIN = TOTAL WRV AREA

RESTRICTED LENGTH = 40.055"

.402 SQIN = ~~UNRESTRICTED~~ WELD AREA SCANNED (DWB 11-19-98)

2.812 SQIN = ~~RESTRICTED~~ WELD AREA NOT SCANNED (DWB 11-19-98)

3.160 SQIN = ~~UNRESTRICTED~~ SCANNED BASEMATERIAL WRV AREA (DWB 11-19-98)

9.536 SQIN = ~~RESTRICTED~~ NOT SCANNED BASEMATERIAL WRV AREA (DWB 11-19-98)

ANII REVIEW
ANII [signature]
DATE 11-25-98

09
45°
Toward
Head

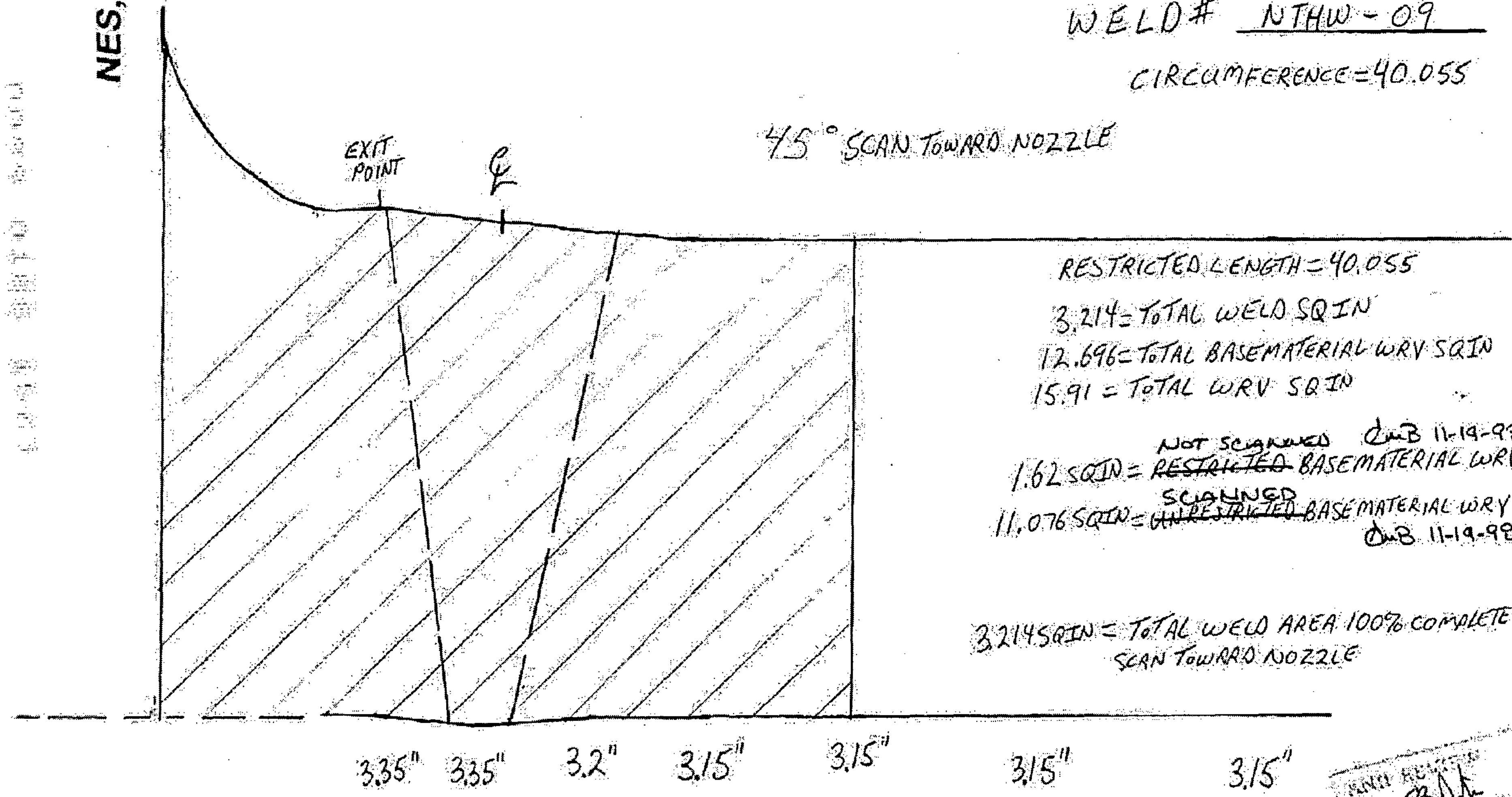
EXAMINER [signature] LEVEL II DATE 10/30/98
EXAMINER [signature] LEVEL II DATE 10/30/98
REVIEWER [signature] LEVEL III DATE 11-3-98

NES, Inc.

DATA SHEET # 210-98 ~~01~~ 11-11-98
PAGE 7 OF 15
ISO# 1-ISI-P2R-1
WELD# NTHW-09

CIRCUMFERENCE = 40.055

45° SCAN TOWARD NOZZLE



RESTRICTED LENGTH = 40.055

3.214 = TOTAL WELD SQ IN

12.696 = TOTAL BASEMATERIAL WRV SQIN

15.91 = TOTAL WRV SQ IN

1.62 SQIN = ~~RESTRICTED~~ NOT SCANNED BASEMATERIAL WRV DWB 11-19-98

11.076 SQIN = ~~UNRESTRICTED~~ SCANNED BASEMATERIAL WRV DWB 11-19-98

3.214 SQIN = TOTAL WELD AREA 100% COMPLETE SCAN TOWARD NOZZLE

ANII REVIEW
DATE 11-25-98

09
45°
Scan
Toward
Nozzle

EXAMINER [signature] LEVEL II DATE 10/30/98

EXAMINER [signature] LEVEL II DATE 10/30/98

REVIEWER [signature] LEVEL III DATE 11-3-98

NES, Inc.

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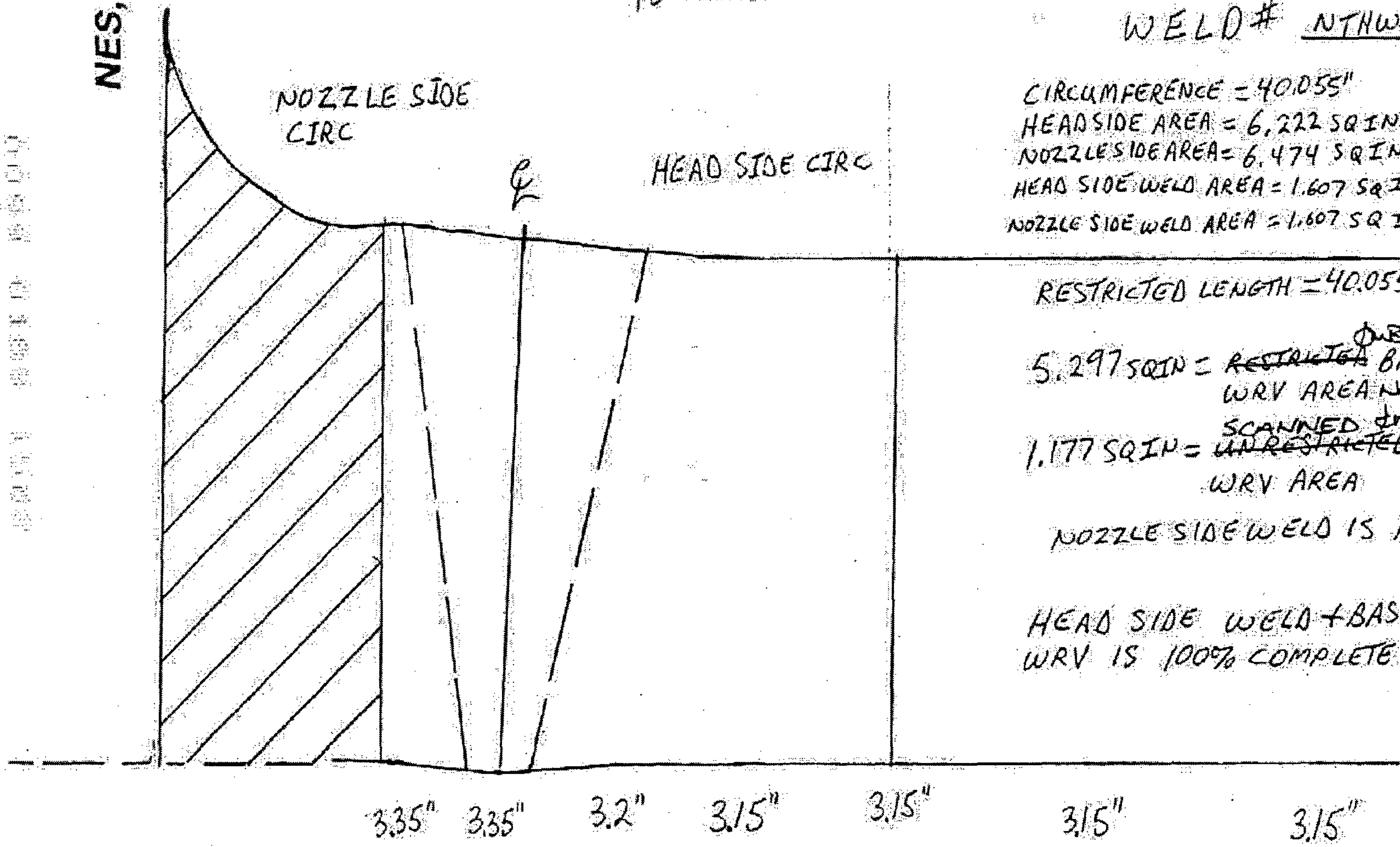
ISO # HSI-PZR-1
WELD # NTHW-09

45° CIRC



CIRCUMFERENCE = 40.055"
HEAD SIDE AREA = 6.222 SQ IN BASE MATERIAL WRV
NOZZLE SIDE AREA = 6.474 SQ IN BASE MATERIAL WRV
HEAD SIDE WELD AREA = 1.607 SQ IN
NOZZLE SIDE WELD AREA = 1.607 SQ IN

RESTRICTED LENGTH = 40.055"

5.297 SQ IN = ~~RESTRICTED~~ BASE MATERIAL WRV AREA NOT SCANNED (DWB 11-19-98)

1.177 SQ IN = ~~UNRESTRICTED~~ SCANNED (DWB 11-19-98) BASE MATERIAL WRV AREA

NOZZLE SIDE WELD IS 100% COMPLETE

HEAD SIDE WELD + BASE MATERIAL WRV IS 100% COMPLETE

ANII REVIEW
ANII [signature]
DATE 11-25-98

69
45° Circ
Scan

EXAMINER [signature] LEVEL II DATE 10/30/98
EXAMINER [signature] LEVEL II DATE 10/30/98
REVIEWER [signature] LEVEL III DATE 11-3-98

COVERAGE CALCULATION SHEET

P. 9 of 15
ISO# 1-ISI-PZR-1
DATA SHT# 210-98-01

WELD NO.:NTHW-09		45 DEGREE											
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD HEAD BASE MATERIAL AXIAL COVERAGE	40.055	40.055	100.00%	0	0.00%	12.696	3.16	24.89%	0	0.00%	24.89%	0.00%	24.89%
TOWARD HEAD WELD AXIAL COVERAGE	40.055	40.055	100.00%	0	0.00%	3.214	0.402	12.51%	0	0.00%	12.51%	0.00%	12.51%
TOWARD NOZZLE BASE MATERIAL AXIAL COVERAGE	40.055	40.055	100.00%	0	0.00%	12.696	11.076	87.24%	0	0.00%	87.24%	0.00%	87.24%
TOWARD NOZZLE WELD AXIAL COVERAGE	40.055	0	0.00%	40.055	100.00%	3.214	0	0.00%	3.214	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE WELD	40.055	0	0.00%	40.055	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE BASEMATERIAL	40.055	0	0.00%	40.055	100.00%	6.222	0	0.00%	6.222	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE WELD	40.055	0	0.00%	40.055	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
NOZZ SIDE CIRC COVERAGE BASEMATERIAL	40.055	40.055	100.00%	0	0.00%	6.474	1.177	18.18%	0	0.00%	18.18%	0.00%	18.18%
TOTAL WELD VOLUME COVERAGE													67.85%

Edwin Black CPL LIII, 11-19-98

Summary Coverage 45° 0°

ANII REVIEW
ANII [signature]
DATE 1-25-98

NES, Inc.

SK 11-11-98

DATA SHEET # 210-98-.01

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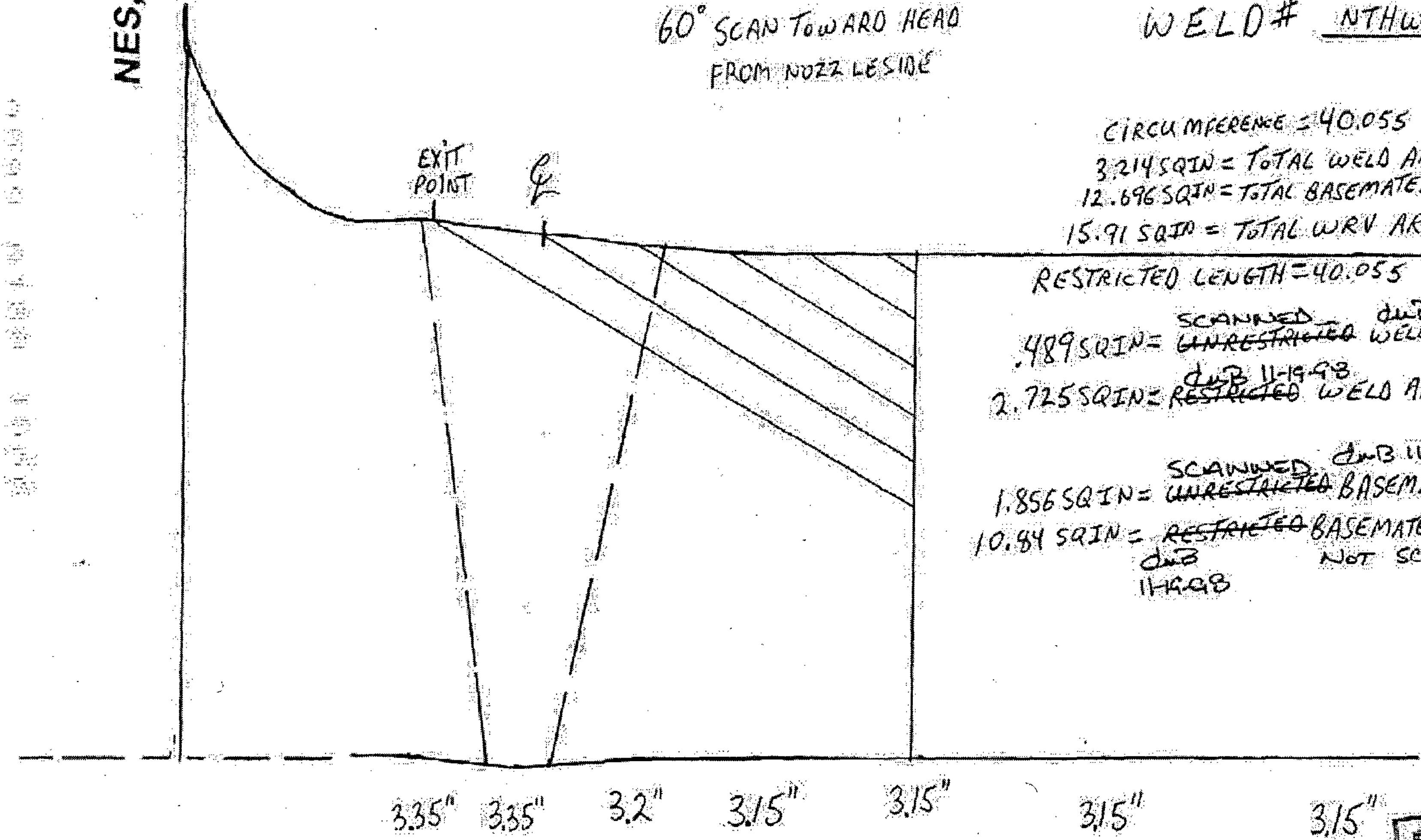
ISO# 1-ISI-PZR-1

WELD# NTHW-09

60° SCAN TOWARD HEAD FROM NOZZLE SIDE



CIRCUMFERENCE = 40.055

3.214 SQIN = TOTAL WELD AREA

12.696 SQIN = TOTAL BASEMATERIAL WRV AREA

15.91 SQIN = TOTAL WRV AREA

RESTRICTED LENGTH = 40.055

.489 SQIN = ~~UNRESTRICTED~~ SCANNED WELD AREA dwB 11-19-98

2.725 SQIN = ~~RESTRICTED~~ WELD AREA NOT SCANNED dwB 11-19-98

1.856 SQIN = ~~UNRESTRICTED~~ SCANNED BASEMATERIAL WRV AREA dwB 11-19-98

10.84 SQIN = ~~RESTRICTED~~ BASEMATERIAL WRV AREA NOT SCANNED dwB 11-19-98

ANII REVIEW
ANII [signature]
DATE 12-25-98

60° Scan toward Head 60

dwB 11-19-98

EXAMINER Paul S Blecha LEVEL II DATE 10/30/98

EXAMINER N/A LEVEL N/A DATE N/A

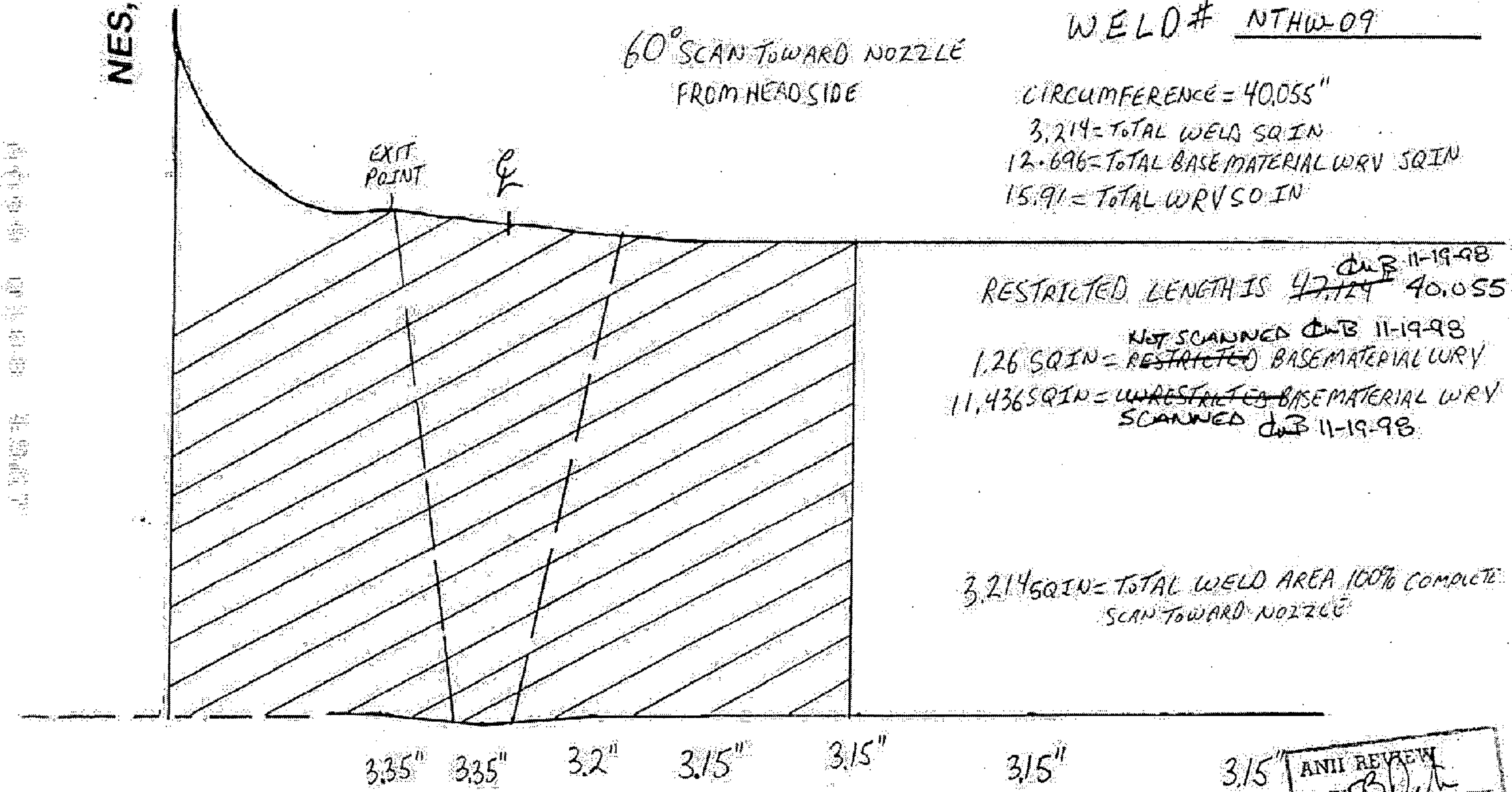
REVIEWER [signature] LEVEL III DATE 11-3-98

NES, Inc.

DATA SHEET # 210-98-01
PAGE 13 OF 15
ISO# 1-ISI-PZR-1
WELD# NTHW-09

60° SCAN TOWARD NOZZLE
FROM HEAD SIDE

CIRCUMFERENCE = 40.055"
3.214 = TOTAL WELD SQ IN
12.696 = TOTAL BASE MATERIAL WRV SQ IN
15.91 = TOTAL WRV SQ IN



RESTRICTED LENGTH IS ~~42.124~~ 40.055" CWB 11-19-98

1.26 SQ IN = ~~RESTRICTED~~ NOT SCANNED CWB 11-19-98 BASE MATERIAL WRV
11.436 SQ IN = ~~UNRESTRICTED~~ SCANNED CWB 11-19-98 BASE MATERIAL WRV

3.214 SQ IN = TOTAL WELD AREA 100% COMPLETE SCAN TOWARD NOZZLE

ANII REVIEW
ANII [signature]
DATE 11-25-98

60° Scan Toward Nozzle

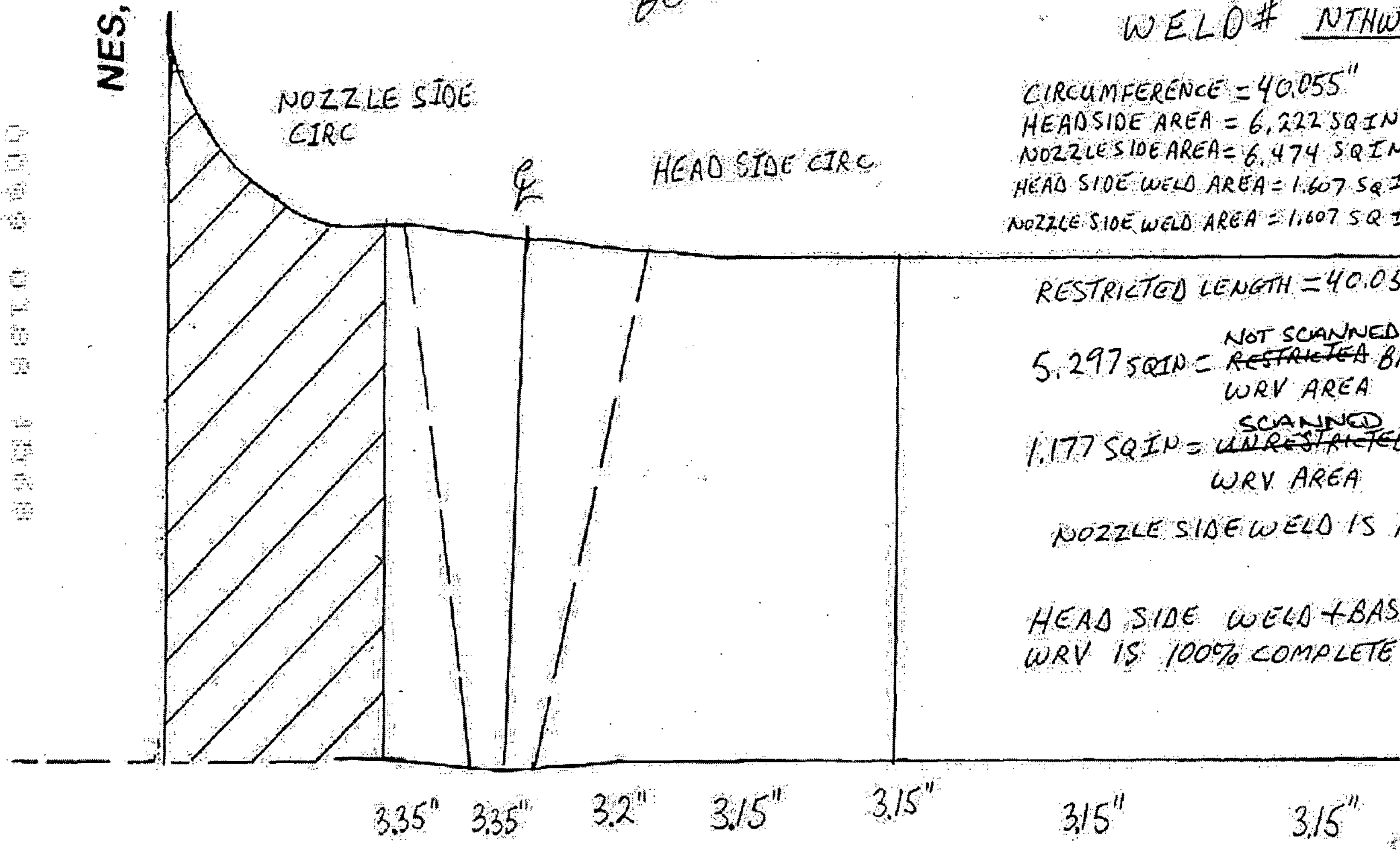
CWB
11-19-98

EXAMINER Paul S Blecha LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-3-98

NES, Inc.

DATA SHEET # 210-98-1
PAGE 14 OF 15
ISO# 1-ISI-PZR-1
WELD# NTHW-09

60° CIRC SCAN



CIRCUMFERENCE = 40.055"
HEADSIDE AREA = 6.222 SQ IN BASE MATERIAL WRV
NOZZLE SIDE AREA = 6.474 SQ IN BASE MATERIAL WRV
HEAD SIDE WELD AREA = 1.607 SQ IN
NOZZLE SIDE WELD AREA = 1.607 SQ IN

RESTRICTED LENGTH = 40.055"

5.297 SQ IN = ~~RESTRICTED~~ NOT SCANNED BASE MATERIAL WRV AREA CWB 11-19-98

1.177 SQ IN = ~~UNRESTRICTED~~ SCANNED BASEMATERIAL WRV AREA CWB 11-19-98

NOZZLE SIDE WELD IS 100% COMPLETE

HEAD SIDE WELD + BASE MATERIAL WRV IS 100% COMPLETE

ANII REVIEW
SBA
DATE 11-25-98

60° CIRC SCAN

CWB
11-19-98

EXAMINER Paul S Blecha LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-3-98

dmB 11-19-98

ISO# 1-ISI-PZR-1

DATA SHT # 210-98-01

COVERAGE CA[illegible]ON SHEET

WELD NO.:NTHW-09		60 DEGREE											
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD HEAD BASE MATERIAL AXIAL COVERAGE	40.055	40.055	100.00%	0	0.00%	12.696	1.856	14.62%	0	0.00%	14.62%	0.00%	14.62%
TOWARD HEAD WELD AXIAL COVERAGE	40.055	40.055	100.00%	0	0.00%	3.214	0.489	15.21%	0	0.00%	15.21%	0.00%	15.21%
TOWARD NOZZLE BASE MATERIAL AXIAL COVERAGE	40.055	40.055	100.00%	0	0.00%	12.696	11.436	90.08%	0	0.00%	90.08%	0.00%	90.08%
TOWARD NOZZLE WELD AXIAL COVERAGE	40.055	0	0.00%	40.055	100.00%	3.214	0	0.00%	3.214	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE WELD	40.055	0	0.00%	40.055	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE BASEMATERIAL	40.055	0	0.00%	40.055	100.00%	6.222	0	0.00%	6.222	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE WELD	40.055	0	0.00%	40.055	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
~~HEAD~~ NOZZLE SIDE CIRC COVERAGE BASEMATERIAL	40.055	40.055	100.00%	0	0.00%	6.474	1.177	18.18%	0	0.00%	18.18%	0.00%	18.18%
TOTAL WELD VOLUME COVERAGE													67.25%

Edwin Black, CPL III, 11-19-98

Errors corrected dmB

EB Ayte
DATE 11-25-98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

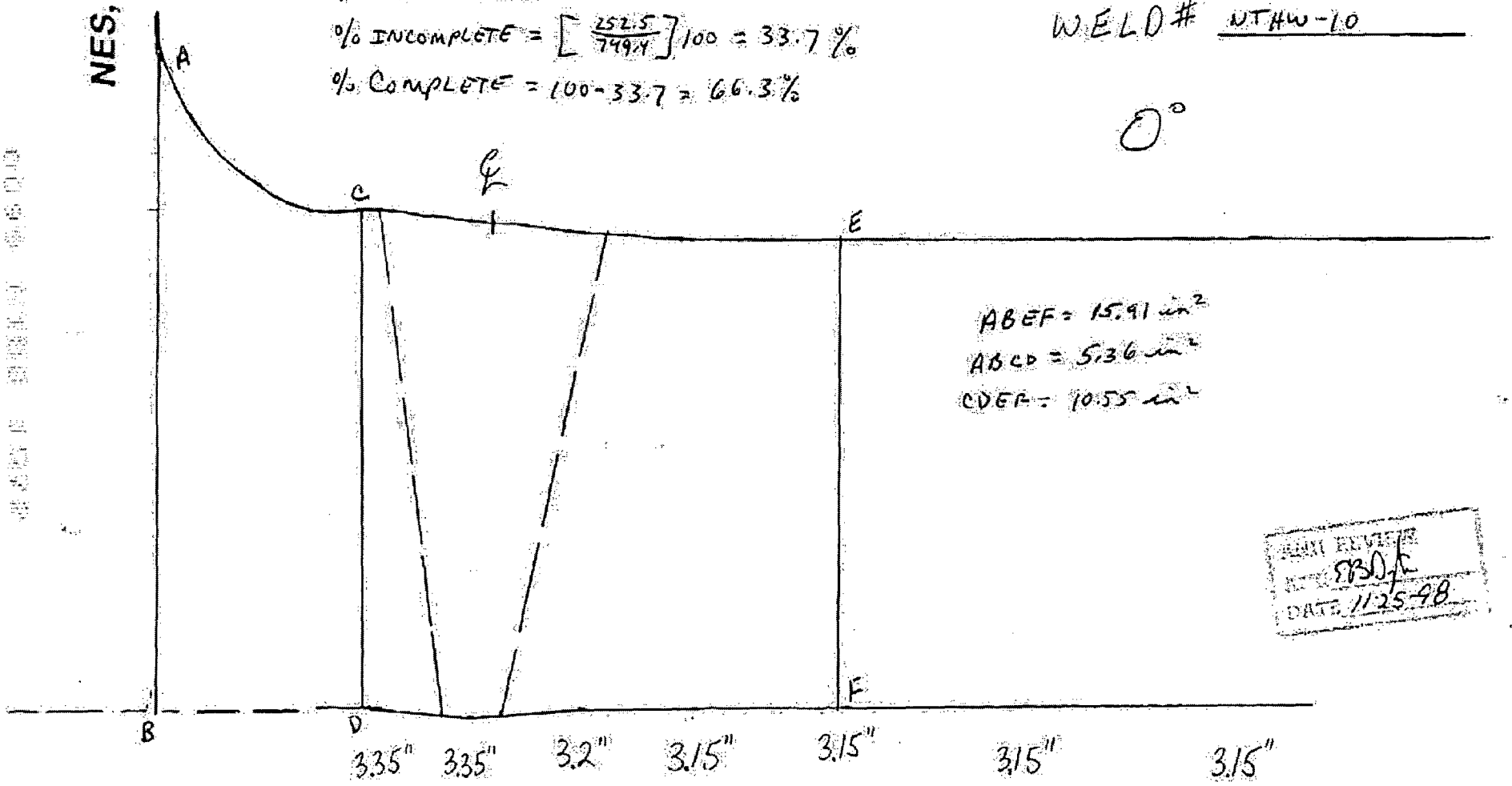
ATTACHMENT C
Supplemental Ultrasonic Sheets
NTHW-10
(10 Pages)

NES, Inc.

DATA SHEET # 210-98-0
PAGE 2 OF 15
ISO # 1-JSJ-PZR-1
WELD # NTHW-10

WELD LENGTH = 47.1 in
REQUIRED EXAM VOLUME = (ABEF)(47.1) = 749.4 in^3
VOLUME NOT EXAMINED = (ABCD)(47.1) = 252.5 in^3
% INCOMPLETE = $\left[\frac{252.5}{749.4}\right]100 = 33.7\%$
% COMPLETE = 100 - 33.7 = 66.3%

0°



ABEF = 15.91 in^2
ABCD = 5.36 in^2
CDEF = 10.55 in^2

ANII REVIEW
BY SBD
DATE 11-25-98

EXAMINER Edward R Dargan LEVEL II DATE 10-30-98
11-19-98 EXAMINER Daly Murdock LEVEL III DATE 10/30/98
REVIEWER Scott Damon LEVEL III DATE 11-3-98

COVERAGE CALC ...ION SHEET

P 3 of 15

ISO 1-ISI-PLR-1

DATA SHT# 210-98-02

WELD NO.:NTHW-10							0 DEGREE ONLY						
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
HEAD SIDE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	15.91	10.55	66.31%	0	0.00%	66.31%	0.00%	66.31%

Edward Blank, CPL VIII, 11-19-98

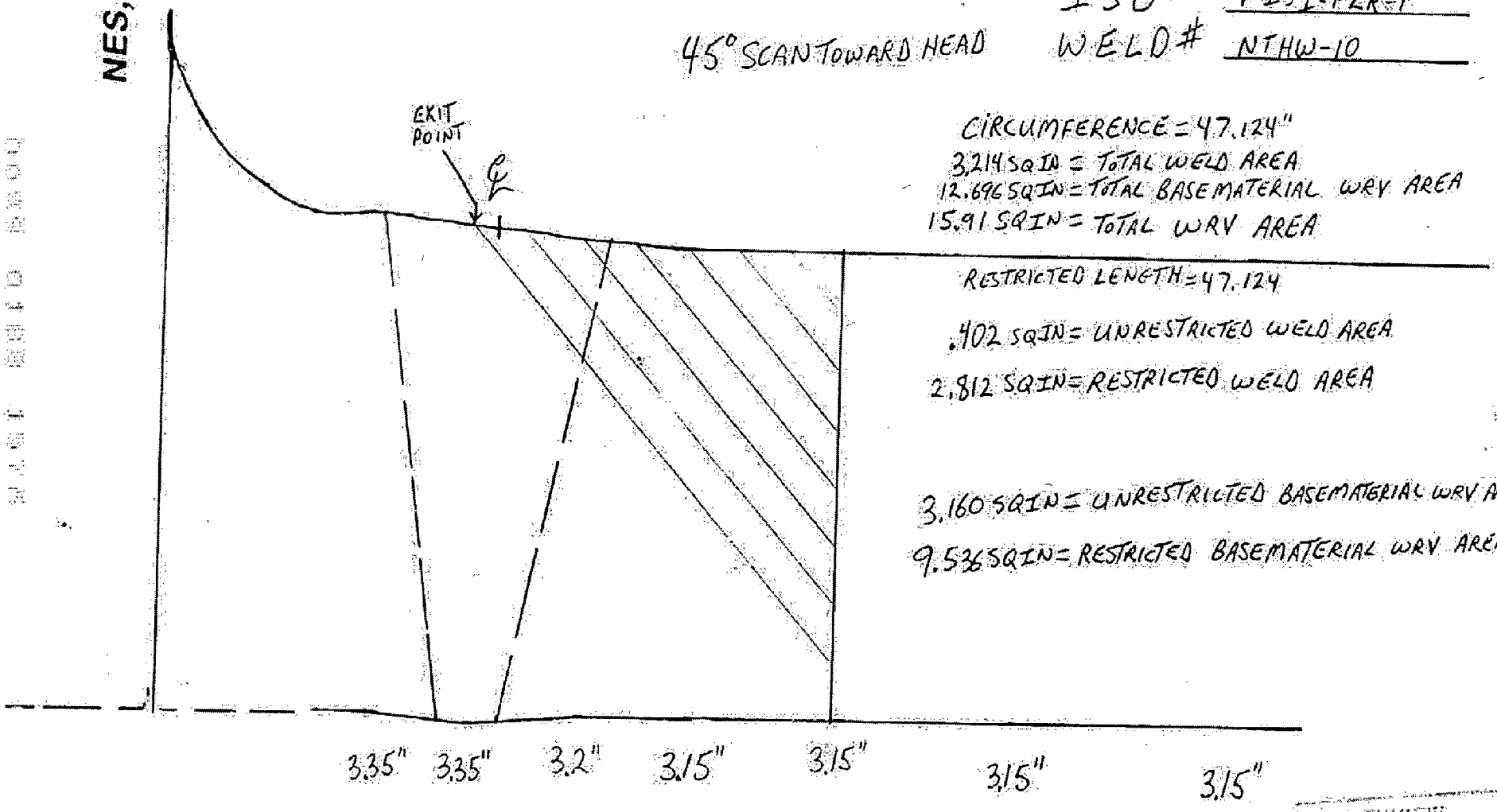
ANII REVIEW
ANII SB Date
DATE 11-25-98

NES, Inc.

SL 11-11-98

DATA SHEET # 210-9 02 98-02
PAGE 6 OF 15
ISO # 1-IST-PZR-1
WELD # NTHW-10

45° SCAN TOWARD HEAD



CIRCUMFERENCE = 47.124"
3.214 SQIN = TOTAL WELD AREA
12.696 SQIN = TOTAL BASE MATERIAL WRV AREA
15.91 SQIN = TOTAL WRV AREA

RESTRICTED LENGTH = 47.124

.402 SQIN = UNRESTRICTED WELD AREA

2.812 SQIN = RESTRICTED WELD AREA

3.160 SQIN = UNRESTRICTED BASEMATERIAL WRV AREA

9.536 SQIN = RESTRICTED BASEMATERIAL WRV AREA

FINAL REVIEW
INITIAL SBH
DATE 11-25-98

EXAMINER T. Hunt LEVEL II DATE 10/30/98
EXAMINER ~~Jay D Burg~~ LEVEL II DATE 10/30/98
REVIEWER ~~Scott Larson~~ LEVEL III DATE 11-3-98

JB 11-19-98

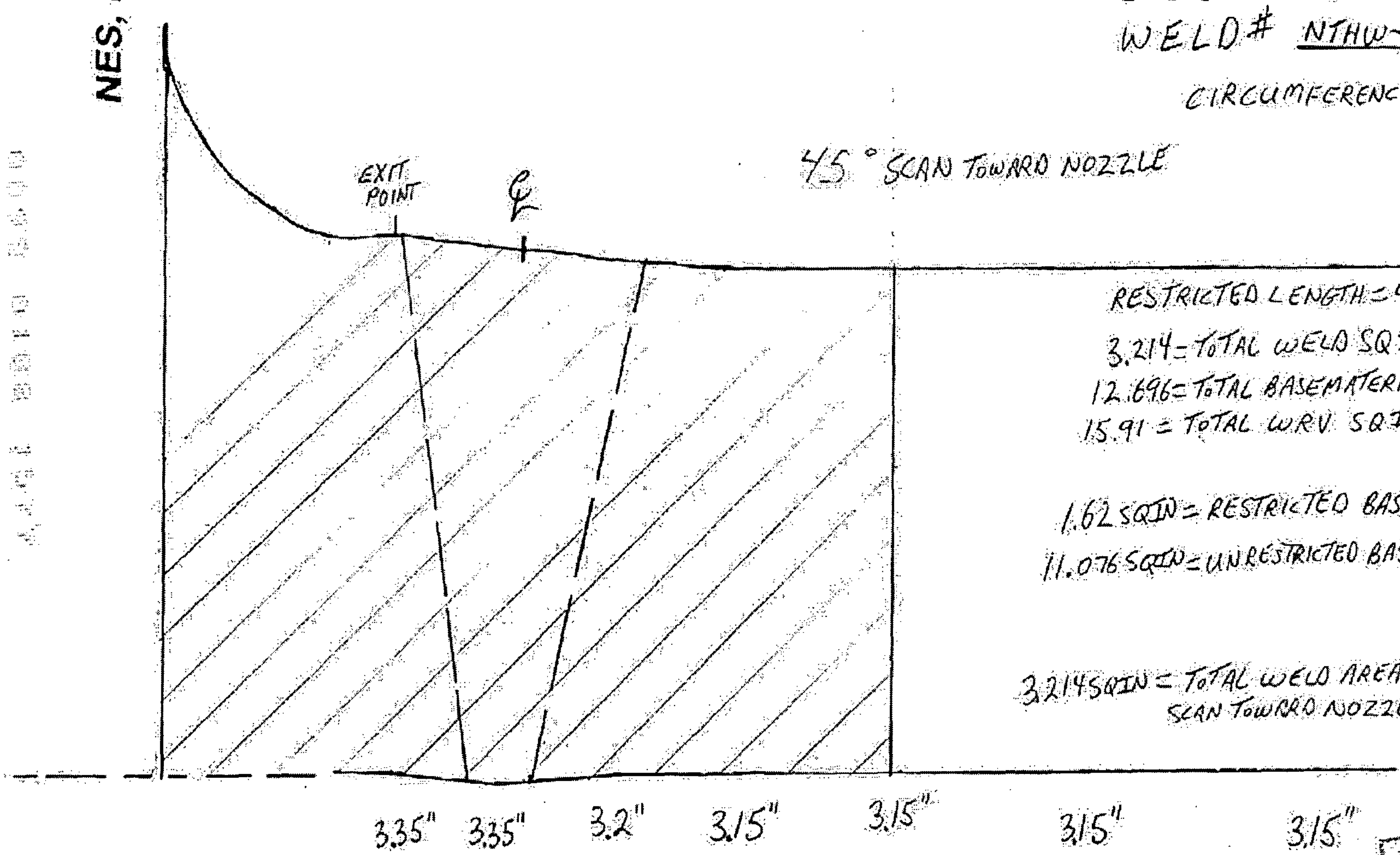
NES, Inc.

SC 11-11-98

DATA SHEET # 210-98-~~X~~02
PAGE 7 OF 15
ISO# 1-ISI-PZR-1
WELD# NTHW-10

CIRCUMFERENCE = 47.124"

45° SCAN TOWARD NOZZLE



RESTRICTED LENGTH = 47.124"

3.214 = TOTAL WELD SQ IN
12.696 = TOTAL BASEMATERIAL WRV SQIN
15.91 = TOTAL WRV SQ IN

1.62 SQIN = RESTRICTED BASEMATERIAL WRV
11.076 SQIN = UNRESTRICTED BASEMATERIAL WRV

3.214 SQIN = TOTAL WELD AREA 100% COMPLETE SCAN TOWARD NOZZLE

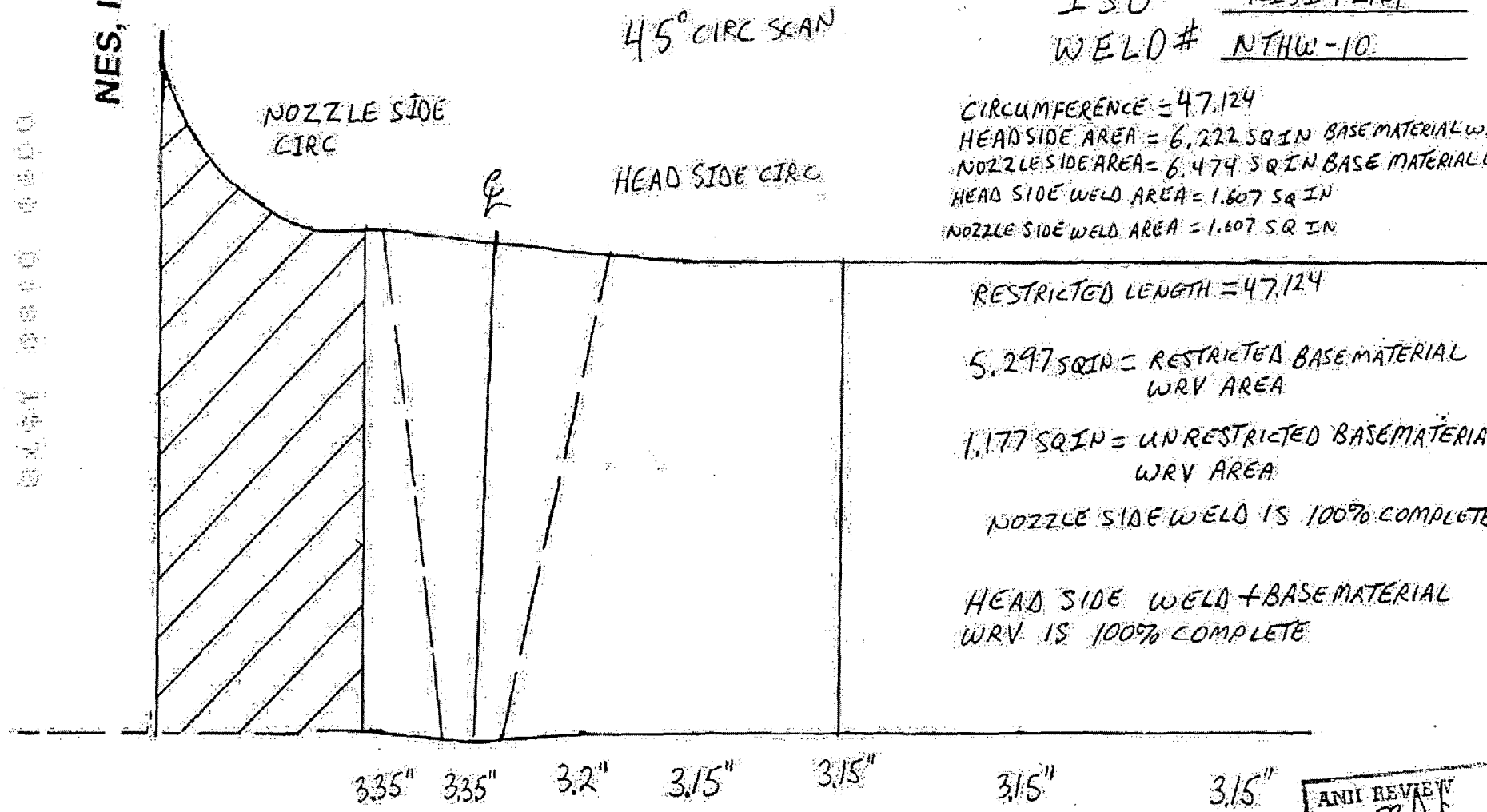
ANII REVIEW
ANII [signature]
DATE 11-25-98

CAB 11-19-98

EXAMINER [signature] LEVEL II DATE 10/30/98
EXAMINER [signature] LEVEL II DATE 10/30/98
REVIEWER [signature] LEVEL III DATE 11-3-98

NES, Inc.

DATA SHEET # 210-98-402
PAGE 8 OF 15
ISO # 1-ISI-PZR-1
WELD # NTHW-10



CIRCUMFERENCE = 47.124
HEAD SIDE AREA = 6.222 SQ IN BASE MATERIAL WRV
NOZZLE SIDE AREA = 6.474 SQ IN BASE MATERIAL WRV
HEAD SIDE WELD AREA = 1.607 SQ IN
NOZZLE SIDE WELD AREA = 1.607 SQ IN

RESTRICTED LENGTH = 47.124

5.297 SQ IN = RESTRICTED BASE MATERIAL WRV AREA

1.177 SQ IN = UNRESTRICTED BASE MATERIAL WRV AREA

NOZZLE SIDE WELD IS 100% COMPLETE

HEAD SIDE WELD + BASE MATERIAL WRV IS 100% COMPLETE

ANII REVIEW
ANII [signature]
DATE 11-25-98

EXAMINER T. Hude LEVEL II DATE 10/30/98
EXAMINER ~~Ronald Bye~~ LEVEL ~~II~~ DATE 10/30/98
REVIEWER ~~Scott Larson~~ LEVEL III DATE 11-3-98

CLB 11-19-98

COVERAGE CALCULATION SHEET

P9 of 15

ISO # 1-ISI-PZR-1

DATA SHT# 210-98-02

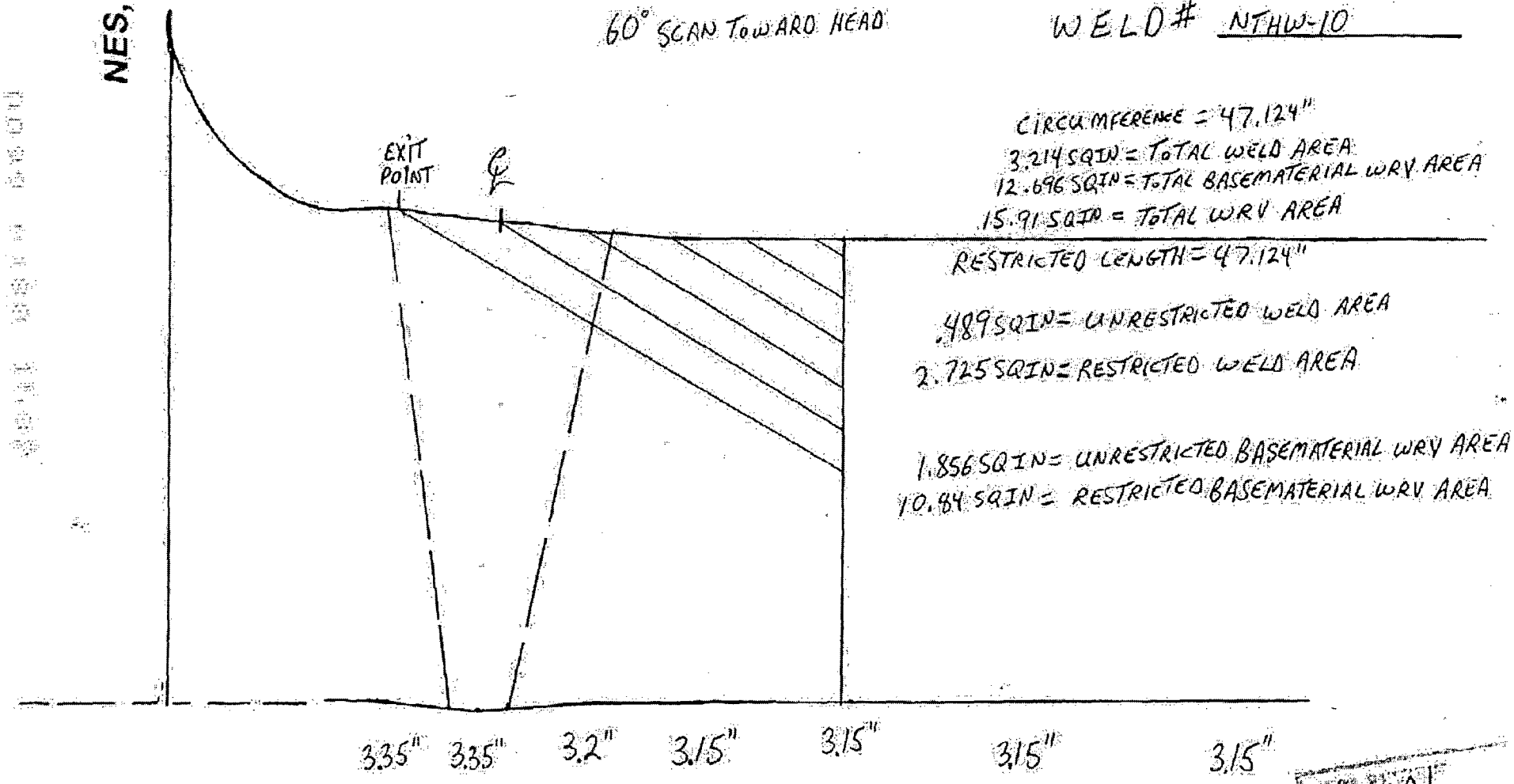
WELD NO.:NTHW-10		45 DEGREE											
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD HEAD BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	3.16	24.89%	0	0.00%	24.89%	0.00%	24.89%
TOWARD HEAD WELD AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	3.214	0.402	12.51%	0	0.00%	12.51%	0.00%	12.51%
TOWARD NOZZLE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	11.076	87.24%	0	0.00%	87.24%	0.00%	87.24%
TOWARD NOZZLE WELD AXIAL COVERAGE	47.12	0	0.00%	47.12	100.00%	3.214	0	0.00%	3.214	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE BASEMATERIAL	47.12	0	0.00%	47.12	100.00%	6.222	0	0.00%	6.222	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
NOZZ SIDE CIRC COVERAGE BASEMATERIAL	47.12	47.12	100.00%	0	0.00%	6.474	1.177	18.18%	0	0.00%	18.18%	0.00%	18.18%
TOTAL WELD VOLUME COVERAGE													67.85%

Edward Black CPL LIII, 11-19-98

UNIT REVIEW
DATE 11-25-98

NES, Inc.

DATA SHEET # 210-98-02
PAGE 12 OF 15
ISO # 1-ISI-PZR-1
WELD # NTHW-10



CIRCUMFERENCE = 47.124"
3.214 SQIN = TOTAL WELD AREA
12.696 SQIN = TOTAL BASEMATERIAL WRV AREA
15.91 SQIN = TOTAL WRV AREA
RESTRICTED LENGTH = 47.124"

.489 SQIN = UNRESTRICTED WELD AREA
2.725 SQIN = RESTRICTED WELD AREA

1.856 SQIN = UNRESTRICTED BASEMATERIAL WRV AREA
10.84 SQIN = RESTRICTED BASEMATERIAL WRV AREA

RECEIVED
NOV 30 1998
11-25-98

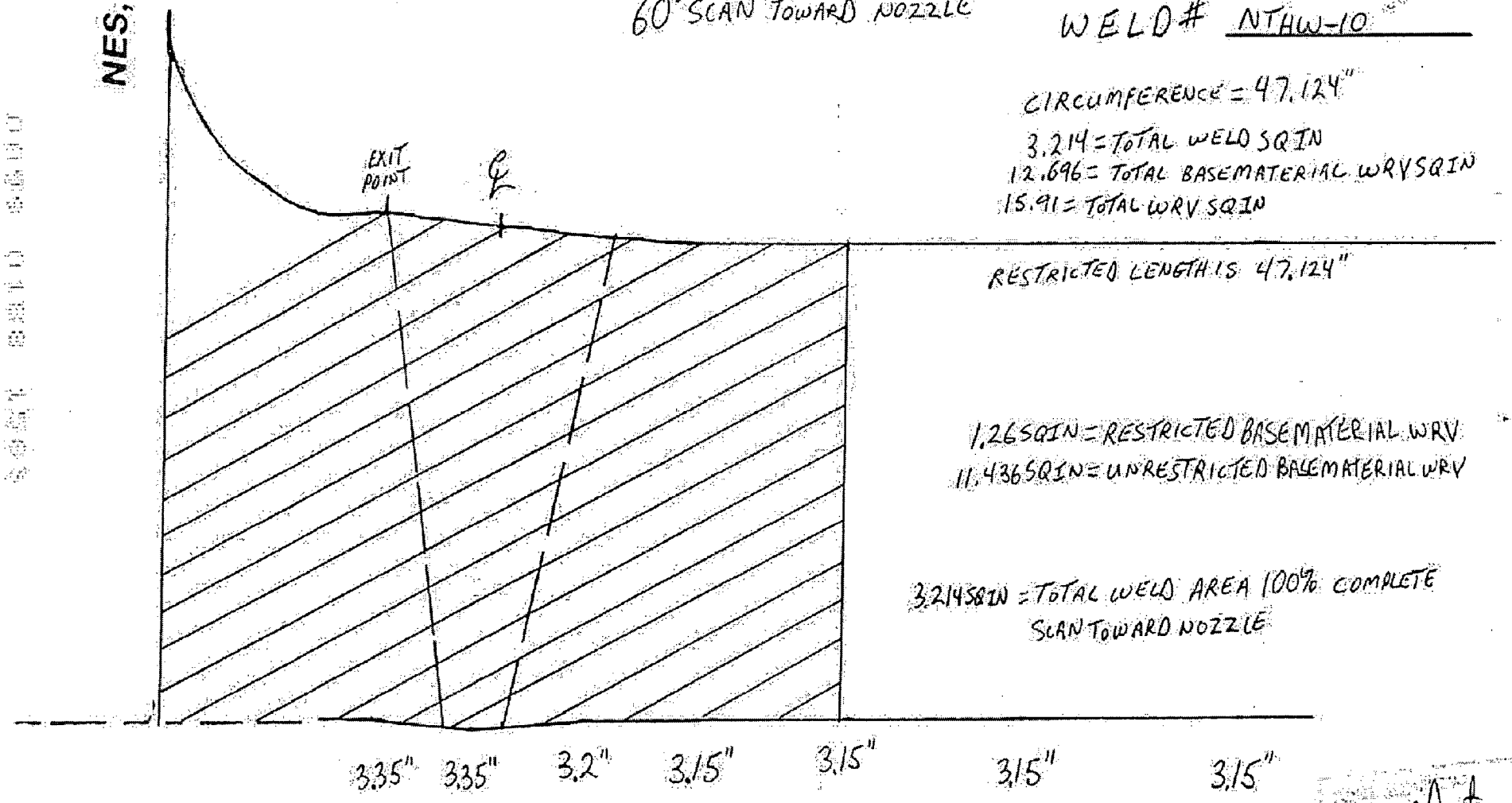
EXAMINER Paul S Black LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-3-98

JB 11-19-98

NES, Inc.

DATA SHEET # 210-98-02
PAGE 13 OF 15
ISO# 1-ISI-P2R-1
WELD# NTHW-10

60° SCAN TOWARD NOZZLE



CIRCUMFERENCE = 47.124"

3.214 = TOTAL WELD SQIN
12.696 = TOTAL BASEMATERIAL WRVSQIN
15.91 = TOTAL WRV SQIN

RESTRICTED LENGTH IS 47.124"

1.265QIN = RESTRICTED BASEMATERIAL WRV
11.4365QIN = UNRESTRICTED BASEMATERIAL WRV

3.21458IN = TOTAL WELD AREA 100% COMPLETE
SCAN TOWARD NOZZLE

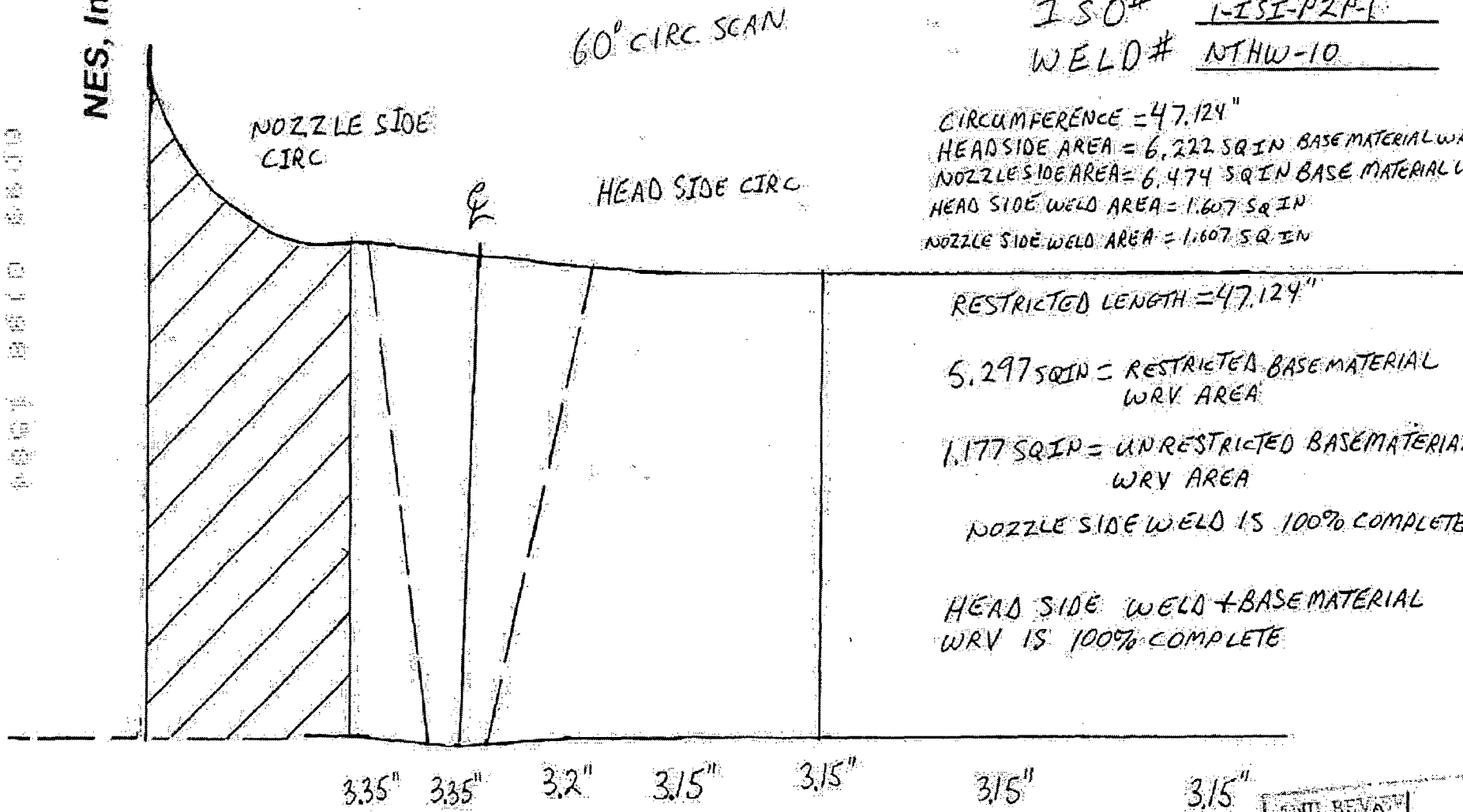
SVS Daft
DATE: 11-25-98

EXAMINER Paul S Blecha LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL ~~III~~ DATE 11-3-98

JeB 11-19-98

NES, Inc.

DATA SHEET # 210-98- 02
PAGE 14 OF 15
ISO # 1-ISI-P2P-1
WELD # NTHW-10



CIRCUMFERENCE = 47.124"
HEADSIDE AREA = 6.222 SQ IN BASE MATERIAL WRV
NOZZLE SIDE AREA = 6.474 SQ IN BASE MATERIAL WRV
HEAD SIDE WELD AREA = 1.607 SQ IN
NOZZLE SIDE WELD AREA = 1.607 SQ IN

RESTRICTED LENGTH = 47.124"

5.297 SQ IN = RESTRICTED BASE MATERIAL WRV AREA

1.177 SQ IN = UNRESTRICTED BASE MATERIAL WRV AREA

NOZZLE SIDE WELD IS 100% COMPLETE

HEAD SIDE WELD + BASE MATERIAL WRV IS 100% COMPLETE

ANII REVIEW
ANII [illegible]
DATE 11-25-98

EXAMINER Paul S Bleda LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-3-98

11-A-93

COVERAGE CALC[illegible]N SHEET

P15 of 15

ISO# 1-ISI-PZR-1

DATA SHT# 210-98-02

WELD NO.: NTHW-10		60 DEGREE											
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD HEAD BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	1.856	14.62%	0	0.00%	14.62%	0.00%	14.62%
TOWARD HEAD WELD AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	3.214	0.489	15.21%	0	0.00%	15.21%	0.00%	15.21%
TOWARD NOZZLE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	11.436	90.08%	0	0.00%	90.08%	0.00%	90.08%
TOWARD NOZZLE WELD AXIAL COVERAGE	47.12	0	0.00%	47.12	100.00%	3.214	0	0.00%	3.214	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE BASEMATERIAL	47.12	0	0.00%	47.12	100.00%	6.222	0	0.00%	6.222	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE BASEMATERIAL	47.12	47.12	100.00%	0	0.00%	6.474	1.177	18.18%	0	0.00%	18.18%	0.00%	18.18%
TOTAL WELD VOLUME COVERAGE													67.25%

Edward Block, CPL VIII, 11-19-98

[illegible] 11-25-98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

ATTACHMENT D
Supplemental Ultrasonic Sheets
NTHW-11
(10 Pages)

NES, Inc.

WELD LENGTH = 47.1 in

REQUIRED EXAM VOLUME = (ABEF)(47.1) = 749.4 in³

VOLUME NOT EXAMINED = (ABCD)(47.1) = 252.5 in³

% INCOMPLETE = $\left[\frac{252.5}{749.4}\right]100 = 33.7\%$

% COMPLETE = 100 - 33.7 = 66.3 %

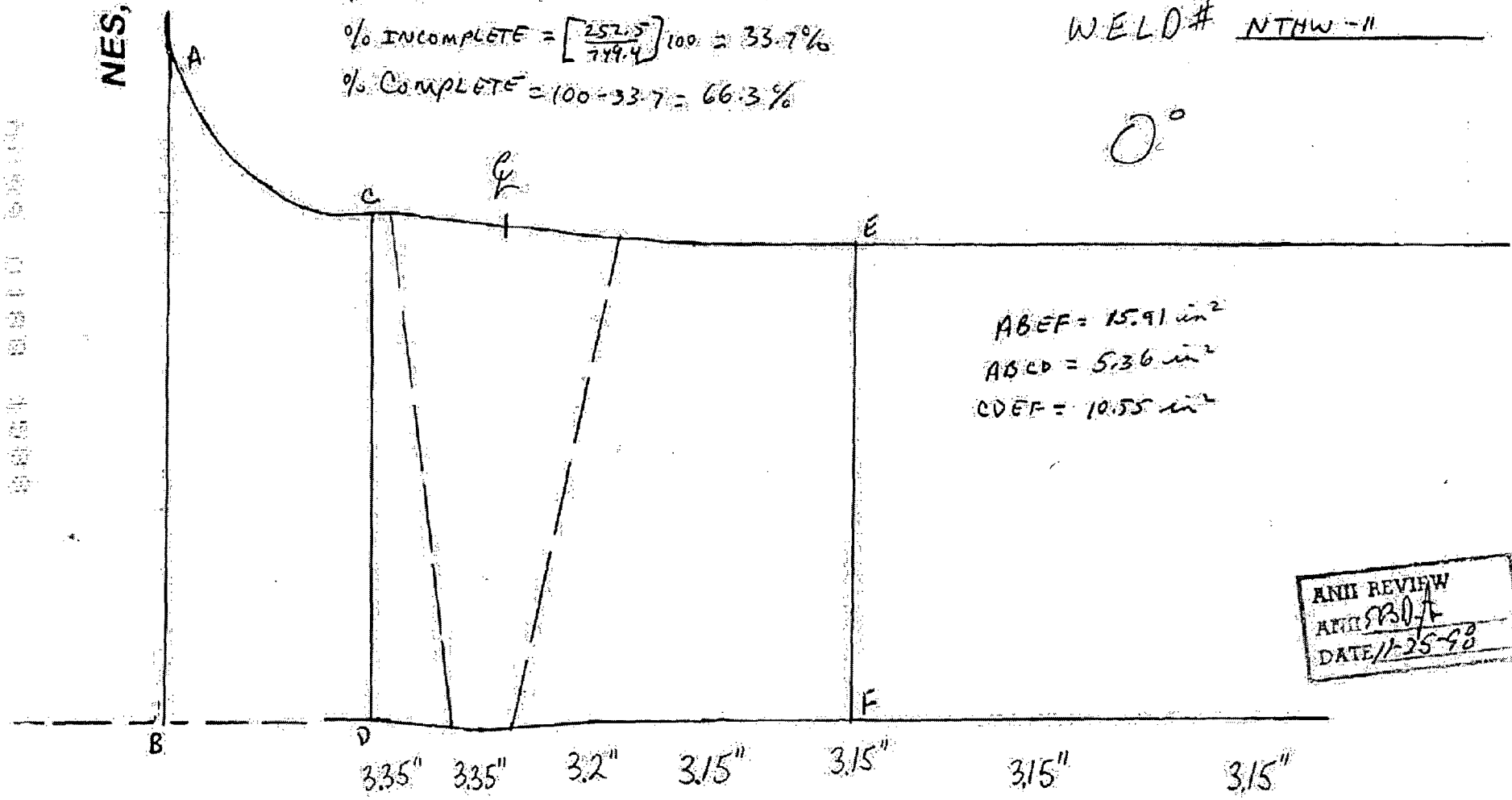
DATA SHEET # 210-98-03

PAGE 2 OF 15

ISO # 1-ISS-P2R-1

WELD # NTHW-11

0°



ABEF = 15.91 in²

ABCD = 5.36 in²

CDEF = 10.55 in²

ANII REVIEW
ANII 330-A
DATE 11-25-98

EXAMINER Edward Dagovan LEVEL II DATE 10-30-98

EXAMINER [signature] LEVEL III DATE 10/30/98

REVIEWER [signature] LEVEL III DATE 11-3-98

COVERAGE CALC. ON SHEET

P3 of 15

ISO# 1-ISI-PZR-1

DATA SHT # 210-98-05

WELD NO.:NTHW-11							0 DEGREE ONLY							
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
HEAD SIDE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	15.91	10.55	66.31%	0	0.00%	66.31%	0.00%	66.31%

Edwin Block CPL III, 11-19-98

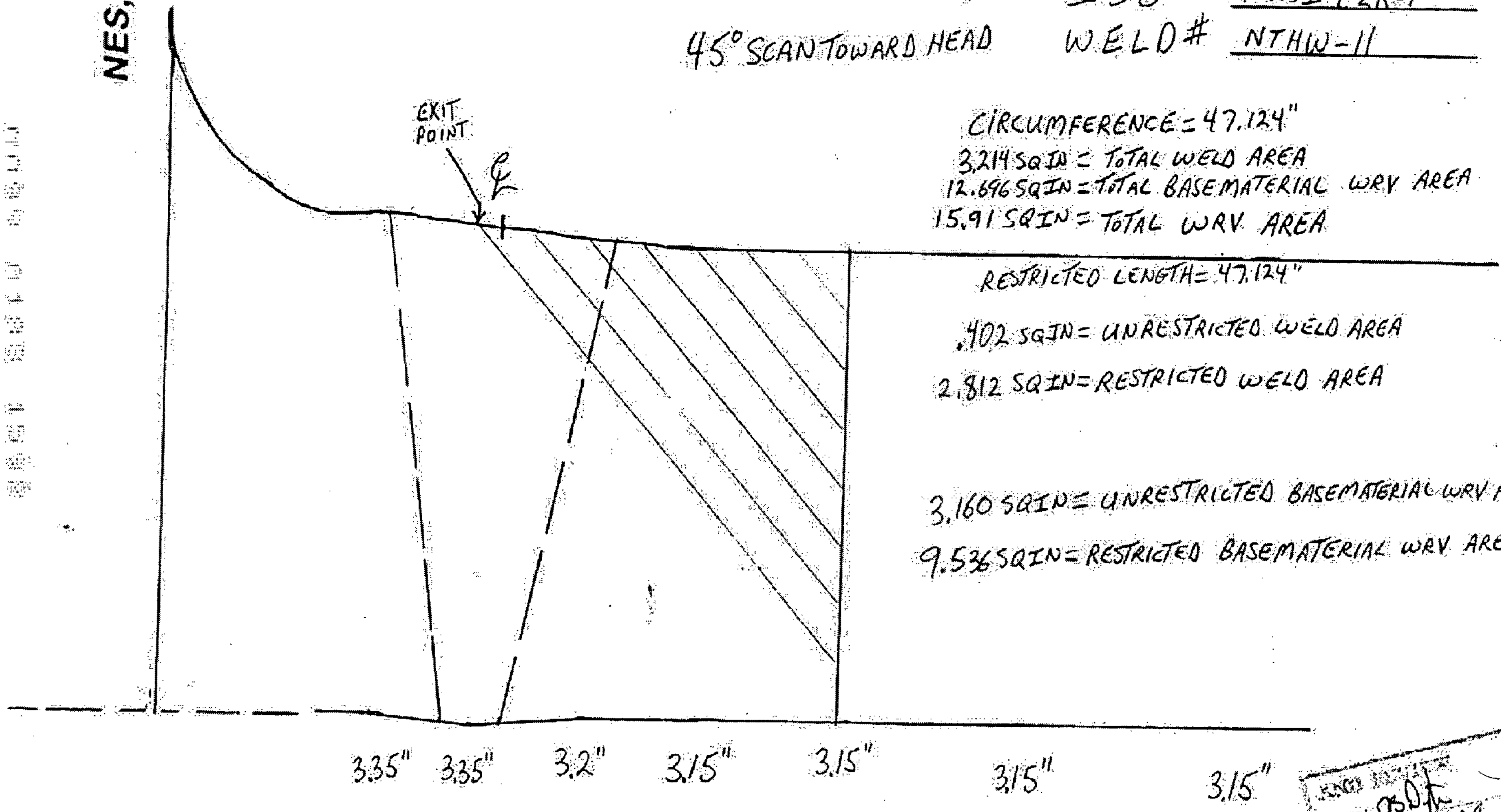
ANII REVIEW
INITIAL
DATE 11-25-98

SC 11-11-98

DATA SHEET # 210.9 803
PAGE 6 OF 15
ISO# 1-ISI-P2R-1
WELD# NTHW-11

NES, Inc.

45° SCAN TOWARD HEAD



CIRCUMFERENCE = 47.124"
3.214 SQIN = TOTAL WELD AREA
12.696 SQIN = TOTAL BASEMATERIAL WRV AREA
15.91 SQIN = TOTAL WRV AREA

RESTRICTED LENGTH = 47.124"

.402 SQIN = UNRESTRICTED WELD AREA
2.812 SQIN = RESTRICTED WELD AREA

3.160 SQIN = UNRESTRICTED BASEMATERIAL WRV AREA
9.536 SQIN = RESTRICTED BASEMATERIAL WRV AREA

DATE 11-25-98

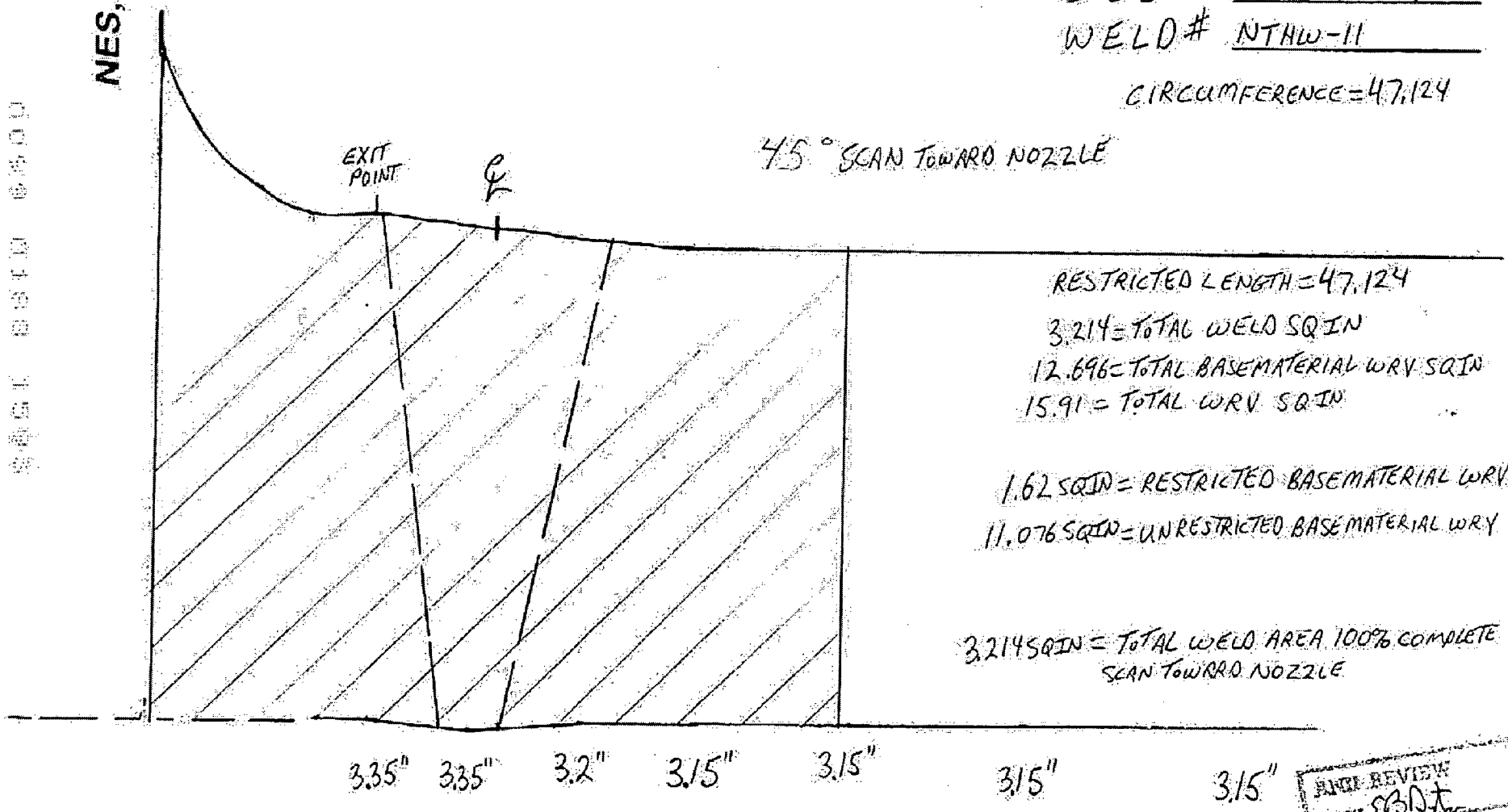
EXAMINER [signature] LEVEL II DATE 10/30/98
EXAMINER [signature] LEVEL II DATE 10/30/98
REVIEWER [signature] LEVEL III DATE 11-3-98

CRB
11-19-98

NES, Inc.

DATA SHEET # 210-98 , 03
PAGE 7 OF 45
ISO # 1-ISI-PZR-1
WELD # NTHW-11

CIRCUMFERENCE = 47.124



RESTRICTED LENGTH = 47.124

3.214 = TOTAL WELD SQIN

12.696 = TOTAL BASEMATERIAL WRV SQIN

15.91 = TOTAL WRV SQIN

1.62 SQIN = RESTRICTED BASEMATERIAL WRV

11.076 SQIN = UNRESTRICTED BASEMATERIAL WRV

3.214 SQIN = TOTAL WELD AREA 100% COMPLETE SCAN TOWARD NOZZLE

ANII REVIEW
ANII SBD
DATE 11-25-98

EXAMINER T. Hunt LEVEL II DATE 10/30/98

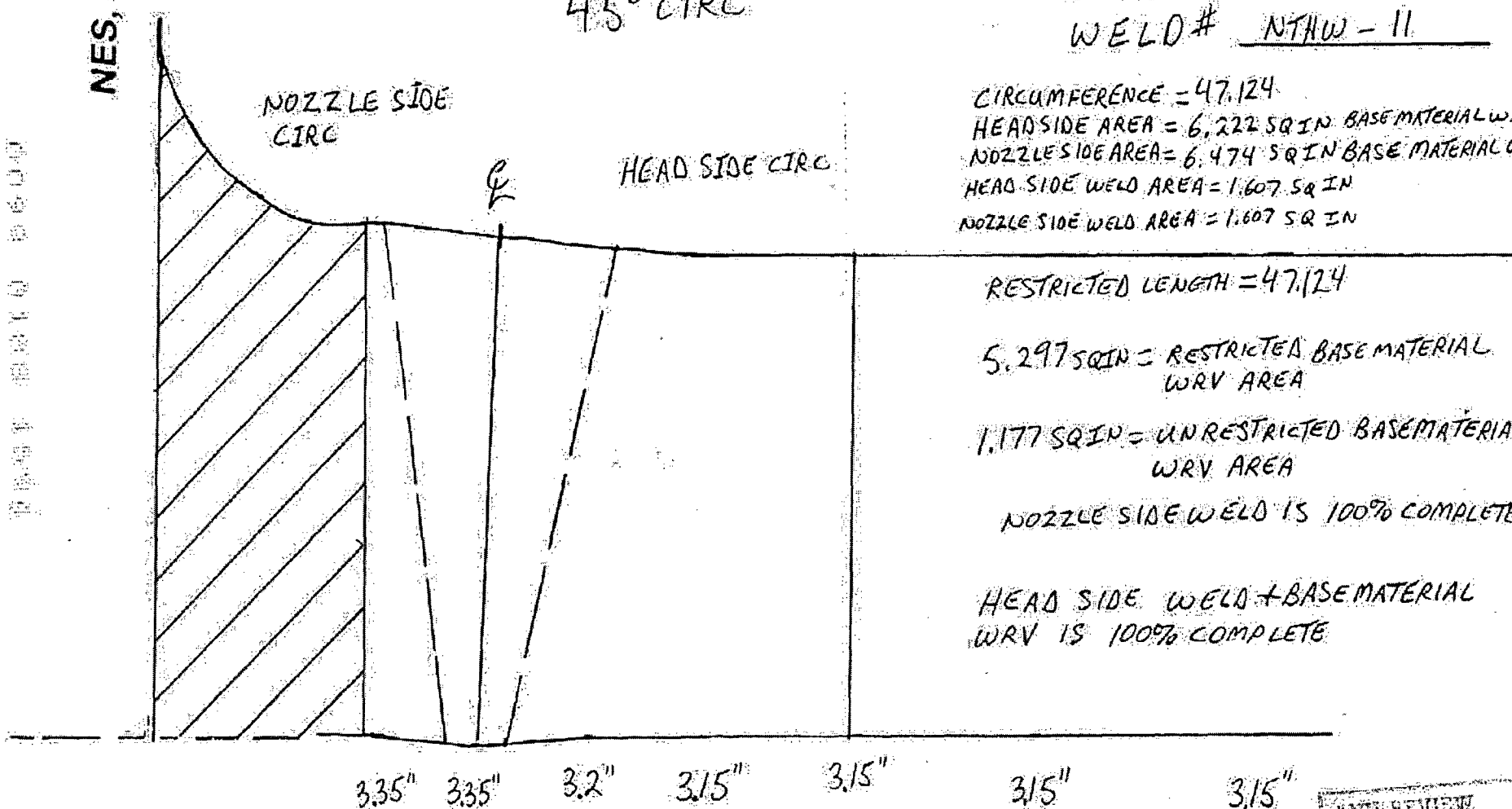
EXAMINER D. D Burg LEVEL II DATE 10/30/98

REVIEWER Scott Larson LEVEL III DATE 11-3-98

DaB
11-19-98

NES, Inc.

DATA SHEET # 210-98-03
PAGE 8 OF 15
ISO # 1-ISI-A2A-1
WELD # NTHW-11



CIRCUMFERENCE = 47.124
HEAD SIDE AREA = 6.222 SQ IN BASE MATERIAL WRV
NOZZLE SIDE AREA = 6.474 SQ IN BASE MATERIAL WRV
HEAD SIDE WELD AREA = 1.607 SQ IN
NOZZLE SIDE WELD AREA = 1.607 SQ IN

RESTRICTED LENGTH = 47.124

5.297 SQ IN = RESTRICTED BASE MATERIAL WRV AREA

1.177 SQ IN = UNRESTRICTED BASEMATERIAL WRV AREA

NOZZLE SIDE WELD IS 100% COMPLETE

HEAD SIDE WELD + BASE MATERIAL WRV IS 100% COMPLETE

ANII REVIEW
ANII [illegible]
DATE 11-25-98

EXAMINER T. Hud LEVEL II DATE 10/30/98
EXAMINER [illegible] LEVEL II DATE 10/30/98
11-4-98 REVIEWER [illegible] LEVEL III DATE 11-3-98

COVERAGE CALC[illegible]ON SHEET

P9 of 15

ISO # 1-ISI-PZR-1

DATA SHT # 210-98-03

WELD NO.:NTHW-11		45 DEGREE											
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD HEAD BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	3.15	24.89%	0	0.00%	24.89%	0.00%	24.89%
TOWARD HEAD WELD AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	3.214	0.402	12.51%	0	0.00%	12.51%	0.00%	12.51%
TOWARD NOZZLE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	11.078	87.24%	0	0.00%	87.24%	0.00%	87.24%
TOWARD NOZZLE WELD AXIAL COVERAGE	47.12	0	0.00%	47.12	100.00%	3.214	0	0.00%	3.214	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE BASEMATERIAL	47.12	0	0.00%	47.12	100.00%	6.222	0	0.00%	6.222	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
NOZZ SIDE CIRC COVERAGE BASEMATERIAL	47.12	47.12	100.00%	0	0.00%	6.474	1.177	18.18%	0	0.00%	18.18%	0.00%	18.18%
TOTAL WELD VOLUME COVERAGE													67.85%

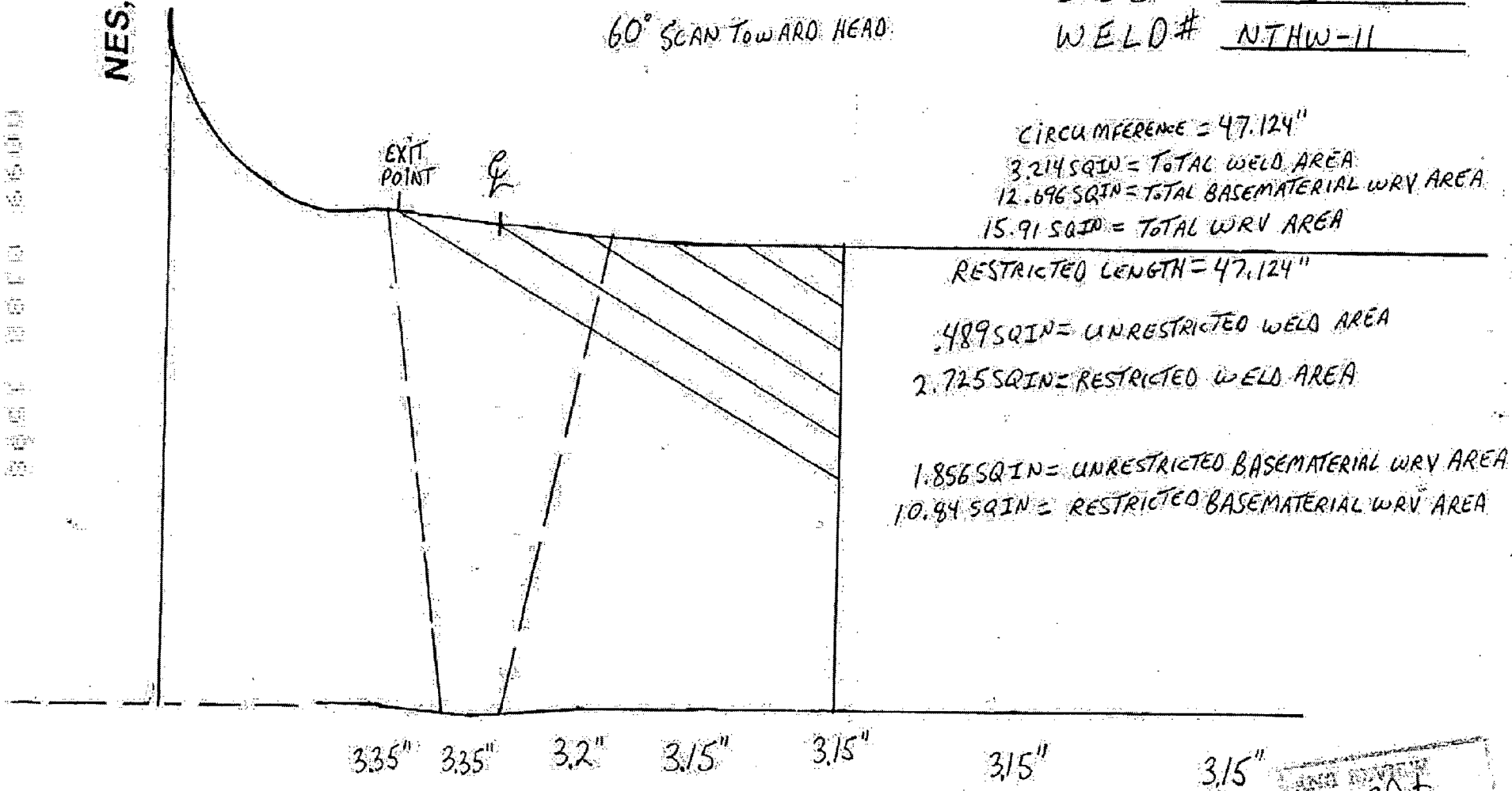
Edwin Black, CPL III, 11-19-98

ANII REVIEW
ANII [illegible]
DATE 11-25-98

NES, Inc.

DATA SHEET # 210-98-03 SC 11-11-98
PAGE 12 OF 15
ISO # 1-IST-PZR-1
WELD # NTHW-11

60° SCAN TOWARD HEAD



CIRCUMFERENCE = 47.124"
3.214 SQIN = TOTAL WELD AREA
12.696 SQIN = TOTAL BASEMATERIAL WRV AREA
15.91 SQIN = TOTAL WRV AREA
RESTRICTED LENGTH = 47.124"

.489 SQIN = UNRESTRICTED WELD AREA
2.725 SQIN = RESTRICTED WELD AREA

1.856 SQIN = UNRESTRICTED BASEMATERIAL WRV AREA
10.84 SQIN = RESTRICTED BASEMATERIAL WRV AREA

NDE REVIEW
SIGN
DATE 11-25-98

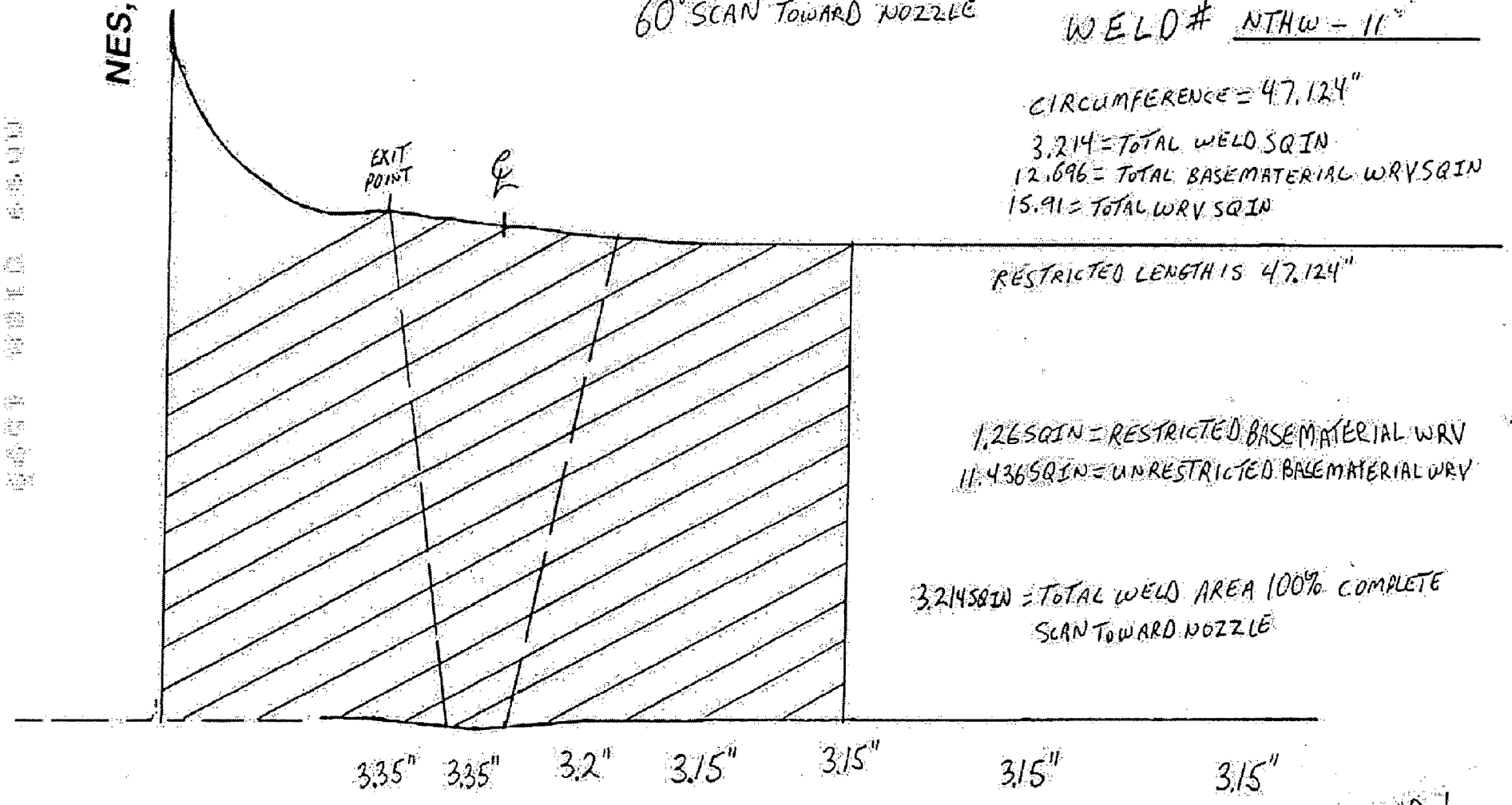
EXAMINER Paul S Bleeks LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER Scott Lewis LEVEL III DATE 11-3-98

DLB 11-6-98

NES, Inc.

DATA SHEET # 210-98-[illegible] 03
PAGE 13 OF 15
ISO# 1-ISI-PZR-1
WELD# NTHW-11

60° SCAN TOWARD NOZZLE



CIRCUMFERENCE = 47.124"
3.214 = TOTAL WELD SQIN
12.696 = TOTAL BASEMATERIAL WRV SQIN
15.91 = TOTAL WRV SQIN

RESTRICTED LENGTH IS 47.124"

1.265QIN = RESTRICTED BASE MATERIAL WRV
11.436SQIN = UNRESTRICTED BASEMATERIAL WRV

3.214SQIN = TOTAL WELD AREA 100% COMPLETE SCAN TOWARD NOZZLE

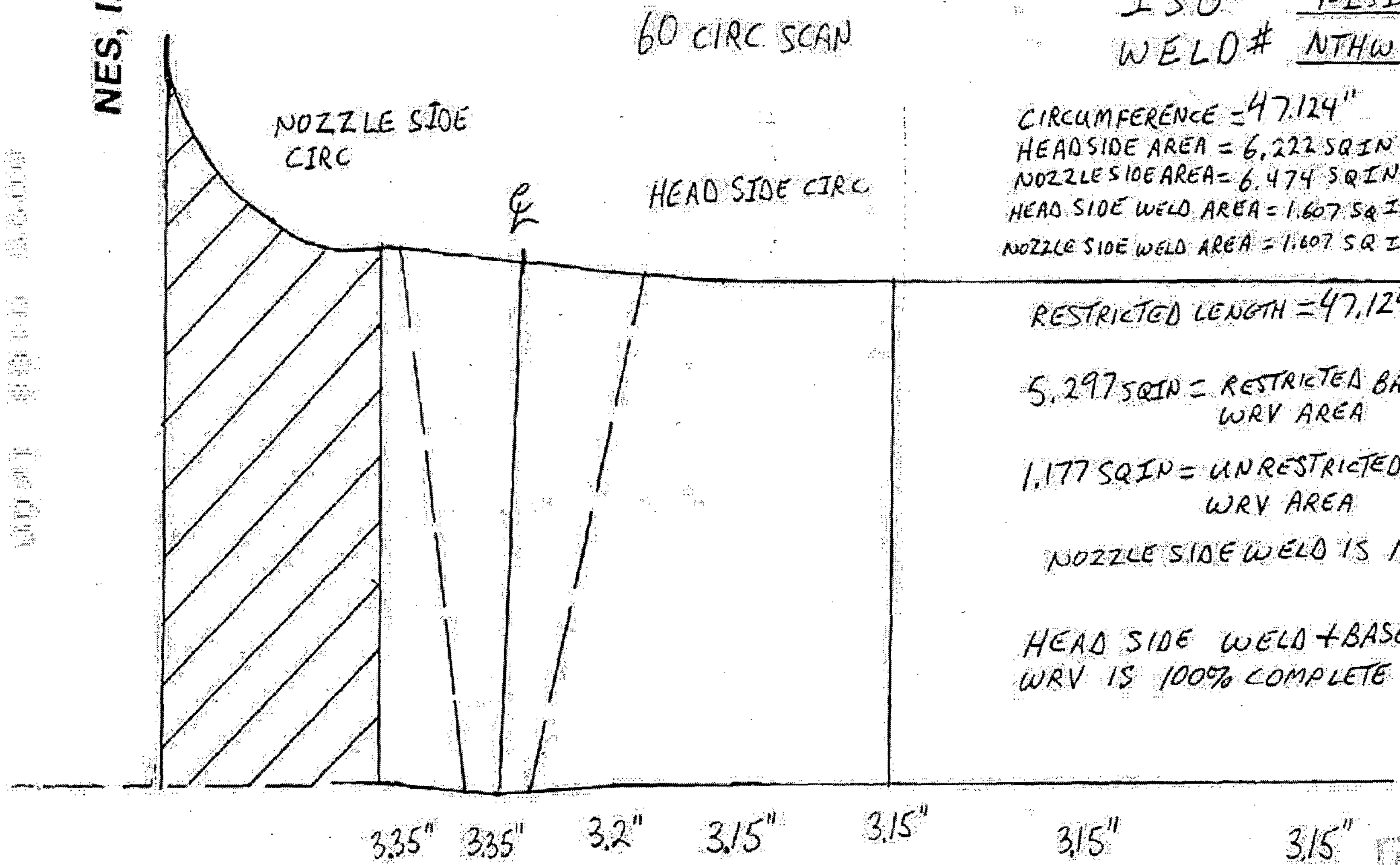
SBN 11-25-98

EXAMINER Paul S Bleha LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-3-98

JB 11-19-98

NES, Inc.

DATA SHEET # 210-98-0 _03 (initialed 11-11-98)
PAGE 14 OF 15
ISO# 1-ISI-P2R-1
WELD# NTHW-11



CIRCUMFERENCE = 47.124"
HEADSIDE AREA = 6.222 SQ IN BASE MATERIAL WRV
NOZZLE SIDE AREA = 6.474 SQ IN BASE MATERIAL WRV
HEAD SIDE WELD AREA = 1.607 SQ IN
NOZZLE SIDE WELD AREA = 1.607 SQ IN

RESTRICTED LENGTH = 47.124"

5.297 SQ IN = RESTRICTED BASE MATERIAL WRV AREA

1.177 SQ IN = UNRESTRICTED BASE MATERIAL WRV AREA

NOZZLE SIDE WELD IS 100% COMPLETE

HEAD SIDE WELD + BASE MATERIAL WRV IS 100% COMPLETE

ANII REVIEW
ANII [signature]
DATE 11-25-98

EXAMINER Paul S Blecha LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-3-98

[initials] 11-19-98

COVERAGE C... ...ATION SHEET

P15 of 15
ISO# 1-ISI-PZR-1
DATA SHT# 210-98-03

WELD NO.: NTHW-11	~	60 DEGREE											
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD HEAD BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	1.856	14.62%	0	0.00%	14.62%	0.00%	14.62%
TOWARD HEAD WELD AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	3.214	0.489	15.21%	0	0.00%	15.21%	0.00%	15.21%
TOWARD NOZZLE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	11.436	90.08%	0	0.00%	90.08%	0.00%	90.08%
TOWARD NOZZLE WELD AXIAL COVERAGE	47.12	0	0.00%	47.12	100.00%	3.214	0	0.00%	3.214	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE BASEMATERIAL	47.12	0	0.00%	47.12	100.00%	6.222	0	0.00%	6.222	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE BASEMATERIAL	47.12	47.12	100.00%	0	0.00%	6.474	1.177	18.18%	0	0.00%	18.18%	0.00%	18.18%
TOTAL WELD VOLUME COVERAGE													67.25%

CPL LIII, 11-19-98

DATE 11-25-98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

ATTACHMENT E
Supplemental Ultrasonic Sheets
NTHW-12
(10 Pages)

NES, Inc.

DATA SHEET # 210-98-0
PAGE 2 OF 5
ISO# 1-ISI-PZR-1
WELD# NTHW-12

WELD LENGTH = 47.1 in

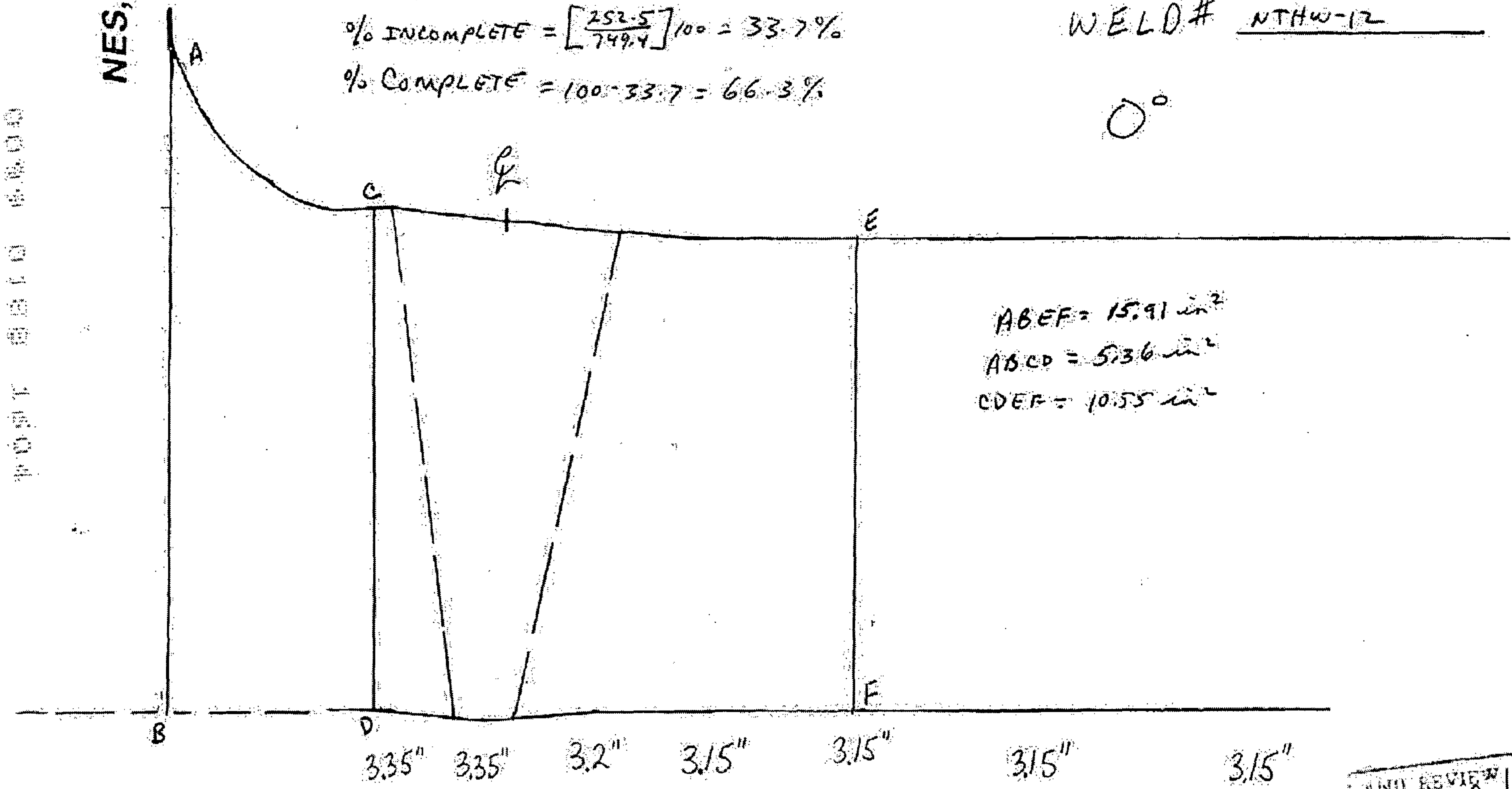
REQUIRED EXAM VOLUME = (ABEF) (47.1) = 749.4 in^3

VOLUME NOT EXAMINED = (ABCD) (47.1) = 252.5 in^3

% INCOMPLETE = $\left[\frac{252.5}{749.4}\right]100 = 33.7\%$

% COMPLETE = 100 − 33.7 = 66.3 %

0°



ANII REVIEW
EB D
DATE 11-25-98

EXAMINER [illegible] LEVEL II DATE 10-30-98
EXAMINER [illegible] LEVEL III DATE 10/30/98
REVIEWER [illegible] LEVEL III DATE 11-2-98

CAB
11-19-98

COVERAGE CA[illegible]ON SHEET

ISO# 1-ISI-PZR-1

DATA SHT# 210-98-04

WELD NO.:NTHW-12							0 DEGREE ONLY						
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
HEAD SIDE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	15.91	10.55	66.31%	0	0.00%	66.31%	0.00%	66.31%

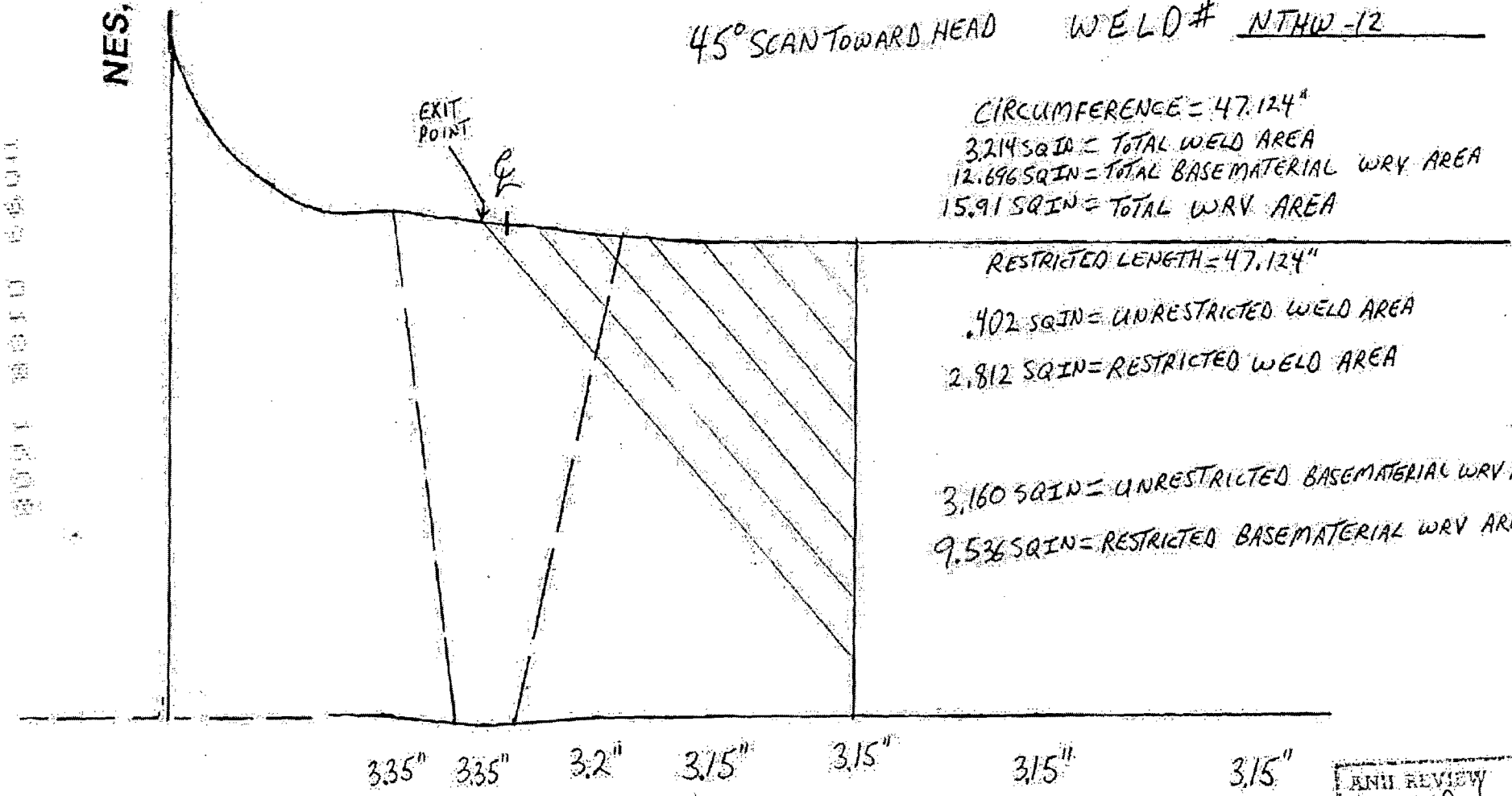
Edwin Black, CPL III, 11-19-98

[illegible] REVIEW
[illegible] EBDoyle
DATE 11-25-98

NES, Inc.

DATA SHEET # 210-98 04
PAGE 6 OF 15
ISO # 1-ISI-PZR-1
WELD # NTHW-12

45° SCAN TOWARD HEAD



CIRCUMFERENCE = 47.124"
3.214 SQIN = TOTAL WELD AREA
12.696 SQIN = TOTAL BASEMATERIAL WRV AREA
15.91 SQIN = TOTAL WRV AREA

RESTRICTED LENGTH = 47.124"

.402 SQIN = UNRESTRICTED WELD AREA
2.812 SQIN = RESTRICTED WELD AREA

3.160 SQIN = UNRESTRICTED BASEMATERIAL WRV AREA
9.536 SQIN = RESTRICTED BASEMATERIAL WRV AREA

ANII REVIEW
ANII [illegible]
DATE 11-25-98

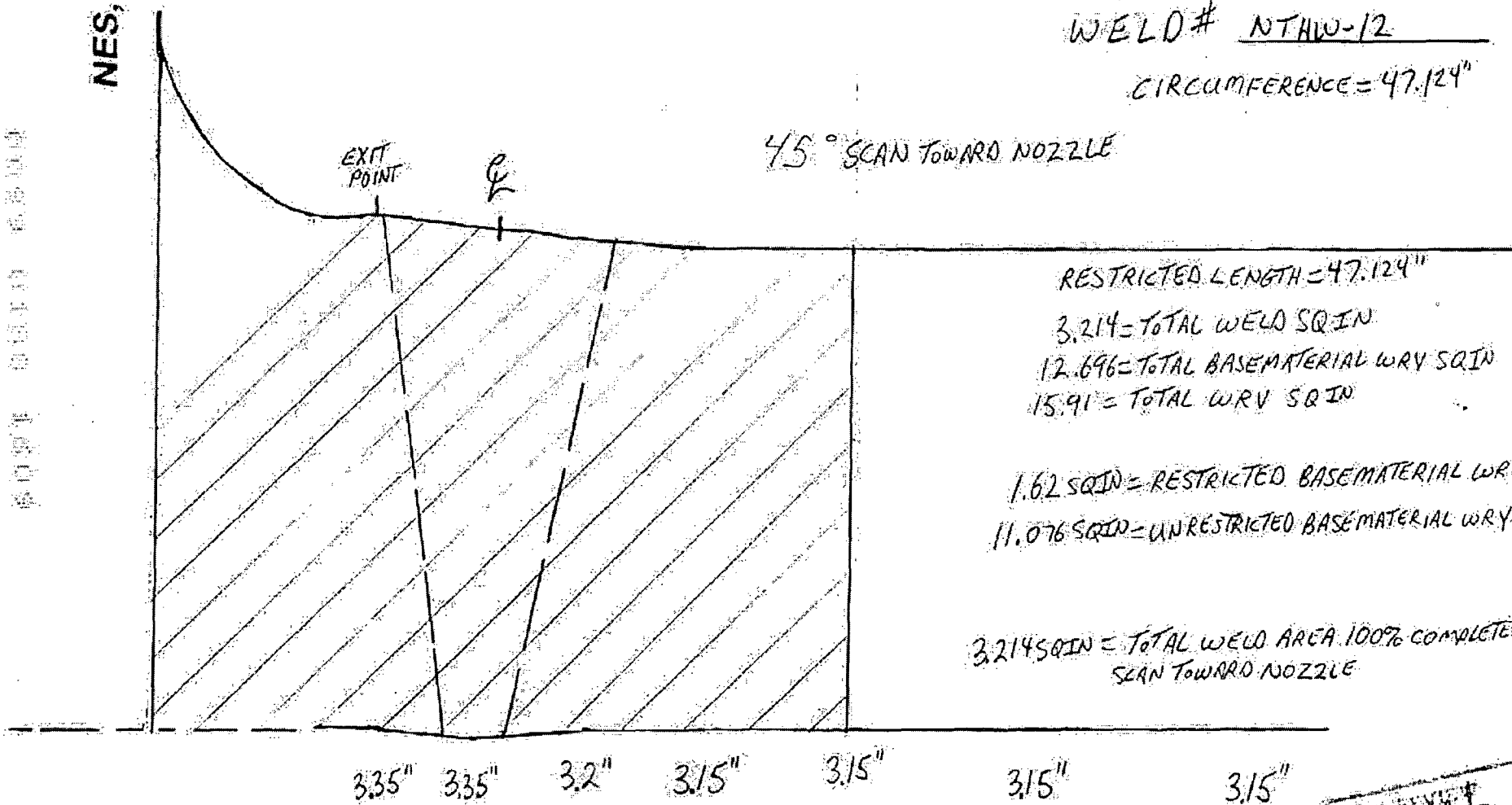
EXAMINER [signature] LEVEL II DATE 10/30/98
EXAMINER [signature] LEVEL II DATE 10/30/98
REVIEWER [signature] LEVEL III DATE 11-2-98

CB
11-19-98

SC 11-11-98

DATA SHEET # 210-98-...04
PAGE 7 OF 15
ISO # 1-ISI-PZR-1
WELD # NTHW-12
CIRCUMFERENCE = 47.124"

NES, Inc.



RESTRICTED LENGTH = 47.124"
3.214 = TOTAL WELD SQ IN
12.696 = TOTAL BASEMATERIAL WRV SQ IN
15.91 = TOTAL WRV SQ IN

1.62 SQ IN = RESTRICTED BASEMATERIAL WRV
11.076 SQ IN = UNRESTRICTED BASEMATERIAL WRV

3.214 SQ IN = TOTAL WELD AREA 100% COMPLETE
SCAN TOWARD NOZZLE

JWB
11-19-98

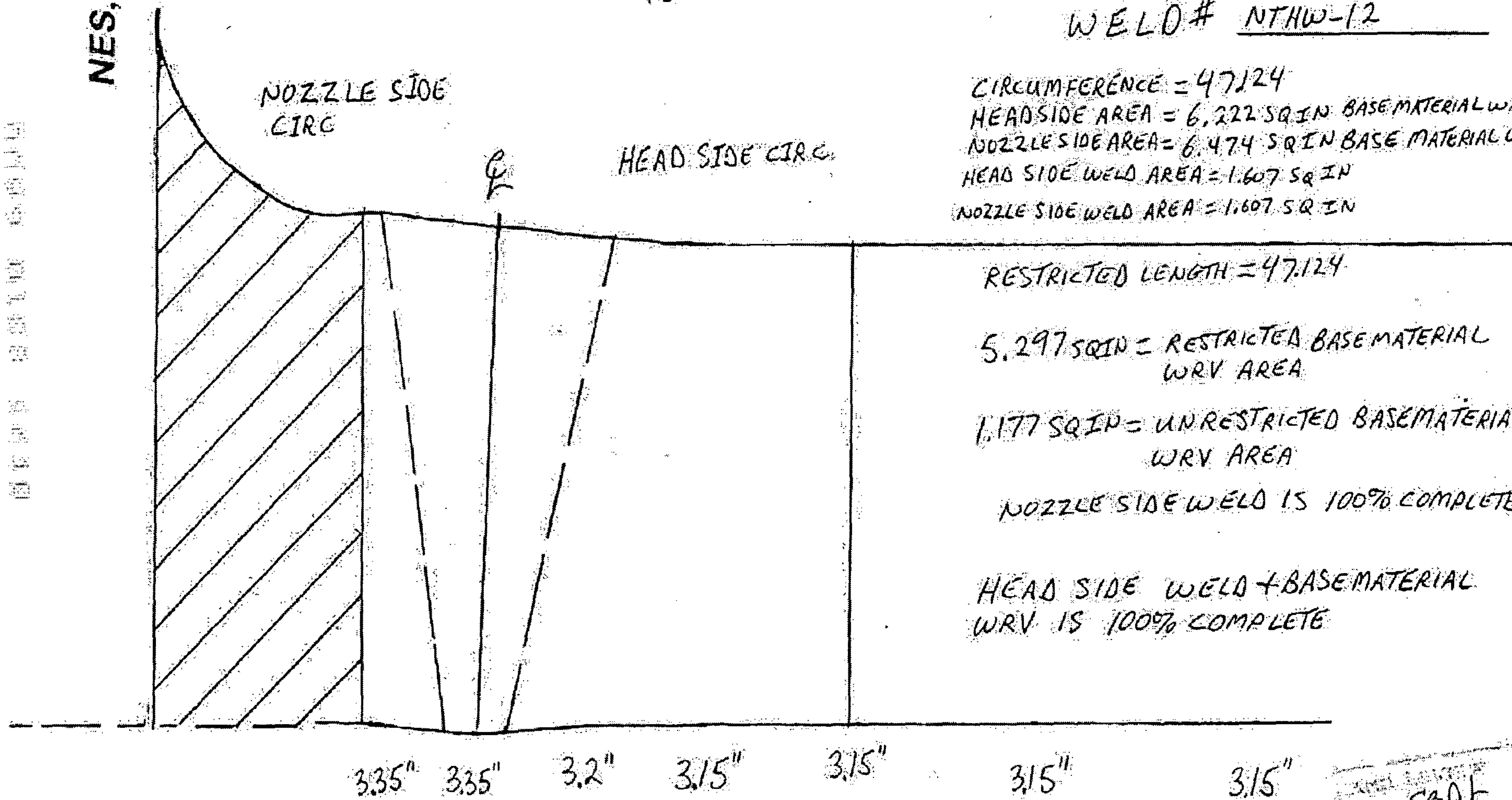
EXAMINER T. Hu LEVEL II DATE 10/30/98
EXAMINER ~~Tony D Bu~~ LEVEL II DATE 10/30/98
REVIEWER ~~Scott~~ LEVEL III DATE 11-2-98

6C 11-11-98

DATA SHEET # 210-98-04

ISO# 1-ISIP2R-1
WELD# NTHW-12

45° CIRC SCAN



CIRCUMFERENCE = 47.124
HEADSIDE AREA = 6.222 SQ IN BASE MATERIAL WRV
NOZZLE SIDE AREA = 6.474 SQ IN BASE MATERIAL WRV
HEAD SIDE WELD AREA = 1.607 SQ IN
NOZZLE SIDE WELD AREA = 1.607 SQ IN

RESTRICTED LENGTH = 47.124

5.297 SQIN = RESTRICTED BASE MATERIAL WRV AREA

1.177 SQIN = UNRESTRICTED BASEMATERIAL WRV AREA

NOZZLE SIDE WELD IS 100% COMPLETE

HEAD SIDE WELD + BASEMATERIAL WRV IS 100% COMPLETE

SBD 11-25-98

dB 11-19-98

EXAMINER [signature] LEVEL II DATE 10/30/98
EXAMINER [signature] LEVEL II DATE 10/30/98
REVIEWER [signature] LEVEL III DATE 11-2-98

ISO# 1-ISI-PZR-1

DATA SHT# 210-98-04

WELD NO.:NTHW-12		45 DEGREE												
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD HEAD BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	3.18	24.89%	0	0.00%	24.89%	0.00%	24.89%
TOWARD HEAD WELD AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	3.214	0.402	12.51%	0	0.00%	12.51%	0.00%	12.51%
TOWARD NOZZLE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	11.076	87.24%	0	0.00%	87.24%	0.00%	87.24%
TOWARD NOZZLE WELD AXIAL COVERAGE	47.12	0	0.00%	47.12	100.00%	3.214	0	0.00%	3.214	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE BASEMATERIAL	47.12	0	0.00%	47.12	100.00%	6.222	0	0.00%	6.222	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
NOZZ SIDE CIRC COVERAGE BASEMATERIAL	47.12	47.12	100.00%	0	0.00%	6.474	1.177	18.18%	0	0.00%	18.18%	0.00%	18.18%
TOTAL WELD VOLUME COVERAGE													67.85%

Edwin Black, CPL LIII, 11-19-98

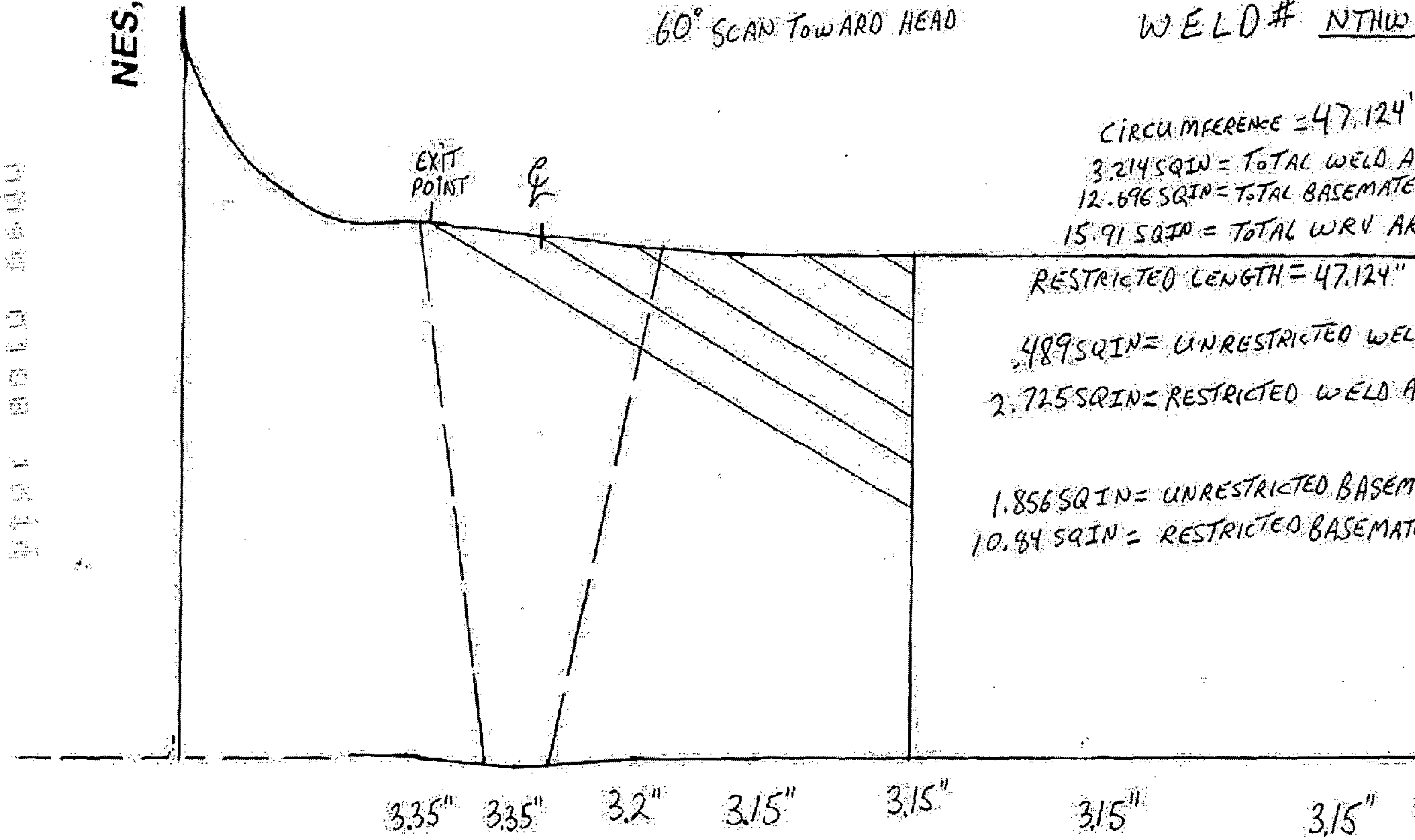
ANII REVIEW
ANII [signature]
DATE 11-25-98

NES, Inc.

SL 11-11-98

DATA SHEET # 210-98-1 04
PAGE 12 OF 15
ISO# 1-ISI-P2R-1
WELD# NTHW-12

60° SCAN TOWARD HEAD



CIRCUMFERENCE = 47.124"
3.214 SQIN = TOTAL WELD AREA
12.696 SQIN = TOTAL BASEMATERIAL WRV AREA
15.91 SQIN = TOTAL WRV AREA

RESTRICTED LENGTH = 47.124"

.489 SQIN = UNRESTRICTED WELD AREA
2.725 SQIN = RESTRICTED WELD AREA

1.856 SQIN = UNRESTRICTED BASEMATERIAL WRV AREA
10.84 SQIN = RESTRICTED BASEMATERIAL WRV AREA

ANII REVIEW
ANII EB Dayton
DATE 11-25-98

EXAMINER Paul S Blecke LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER Scott Faro LEVEL III DATE 11-2-98

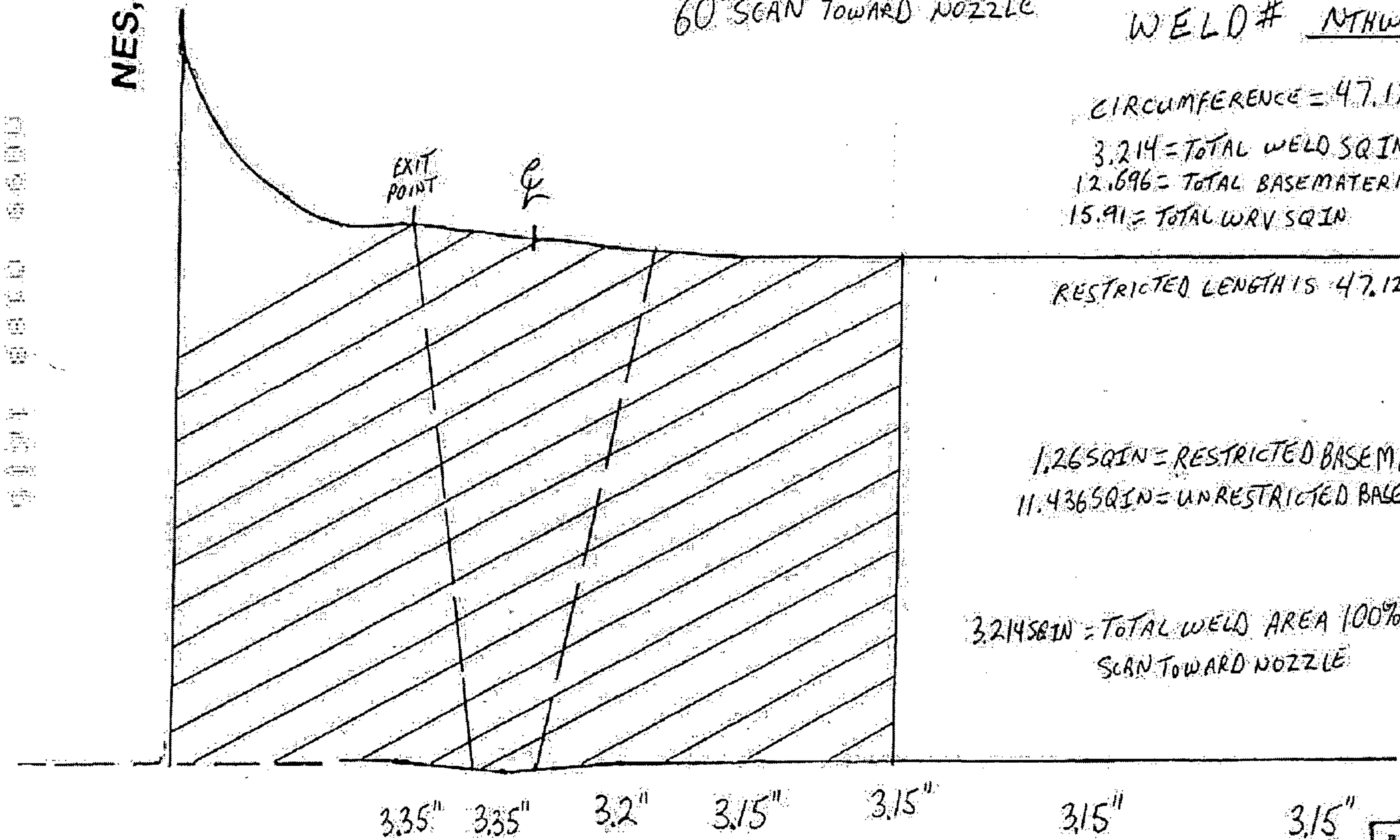
CLB
11-19-98

NES, Inc.

DATA SHEET # ~~210-98-06~~ 210-98-09 SC 11-11-98
PAGE 13 OF ~~8~~ 15 SC 11-11-98
ISO# 1-ISI-PZR-1
WELD# NTHW-12

60° SCAN TOWARD NOZZLE

CIRCUMFERENCE = 47.124"
3.214 = TOTAL WELD SQ IN
12.696 = TOTAL BASEMATERIAL WRV SQ IN
15.91 = TOTAL WRV SQ IN



RESTRICTED LENGTH IS 47.124"

1.26 SQ IN = RESTRICTED BASEMATERIAL WRV
11.436 SQ IN = UNRESTRICTED BASEMATERIAL WRV

3.214 SQ IN = TOTAL WELD AREA 100% COMPLETE SCAN TOWARD NOZZLE

ANII REVIEW
ANII [signature]
DATE 11-25-98

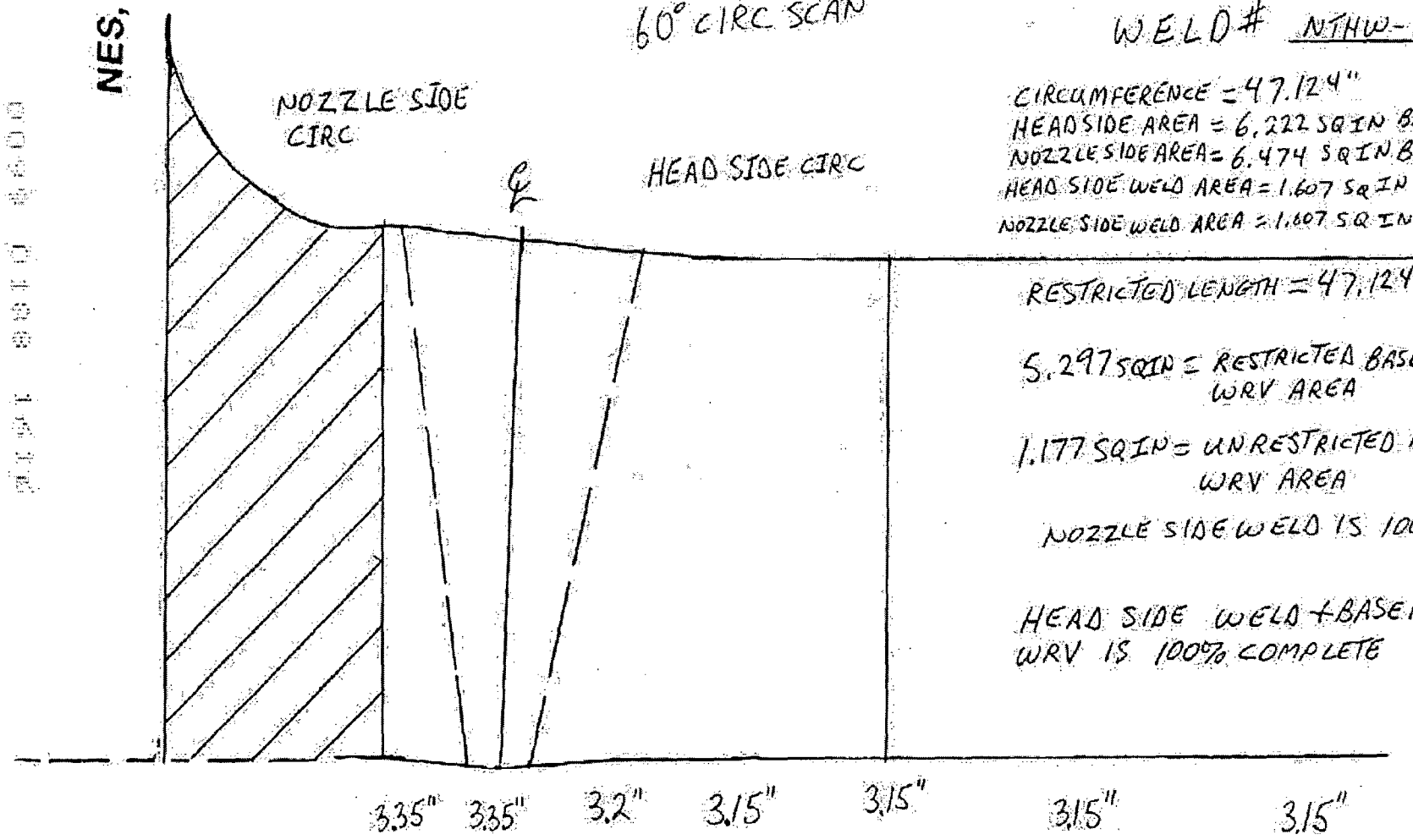
EXAMINER Paul S Blecha LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-2-98

[initials] 11-19-98

SE 11-11-98

DATA SHEET # 210-98-L 04
PAGE 14 OF 15
ISO # 1-ISI-P2R-1
WELD # NTHW-12

NES, Inc.



CIRCUMFERENCE = 47.124"
HEAD SIDE AREA = 6.222 SQ IN BASE MATERIAL WRV
NOZZLE SIDE AREA = 6.474 SQ IN BASE MATERIAL WRV
HEAD SIDE WELD AREA = 1.607 SQ IN
NOZZLE SIDE WELD AREA = 1.607 SQ IN

RESTRICTED LENGTH = 47.124"

5.297 SQIN = RESTRICTED BASE MATERIAL WRV AREA

1.177 SQIN = UNRESTRICTED BASEMATERIAL WRV AREA

NOZZLE SIDE WELD IS 100% COMPLETE

HEAD SIDE WELD + BASE MATERIAL WRV IS 100% COMPLETE

ANII REVIEWED
DATE: 11-25-98

EXAMINER Paul S Bleile LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-2-98

11-19-98

COVERAGE CA[illegible]ON SHEET

P15 of 15

ISOA 1-ISI-PZR-1

DATA SHT # 210-98-04

WELD NO. NTHW-12		60 DEGREE											
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD HEAD BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	1.856	14.62%	0	0.00%	14.62%	0.00%	14.62%
TOWARD HEAD WELD AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	3.214	0.489	15.21%	0	0.00%	15.21%	0.00%	15.21%
TOWARD NOZZLE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	11.436	90.08%	0	0.00%	90.08%	0.00%	90.08%
TOWARD NOZZLE WELD AXIAL COVERAGE	47.12	0	0.00%	47.12	100.00%	3.214	0	0.00%	3.214	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE BASEMATERIAL	47.12	0	0.00%	47.12	100.00%	6.222	0	0.00%	6.222	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE BASEMATERIAL	47.12	47.12	100.00%	0	0.00%	6.474	1.177	18.18%	0	0.00%	18.18%	0.00%	18.18%
TOTAL WELD VOLUME COVERAGE													67.26%

Edwin Block, CPL III, 11-19-98

ANI REVIEW
BBJ
DATE: 11-25-98

11/19/98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-021
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

ATTACHMENT F
Supplemental Ultrasonic Sheets
NTHW-13
(10 Pages)

NES, Inc.

WELD LENGTH = 47.1 in

REQUIRED EXAM VOLUME = (ABEF) (47.1) = 749.4 in³

VOLUME NOT EXAMINED = (ABCD) (47.1) = 252.5 in³

% INCOMPLETE = $\left[\frac{252.5}{749.4}\right]$ 100 = 33.7 %

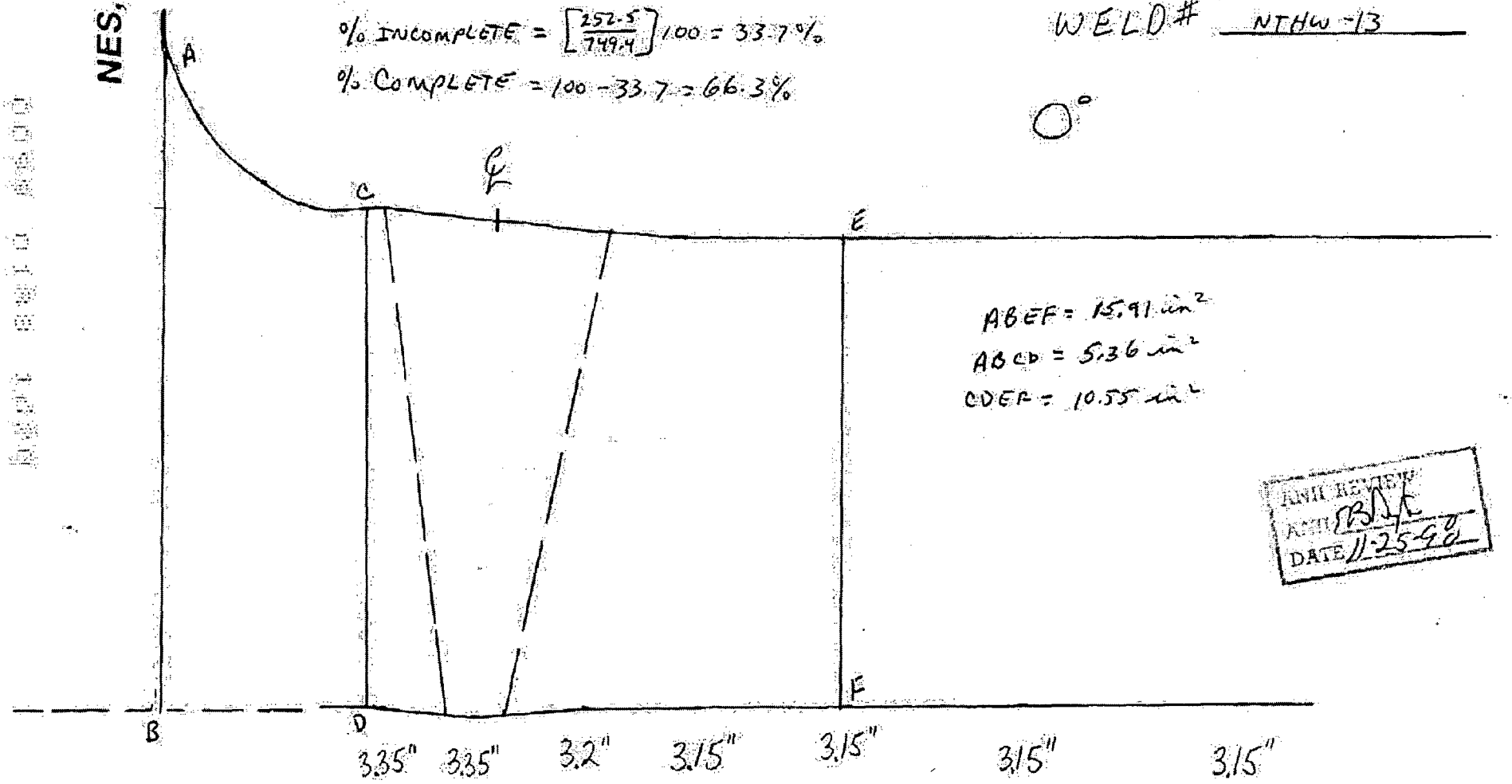
% COMPLETE = 100 − 33.7 = 66.3 %

DATA SHEET # 210-98-05

PAGE 2 OF 15

ISO # 1-ISI-PER-1

WELD # NIHW-13



ABEF = 15.91 in²

ABCD = 5.36 in²

CDEF = 10.55 in²

ANII REVIEW
ANII RBN
DATE 11-25-98

EXAMINER Edward R Dawson LEVEL II DATE 10-30-98

EXAMINER Ndy Murdock LEVEL III DATE 10/30/98

REVIEWER [signature] LEVEL III DATE 11-2-98

CB
11-19-98

COVERAGE CALC... ION SHEET

P3 of 15

ISO # 1-ISI-PZR-1

DATA SHT # 210-98-05

WELD NO.: NTHW-13							0 DEGREE ONLY						
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
HEAD SIDE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	15.91	10.55	66.31%	0	0.00%	66.31%	0.00%	66.31%

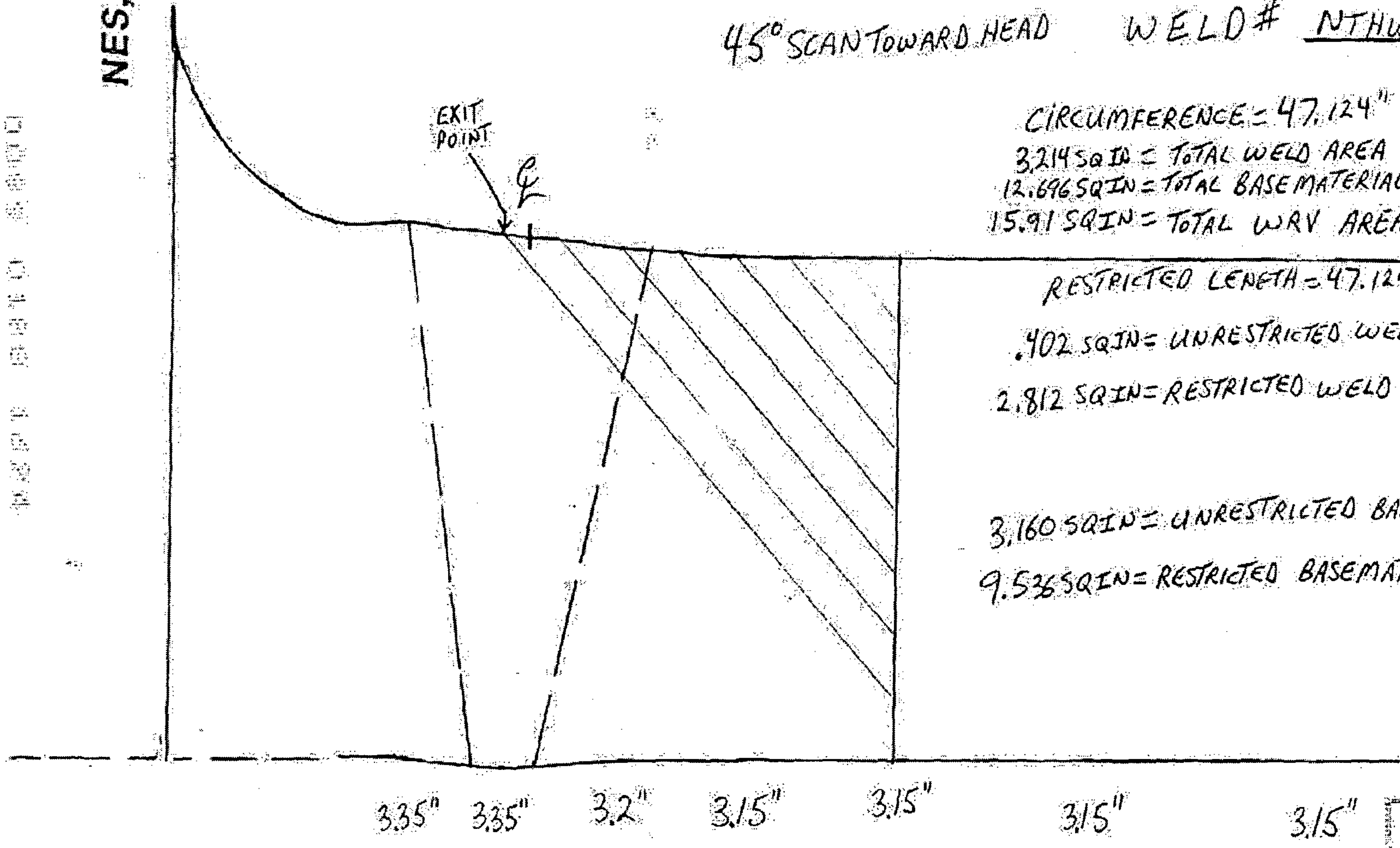
Edwin Black, CPL-III, 11-19-98

11/19/98

NES, Inc.

DATA SHEET # 200-9.05 (corrected from 200-9.15, initialed SC 11-11-98)
PAGE 6 OF 15
ISO # 1-ISI-PZR-1
WELD # NTHW-13

45° SCAN TOWARD HEAD



CIRCUMFERENCE = 47.124"
3.214 SQ IN = TOTAL WELD AREA
12.696 SQ IN = TOTAL BASE MATERIAL WRV AREA
15.91 SQ IN = TOTAL WRV AREA

RESTRICTED LENGTH = 47.124"

.402 SQ IN = UNRESTRICTED WELD AREA
2.812 SQ IN = RESTRICTED WELD AREA

3.160 SQ IN = UNRESTRICTED BASEMATERIAL WRV AREA
9.536 SQ IN = RESTRICTED BASEMATERIAL WRV AREA

ANII REVIEW
ANII EBD
DATE 11/25/98

EXAMINER [signature] LEVEL II DATE 10/30/98
EXAMINER [signature] LEVEL II DATE 10/30/98
REVIEWER [signature] LEVEL III DATE 11-2-98

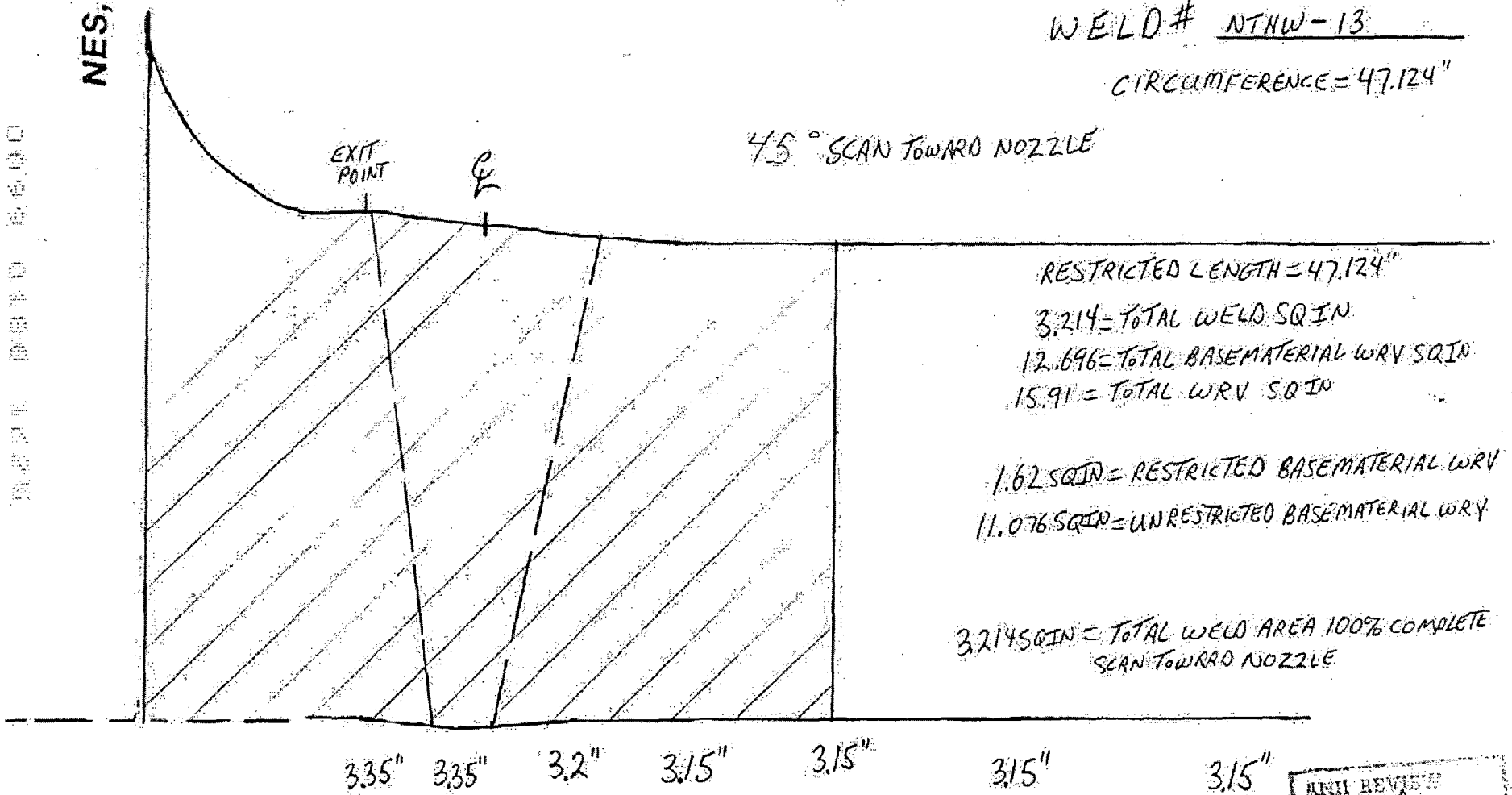
JSB
11-19-98

SC 11-11-98

DATA SHEET # 210-98 105
PAGE 7 OF 15
ISO # 1-ISI-P2R1
WELD # NTNW-13

CIRCUMFERENCE = 47.124"

NES, Inc.



RESTRICTED LENGTH = 47.124"
3.214 = TOTAL WELD SQIN
12.696 = TOTAL BASEMATERIAL WRV SQIN
15.91 = TOTAL WRV SQIN

1.62 SQIN = RESTRICTED BASEMATERIAL WRV
11.076 SQIN = UNRESTRICTED BASEMATERIAL WRV

3.214 SQIN = TOTAL WELD AREA 100% COMPLETE
SCAN TOWARD NOZZLE

ANII REVIEW
ANII
DATE 11-25-98

EXAMINER T. Hunt LEVEL II DATE 10/30/98
EXAMINER [illegible] LEVEL II DATE 10/30/98
REVIEWER [illegible] LEVEL III DATE 11-2-98

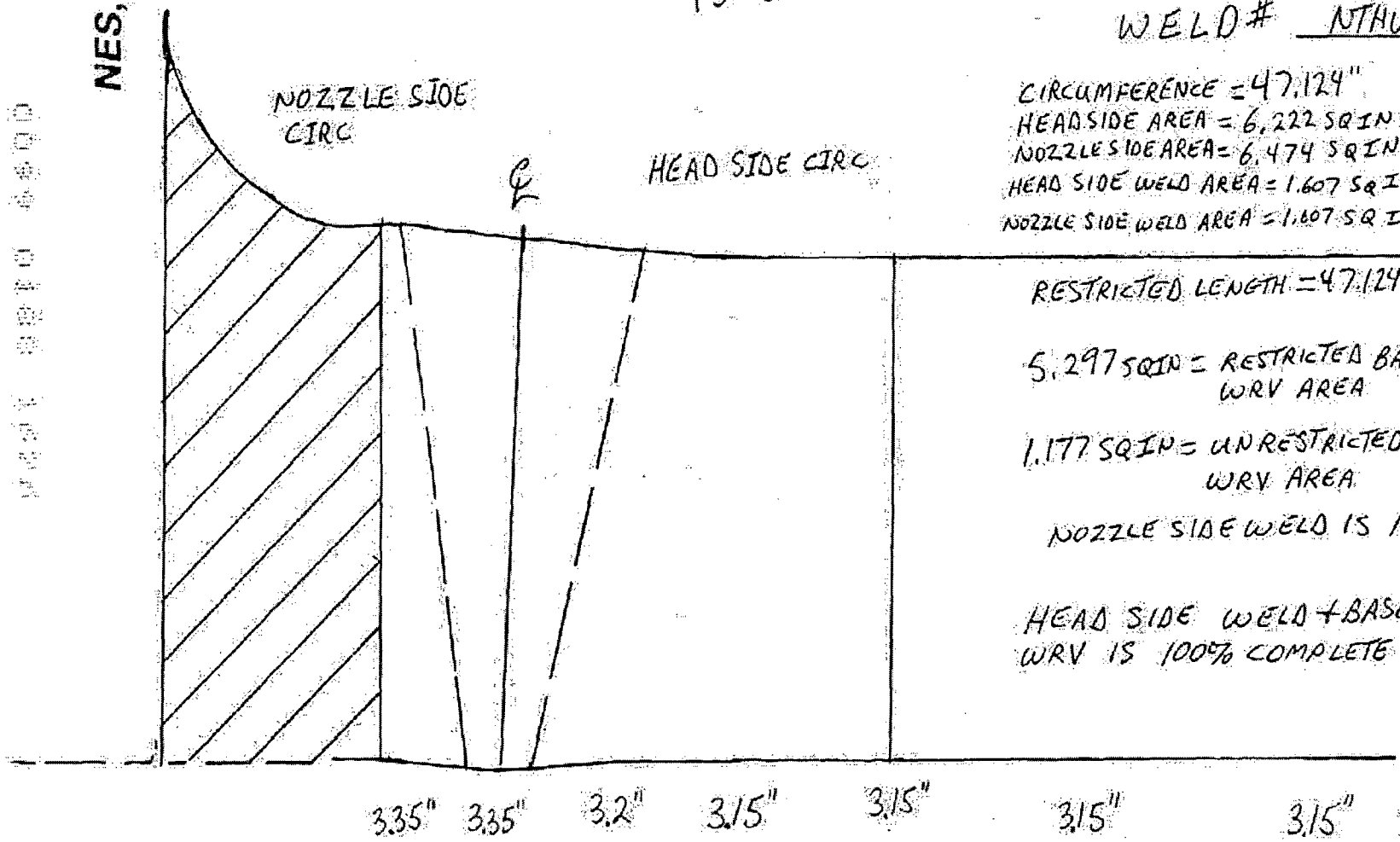
CLB
11-19-98

Sc 11-11-98

DATA SHEET # 210-98 Tas
PAGE 8 OF 15
ISO # 1-ISI-PZR-1
WELD # NTHW 13

NES, Inc.

45° CIRC SCAN



CIRCUMFERENCE = 47.124"
HEAD SIDE AREA = 6.222 SQ IN BASE MATERIAL WRV
NOZZLE SIDE AREA = 6.474 SQ IN BASE MATERIAL WRV
HEAD SIDE WELD AREA = 1.607 SQ IN
NOZZLE SIDE WELD AREA = 1.607 SQ IN

RESTRICTED LENGTH = 47.124"

5.297 SQ IN = RESTRICTED BASE MATERIAL WRV AREA

1.177 SQ IN = UNRESTRICTED BASE MATERIAL WRV AREA

NOZZLE SIDE WELD IS 100% COMPLETE

HEAD SIDE WELD + BASE MATERIAL WRV IS 100% COMPLETE

NDE REVIEW
BY: RBD
DATE: 11-25-98

JLB
11-19-98

EXAMINER T. Hale LEVEL II DATE 10/30/98
EXAMINER Todd Bay LEVEL II DATE 10/30/98
REVIEWER [signature] LEVEL III DATE 11-2-98

COVERAGE CALC. ...ION SHEET

P 9 of 15

ISO # 1-ISI-PZR-1

DATA SHT # 210-98-05

WELD NO.:NTHW-13		45 DEGREE												
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD HEAD BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	3.16	24.89%	0	0.00%	24.89%	0.00%	24.89%
TOWARD HEAD WELD AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	3.214	0.402	12.51%	0	0.00%	12.51%	0.00%	12.51%
TOWARD NOZZLE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.696	11.076	87.24%	0	0.00%	87.24%	0.00%	87.24%
TOWARD NOZZLE WELD AXIAL COVERAGE	47.12	0	0.00%	47.12	100.00%	3.214	0	0.00%	3.214	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE BASEMATERIAL	47.12	0	0.00%	47.12	100.00%	6.222	0	0.00%	6.222	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
NOZZ SIDE CIRC COVERAGE BASEMATERIAL	47.12	47.12	100.00%	0	0.00%	6.474	1.177	18.18%	0	0.00%	18.18%	0.00%	18.18%
TOTAL WELD VOLUME COVERAGE													67.85%

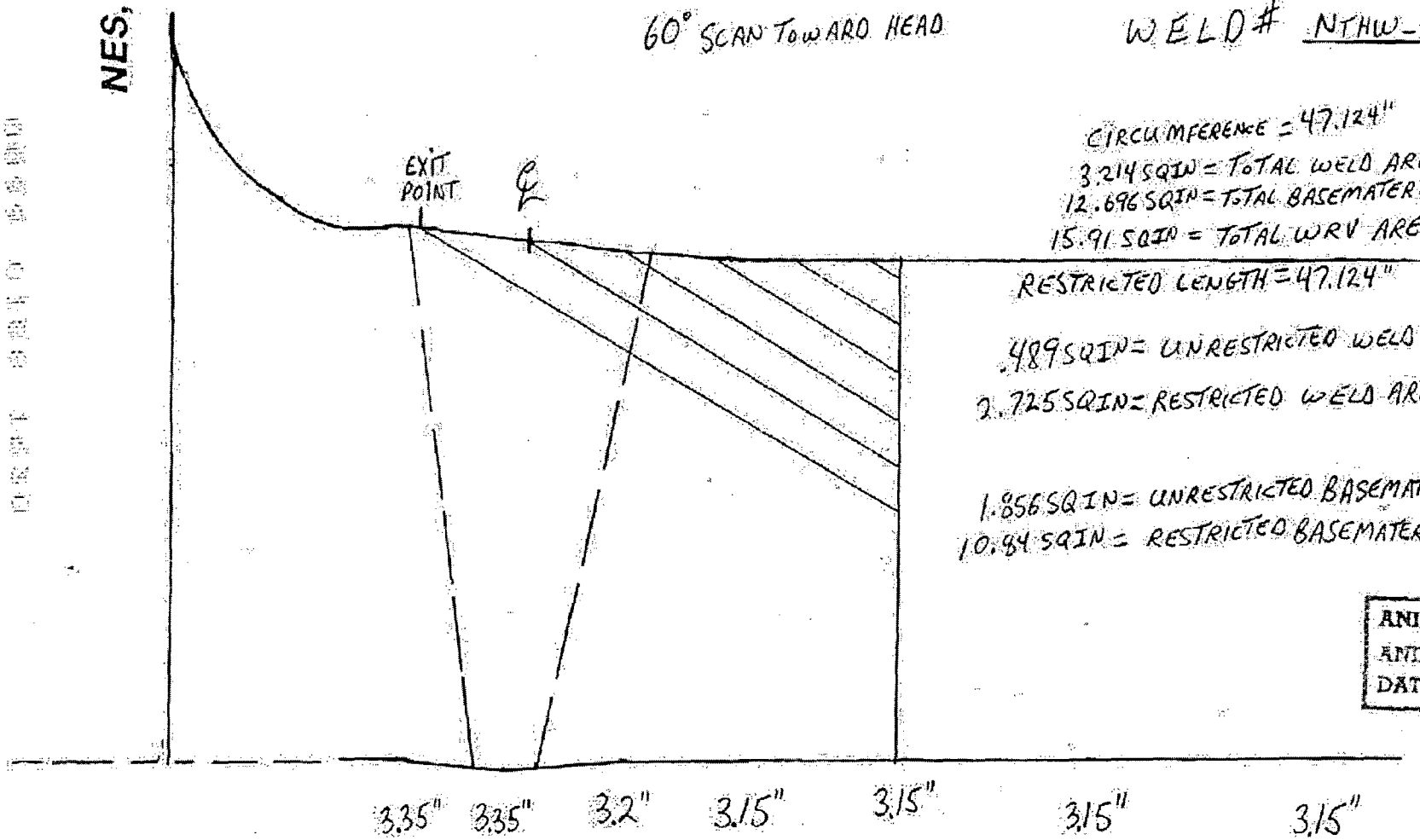
Edwin Buck, CPLIII, 11-19-98

ANII REVIEW
ANII [illegible]
DATE 11-25-98

SC 11-11-98

DATA SHEET # 210-98- 05
PAGE 12 OF 15
ISO# 1-ISI-PZR-1
WELD# NTHW-13

NES, Inc.



CIRCUMFERENCE = 47.124"
3.214 SQIN = TOTAL WELD AREA
12.696 SQIN = TOTAL BASEMATERIAL WRV AREA
15.91 SQIN = TOTAL WRV AREA

RESTRICTED LENGTH = 47.124"

.489 SQIN = UNRESTRICTED WELD AREA
2.725 SQIN = RESTRICTED WELD AREA

1.856 SQIN = UNRESTRICTED BASEMATERIAL WRV AREA
10.84 SQIN = RESTRICTED BASEMATERIAL WRV AREA

ANII REVIEW
ANII [signature]
DATE 11-25-98

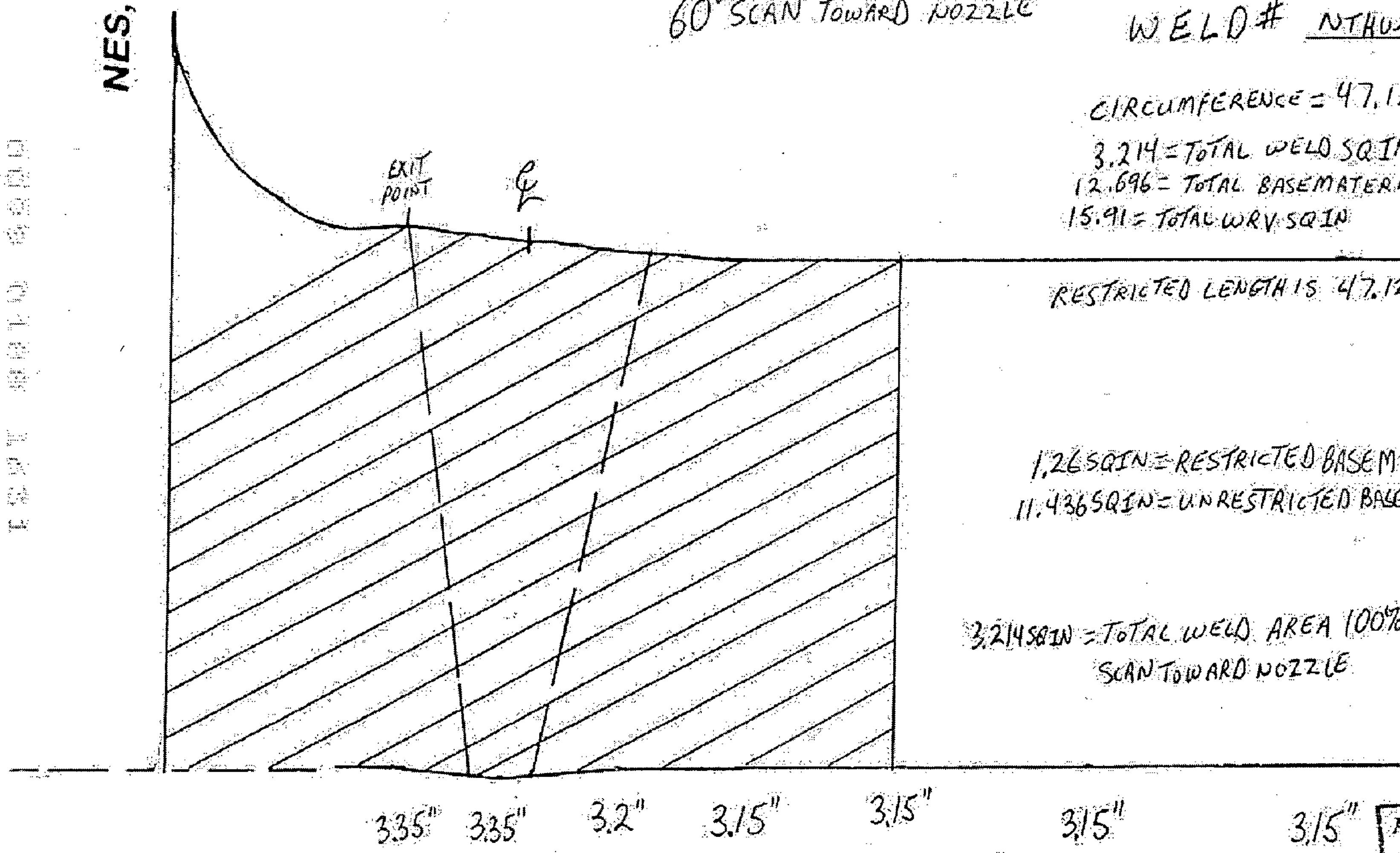
EXAMINER Paul S Bleck LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-2-98

11-19-98

NES, Inc.

DATA SHEET # 210-98-05
PAGE 13 OF 15
ISO# 1-ISI-PZP-1
WELD# NTHW-13

60° SCAN TOWARD NOZZLE



CIRCUMFERENCE = 47.124"
3.214 = TOTAL WELD SQ IN
12.696 = TOTAL BASEMATERIAL WRV SQ IN
15.91 = TOTAL WRV SQ IN

RESTRICTED LENGTH IS 47.124"

1.26 SQ IN = RESTRICTED BASEMATERIAL WRV
11.436 SQ IN = UNRESTRICTED BASEMATERIAL WRV

3.214 SQ IN = TOTAL WELD AREA 100% COMPLETE
SCAN TOWARD NOZZLE

ANII REVIEW
ANII [signature]
DATE 11-25-98

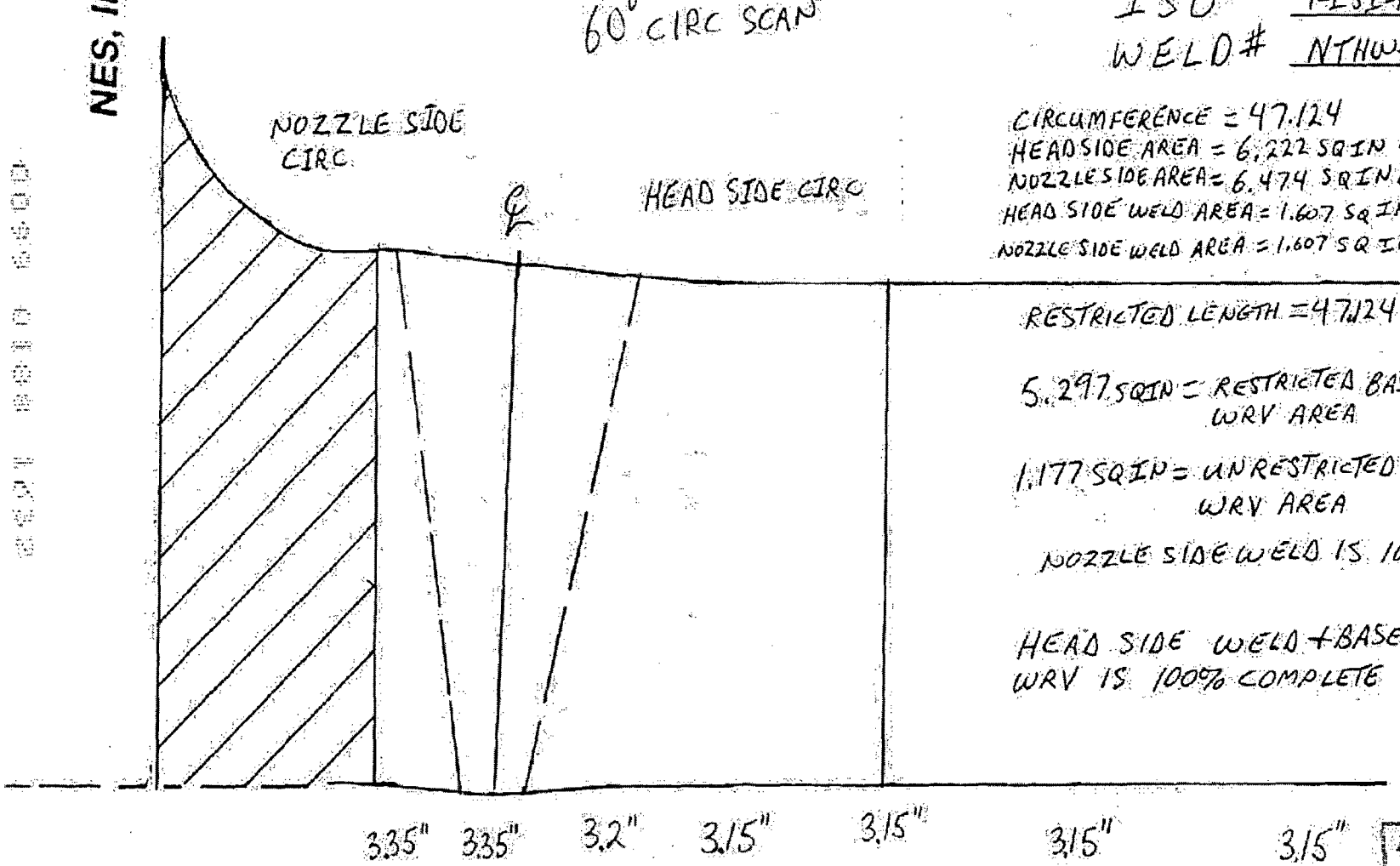
[signature]
11-19-98

EXAMINER Paul S Bleck LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-2-98

SL 11-11-98

DATA SHEET # 210-98-A 05
PAGE 14 OF 15
ISO # 1-ISI-PZR-1
WELD # NTHW-13

NES, Inc.



CIRCUMFERENCE = 47.124
HEADSIDE AREA = 6.222 SQ IN BASE MATERIAL WRV
NOZZLE SIDE AREA = 6.474 SQ IN BASE MATERIAL WRV
HEAD SIDE WELD AREA = 1.607 SQ IN
NOZZLE SIDE WELD AREA = 1.607 SQ IN

RESTRICTED LENGTH = 47.124

5.297 SQ IN = RESTRICTED BASE MATERIAL WRV AREA

1.177 SQ IN = UNRESTRICTED BASE MATERIAL WRV AREA

NOZZLE SIDE WELD IS 100% COMPLETE

HEAD SIDE WELD + BASE MATERIAL WRV IS 100% COMPLETE

ANII REVIEW
ANII SB
DATE 11-25-98

EXAMINER Paul S Bleuke LEVEL II DATE 10/30/98
EXAMINER N/A LEVEL N/A DATE N/A
REVIEWER [signature] LEVEL III DATE 11-2-98

JB
11-19-98

COVERAGE CAL... ...N SHEET

P15 of 15

ISO# 1-ISI-PZR-1

DATA SHT# 210-98-05

WELD NO.:NTHW-13		60 DEGREE											
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD HEAD BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.606	1.858	14.62%	0	0.00%	14.62%	0.00%	14.62%
TOWARD HEAD WELD AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	3.214	0.489	15.21%	0	0.00%	15.21%	0.00%	15.21%
TOWARD NOZZLE BASE MATERIAL AXIAL COVERAGE	47.12	47.12	100.00%	0	0.00%	12.606	11.438	90.08%	0	0.00%	90.08%	0.00%	90.08%
TOWARD NOZZLE WELD AXIAL COVERAGE	47.12	0	0.00%	47.12	100.00%	3.214	0	0.00%	3.214	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
HEAD SIDE CIRC COVERAGE BASEMATERIAL	47.12	0	0.00%	47.12	100.00%	6.222	0	0.00%	6.222	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE WELD	47.12	0	0.00%	47.12	100.00%	1.607	0	0.00%	1.607	100.00%	0.00%	100.00%	100.00%
NOZZLE SIDE CIRC COVERAGE BASEMATERIAL	47.12	47.12	100.00%	0	0.00%	6.474	1.177	18.18%	0	0.00%	18.18%	0.00%	18.18%
TOTAL WELD VOLUME COVERAGE													67.26%

Edwin T. Black, QA LIII, 11-19-98

ANII REVIEW
ANII [illegible]
DATE 12-23-98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-022
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Examination Category B-B, Item B2.40, Tubesheet-to-Head Weld

RAI	REQUEST	RESPONSE
1a	Description	(Reference Relief Request submittal HNP-08-045 Section 1.0). Welds is Tubesheet-to-Head Weld.
1a	Sketch	Information follows in Enclosure.
1a	Interference/Obstruction	Information follows in Enclosure.
1b	NDE Equipment	Information follows in Enclosure.
1b	Alternative Methods	(Reference Relief Request submittal HNP-08-045 Section 6.0). HNP is proposing to volumetrically UT examine the steam generator Tubesheet-to-head weld, II-SG-001SGA-TSTHW-06-1, to the maximum extent possible in accordance with the Inservice Inspection Program schedule. In addition, the subject weld will be subject to system pressure tests during each refueling outage.
1c	Wave Modality/ Insonification Angles	Information follows in Enclosure (0° Longitudinal, 45° Shear, 60° Shear).
1e	Results of the Examination Indications / No Indications	No indications detected.
4a	Please clarify whether all three steam generator tubesheet-to-head welds were examined. Because the licensee was unable to meet the ASME Code-required inspection volume on tubesheet-to-head weld II-SG-001SGA-TSTHW-06-1, if the other tubesheet-to-head welds were examined, please describe whether the same coverage area limitations apply to these similar welds on the remaining two steam generators.	All three of the steam generators have the same configuration / limitation. Since B-B, B2.40 Note 1 only requires one per similar vessel, the examination was performed on one of the three steam generators. (Note: These steam generators were new in 2001).

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-022
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**II-SG-001SGA-TSTHW-06-1**	ASME CATEGORY:	B-B
ASME CODE FIGURE:	IWB-2500-6	ASME ITEM NUMBER:	B2.40
CONFIGURATION:	TUBESHEET TO HEAD WELD	% CRV ACHIEVED: WELD BASE METAL	70.106% 74.20%
PROCEDURES:	NDEP-0450	MATERIAL	CS/CS
PDI TECHNIQUE USED:	NO		

BASE METAL AND WELD METAL VOLUME COVERAGE

SCAN	% VOLUME ACHIEVED	% WELD VOLUME ACHIEVED	LIMITATION
0°	72.74%	76.6%	Lower lateral support pads
45°	73.38%	68.852%	Lower lateral support pads
60°	76.48%	64.867%	Lower lateral support pads
TOTAL	74.2%	70.106%	Lower lateral support pads

The coverage achieved was the maximum extent practical with the four lower lateral support pad obstructions in place and the results are representative of the entire weld.

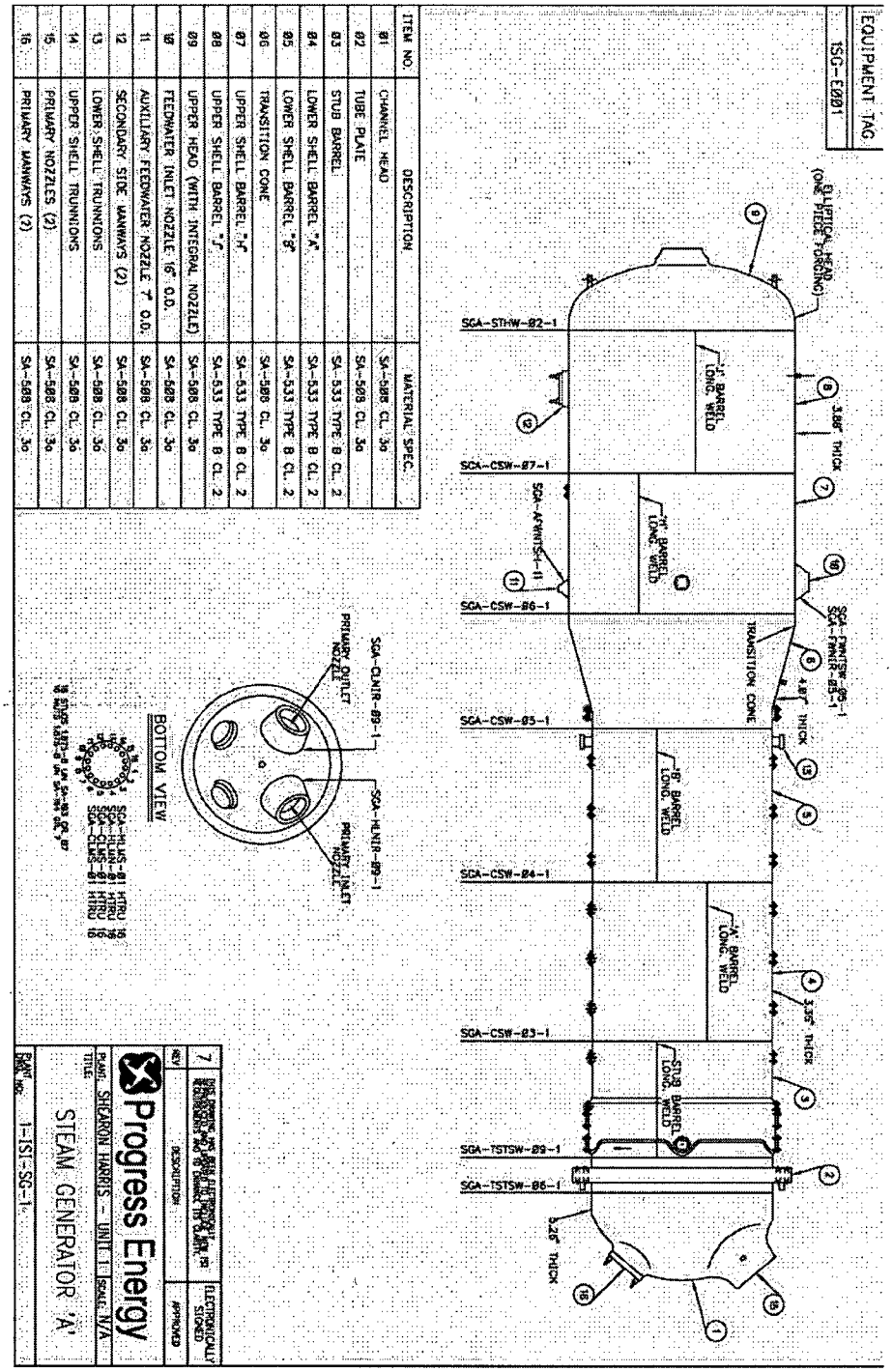
UT COMBINED COVERAGE:
Total base metal volume coverage 74.20 %
Total weld volume coverage 70.11 %

EXAMINATION RESULTS: NO RECORDABLE INDICATIONS

NDE EQUIPMENT: STAVELEY, SONIC-136, WITH KBA 1.0", 2.25MHZ, LONGITUDINAL 0°, KBA 0.5" x 1.0", 2.25MHZ, SHEAR 45° AND KBA 0.5" x 1.0", 2.25MHZ, SHEAR 60°

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-022
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

STEAM GENERATOR "A"



ITEM NO.	DESCRIPTION	MATERIAL SPEC.
01	CHANNEL HEAD	SA-508 CL. 3a
02	TUBE PLATE	SA-508 CL. 3a
03	STUB BARREL	SA-533 TYPE B CL. 2
04	LOWER SHELL BARREL "A"	SA-533 TYPE B CL. 2
05	LOWER SHELL BARREL "B"	SA-533 TYPE B CL. 2
06	TRANSITION CONE	SA-508 CL. 3a
07	UPPER SHELL BARREL "A"	SA-533 TYPE B CL. 2
08	UPPER SHELL BARREL "B"	SA-533 TYPE B CL. 2
09	UPPER HEAD (WITH INTEGRAL NOZZLE)	SA-508 CL. 3a
10	FEEDWATER INLET NOZZLE 16" O.D.	SA-508 CL. 3a
11	AUXILIARY FEEDWATER NOZZLE 4" O.D.	SA-508 CL. 3a
12	SECONDARY SIDE MANWAYS (2)	SA-508 CL. 3a
13	LOWER SHELL TRUNNIONS	SA-508 CL. 3a
14	UPPER SHELL TRUNNIONS	SA-508 CL. 3a
15	PRIMARY NOZZLES (2)	SA-508 CL. 3a
16	PRIMARY MANWAYS (2)	SA-508 CL. 3a

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-022
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-SG-001SGA-TSTHW-06-1
COVERAGE SUMMARY
WELD MATERIAL

NGG Nuclear Generation Group

Determination of Percent Coverage for UT Examinations - Vessels

Site/Unit: HNP / 1 Procedure: NDEP-0450 Outage No.: IRFO-12
Summary No.: H-03849 Procedure Rev.: 0 Report No.: UT-04-023
Workscope: ISI Work Order No.: Page: 4 of 6

WELD MATERIAL

0 deg Planar

Scan 76.600 % Length X 100.000 % volume of length / 100 = 76.600 % total for 0 deg

45 deg

Scan 1 76.600 % Length X 100.000 % volume of length / 100 = 76.600 % total for Scan 1
Scan 2 76.600 % Length X 59.540 % volume of length / 100 = 45.608 % total for Scan 2
Scan 3 76.600 % Length X 100.000 % volume of length / 100 = 76.600 % total for Scan 3
Scan 4 76.600 % Length X 100.000 % volume of length / 100 = 76.600 % total for Scan 4

Add totals and divide by # scans = 68.852 % total for 45 deg

Other deg 60°

Scan 1 76.600 % Length X 100.000 % volume of length / 100 = 76.600 % total for Scan 1
Scan 2 76.600 % Length X 38.730 % volume of length / 100 = 29.667 % total for Scan 2
Scan 3 76.600 % Length X 100.000 % volume of length / 100 = 76.600 % total for Scan 3
Scan 4 76.600 % Length X 100.000 % volume of length / 100 = 76.600 % total for Scan 4

Add totals and divide by # scans = 64.867 % total for 60° deg

Percent complete coverage

Add totals for each angle and scan required and divide by # of angles to determine:

70.106 % Total for complete exam

Note:

Supplemental coverage may be achieved by use of other angles / methods. When used, the coverage for volume not obtained with angles as noted above shall be calculated and added to the total to provide the percent total for the complete examination.

Site Field Supervisor: [signature] Date: 11/1/04

This Document is a QA Record

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-022
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-SG-001SGA-TSTHW-06-1
COVERAGE SUMMARY
BASE MATERIAL

NGG Nuclear Generation Group

Supplemental Report

Report No.: UT-04-023
Page: 5 of 6

Summary No.: H-03849

Sketch or Photo: Y:\Shared\ddees\HNP_Data\DataSheet_Info\UT-04-023-3.tif

BASE MATERIAL

0 deg Plane:
Scan 76.6 % Length X 94.96 % volume of length / 100 = 72.74 % total for 0 deg

45 deg
Scan 1 76.6 % Length X 99.13 % volume of length / 100 = 75.93 % total for Scan 1
Scan 2 N/A % Length X N/A % volume of length / 100 = N/A % total for Scan 2
Scan 3 76.6 % Length X 100 % volume of length / 100 = 76.6 % total for Scan 3
Scan 4 76.6 % Length X 100 % volume of length / 100 = 76.6 % total for Scan 4
Add totals and divide by # scans = 73.30 % total for 45 deg

Other deg 60
Scan 1 76.6 % Length X 99.54 % volume of length / 100 = 76.24 % total for Scan 1
Scan 2 N/A % Length X N/A % volume of length / 100 = N/A % total for Scan 2
Scan 3 76.6 % Length X 100 % volume of length / 100 = 76.6 % total for Scan 3
Scan 4 76.6 % Length X 100 % volume of length / 100 = 76.6 % total for Scan 4
Add totals and divide by # scans = 76.48 % total for 60 deg

Percent complete coverage
Add totals for each angle and scan required and divide by # of angles to determine:
74.2 % Total for complete exam

Note:
Supplemental coverage may be achieved by use of other angles / methods. When used, the coverage for volume not obtained with angles as noted above shall be calculated and added to the total to provide the percent total for the complete examination.

Site Field Supervisor: [signature] Date: 11/1/04

This Document is a QA Record

This Document is a QA Record

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R1-022
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-SG-001SGA-TSTHW-06-1
LIMITATION SKETCH

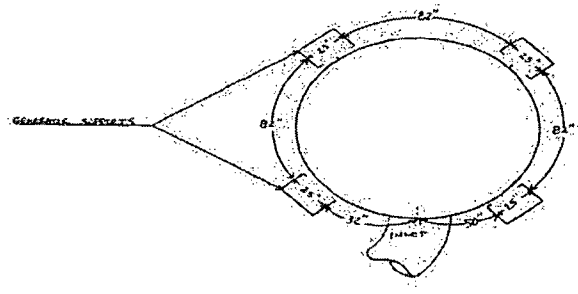
NGG Nuclear Generation Group

Limitation Record

Site/Unit:	HNP / 1	Procedure:	NDEP-0450	Outage No.:	IRFO-12
Summary No.:	H-03849	Procedure Rev.:	0	Report No.:	UT-04-023
Workscope:	ISI	Work Order No.:		Page:	6 of 6

Description of Limitation:

Sketch of Limitation: Y:\Shared\Idea\HNP_Data\DataSheet_Info\UT-04-023-4.tif



TOTAL CIRCUMFERENCE - 428" - 100%
TOTAL OBSTRUCTION (1)x2" - 100" - 23.4%
TOTAL SCANNABLE CIRC 328" - 76.6%

Limitations removal requirements:

Radiation field:

Examiner Lester, Robert	Level II-PDI	Signature	Date 10/25/2004	Reviewer Michael P. Dugan ITI UT Level III	Signature	Date 10/26/2004
Examiner N/A	Level N/A	Signature	Date	Site Review Edwin M. Black	Signature	Date 10/27/2004
Other N/A	Level N/A	Signature	Date	ANII Review Larry Jones ANII	Signature	Date 10/27/2004

This Document is a QA Record

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Examination Category C-A, Item C1.10, Shell Circumferential Welds

RAI	REQUEST	RESPONSE
1a	Description	(Reference Relief Request submittal HNP-08-045 Section 1.0). Weld is Pressure Retaining Welds in Pressure Vessels.
1a	Sketch	Information follows in Enclosure.
1a	Interference/Obstruction	(Reference Relief Request submittal HNP-08-045 Section 5.0). Weld configuration (flange to shell) and obstructions (flange bolting) prevent 100 percent volumetric examination to be performed during inservice inspection activities.
1b	NDE Equipment	Information follows in Enclosure.
1b	Alternative Methods	(Reference Relief Request submittal HNP-08-045 Section 6.0). HNP is proposing to volumetrically UT examine the restricted areas of Weld RHRACSW-02 to the maximum extent possible in accordance with the Inservice Inspection Program schedule. In addition, this weld is subject to visual (VT-2) system leakage testing during each refueling period. To supplement the volumetric examination, a 70 degree ½ vee shear wave UT examination was performed. A code compliant surface examination (PT) was also performed, although not required by code.
1c	Wave Modality/ Insonification Angles	Information follows in Enclosure ("45° Shear Wave ¾ Vee Scan").
1d	Cross Sectional Coverage Plots to describe the ASME Code coverage	Information follows in Enclosure.
1e	Results of the Examination Indications / No Indications	Information follows in Enclosure.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**II-RHR-01RHRA-CSW-02**	ASME CATEGORY:	C-A
ASME CODE FIGURE:	IWC-2500-1	ASME ITEM NUMBER:	C1.10
CONFIGURATION:	SHELL CIRCUMFERENTIAL WELDS	% CRV ACHIEVED:	66.50
PROCEDURES:	ISI-211T	MATERIAL	SS/SS
PDI TECHNIQUE USED:	NO		

45° SHEAR WAVE ¾ VEE SCAN

SCAN	% WELD REQUIRED VOLUME ACHIEVED	LIMITATION
AXIAL TOWARD FLANGE	96.01%	FLANGE TO SHELL WELD CONFIGURATION AND INTERFERENCE FROM THE CLOSE PROXIMITY OF THE FLANGE CONNECTION BOLTING
AXIAL TOWARD SHELL	38.63%	FLANGE TO SHELL WELD CONFIGURATION AND INTERFERENCE FROM THE CLOSE PROXIMITY OF THE FLANGE CONNECTION BOLTING
CIRC FLANGE SIDE	31.37%	FLANGE TO SHELL WELD CONFIGURATION AND INTERFERENCE FROM THE CLOSE PROXIMITY OF THE FLANGE CONNECTION BOLTING
CIRC SHELL SIDE	100%	FLANGE TO SHELL WELD CONFIGURATION AND INTERFERENCE FROM THE CLOSE PROXIMITY OF THE FLANGE CONNECTION BOLTING

The coverage achieved was the maximum extent practical with the four core support lug obstructions in place and the results are representative of the entire weld.

A 70° shear wave, ½ vee examination was performed from both sides of the weld for additional coverage but was not listed on the coverage calc.

UT COMBINED COVERAGE = 66.50 %

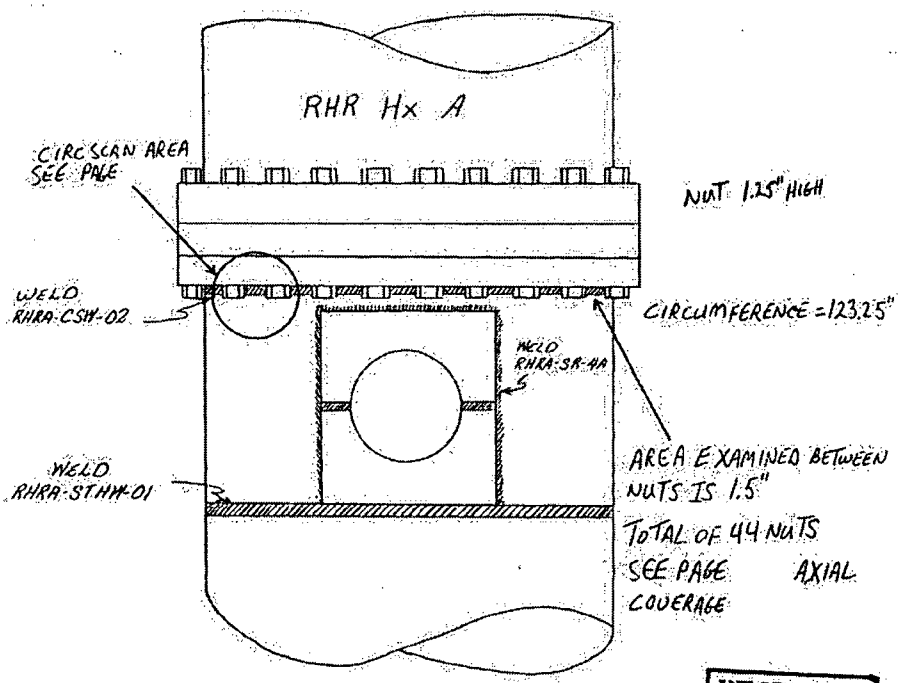
EXAMINATION RESULTS: GEOMETRIC INDICATION NOTED (ROOT GEOMETRY), NO RECORDABLE INDICATION

NDE EQUIPMENT: STAVELEY, SONIC-136, WITH KBA 0.375", 2.25MHZ, SHEAR 45° AND KBA 0.375", 2.25MHZ, SHEAR 70°

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

DATA SHEET 211-98-001
PAGE 11 OF 12
COMPONENT DRAWING

DATASHEET # 211-98-001
ISO # 1-ISI-RHR-1
PAGE 11 OF 12
WELD # RHRA-CSW-02

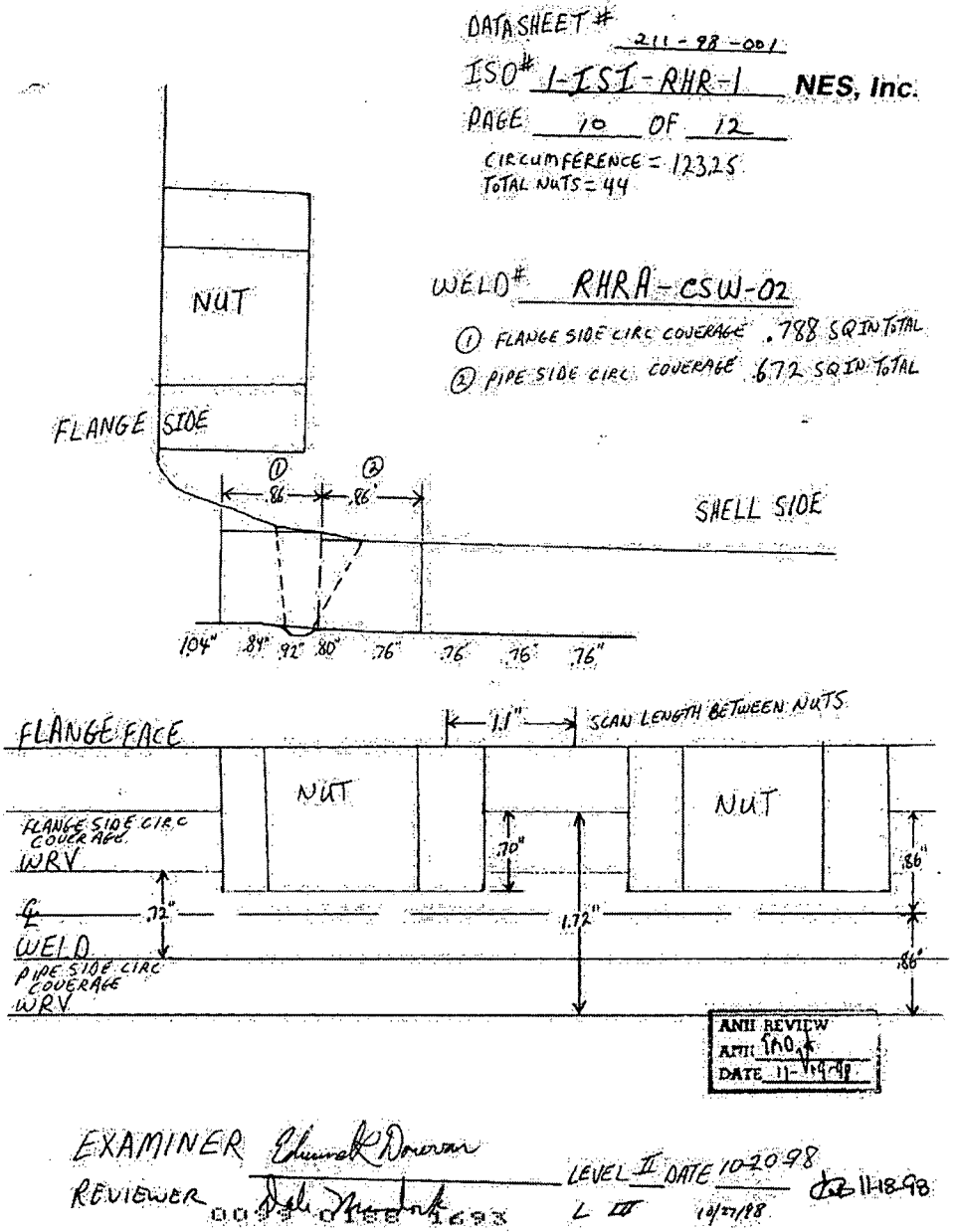


ANII REVIEW
ANII
DATE 11-19-98

dlb 11-18-98 EXAMINER Edward R Donovan LEVEL II DATE 10-20-98
REVIEWER L III 10/27/98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

DATA SHEET 211-98-001
PAGE 10 OF 12
INTERFERENCE MEASUREMENT DRAWING

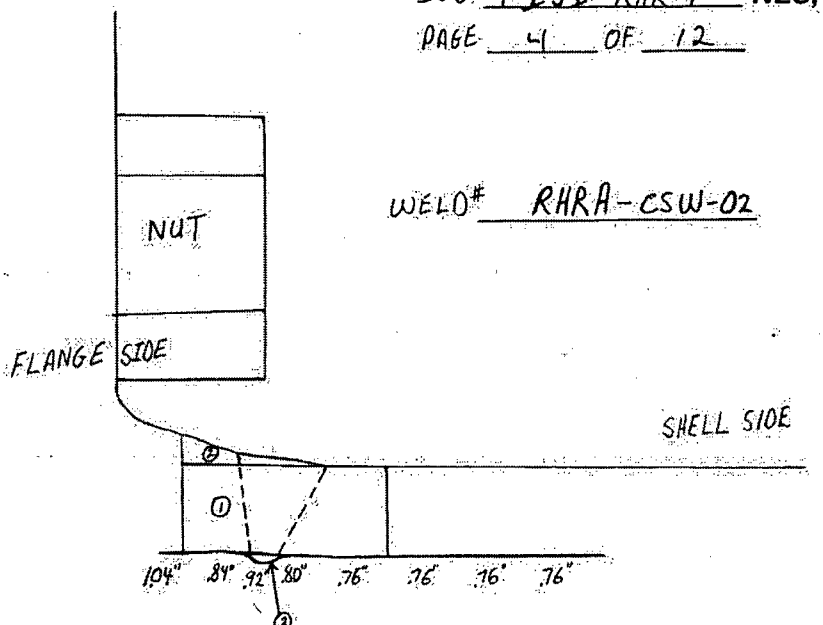


SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

DATA SHEET 211-98-001
PAGE 4 OF 12
PROFILE SCAN

DATA SHEET # 211-98-001
ISO # 1-ISI-RHR-1 NES, Inc.
PAGE 4 OF 12

WELD # RHRA-CSW-02



① .76 X 1.72 = 1.307 SQIN
② 1.2 X .25 = .3 ÷ 2 = 0.15 SQIN
③ .3 X .1 = 0.03 ÷ 2 = 0.015 SQIN
1.307 + 0.15 + 0015 = 1.472 SQIN THRU WALL

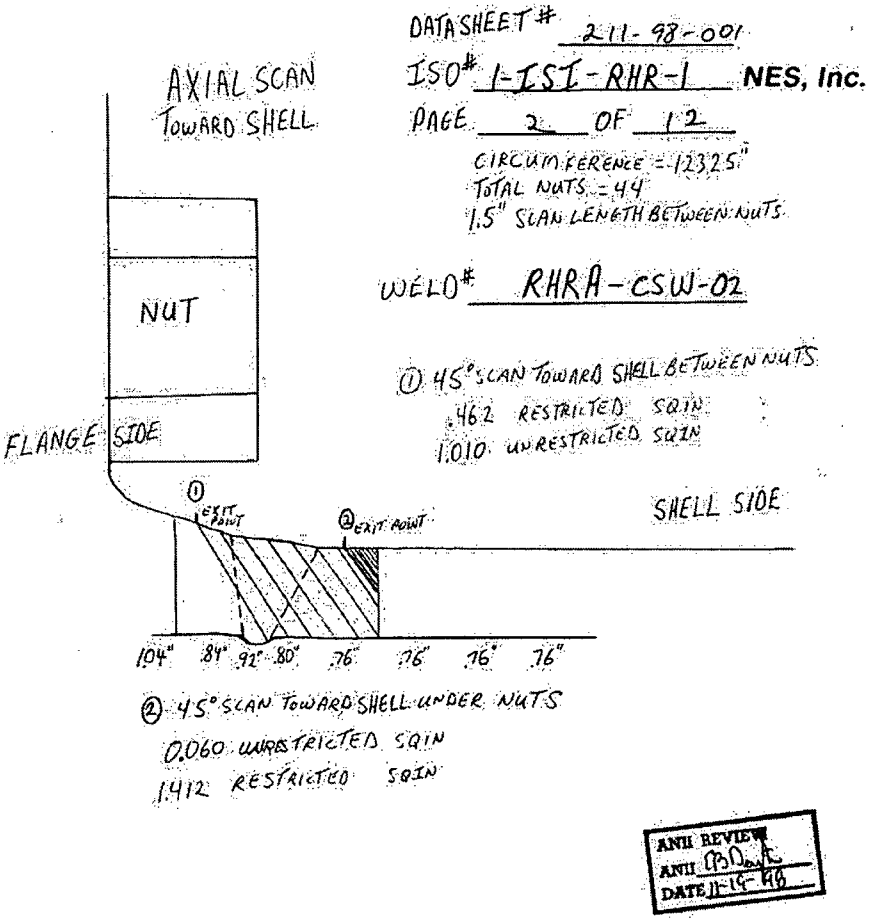
1.472 TOTAL THRU WALL SQIN

ANII REVIEW
ANII [illegible]
DATE 11-17-98

EXAMINER Edward R Dawson LEVEL II DATE 10-20-98
REVIEWER [illegible] LEVEL III 10/27/98
11-18-98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

DATA SHEET 211-98-001
PAGE 2 OF 12
45° SCAN TOWARD SHELL



ANII REVIEW
ANII
DATE 11-19-98

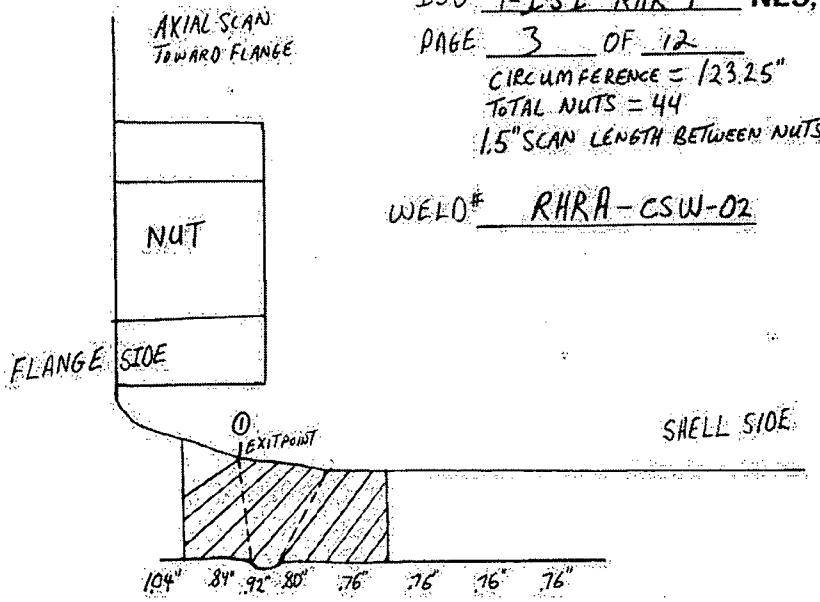
EXAMINER [signature] LEVEL II DATE 10-20-98
REVIEWER [signature] LEVEL III 10/21/98 11-18-98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

DATA SHEET 211-98-001
PAGE 3 OF 12
45° SCAN TOWARD FLANGE

DATA SHEET # 211-98-001
ISO # 1-IST-RHR-1 NES, Inc.
PAGE 3 OF 12
CIRCUMFERENCE = 123.25"
TOTAL NUTS = 44
1.5" SCAN LENGTH BETWEEN NUTS

WELD # RHRA-CSW-02



① 45° SCAN TOWARD FLANGE UNDER NUTS
.126 SQ IN RESTRICTED
1.346 SQ IN UNRESTRICTED

② 45° SCAN TOWARD FLANGE BETWEEN NUTS
IS UNRESTRICTED 100%

ANII REVIEW
ANII
DATE 11-19-98

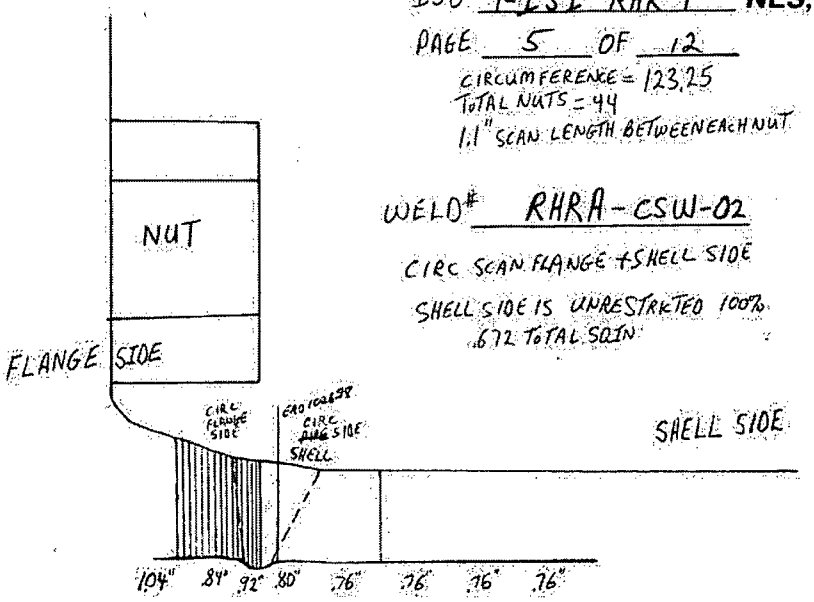
EXAMINER Edward R Donovan LEVEL II DATE 10-20-98
REVIEWER [signature] L III 10/21/98 11-18-98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

DATA SHEET 211-98-001
PAGE 5 OF 12
CIRCUMFERENTIAL SCAN

DATA SHEET # 211-98-001
ISO # 1-ISI-RHR-1 NES, Inc.
PAGE 5 OF 12
CIRCUMFERENCE = 123.25
TOTAL NUTS = 44
1.1" SCAN LENGTH BETWEEN EACH NUT

WELD # RHRA-CSW-02
CIRC SCAN FLANGE + SHELL SIDE
SHELL SIDE IS UNRESTRICTED 100%
.672 TOTAL SQIN



RESTRICTED AREA CIRC SCAN
.7" OBSTRUCTED BY NUT ON CIRC SCAN

.659 SQ IN RESTRICTED BY NUTS ON FLANGE SIDE

.788 TOTAL SQIN
− .659 SQIN
.129 SQIN UNRESTRICTED BY NUTS ON FLANGE SIDE

ANII REVIEW
ANII [illegible]
DATE 11-19-98

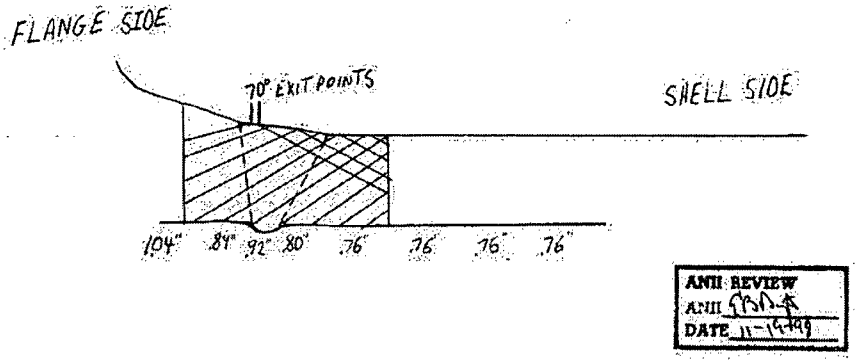
EXAMINER Edward Dawson LEVEL II DATE 10-20-98
REVIEWER [illegible] LEVEL III 10/22/98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

DATA SHEET 211-98-001
PAGE 9 OF 12
70° SUPPLEMENTAL SCAN

DATA SHEET # 211-98-001
ISO # 1-ISI-RHR-1 NES, Inc.
PAGE 9 OF 12

WELD # RHRA-CSW-02



ANII REVIEW
ANII
DATE 11-19-98

EXAMINER [signature] LEVEL II DATE 10-20-98 11-18-98
REVIEWER [signature] L III 10/27/98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

DATA SHEET 211-98-001
PAGE 12 OF 12
COVERAGE SUMMARY

ISO # 1-ISI-RHA-1 ~~-ISI RHR 1st 11-18-98~~ WELD # RHRA-CSW-02 3c 11-18-98 DATA SHEET # 211-98-001 1st 11-18-98
COVERAGE CALCULATION SHEET PAGE 12 OF 12

WELD NO :	RHRA-CSW-02														
	TOTAL WELD LENGTH (INCHES)	WELD LENGTH EXAMINED RESTRICTED (INCHES)	LENGTH EXAMINED RESTRICTED %	WELD LENGTH EXAMINED UNRESTRICTED (INCHES)	WELD LENGTH EXAMINED UNRESTRICTED %	CROSS SECTION THICKNESS (INCHES)	CROSS SECTION LENGTH (INCHES)	CROSS SECTION AREA (SQ. INCHES)	RESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION RESTRICTED COVERAGE %	UNRESTRICTED CROSS SECTION AREA EXAMINED (SQ. INCHES)	TOTAL CROSS SECTION UNRESTRICTED COVERAGE %	TOTAL RESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL UNRESTRICTED COVERAGE (LENGTH X CROSS SECTION) %	TOTAL COVERAGE (RESTRICTED + UNRESTRICTED) %
TOWARD FLANGE AXIAL COVERAGE	123.25	57.25	46.48%	66	53.55%	0.856	1.72	1.47232	1.346	91.43%	1.47232	100.00%	42.47%	53.55%	96.01%
TOWARD SHELL AXIAL COVERAGE	123.25	57.25	46.48%	66	53.55%	0.856	1.72	1.47232	0.06	4.08%	1.01	68.60%	1.89%	36.73%	38.63%
FLANGE SIDE CIRC COVERAGE	123.25	74.25	60.73%	48.4	39.27%	0.918	0.86	0.78972	0.33	41.67%	0.119	15.11%	25.44%	5.93%	31.37%
SHELL SIDE CIRC COVERAGE	123.25	0	0.00%	123.25	100.00%	0.781	0.86	0.67166	0	0.00%	0.67166	100.00%	0.00%	100.00%	100.00%
TOTAL WELD VOLUME COVERAGE															98.50%

ANII REVIEW
ANII SAO A
DATE 11-16-98

11-18-98

EXAMINER Edward R Donovan LEVEL II DATE 10/26/98
REVIEWER 10/26/98 Dale Murdock III 10/27/98

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-009
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

DATA SHEET 211-98-001
PAGE 1 OF 1
NDE REPORT SUMMARY

CAROLINA POWER & LIGHT COMPANY NDE REPORT/SUMMARY		Report No. _____ Page 1 Of 1
Plant/Unit HNP	Component(s) or Item(s) Examined II-RHR-01RHRA-CSW-02	
Procedure(s) ISI-211T		
Per the ISI Program Plan, Interval 2, Period 1, Outage 1 (RFO-8), ultrasonic examinations (UT) were performed on the subject weld. These examinations meet the requirements of ASME Section XI, 1989 Ed. and are acceptable to the evaluation criteria of IWA-3000. This weld only requires a UT examination. A code compliant PT was also performed. No indications were detected. The UT exams were performed using procedure, techniques and personnel that meet the requirements of Appendix III of ASME, Section XI. A 45°, shear wave, ¾ vee exam was performed from both sides. For additional coverage, a 70° ½ vee, shear wave was used to scan on both sides of the welds. Examination is incomplete. Scanning was limited due to the flange to shell weld configuration and interference from the close proximity of the flange connection bolting. Total volume of weld and base material coverage was calculated to be 66.5%. Coverage plots and calculations are attached.		
Reported By Scott Larson	Level III	Date 10-29-98
Reviewed By [signature]	Title CPL LIII	Date 11-18-98

CPL NDE 30, Rev. 0, 03/94

0099 0188 1683

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-010
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Examination Category C-B, Item C2.21, Nozzle-to-Shell Weld

RAI	REQUEST	RESPONSE
1a	Description	(Reference Relief Request submittal HNP-08-045 Section 1.0). Weld BIT-01NTHW-03 is the Outlet Nozzle to Head Weld located on the top of the Boron Injection Tank and Weld BIT-01NTHW-04 is the Inlet Nozzle to Head Weld located on the bottom of the Boron Injection Tank.
1a	Sketch	Information follows in Enclosure.
1a	Interference/Obstruction	(Reference Relief Request submittal HNP-08-045 Section 5.0). Nozzle to vessel welds are not conducive to two-sided volumetric examinations due to nozzle configurations.
1b	NDE Equipment	Information follows in Enclosure.
1b	Alternative Methods	(Reference Relief Request submittal HNP-08-045 Section 6.0). HNP is proposing to volumetrically examine the pressure retaining nozzle to vessel welds BIT-01NTHW-03 and BIT-01NTHW-04 to the maximum extent possible in accordance with the Inservice Inspection Program schedule using Ultrasonic (UT) Examination. A significant portion of the subject welds have been examined, obtaining greater than 75 percent coverage for each nozzle to shell weld. In addition, the welds are subject to visual (VT-2) tests during each refueling outage.
1c	Wave Modality/ Insonification Angles	Information follows in Enclosure ("0° Longitudinal Wave Scan", 45° Shear Wave ½ Vee Scan", 60° Shear Wave ½ Vee Scan").
1d	Cross Sectional Coverage Plots to describe the ASME Code coverage	Information follows in Enclosure.
1e	Results of the Examination Indications / No Indications	No indications detected.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-010
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

2a	Please state whether the inspection techniques used to examine these welds included refracted longitudinal waves.	All angle beam exams used shear waves, only the 0 degree exam used longitudinal waves. 45 degree shear – ½ V 60 degree shear - ½ V 0 degree longitudinal
2b	Please state the material used (austenitic or ferritic steel) and the wall thickness for each of these components.	Material used is alloy steel – ASTM A 204 Standard Specification for Pressure Vessel Plates, Alloy Steel, Molybdenum (Austenitic); 1.732" Thickness

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-010
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**II-BIT-01NTHW-03** **II-BIT-01NTHW-04**	ASME CATEGORY:	C-B
ASME CODE FIGURE:	IWC-2500-4	ASME ITEM NUMBER:	C2.21
CONFIGURATION:	PRESSURE RETAINING NOZZLE WELDS IN VESSELS	% CRV ACHIEVED: 0 DEGREES 45 DEGREES 60 DEGREES	77.14% 100% 58 % 73.43%
PROCEDURES:	NDEP-0448	MATERIAL	SS/SS
PDI TECHNIQUE USED:	NO		

0° LONGITUDINAL WAVE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
	100%	

45° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
CIRCUMFERENTIAL SCAN HEADSIDE	100%	
CIRCUMFERENTIAL SCAN NOZZLE SIDE	100%	
AXIAL SCAN TOWARD HEAD	0%	NOZZLE TO SHELL CONFIGURATION
AXIAL SCAN TOWARD NOZZLE	32%	NOZZLE TO SHELL CONFIGURATION

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
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INSERVICE INSPECTION RELIEF REQUEST 2R2-010
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

60° SHEAR WAVE ½ VEE SCAN

SCAN	% VOLUME ACHIEVED	LIMITATION
CIRCUMFERENTIAL SCAN HEADSIDE	100%	
CIRCUMFERENTIAL SCAN NOZZLE SIDE	100%	
AXIAL SCAN TOWARD HEAD	0%	NOZZLE TO SHELL CONFIGURATION
AXIAL SCAN TOWARD NOZZLE	93.7%	NOZZLE TO SHELL CONFIGURATION

The coverage achieved was the maximum extent practical with the nozzle to shell configuration and the results are representative of the entire weld.

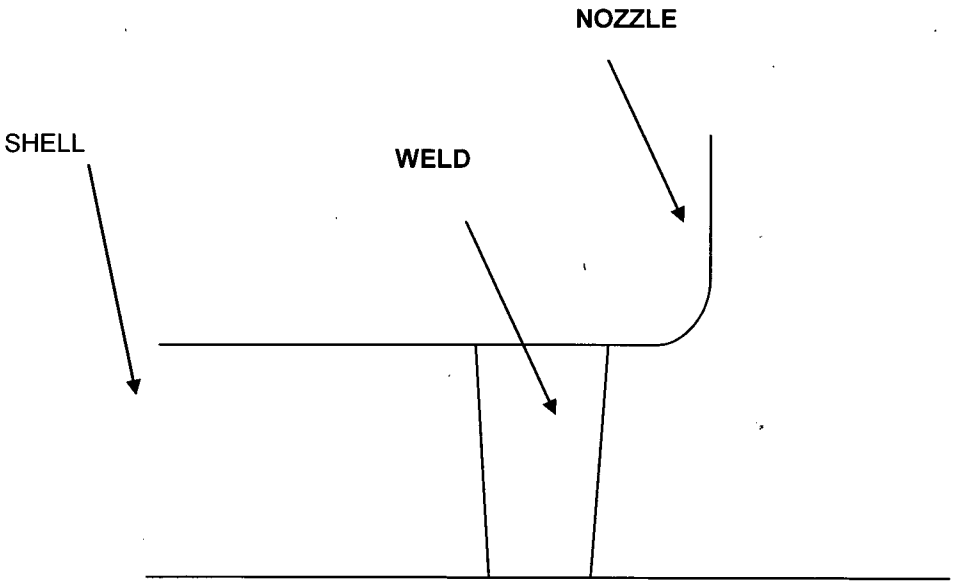
UT COMBINED COVERAGE = 77.14 %

EXAMINATION RESULTS: NO INDICATIONS

NDE EQUIPMENT: STAVELEY, SONIC-136, WITH KBA 0.75", 2.25MHZ, LONGITUDINAL 0°, KBA 0.5" DIA., 2.25MHZ, SHEAR 45° AND KBA 0.5" DIA., 2.25MHZ, SHEAR 60°

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-010
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

BORON INJECTION TANK NOZZLE TO HEAD WELD CONFIGURATION IDENTIFICATION SHEET TYPICAL FOR BOTH THE INLET NOZZLE AND THE OUTLET NOZZLE



SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-010
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-BIT-01NTHW-03
COVERAGE SUMMARY

NGG Nuclear Generation Group

Determination of Percent Coverage for UT Examinations - Vessels

Site/Unit:	HNP / 1	Procedure:	NDEP-0448	Outage No.:	IRFO-12
Summary No.:	H-01353	Procedure Rev.:	0	Report No.:	UT-04-003
Workscope:	ISI	Work Order No.:		Page:	2 of 3

0 deg Planar

Scan	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for 0 deg	

45 deg

Scan 1	100.000	% Length X	32.000	% volume of length / 100 =	32.000	% total for Scan 1	
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2	
Scan 3	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 3	
Scan 4	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 4	

Add totals and divide by # scans = 58.000 % total for 45 deg

Other deg 60°

Scan 1	100.000	% Length X	93.700	% volume of length / 100 =	93.700	% total for Scan 1	
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2	
Scan 3	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 3	
Scan 4	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 4	

Add totals and divide by # scans = 73.425 % total for 60° deg

Percent complete coverage

Add totals for each angle and scan required and divide by # of angles to determine:

77.142 % Total for complete exam

Note:

Supplemental coverage may be achieved by use of other angles / methods. When used, the coverage for volume not obtained with angles as noted above shall be calculated and added to the total to provide the percent total for the complete examination.

Site Field Supervisor: Michael W. Blew Date: 10/22/2004

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SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-010
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-BIT-01NTHW-03
ULTRASONIC SKETCH

NGG Nuclear Generation Group

Supplemental Report

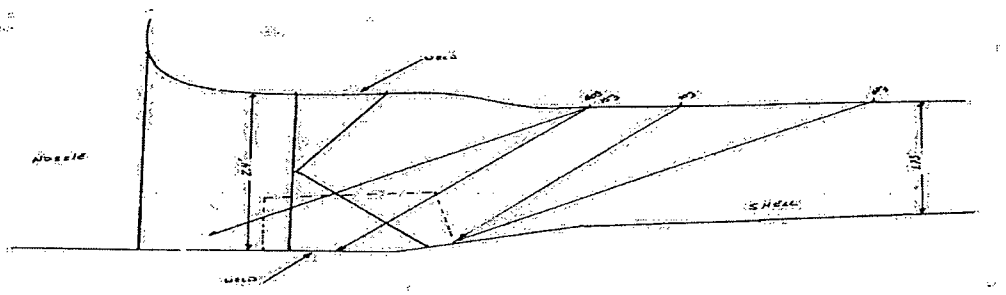
Report No.: UT-04-003
Page: 3 of 3

Summary No.:	H-01353						
Examiner:	Burgess, Ron	Level:	II-PDI	Reviewer:	Michael P. Dugan UT Level III	Date:	10/22/2004
Examiner:	N/A	Level:	N/A	Site Review:	Edwin M. Black	Date:	10/23/2004
Other:	N/A	Level:	N/A	ANII Review:	Larry Jones ANII	Date:	10/23/2004

Comments: WELD LOCATION AND DIMENSIONS TAKEN FROM DRAWING # 1219E77 SHEET 2.

Sketch or Photo: Y:\Shared\ddea\HNP_Data\DataSheet_Info\UT-04-003.tif

Sketch or Photo:



This Document is a QA Record.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-010
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-BIT-01NTHW-04
COVERAGE SUMMARY

NGG Nuclear Generation Group

Determination of Percent Coverage for UT Examinations - Vessels

Site/Unit:	HNP / 1	Procedure:	NDEP-0448	Outage No.:	IRFO-12
Summary No.:	H-01354	Procedure Rev.:	0	Report No.:	UT-04-006
Workscope:	ISI	Work Order No.:		Page:	3 of 3

0 deg Planar

Scan 100.000 % Length X 100.000 % volume of length / 100 = 100.000 % total for 0 deg

45 deg

Scan 1	100.000	% Length X	32.000	% volume of length / 100 =	32.000	% total for Scan 1
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 3
Scan 4	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 4

Add totals and divide by # scans = 58.000 % total for 45 deg

Other deg 60°

Scan 1	100.000	% Length X	93.700	% volume of length / 100 =	93.700	% total for Scan 1
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 3
Scan 4	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 4

Add totals and divide by # scans = 73.425 % total for 60° deg

Percent complete coverage

Add totals for each angle and scan required and divide by # of angles to determine:

77.142 % Total for complete exam

Note:
Supplemental coverage may be achieved by use of other angles / methods. When used, the coverage for volume not obtained with angles as noted above shall be calculated and added to the total to provide the percent total for the complete examination.

Site Field Supervisor: Michael W. Blew Date: 10/22/2004

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SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-010
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-BIT-01NTHW-04
ULTRASONIC SKETCH

NGG Nuclear Generation Group

Supplemental Report

Report No.: UT-04-006
Page: 2 of 3

Summary No.: H-01354

Examiner:	Burgess, Ron	Level:	II-PDI	Reviewer:	Michael P. Dugan UT Level III	Date:	10/22/2004
Examiner:	N/A	Level:	N/A	Site Review:	Edwin M. Black	Date:	10/23/2004
Other:	N/A	Level:	N/A	ANII Review:	Larry Jones ANII	Date:	10/23/2004

Comments:

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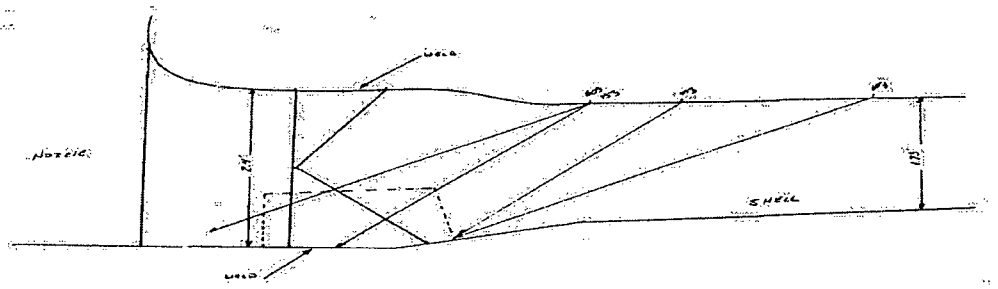
Sketch or Photo:



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SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-011
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Examination Category C-C, Item C3.30, Pumps Integrally Welded Attachments

RAI	REQUEST	RESPONSE
1a	Description	(Reference Relief Request submittal HNP-08-045 Section 1.0). Welds II-CSIP-1CSIP-A-WA1, II-CSIP-1CSIP-A-WA2, II-CSIP-1CSIP-A-WA3 and IICSIP-1CSIP-A-WA4 are integral attachments for the support legs located on the bottom of the Charging Safety Injection Pump.
1a	Sketch	Information follows in Enclosure.
1a	Interference/Obstruction	(Reference Relief Request submittal HNP-08-045 Section 5.0). Due to the restricted access caused by the configuration of the components, structural support steel limits, access to one side of the welded attachment, 100 percent surface examinations are limited.
1b	NDE Equipment	Information follows in Enclosure.
1b	Alternative Methods	No additional alternative methods or advanced technologies have been employed.
1c	Wave Modality/ Insonification Angles	Penetrant Examination.
1d	Cross Sectional Coverage Plots to describe the ASME Code coverage	Information follows in Enclosure.
1e	Results of the Examination Indications / No Indications	No recordable indications.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-011
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**II-CSIP-1CSIP-A-WA1**	ASME CATEGORY:	C-C
ASME CODE FIGURE:	IWC-2500-5	ASME ITEM NUMBER:	C3.30
CONFIGURATION:	INTEGRAL ATTACHMENTS FOR VESSELS, PIPING, PUMPS AND VALVES	% CRV ACHIEVED:	77.10%
PROCEDURES:	NDEP-0201	MATERIAL	SS
PDI TECHNIQUE USED:	NO		

LIQUID PENETRANT EXAMINATION

% VOLUME ACHIEVED	LIMITATION
77.1%	FLANGE MATING SURFACE AND STRUCTURAL STEEL

The coverage achieved was the maximum extent practical with the pump fillet weld configuration and the results are representative of the entire weld.

UT COMBINED COVERAGE = 77.14 %

EXAMINATION RESULTS: NO RECORDABLE INDICATIONS

NDE EQUIPMENT: MAGNAFLUX MATERIALS

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-011
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-CSIP-1CSIP-A-WA1
COVERAGE SUMMARY

NGG Nuclear Generation Group

Supplemental Report

Report No.: PT-04-002
Page: 2 of 2

Summary No.: H-01858

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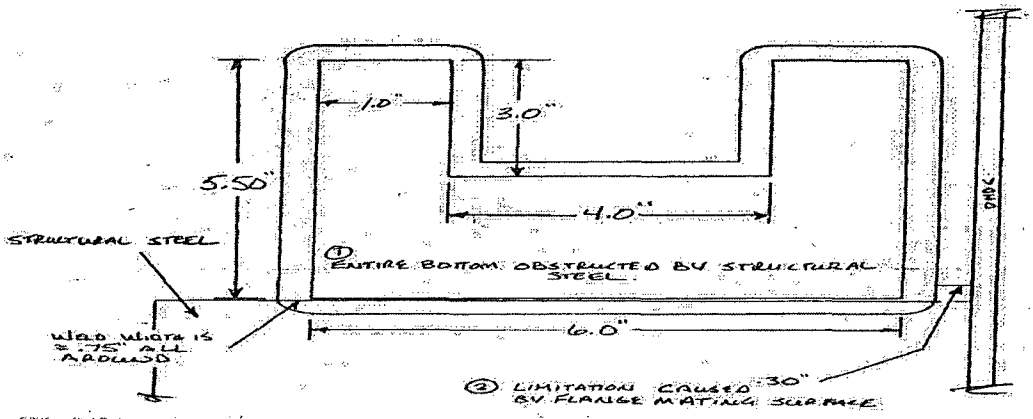

II-CSIP-1CSIP-A-WA1

Examination completion calculation:

Total examination area:

5.50" + 1.0" + 3.00" + 4.00" + 3.00" + 1.0" + 5.50" + 6.00" (linear weld dimension) X 1.75" (weld width + .50" either side) = 50.75"²

Incomplete examination area:

1. **.75" (weld width) + 1.0" (.50" exam area either side of weld) X 6.00" (length of incomplete examination area) = 10.5"²**
2. **.20" X 5.50" = 1.10"²**

Total incomplete examination area = 11.60"²

Completed percentage:

11.60"² + 50.75"² = .22857 = 22.90% incomplete = 77.10% complete.

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SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-011
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**II-CSIP-1CSIP-A-WA2**	ASME CATEGORY:	C-C
ASME CODE FIGURE:	IWC-2500-5	ASME ITEM NUMBER:	C3.30
CONFIGURATION:	INTEGRAL ATTACHMENTS FOR VESSELS, PIPING, PUMPS AND VALVES	% CRV ACHIEVED:	82.35%
PROCEDURES:	NDEP-0201	MATERIAL	SS
PDI TECHNIQUE USED:	NO		

LIQUID PENETRANT EXAMINATION

% VOLUME ACHIEVED	LIMITATION
82.35%	STRUCTURAL STEEL

The coverage achieved was the maximum extent practical with the pump fillet weld configuration and the results are representative of the entire weld.

UT COMBINED COVERAGE = 82.35%

EXAMINATION RESULTS: NO RECORDABLE INDICATIONS

NDE EQUIPMENT: MAGNAFLUX MATERIALS

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-011
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-CSIP-1CSIP-A-WA2
COVERAGE SUMMARY

NGG Nuclear Generation Group

Supplemental Report

Report No.: PT-04-003
Page: 2 of 2

Summary No.: H-01859

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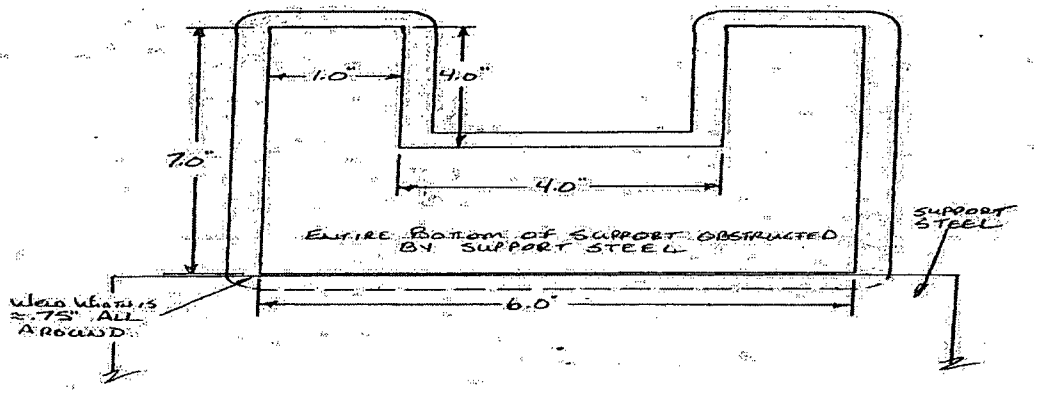

II-CSIP-1CSIP-A-WA2

Examination completion calculation:
Total examination area:

7.0" + 1.0" + 4.00" + 4.00" + 4.00" + 1.0" + 7.00" + 6.00" (linear weld dimension) X 1.75" (weld width + .50" either side) = 59.5"^{2}

Incomplete examination area:

.75" (weld width) + 1.0" (.50" exam area either side of weld) X 6.00" (length of incomplete examination area) = 10.5"^{2}

Completed percentage:

10.5"^{2} + 59.5"^{2} = .1765 = 17.65% incomplete = 82.35% complete.

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SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-011
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**II-CSIP-1CSIP-A-WA3**	ASME CATEGORY:	C-C
ASME CODE FIGURE:	IWC-2500-5	ASME ITEM NUMBER:	C3.30
CONFIGURATION:	INTEGRAL ATTACHMENTS FOR VESSELS, PIPING, PUMPS AND VALVES	% CRV ACHIEVED:	80%
PROCEDURES:	NDEP-0201	MATERIAL	SS
PDI TECHNIQUE USED:	NO		

LIQUID PENETRANT EXAMINATION

% VOLUME ACHIEVED	LIMITATION
80%	STRUCTURAL STEEL

The coverage achieved was the maximum extent practical with the pump fillet weld configuration and the results are representative of the entire weld.

UT COMBINED COVERAGE = 80%

EXAMINATION RESULTS: NO RECORDABLE INDICATIONS

NDE EQUIPMENT: MAGNAFLUX MATERIALS

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-011
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-CSIP-1CSIP-A-WA3
COVERAGE SUMMARY

NGG Nuclear Generation Group

Supplemental Report

Report No.:: PT-04-004
Page:: 2 of 2

Summary No.: H-01860

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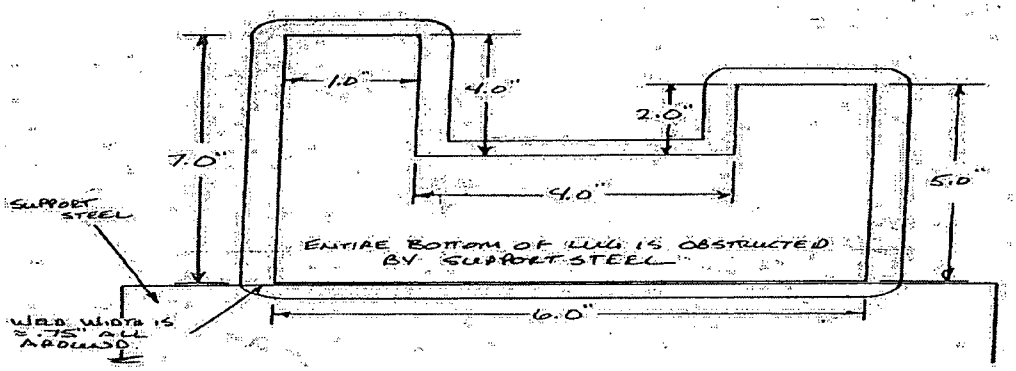

II-CSIP-1CSIP-A-WA3

Examination completion calculation:
Total examination area:

7.0" + 1.0" + 4.00" + 4.00" + 2.00" + 1.0" + 5.00" + 6.00" (linear weld dimension) X 1.75" (weld width + .50" either side) = 52.50"^{2}

Incomplete examination area:

.75" (weld width) + 1.0" (.50" exam area either side of weld) X 6.00" (length of incomplete examination area) = 10.50"^{2}

Completed percentage:

10.50"^{2} ÷ 52.50"^{2} = .20 = 20% incomplete = 80% complete.

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SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-011
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

COMPONENT ID:	**II-CSIP-1CSIP-A-WA4**	ASME CATEGORY:	C-C
ASME CODE FIGURE:	IWC-2500-5	ASME ITEM NUMBER:	C3.30
CONFIGURATION:	INTEGRAL ATTACHMENTS FOR VESSELS, PIPING, PUMPS AND VALVES	% CRV ACHIEVED:	75%
PROCEDURES:	NDEP-0201	MATERIAL	SS
PDI TECHNIQUE USED:	NO		

LIQUID PENETRANT EXAMINATION

% VOLUME ACHIEVED	LIMITATION
75%	FLANGE MATING SURFACE AND STRUCTURAL STEEL

The coverage achieved was the maximum extent practical with the pump fillet weld configuration and the results are representative of the entire weld.

UT COMBINED COVERAGE = 75%

EXAMINATION RESULTS: NO RECORDABLE INDICATIONS

NDE EQUIPMENT: MAGNAFLUX MATERIALS

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 2R2-011
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

II-CSIP-1CSIP-A-WA4
COVERAGE SUMMARY

NGG Nuclear Generation Group

Supplemental Report

Report No.: PT-04-005
Page: 2 of 2

Summary No.: H-01861

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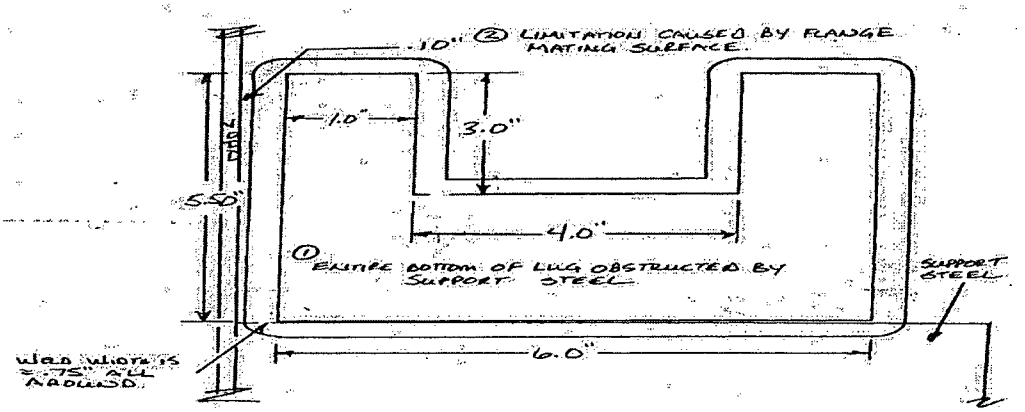

II-CSIP-1CSIP-A-WA4

Examination completion calculation:
Total examination area:

5.50" + 1.0" + 3.00" + 4.00" + 3.00" + 1.0" + 5.50" + 6.00" (linear weld dimension) X 1.75" (weld width + .50" either side) = 50.75"²

Incomplete examination area:

1. **.75" (weld width) + 1.0" (.50" exam area either side of weld) X 6.00" (length of incomplete examination area) = 10.50"²**
2. **.40" X 5.50" = 2.20"²**

Total incomplete examination area = 12.70"²

Completed percentage:

12.70"² ÷ 50.75"² = .2502 = 25.00% incomplete = 75.00% complete.

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