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Christina Perino
Licensing Manager

GNRO-2012/00051

May 24, 2012

U.S. Nuclear Regulatory Commission (NRC)
Attn: Document Control Desk
Washington, D.C. 20555

Subject: Grand Gulf Nuclear Station 14-day report of nozzle N06B-KB weld overlay examination results following completion of repair
Grand Gulf Nuclear Station (GGNS), Unit 1
Docket No. 50-416
License No. NPF-29

Reference: Grand Gulf Nuclear Station Relief Request ISI-17 Repair Plan for ISI Weld N06B-KB, dated May 2, 2012, (GNRO-2012/00040; ADAMS Accession No. ML12124A245)

Dear Sir or Madam:

In a letter dated May 2, 2012, Grand Gulf Nuclear Station (GGNS) requested approval of Relief Request ISI-17 to repair degraded weld N06B-KB at the "C" nozzle in the Residual Heat Removal (RHR) / Low Pressure Core Injection (LPCI) system. In the referenced relief request, GGNS committed to providing a report within 14 days of completing the final ultrasonic examinations (UT) of the completed weld overlays containing 1) weld overlay examination results including a listing of indications detected, 2) disposition of indications using the standards of ASME Section XI, Subsection IWB-3514-2 and/or IWB-3514-3 criteria and, if possible, the type and nature of the indications and 3) a discussion of any repairs to the weld overlay material and/or base metal and the reason for the repairs. The UT examinations were completed on May 16, 2012. Attachment 1 is the Ultrasonic Examination Report and Attachment 2 is the Liquid Penetrant Examination Report for nozzle N06B-KB.

This letter contains no new commitments. If you have questions or require additional information concerning this report, please contact Ernest Rufus at (601) 437-6582.

Sincerely,

CLPjjas 

Attachments(s): 1. Ultrasonic Examination Report ISI-VE-12-178
2. Liquid Penetrant Examination Report ISI-VE-12-179

cc: (See next page)

cc:

NRC Senior Resident Inspector
Grand Gulf Nuclear Station
Port Gibson, MS 39150

U.S. Nuclear Regulatory Commission
ATTN: Mr. Elmo E. Collins, Jr.
Region Administrator, Region IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

U. S. Nuclear Regulatory Commission
ATTN: Mr. Alan Wang, NRR/DORL
Mail Stop OWFN/8 B1
Washington, DC 20555-0001

Attachment 1 to
GNRO-2012/00051
Ultrasonic Examination Report ISI-VE-12-178



Ultrasonic Examination

Site/Unit:	GGNS / 1	Procedure:	VENDOR	Outage No.:	RF-18-ISI
Summary No.:	G1.R1.16.959	Procedure Rev.:	00	Report No.:	ISI-VE-12-178
Workscope:	AUG	Work Order No.:		Page:	1 of 1
Code:	ASME Sec. XI, 2001 Ed., 03 Add.	Cat./Item:	R-A/R1.16	Location:	Upper Annulus/ 141° az.
Drawing No.:	RPV-11-01	Description:	RHR/LPCI INLET NOZZLE-TO-SAFE END CIRC WELD		
System ID:	RHR / LPCI				
Component ID:	N06B-KB	Size/Length:	N/A	Thickness/Diameter:	1 in./16.27
Limitations:	None *				

Comments:

This report is to document the PSI UT examination of N06B-KB overlay.

Final UT was performed by GE inspection personnel in accordance with GEH-UT-249 rev. 0,

WOL acceptance examinations, inspections, preservice examinations were based on Code Case N-504-4, Appendix Q of the 2004 Edition/2005 Addenda of ASME Section XI, as stipulated in Relief Request ISI-17.

The examination volume A-B-C-D in Fig. Q-4100-1 of Appendix Q was ultrasonically examined to assure adequate fusion (i.e., adequate bond) with the base metal and to detect welding flaws, such as inter-bead lack of fusion, inclusions, or cracks.

The examination volume A-B-C-D in Fig. Q-4300-1 of Appendix Q was ultrasonically examined for the Preservice Inspection. The angle beam was directed perpendicular and parallel to the piping axis, with scanning performed in four directions to locate and size any cracks that might have propagated into the upper 25% of the base material or into the weld overlay.

During the examination no indications associated with IGSCC were recorded. Two fabrication related indications were detected, one in the overlay and one at the overlay to nozzle interface. These indications were evaluated and found to be acceptable to IWB-3514-2. See page 2 of the attached GE report GGRF-APR-024 for location of indications and parameters.

See the attached GE UT Report (GGRF-APR-024) for all signatures.

* GE noted an area on the nozzle end of the overlay material as no coverage achieved. This is conservative as the limited area is outside of the exam volume A-B-C-D in Fig. Q-4100-1 of Appendix Q.

Results: Accept ☒ Reject ☐ Eval ☐

Percent Of Coverage Obtained > 90%: **Yes - 98.5**

Reviewed Previous Data: **N/A**

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Rachal, Andre				5/15/2012	N/A		
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Briley, Michael W.		5/16/2012
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Russell, Ben		5/16/2012

**HITACHI****EXAMINATION SUMMARY SHEET**Report No:
GGRF-APR-024Site: Grand GulfComponent ID: N06B-KB-OVLYOutage: GG RF18Safe End - Nozzle 12"System: RHR/LPCIASME Cat.: R-AASME Item: R1.16Aug Req: N/A

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Exam / Oper. Personnel	Cert Level	Date
0°L LKUP/LKDN	N/A	APC-066	GEH-UT-249	CAL-508-CIRC-1	Martin Crane	II	5/14/2012
25°RL LKUP/LKDN	N/A	APC-067	GEH-UT-249	CAL-508-CIRC-1	Martin Crane	II	5/14/2012
45°RL LKUP/LKDN	N/A	APC-068	GEH-UT-249	CAL-508-CIRC-1	Martin Crane	II	5/14/2012
60°RL LKUP/LKDN	N/A	APC-069	GEH-UT-249	CAL-508-CIRC-1	Martin Crane	II	5/14/2012
70°RL LKUP/LKDN	N/A	APC-070	GEH-UT-249	CAL-508-CIRC-1	Martin Crane	II	5/14/2012
45°RL LKCW/CCW	N/A	APC-071	GEH-UT-249	CAL-508-AX-1	Tyler Raymond	II	5/15/2012
60°RL LKCW/CCW	N/A	APC-072	GEH-UT-249	CAL-508-AX-1	Tyler Raymond	II	5/15/2012
70°RL LKCW/CCW	N/A	APC-073	GEH-UT-249	CAL-508-AX-1	Tyler Raymond	II	5/15/2012
N/A	APD-014	N/A	GEH-UT-249	N/A	Andre' Rachal	II	5/15/2012

Examination Results:

During the examination of the above referenced overlay, no indications associated with IGSCC were recorded by the "SP 2000" Phased Array system utilizing two-dimensional phased array probes. Two fabrication related indications were detected, one in the overlay and one at the overlay to nozzle interface. These indications were evaluated and found to be acceptable to IWB-3514-2. See Page 2 for indication location and parameters.

Circumferential flow exams were performed utilizing beam angles of 25°, 45°, 60° and 70° Refracted Longitudinal waves along with a 0° Longitudinal wave. Non-relevant indications, inside surface, and two fabrication related flaws were recorded.

Axial flow examinations were performed utilizing 45°, 60°, and 70° Refracted Longitudinal waves. Non-relevant indications were recorded.

This examination meets the requirements of ASME Section XI, 2001 Edition with Addenda, through 2003, as modified by the PDI program description and 10CFR Part 50.55a, Industry Codes and Standards, amended requirements; final rule dated January 1, 2008. This exam also meets the requirements of Code Case 504-4.

This examination was performed as a pre-service examination.

100% of the ISI code volume was examined.

98.5% of the PSI code volume was examined.

Examination results were compared to Data Report N/Afrom: N/A☐ ChangeThese examinations were performed under Work Order: N/A☐ No Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

Prepared By: Am. RabyLevel: IIDate: 5/15/12Utility Review: [Signature]Date: 5/16/2012RWP: 1516 Task 1Dose: 787 mR.ANII Review: [Signature]Date: 5/16/12Page 1 of 33

**HITACHI****Wall Thickness
Profile Sheet**Site: Grand GulfUnit: 1

Report No.:

Project: GG RF18GGRF-APR-024System: RHR/LPCIComponent ID Number: N06B-KB-OVLY

Position	0°	90°	180°	270°
1	N/A	N/A	N/A	N/A
2	57	56	61	56
3	61	59	62	60
4	59	59	60	59
5	N/A	N/A	N/A	N/A

Overlay Height: < 26.0 mmOverlay Width: 190.0 mmNominal Diameter: 413.3 mmOverlay Length: 1299.0 mmSafe End
UPST Component:

Flow

Nozzle
DNST Component:

See pages 4 and 5 for original contours

AR Andre' Rachal

Drawn by:

II 5/15/2012

Level: Date:

GE Reviewed By:

Level:

III 5-15-12

Date:

Utility Review:

Date:

ANII Review:

Date:

Page 3 of 33



HITACHI

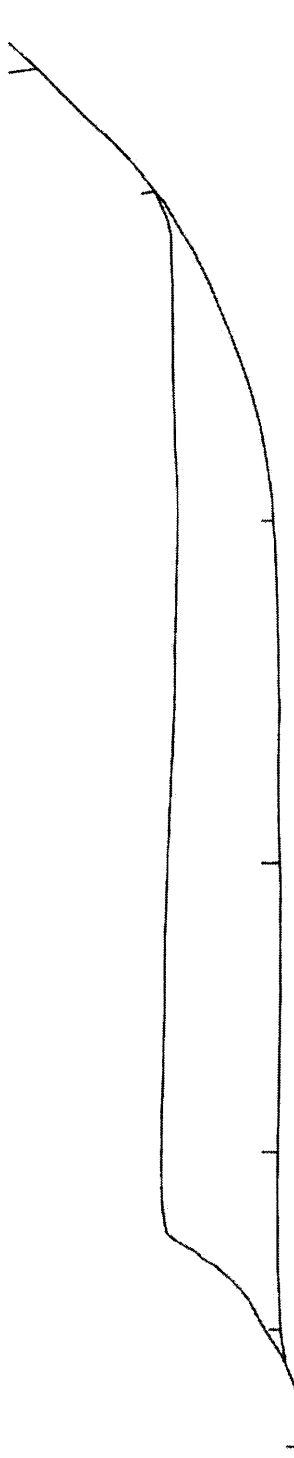
Contour Sheet

Site: Grand Gulf
Project: GG RF18

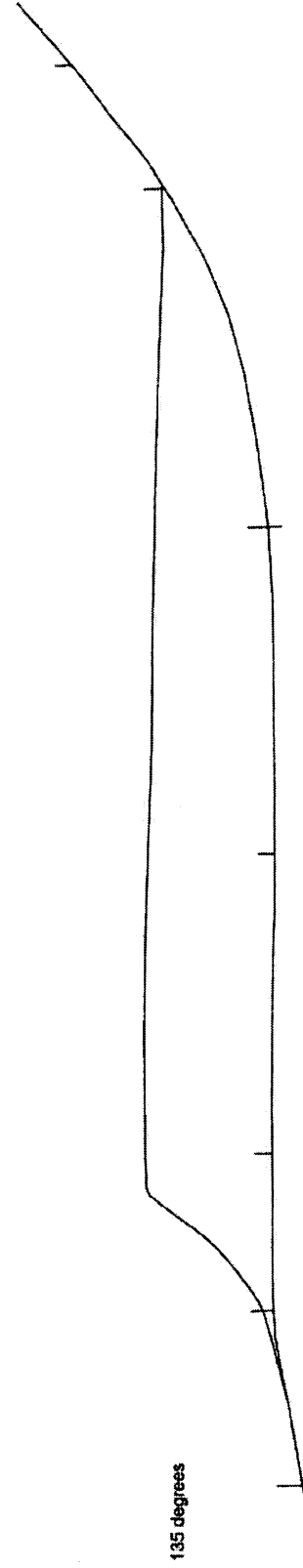
Unit: 1

Report Number:
GGRF-APR-021

45 degrees



135 degrees





HITACHI

Contour Sheet

Site: Grand Gulf

Project: GG RF1B

Unit: 1

Report Number:

GGRF-APR-023

225 degrees

315 degrees

Tom 6/16/12



HITACHI

Indication / Coverage
Plot Sheet

Site: Grand Gulf

Unit: 1

Report Number:

Project: GG RF18

GGRF-APR-020

System: RHR/LPCI

Component ID Number: N068-KB-OVLY

Configuration: Safe End to Nozzle

PSI Examination Circumferential Flaw Limitation

Total Circumferential Flaw Coverage: 98.9%

ISI Circumferential Flaw Coverage: 100%

45RL 25RL

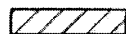
25RL 45RL

Wo

70RL



Volume Not Achieved



ISI Volume



PSI Volume

Drawing dimensions taken at 225 degree L reference

AR

Initials:

Andre' Rachal II

Drawn By:

Level:

5/15/2012

Date:

[Signature]

GE Reviewed By:

111 5-15-12

Level:

Date:

[Signature]

Utility Reviewed By:

5/16/2012

Date:

[Signature]

ANII Reviewed By:

5/16/12

Date:



HITACHI

Indication / Coverage
Plot Sheet

Site: Grand Gulf

Unit: 1

Report Number:

Project: GG RF18

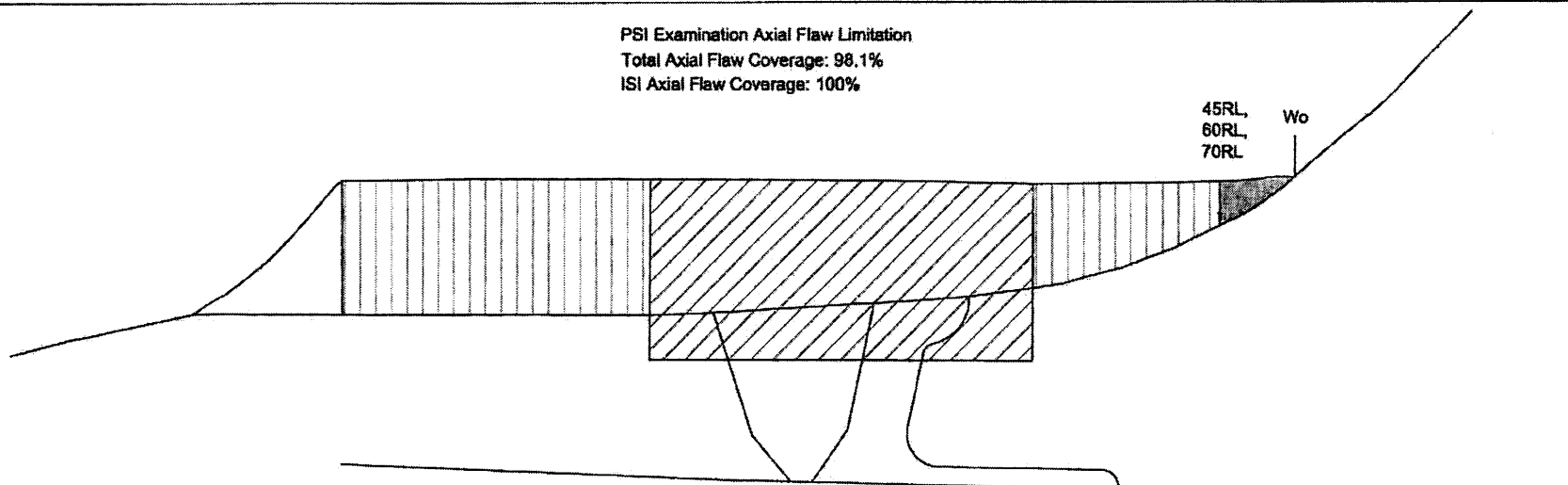
GGRF-APR-021

System: RHR/LPCI

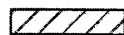
Component ID Number: N06B-K8-OVLY

Configuration: Safe End to Nozzle

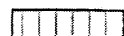
PSI Examination Axial Flaw Limitation
Total Axial Flaw Coverage: 98.1%
ISI Axial Flaw Coverage: 100%



Volume Not Achieved



ISI Volume



PSI Volume

Drawing dimensions taken at 225 degree L reference

AR

Initials:

Andre' Rachal II

Drawn By:

Level:

5/15/2012

Date:

Michael

GE Reviewed By:

III

Level:

5-15-12

Date:

William

Utility Reviewed By:

5/16/12

Date:

Ken

ANII Reviewed By:

5-16-12

Date:

**HITACHI****Ultrasonic Data / Scan Parameter Sheet**
Z-Scan

Site: <u>Grand Gulf</u>	Procedure: <u>GEH-UT-249</u>	System: <u>RHR/LPCI</u>	Report No.: <u>GGRF-APR-024</u>
Unit: <u>1</u>	Revision: <u>0</u>	Weld No.: <u>N06B-KB-OVLY</u>	Data Sheet No.: <u>APD-014</u>
Project No.: <u>GG RF18</u>	DRR: <u>N/A</u>	Configuration: <u>Safe End - Nozzle 12"</u>	Calibration Sheet No. <u>APC-066 thru 073</u>

Weld Reference: Lo: Top Dead Center Wo: DNST Edge of OVLY Motor Steps: Cir: 202.309 Tra: 295.431 Exam Start: 5/14/2012 2:16:00 PM

Examination Surface: OD Exam Surface Temperature: 96°F Thermometer S/N: 272605 Exam End: 5/15/2012 12:12:00 AM

Scanner: Nova Track Diameter: 16.0" Arm Length: 18.0" Track Location: UPST of Overlay

Scan:	Skew:	File ID:	Scan			Index			Gain	Results	Comments
			Start:	Stop	Resol.	Start:	Stop	Resol.			
<u>0L LKDN</u>	<u>180</u>	<u>N06B-KB-LKDN-OVLY</u>	<u>18.00</u>	<u>178.00</u>	<u>0.80</u>	<u>0.00</u>	<u>1347.00</u>	<u>4.00</u>	<u>38 dB</u>	<u>C,E</u>	<u>**</u>
<u>0L LKUP</u>	<u>0</u>	<u>N06B-KB-LKUP-OVLY</u>	<u>17.00</u>	<u>179.00</u>	<u>0.80</u>	<u>0.00</u>	<u>1347.00</u>	<u>4.00</u>	<u>38 dB</u>	<u>C,E</u>	<u>**</u>
<u>25RL LKDN</u>	<u>180</u>	<u>N06B-KB-LKDN-OVLY</u>	<u>19.00</u>	<u>176.00</u>	<u>0.80</u>	<u>0.00</u>	<u>1347.00</u>	<u>4.00</u>	<u>39 dB</u>	<u>B,C,E</u>	<u>**</u>
<u>25RL LKUP</u>	<u>0</u>	<u>N06B-KB-LKUP-OVLY</u>	<u>19.00</u>	<u>181.00</u>	<u>0.80</u>	<u>0.00</u>	<u>1347.00</u>	<u>4.00</u>	<u>39 dB</u>	<u>C,E</u>	<u>**</u>
<u>45RL LKCCW</u>	<u>180</u>	<u>N06B-KB-LKCCW-OVLY</u>	<u>16.00</u>	<u>1366.00</u>	<u>0.80</u>	<u>20.00</u>	<u>187.00</u>	<u>3.90</u>	<u>41 dB</u>	<u>C</u>	<u>**</u>
<u>45RL LKCV</u>	<u>0</u>	<u>N06B-KB-LKCV-OVLY</u>	<u>-16.00</u>	<u>1334.00</u>	<u>0.80</u>	<u>23.00</u>	<u>191.00</u>	<u>3.90</u>	<u>41 dB</u>	<u>C</u>	<u>**</u>
<u>45RL LKDN</u>	<u>180</u>	<u>N06B-KB-LKDN-OVLY</u>	<u>19.00</u>	<u>174.00</u>	<u>0.80</u>	<u>0.00</u>	<u>1347.00</u>	<u>4.00</u>	<u>40 dB</u>	<u>B,C,E</u>	<u>**</u>
<u>45RL LKUP</u>	<u>0</u>	<u>N06B-KB-LKUP-OVLY</u>	<u>20.00</u>	<u>182.00</u>	<u>0.80</u>	<u>0.00</u>	<u>1347.00</u>	<u>4.00</u>	<u>40 dB</u>	<u>B,C,E</u>	<u>**</u>
<u>60RL LKCCW</u>	<u>180</u>	<u>N06B-KB-LKCCW-OVLY</u>	<u>15.00</u>	<u>1364.00</u>	<u>0.80</u>	<u>20.00</u>	<u>187.00</u>	<u>3.90</u>	<u>39 dB</u>	<u>C</u>	<u>**</u>
<u>60RL LKCV</u>	<u>0</u>	<u>N06B-KB-LKCV-OVLY</u>	<u>-15.00</u>	<u>1335.00</u>	<u>0.80</u>	<u>23.00</u>	<u>191.00</u>	<u>3.90</u>	<u>39 dB</u>	<u>C</u>	<u>**</u>
<u>60RL LKDN</u>	<u>180</u>	<u>N06B-KB-LKDN-OVLY</u>	<u>18.00</u>	<u>174.00</u>	<u>0.80</u>	<u>0.00</u>	<u>1347.00</u>	<u>4.00</u>	<u>39 dB</u>	<u>B,C</u>	<u>**</u>
<u>60RL LKUP</u>	<u>0</u>	<u>N06B-KB-LKUP-OVLY</u>	<u>20.00</u>	<u>183.00</u>	<u>0.80</u>	<u>0.00</u>	<u>1347.00</u>	<u>4.00</u>	<u>39 dB</u>	<u>B,C,E</u>	<u>**</u>
<u>70RL LKCCW</u>	<u>180</u>	<u>N06B-KB-LKCCW-OVLY</u>	<u>15.00</u>	<u>1364.00</u>	<u>0.80</u>	<u>20.00</u>	<u>187.00</u>	<u>3.90</u>	<u>39 dB</u>	<u>C</u>	<u>**</u>
<u>70RL LKCV</u>	<u>0</u>	<u>N06B-KB-LKCV-OVLY</u>	<u>-15.00</u>	<u>1335.00</u>	<u>0.80</u>	<u>23.00</u>	<u>191.00</u>	<u>3.90</u>	<u>39 dB</u>	<u>C</u>	<u>**</u>
<u>70RL LKDN</u>	<u>180</u>	<u>N06B-KB-LKDN-OVLY</u>	<u>18.00</u>	<u>173.00</u>	<u>0.80</u>	<u>0.00</u>	<u>1347.00</u>	<u>4.00</u>	<u>39 dB</u>	<u>C</u>	<u>**</u>
<u>70RL LKUP</u>	<u>0</u>	<u>N06B-KB-LKUP-OVLY</u>	<u>22.00</u>	<u>183.00</u>	<u>0.80</u>	<u>0.00</u>	<u>1347.00</u>	<u>4.00</u>	<u>39 dB</u>	<u>B,C,E</u>	<u>**</u>

EXAMINATION RESULTS LEGEND

A - NO RECORDABLE INDICATIONS
E - INSIDE SURFACE
I - COUNTERBORE

B - NON-GEOMETRIC INDICATIONS
F - OUTSIDE SURFACE
J - SHEAR COMPONENT

C - NON-RELEVANT INDICATIONS
G - EMBEDDED FLAWS
K - BEAM RE-DIRECT

D - ACOUSTIC INTERFACE
H - ROOT GEOMETRY

Comments:

*Load A01 for correct offset
** Load RST for correct DXF

Andre' Rachal
Examiner:

Level: II
Date: 5/15/2012

GE Reviewer: *[Signature]*

Level: III
Date: 5-15-12

[Signature] 5/16/12 *[Signature]* 5/16/12



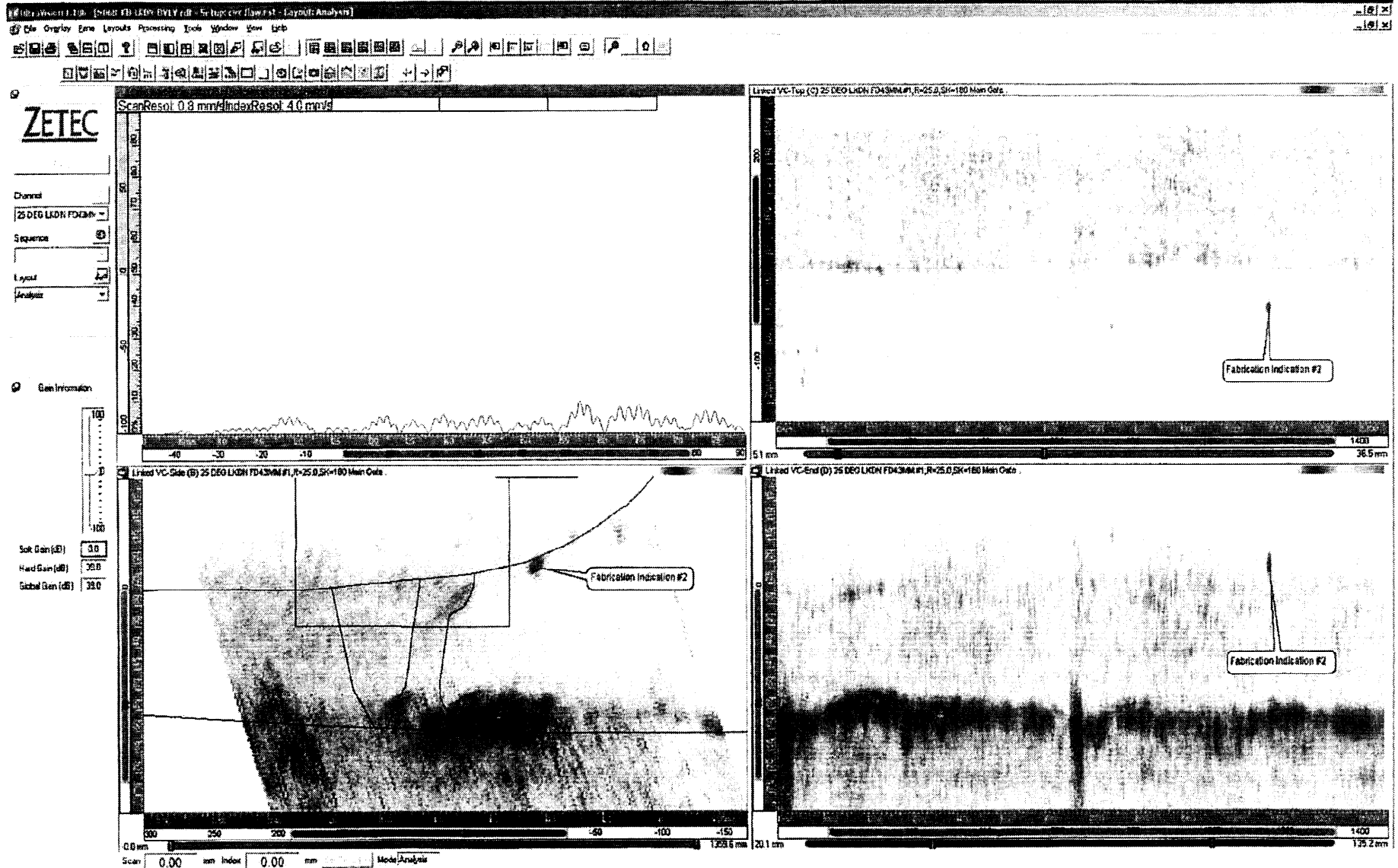
HITACHI

Grand Gulf Nuclear Station RF-18

25° RL LKDN

N06B-KB-OVLY

Safe End to Nozzle





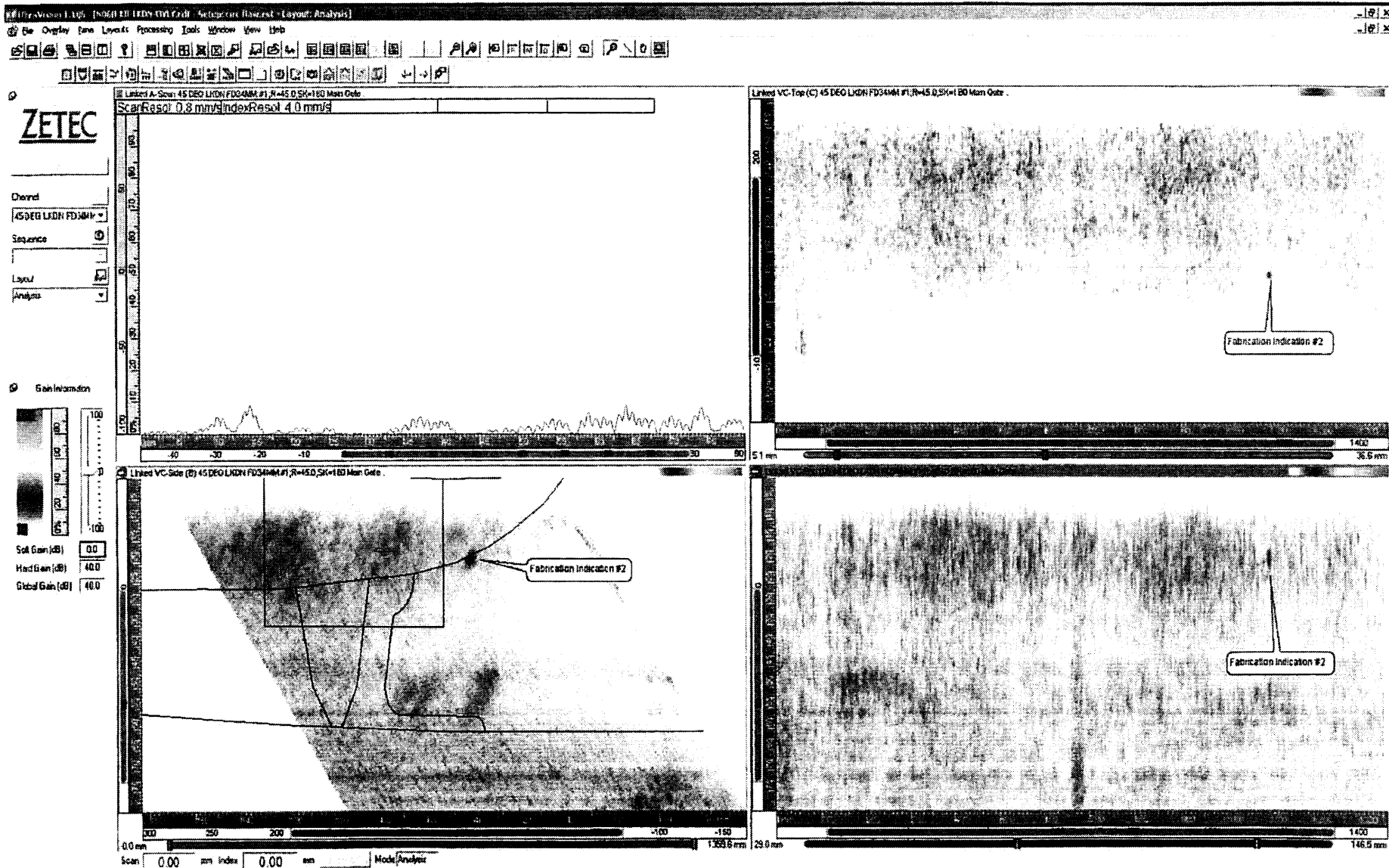
HITACHI

Grand Gulf Nuclear Station RF-18

45° RL LKDN

N06B-KB-OVLY

Safe End to Nozzle



4-3 5/16/12 5/16/12



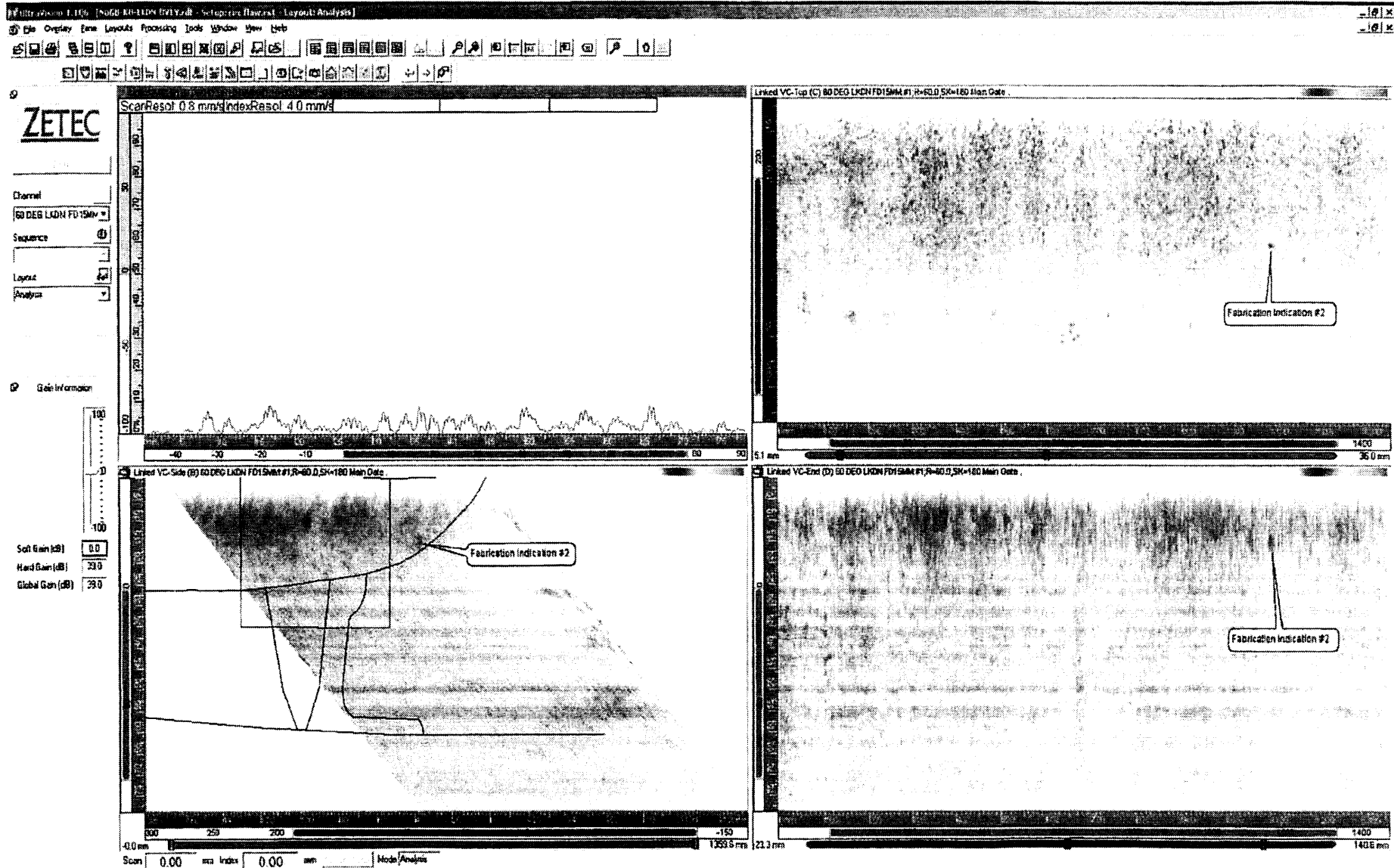
HITACHI

Grand Gulf Nuclear Station RF-18

60° RL LKDN

N06B-KB-OVLY

Safe End to Nozzle





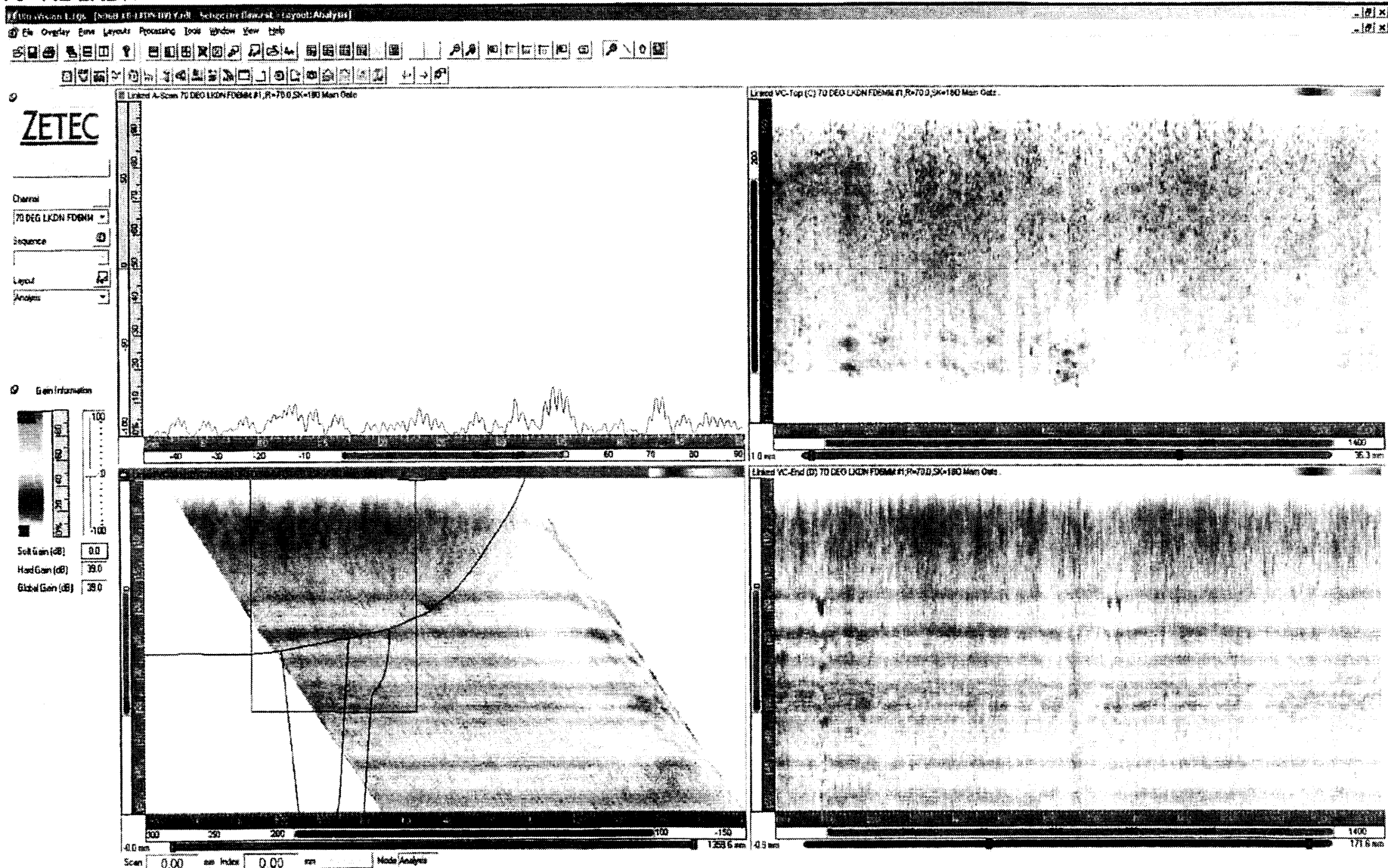
HITACHI

Grand Gulf Nuclear Station RF-18

70° RL LKDN

N06B-KB-OVLY

Safe End to Nozzle





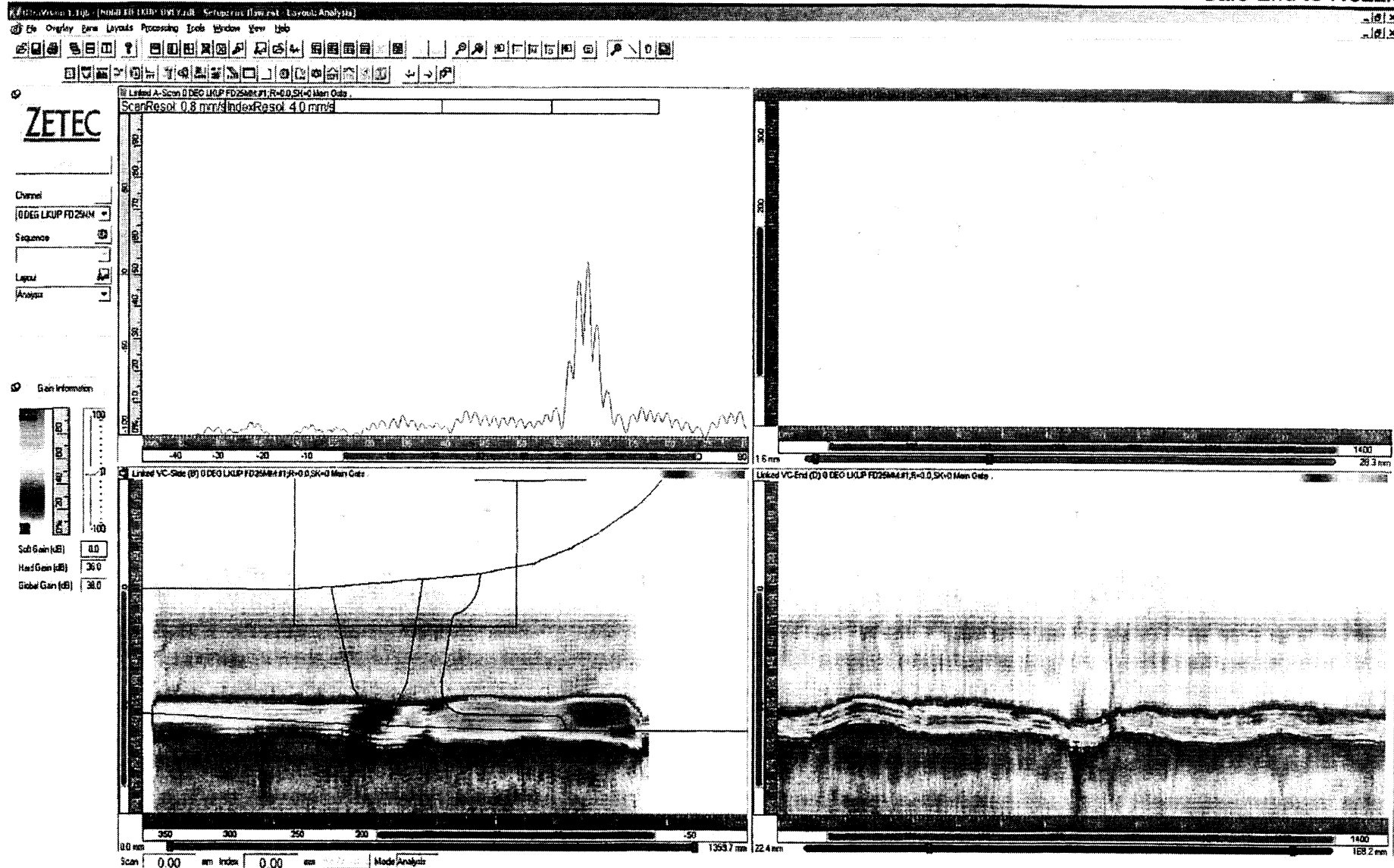
HITACHI

Grand Gulf Nuclear Station RF-18

0° L LKUP

N06B-KB-OVLY

Safe End to Nozzle



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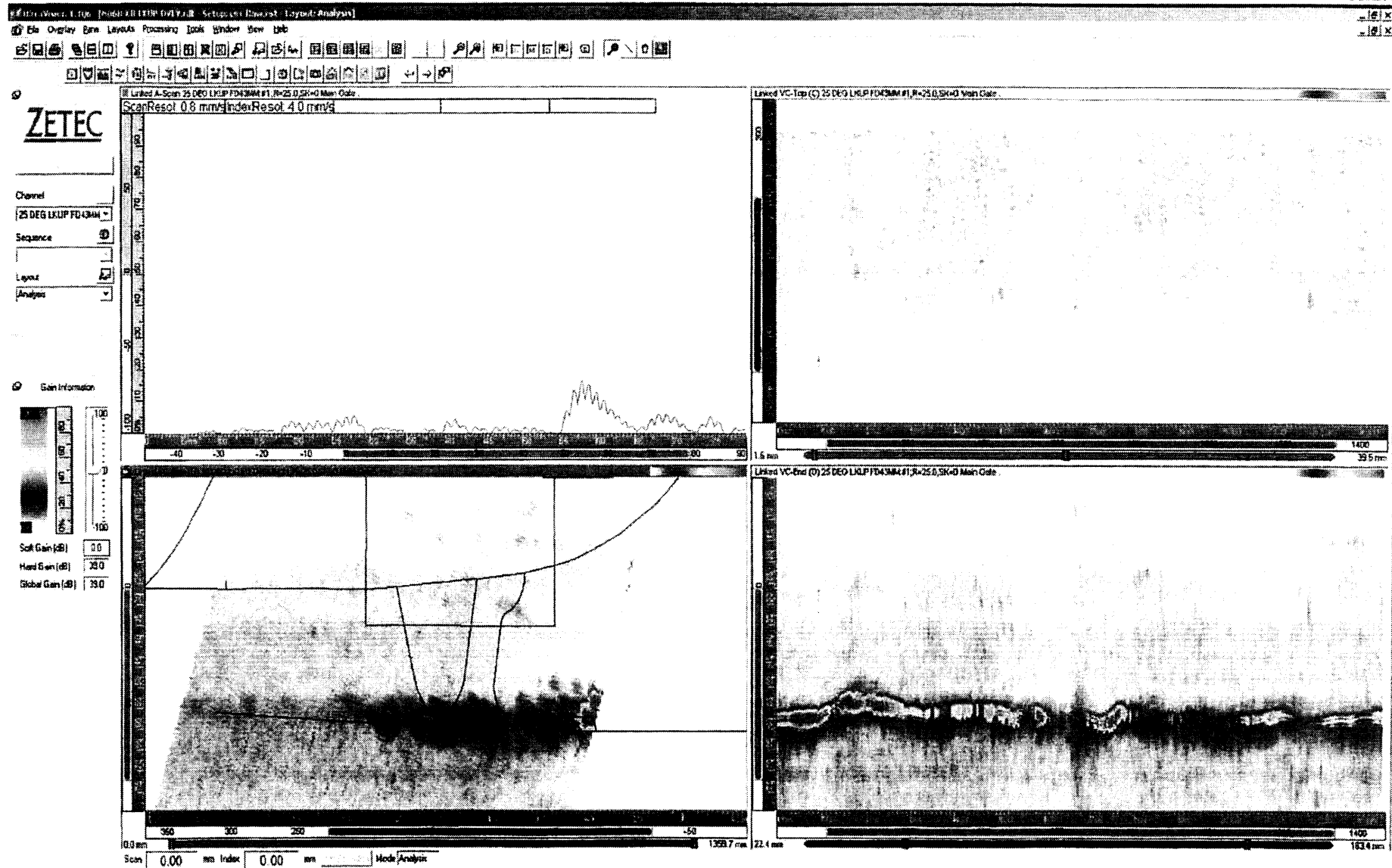
HITACHI

Grand Gulf Nuclear Station RF-18

25° RL LKUP

N06B-KB-OVLY

Safe End to Nozzle



Report Number: GGRF-APR-024

4/15/12 12:56:12

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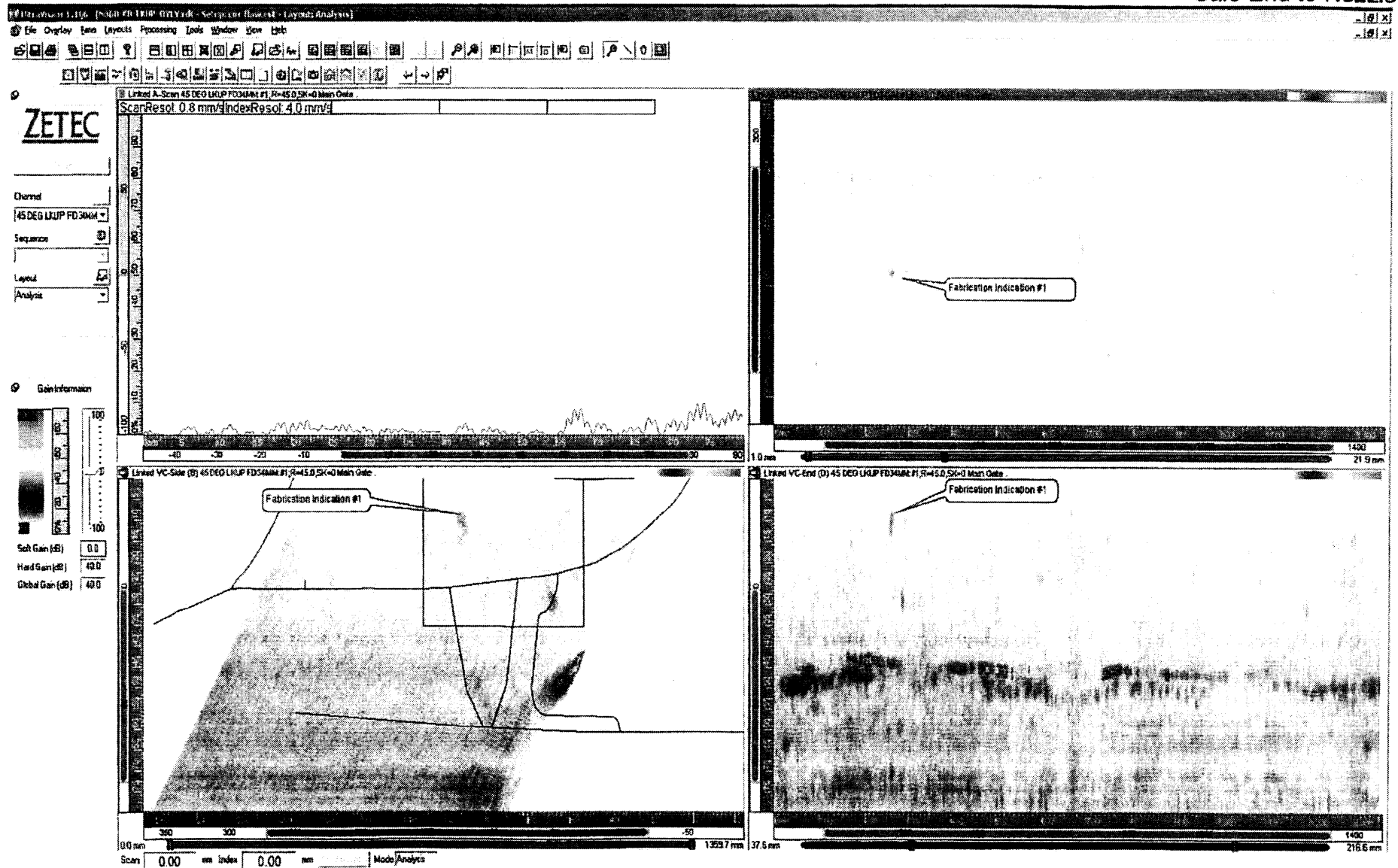
HITACHI

Grand Gulf Nuclear Station RF-18

45° RL LKUP

N06B-KB-OVLY

Safe End to Nozzle





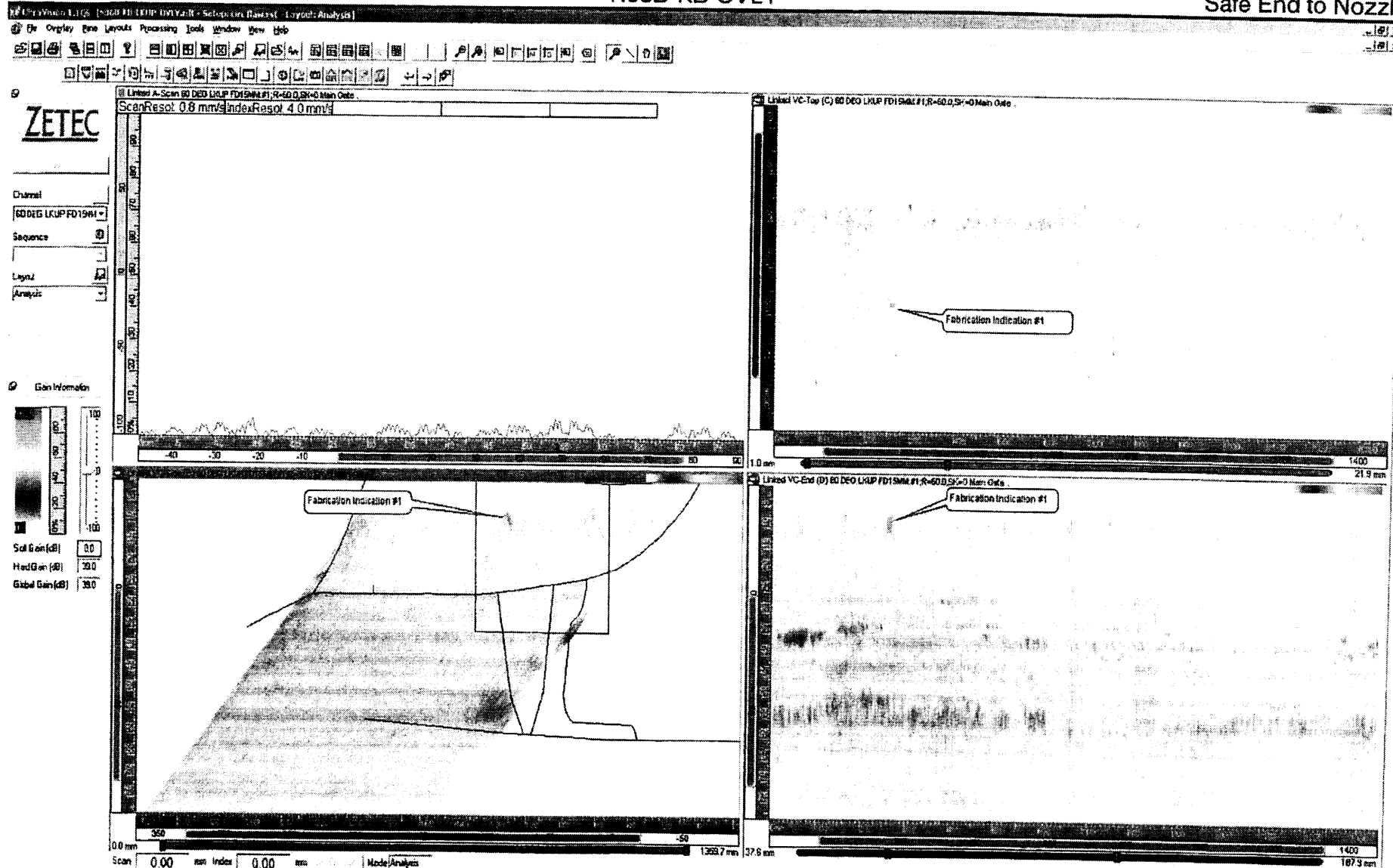
HITACHI

Grand Gulf Nuclear Station RF-18

60° RL LKUP

N06B-KB-OVLY

Safe End to Nozzle



Report Number: GGRF-APR-024

4/25 5/16/12 5/16/12

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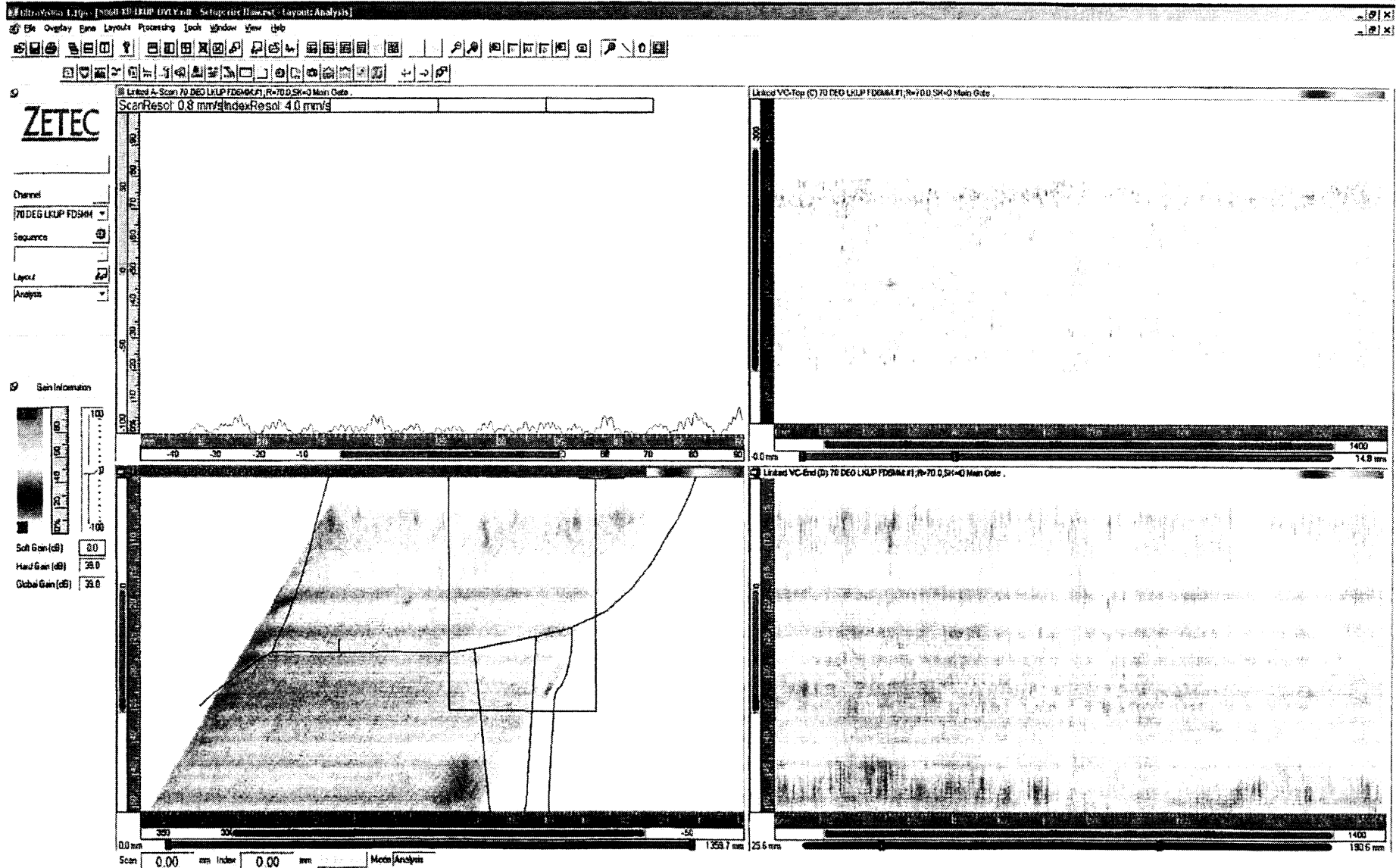
HITACHI

Grand Gulf Nuclear Station RF-18

70° RL LKUP

N06B-KB-OVLY

Safe End to Nozzle





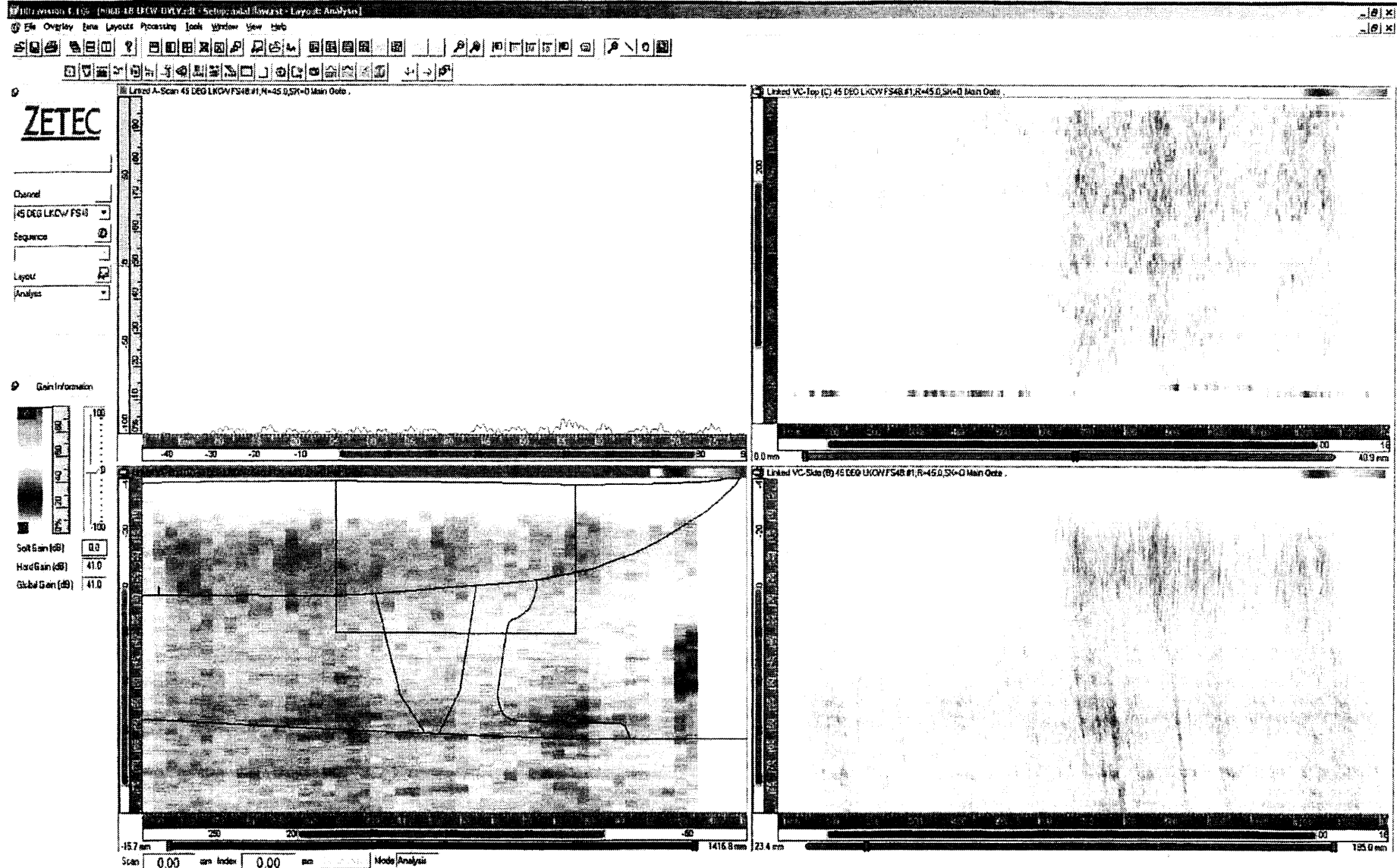
HITACHI

Grand Gulf Nuclear Station RF-18

45° RL LKCW

N06B-KB-OVLY

Safe End to Nozzle





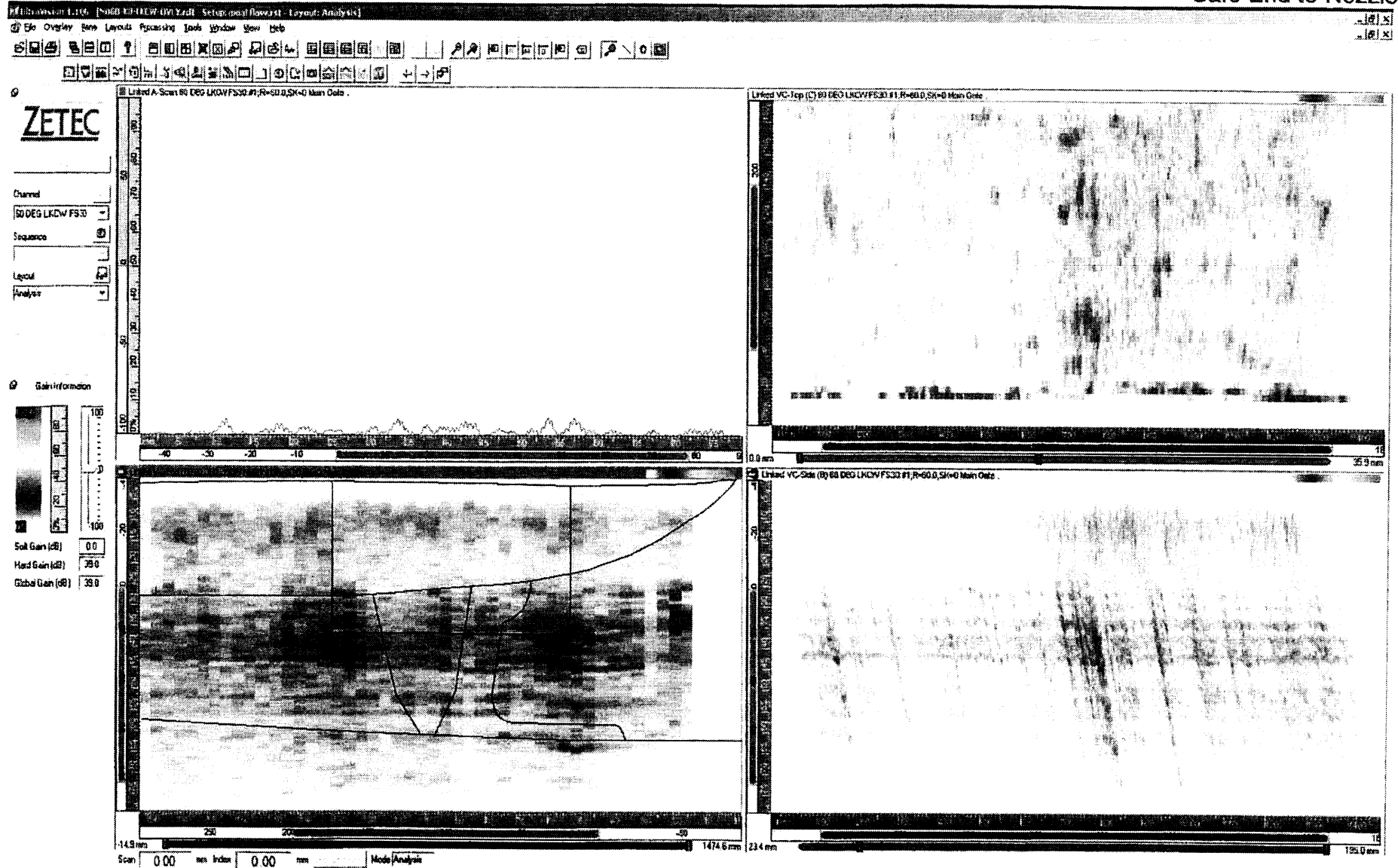
HITACHI

Grand Gulf Nuclear Station RF-18

60° RL LKCW

N06B-KB-OVLY

Safe End to Nozzle





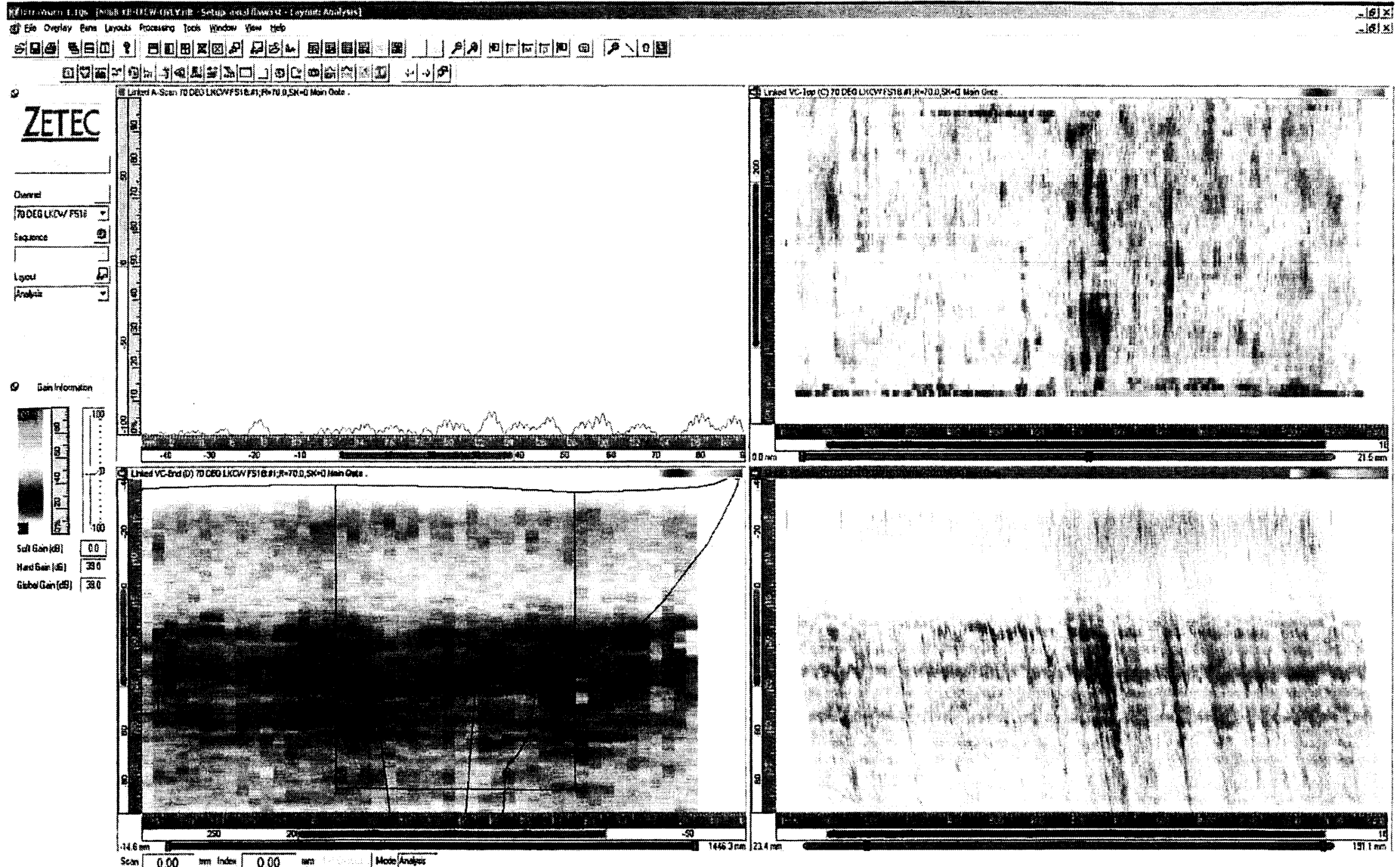
HITACHI

Grand Gulf Nuclear Station RF-18

70° RL LKCW

N06B-KB-OVLY

Safe End to Nozzle





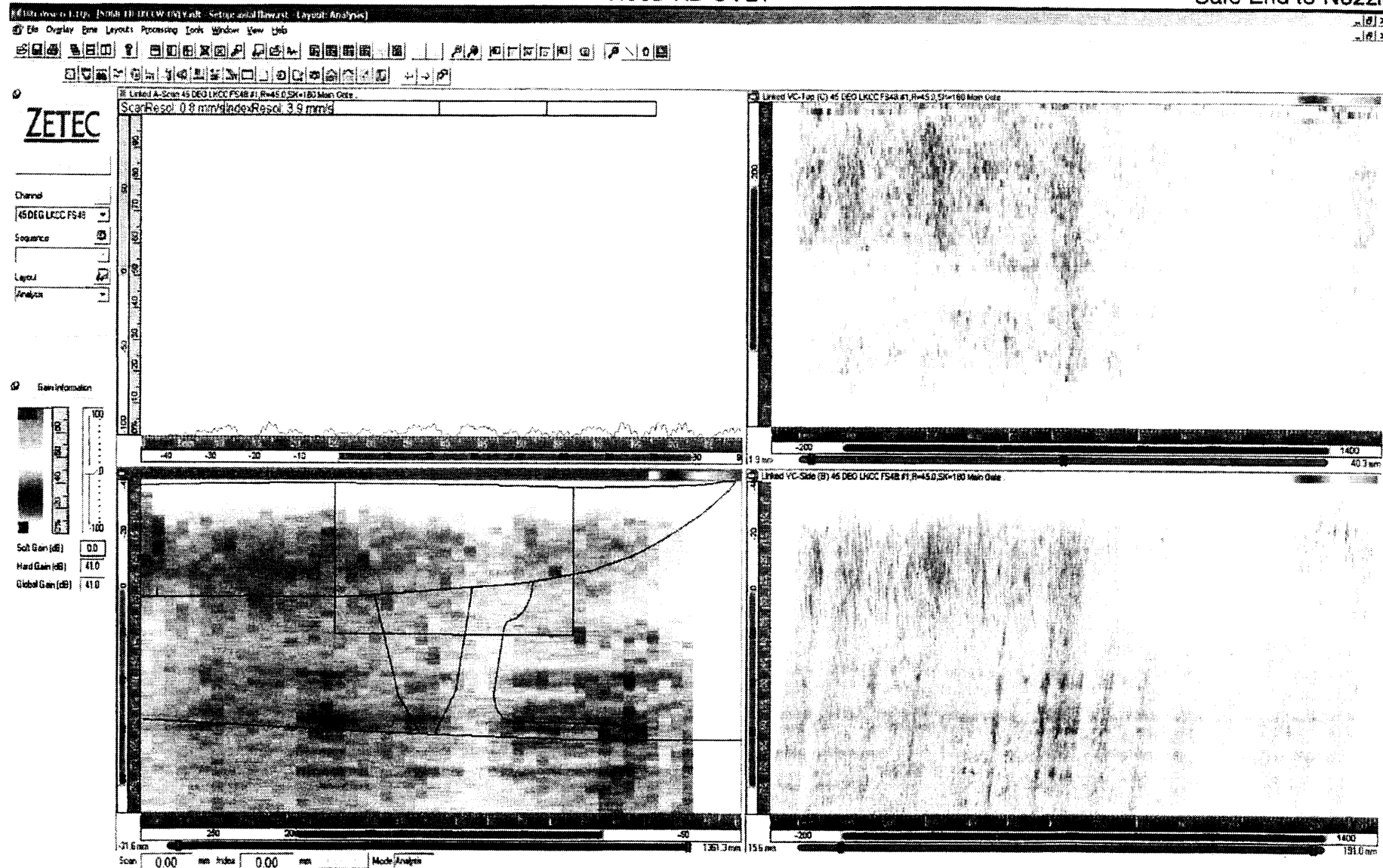
HITACHI

Grand Gulf Nuclear Station RF-18

45° RL LKCCW

N06B-KB-OVLY

Safe End to Nozzle





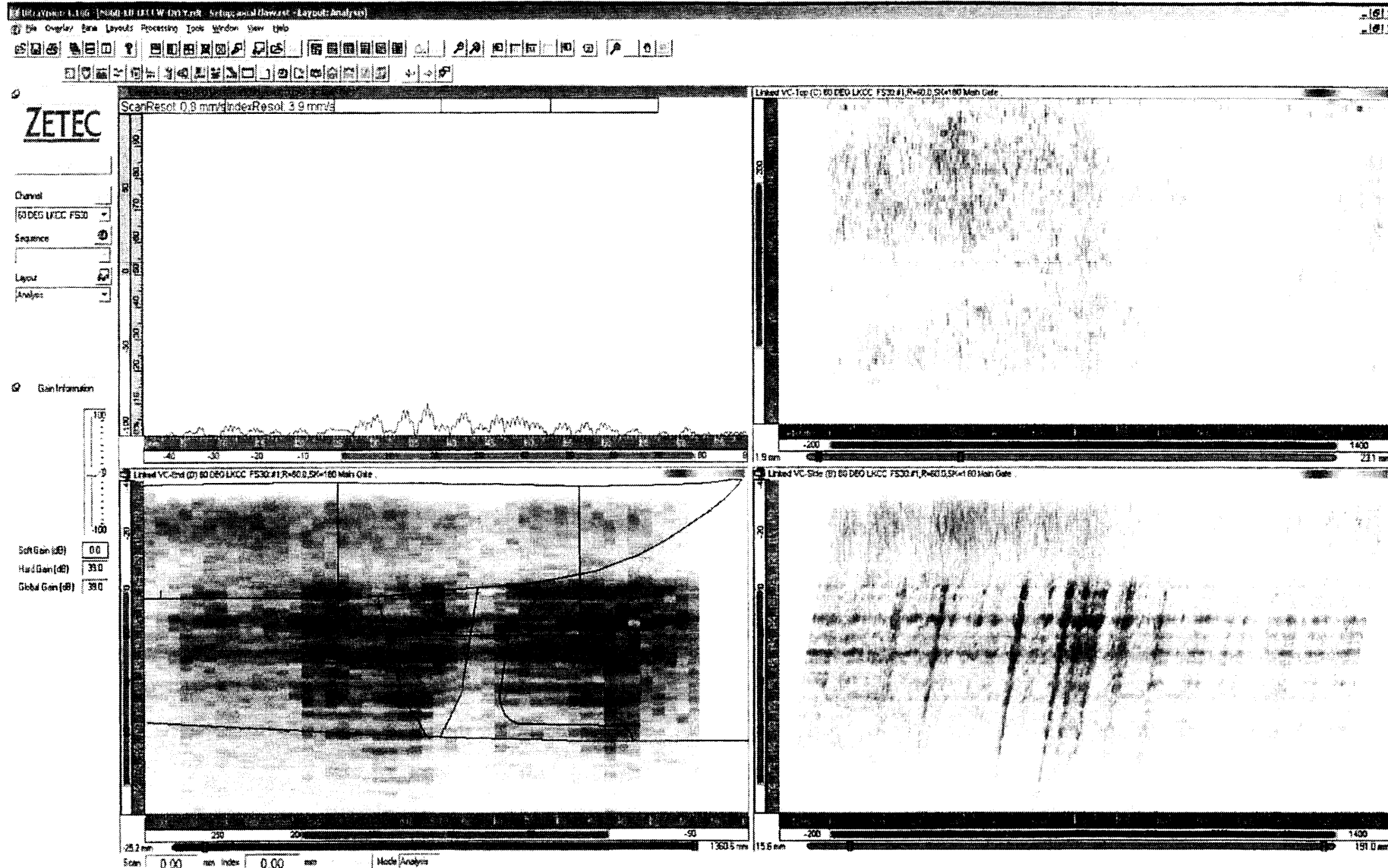
HITACHI

Grand Gulf Nuclear Station RF-18

60° RL LKCCW

N06B-KB-OVLY

Safe End to Nozzle





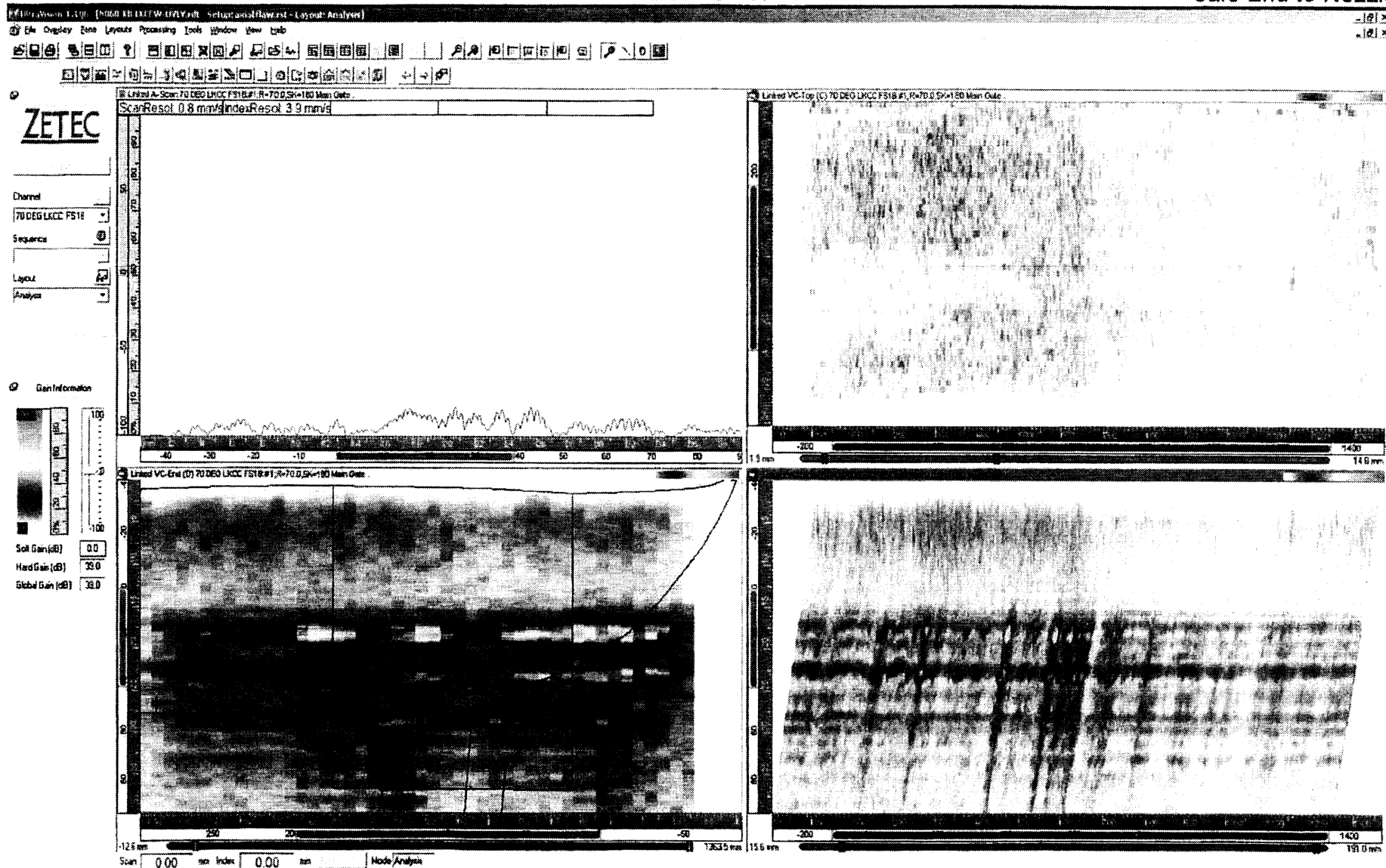
HITACHI

Grand Gulf Nuclear Station RF-18

70° RL LKCCW

N06B-KB-OVLY

Safe End to Nozzle



**HITACHI****ULTRASONIC CALIBRATION DATA SHEET****Z-Scan****(Automated with Phased Array)**Site Grand GulfUnit 1Project GG RF18Report Number GGRF-APR-024Calibration Sheet No. APC-066Weld N06B-KB-OVLYProcedure No. GEH-UT-249Version/Revision 0DRR N/AInstrument: Zetec / Z-Scan
Manufacturer / ModelZPA-5583
System Serial No.1.106
Acquisition Software1.106
Analysis SoftwareSearch Unit GEIT
Manufacturer02297F/02297J
Serial No.118 x 10 mm
Total Aperture115-000-575
Search Unit Model Number:1.5 MHz
Freq. (MHz)360-152-315
Wedge NumberCable 2(64 Conductor 38 GA)
Type2(0.6m/8.0m)
Length1
No. of ConnectorsCalibration Standard CAL-508-CIRC-1
Serial No.SS
Material63.5 mm
Nominal Thickness63.5 mm
Measured ThicknessThermometer 272501
Serial No.105
Temp (°F)

Couplant

Demin Water
TypeN/A
Couplant Batch**Calibration**

Cal Angle 0°
 Orientation Circ
 Type SDH
 Depth 25.4
 Amplitude 80-90%
 Sweep 25.2
 Focal Low Gain 10 dB
 Channel Gain 28 dB

General

Timebase Start 0.00 mm Range 80.700 mm
 Mode Half Path

Digitizer

Digitizing Frequency 100.0 MHz Recurrence 2000 Hz
 Averaging 1 Samples 560
 Acquisition Rate 399 Hz Synchro Pulse ☒ A Scan
 Data Sample Size ☒ 8 bits ☐ 12 bit Compression 5

Field Simulator N/A S/N N/A

Reflector N/A
 Max Amplitude N/A
 Sweep N/A
 Gain (dB) N/A
 Skew N/A
 Angle Used N/A

Pulser / Receiver

Configuration: PA Pulse Echo
 Pulser Element P1 Scale Type LIN
 Voltage 115 V Rectification Bipolar
 Pulse Width 333 ns High Pass 1.1 MHz
 Receiver Element R1 Low Pass 3.4 MHz
 Smoothing 1.5 MHz

Probe

Wave Type Longitudinal Wedge Delay 1.713 μsec.
 Velocity 5770 m/sec.

Calibration Verification

	Time	Date	Block	Operator
Initial	1400	5/13/2012	CAL-508-CIRC-1	MC
Verified	1349	5/14/2012	CAL-RHOM-090	MC
Verified	N/A	N/A	N/A	N/A
Verified	N/A	N/A	N/A	N/A
Final	1817	5/14/2012	CAL-RHOM-090	MC

LKUP/LKDN
 0° or 180°

Martin Crane II 5/14/2012
 Initial Examiner Level Date
 Andre' Rachal II 5/15/2012
 GE Data Analyst Review Level Date

Handwritten: 5/16/12
 5-1672

**HITACHI****ULTRASONIC CALIBRATION DATA SHEET****Z-Scan****(Automated with Phased Array)**Site Grand GulfUnit 1Project GG RF18

Report Number

GGRF-APR-024

Calibration Sheet No.

APC-067Weld N06B-K8-OVLY

Procedure No.

GEH-UT-249

Version/Revision

0

DRR

N/A

Instrument:

Zetec / Z-Scan

Manufacturer / Model

ZPA-5583

System Serial No.

1.106

Acquisition Software

1.106

Analysis Software

Search Unit

GEIT

Manufacturer

02297F/02297J

Serial No.

(18 x 10) mm

Total Aperture

115-000-575

Search Unit Model Number:

1.5 MHz

Freq. (MHz)

360-152-315

Wedge Number

Cable

2164 Conductor 38 GA

Type

210.6m/8.0m

Length

1

No. of Connectors

Calibration Standard

CAL-508-CIRC-1

Serial No.

SS

Material

63.5 mm

Nominal Thickness

63.5 mm

Measured Thickness

Thermometer

272501

Serial No.

105

Temp (°F)

Couplant

Demin Water

Type

N/A

Couplant Batch:

Calibration

Cal Angle

25°

Orientation

Circ

Type

SDH

Depth

45.7

Amplitude

80-90%

Sweep

45.4

Focal Law Gain

10 dB

Channel Gain

27 dBGeneral

Timebase

Start

0.00 mm

Range

87.700 mm

Mode

Half PathDigitizer

Digitizing Frequency

100.0 MHz

Recurrence

2000 Hz

Averaging

1

Samples

608

Acquisition Rate

399 Hz

Synchro

Pulse☒ A Scan

Data Sample Size

☒ 8 bits☐ 12 bit

Compression

5

Field Simulator

N/A

S/N

N/APulser / Receiver

Reflector

N/A

Max Amplitude

N/A

Sweep

N/A

Gain (dB)

N/A

Skew

N/A

Angle Used

N/A

Configuration:

PA Pulse Echo

Pulser Element

P1

Scale Type

LIN

Voltage

115 V

Rectification

Bipolar

Pulse Width

333 ns

High Pass

1.1 MHz

Receiver Element

R1

Low Pass

3.4 MHz

Smoothing

1.5 MHzCalibration Verification

	Time	Date	Block	Operator
Initial	1415	5/13/2012	CAL-508-CIRC-1	MC
Verified	1349	5/14/2012	CAL-RHOM-090	MC
Verified	N/A	N/A	N/A	N/A
Verified	N/A	N/A	N/A	N/A
Final	1817	5/14/2012	CAL-RHOM-090	MC

Wave Type

Longitudinal

Wedge Delay

1.713 μsec.

Velocity

5770 m/sec.

LKUP/LKDN

0° or 180°

Martin Crane

II

5/14/2012

Initial Examiner

Level

Date

Andre' Rachal

II

5/15/2012

GE Data Analyst Review

Level

Date

ms 5/16/12
Be 5-16-12

**HITACHI****ULTRASONIC CALIBRATION DATA SHEET****Z-Scan****(Automated with Phased Array)**e Grand GulfUnit 1Project GG RF18

Report Number

GGRF-APR-024

Calibration Sheet No.

APC-068Weld N06B-KB-OVLY

Procedure No.

GEH-UT-249

Version/Revision

0

DRR

N/A

Instrument:

Zetec / Z-Scan

Manufacturer / Model

ZPA-5583

System Serial No.

1.106

Acquisition Software

1.106

Analysis Software

Search Unit

GEIT

Manufacturer

02297F/02297J

Serial No.

(18 x 10) mm

Total Aperture

115-000-575

Search Unit Model Number:

1.5 MHz

Freq. (MHz)

360-152-315

Wedge Number

Cable

2(64 Conductor 38 GA)

Type

2(0.6m/8.0m)

Length

1

No. of Connectors

Calibration Standard

CAL-508-CIRC-1

Serial No.

SS

Material

63.5 mm

Nominal Thickness

63.5 mm

Measured Thickness

Thermometer

272501

Serial No.

105

Temp (°F)

Couplant

Demin Water

Type

N/A

Couplant Batch:

Calibration

Cal Angle

45°

Orientation

Circ

Type

SDH

Depth

35.5

Amplitude

80-90%

Sweep

35.3

Focal Law Gain

10 dB

Channel Gain

28 dBGeneral

Timebase

Start

0.00 mm

Range

112.800 mm

Mode

Half PathDigitizer

Digitizing Frequency

100.0 MHz

Recurrence

2000 Hz

Averaging

1

Samples

652

Acquisition Rate

399 Hz

Synchro

Pulse☒ A Scan

Data Sample Size

☒ 8 bits☐ 12 bit

Compression

6

Field Simulator

SS Rompas

S/N

CAL-RHOM-090

Reflector

FSDH

Max Amplitude

55%

Sweep

19.1

Gain (dB)

32.0 dB

Skew

0°/180°

Angle Used

45°Pulser / Receiver

Configuration:

PA Pulse Echo

Pulser Element

P1

Scale Type

LIN

Voltage

115 V

Rectification

Bipolar

Pulse Width

333 ns

High Pass

1.1 MHz

Receiver Element

R1

Low Pass

3.4 MHz

Smoothing

1.5 MHzCalibration Verification

	Time	Date	Block	Operator
Initial	1420	5/13/2012	CAL-508-CIRC-1	MC
Verified	1349	5/14/2012	CAL-RHOM-090	MC
Verified	N/A	N/A	N/A	N/A
Verified	N/A	N/A	N/A	N/A
Final	1817	5/14/2012	CAL-RHOM-090	MC

Wave Type

Longitudinal

Wedge Delay

1.713 μsec.

Velocity

5770 m/sec.

LKUP/LKDN

0° or 180°

Martin Crane

II

5/14/2012

Initial Examiner

Level

Date

Andre' Rachal

II

5/15/2012

GE Data Analyst Review

Level

Date

ms 5/16/12
 BW 5/16/12

Page 27 of 33

**HITACHI****ULTRASONIC CALIBRATION DATA SHEET****Z-Scan****(Automated with Phased Array)**Site Grand GulfUnit 1Project GG RF18

Report Number

GGRF-APR-024

Calibration Sheet No.

APC-069Weld N06B-KB-OVLYProcedure No. GEH-UT-249Version/Revision 0DRR N/A

Instrument:

Zetec / Z-Scan

Manufacturer / Model

ZPA-5583

System Serial No.

1.106

Acquisition Software

1.106

Analysis Software

Search Unit

GEIT

Manufacturer

02297F/02297J

Serial No.

(18 x 10) mm

Total Aperture

115-000-575

Search Unit Model Number:

1.5 MHz

Freq. (MHz)

360-152-315

Wedge Number

Cable

2(64 Conductor 38 GA)

Type

2(0.6m/8.0m)

Length

1

No. of Connectors

Calibration Standard

CAL-508-CIRC-1

Serial No.

SS

Material

63.5 mm

Nominal Thickness

63.5 mm

Measured Thickness

Thermometer

272501

Serial No.

105

Temp (°F)

Couplant

Demin Water

Type

N/A

Couplant Batch:

CalibrationCal Angle 60°Orientation CircType SDHDepth 20.3Amplitude 80-90%Sweep 19.5Focal Low Gain 10 dBChannel Gain 29 dBGeneral

Timebase

Start 0.00 mmRange 157.500 mmMode Half PathDigitizerDigitizing Frequency 100.0 MHzRecurrence 2000 HzAveraging 1Samples 780Acquisition Rate 399 HzSynchro Pulse ☒ A ScanData Sample Size ☒ 8 bits ☐ 12 bitCompression 7Pulser / ReceiverConfiguration: PA Pulse EchoPulser Element P1Scale Type LINVoltage 115 VRectification BipolarPulse Width 333 nsHigh Pass 1.1 MHzReceiver Element R1Low Pass 3.4 MHzSmoothing 1.5 MHzProbeWave Type LongitudinalWedge Delay 1.713 μ sec.Velocity 5770 m/sec.LKUP/LKDN0° or 180°Calibration Verification

	Time	Date	Block	Operator
Initial	1425	5/13/2012	CAL-508-CIRC-1	MC
Verified	1349	5/14/2012	CAL-RHOM-090	MC
Verified	N/A	N/A	N/A	N/A
Verified	N/A	N/A	N/A	N/A
Final	1817	5/14/2012	CAL-RHOM-090	MC

Martin Crane
Initial ExaminerII 5/14/2012
Level Date

Andre' Rachal

II 5/15/2012
Level Date

GE Data Analyst Review

Level Date

*MCB 5/16/12**BA 5/16/12*Page 28 of 33

**HITACHI****ULTRASONIC CALIBRATION DATA SHEET****Z-Scan****(Automated with Phased Array)**Site Grand GulfUnit 1Project GG RF18

Report Number

GGRF-APR-024

Calibration Sheet No.

APC-070Weld N06B-KB-OVLY

Procedure No.

GEH-UT-249

Version/Revision

0

DRR

N/A

Instrument:

Zetec / Z-Scan

Manufacturer / Model

ZPA-5583

System Serial No.

1.106

Acquisition Software

1.106

Analysis Software

Search Unit

GEIT

Manufacturer

02297F/02297J

Serial No.

(18 x 10) mm

Total Aperature

115-000-575

Search Unit Model Number:

1.5 MHz

Freq. (MHz)

360-152-315

Wedge Number

Cable

2(64 Conductor 38 GA)

Type

2(0.6m/8.0m)

Length

1

No. of Connectors

Calibration Standard

CAL-508-CIRC-1

Serial No.

SS

Material

63.5 mm

Nominal Thickness

63.5 mm

Measured Thickness

Thermometer

272501

Serial No.

105

Temp (°F)

Couplant

Demin Water

Type

N/A

Couplant Batch:

Calibration

Cal Angle

64°

Orientation

Circ

Type

SDH

Depth

10.1

Amplitude

80-90%

Sweep

10

Facal Low Gain

10 dB

Channel Gain

29 dBGeneral

Timebase

Start

0.00 mm

Range

115.600 mm

Mode

Half PathDigitizer

Digitizing Frequency

100.0 MHz

Recurrence

2000 Hz

Averaging

1

Samples

668

Acquisition Rate

399 Hz

Synchro

Pulse☒ A Scan

Data Sample Size

☒ 8 bits☐ 12 bit

Compression

6Pulser / Receiver

Configuration:

PA Pulse Echo

Pulser Element

P1

Scale Type

LIN

Voltage

115 V

Rectification

Bipolar

Pulse Width

333 ns

High Pass

1.1 MHz

Receiver Element

R1

Low Pass

3.4 MHz

Smoothing

1.5 MHzProbe

Wave Type

Longitudinal

Wedge Delay

1.713 µsec.

Velocity

5770 m/sec.

LKUP/LKDN

0° or 180°Calibration Verification

	Time	Date	Block	Operator
Initial	1430	5/13/2012	CAL-508-CIRC-1	MC
Verified	1349	5/14/2012	CAL-RHOM-090	MC
Verified	N/A	N/A	N/A	N/A
Verified	N/A	N/A	N/A	N/A
Final	1817	5/14/2012	CAL-RHOM-090	MC

Martin Crane

II

5/14/2012

Initial Examiner

Level

Date

Andre Rachal

II

5/15/2012

GE Data Analyst Review

Level

Date

*M/CB 5/14/12**PR 5/16/12*

**HITACHI****ULTRASONIC CALIBRATION DATA SHEET****Z-Scan****(Automated with Phased Array)**Site Grand GulfUnit 1Project GG RF18

Report Number

GGRF-APR-024

Calibration Sheet No.

APC-071Weld N06B-KB-OVLY

Procedure No.

GEH-UT-249

Version/Revision

0

DRR

N/A

Instrument

Zetec / Z-Scan

Manufacturer / Model

ZPA-5583

System Serial No.

1.106

Acquisition Software

1.106

Analysis Software

Search Unit

GEIT

Manufacturer

02297D/01X1HR

Serial No.

(18 x 10) mm

Total Aperture

115-000-575

Search Unit Model Number:

1.5 MHz

Freq. (MHz)

360-152-316

Wedge Number

Cable

2(64 Conductor 38 GA)

Type

2(0.6m/8.0m)

Length

1

No. of Connectors

Calibration Standard

CAL-508-AX-1

Serial No.

SS

Material

63.5 mm

Nominal Thickness

63.5 mm

Measured Thickness

Thermometer

272501

Serial No.

105

Temp (°F)

Couplant

Demin Water

Type

N/A

Couplant Batch:

Calibration

Cal Angle

45°

Orientation

Axial

Type

SDH

Depth

35.5

Amplitude

80-90%

Sweep

50.9

Focal Low Gain

10 dB

Channel Gain

28 dBGeneral

Timebase

Start 0.00 mmRange 112.800 mmMode Half PathDigitizerDigitizing Frequency 100.0 MHz

Recurrence

2000 Hz

Averaging

1

Samples

652

Acquisition Rate

666 Hz

Synchro

Pulse☒ A Scan

Data Sample Size

☒ 8 bits☐ 12 bit

Compression

6Pulser / Receiver

Configuration:

PA Pulse Echo

Pulser Element

P1

Scale Type

LIN

Voltage

115 V

Rectification

Bipolar

Pulse Width

333 ns

High Pass

1.1 MHz

Receiver Element

R1

Low Pass

3.4 MHz

Smoothing

1.5 MHzProbe

Wave Type

Longitudinal

Wedge Delay

2.463 μsec.

Velocity

5770 m/sec.LKCW/LKCCW0° or 180°Calibration Verification

	Time	Date	Block	Operator
Initial	1500	5/13/2012	CAL-508-AX-1	MC
Verified	1823	5/14/2012	CAL-RHOM-090	MC
Verified	N/A	N/A	N/A	N/A
Verified	N/A	N/A	N/A	N/A
Final	0012	5/15/2012	CAL-RHOM-090	TR

Tyler Raymond
Initial Examiner

II

5/15/2012
Date

Andre Rachal

II

5/15/2012
Date

GE Data Analyst Review

Level

Date

Handwritten: 5/16/12
576-12

**HITACHI****ULTRASONIC CALIBRATION DATA SHEET****Z-Scan****(Automated with Phased Array)**Site Grand GulfUnit 1Project GG RF18Report Number GGRF-APR-024Calibration Sheet No. APC-072Weld N06B-KB-OVLYProcedure No. GEH-UT-249Version/Revision 0DRR N/AInstrument: Zetec / Z-Scan
Manufacturer / ModelZPA-5583
System Serial No.1.106
Acquisition Software1.106
Analysis SoftwareSearch Unit GEIT
Manufacturer022970/01X1HR
Serial No.(18 x 10) mm
Total Aperture115-000-575
Search Unit Model Number:1.5 MHz
Freq. (MHz)360-152-316
Wedge NumberCable 2(64 Conductor 38 GA)
Type2(0.6m/8.0m)
Length1
No. of ConnectorsCalibration Standard CAL-508-AX-1
Serial No.SS
Material63.5 mm
Nominal Thickness63.5 mm
Measured ThicknessThermometer 272501
Serial No.105
Temp (°F)

Couplant

Demin Water
TypeN/A
Couplant Batch:CalibrationCal Angle 60°Orientation AxialType SDHDepth 20.3Amplitude 80-90%Sweep 38.4Focal Law Gain 10 dBChannel Gain 29 dBGeneralTimebase Start 0.00 mm Range 158.300 mm
Mode Half PathDigitizerDigitizing Frequency 100.0 MHz Recurrence 2000 Hz
Averaging 1 Samples 784
Acquisition Rate 666 Hz Synchro Pulse ☒ A Scan
Data Sample Size ☒ 8 bits ☐ 12 bit Compression ZPulser / ReceiverConfiguration: PA Pulse Echo
Pulser Element P1 Scale Type LIN
Voltage 115 V Rectification Bipolar
Pulse Width 333 ns High Pass 1.1 MHz
Receiver Element R1 Low Pass 3.4 MHz
Smoothing 1.5 MHzProbeWave Type Longitudinal Wedge Delay 2.463 μsec.
Velocity 5770 m/sec.LKCW/LKCCW
0° or 180°Calibration Verification

	Time	Date	Block	Operator
Initial	1505	5/13/2012	CAL-508-AX-1	MC
Verified	1823	5/14/2012	CAL-RHOM-090	MC
Verified	N/A	N/A	N/A	N/A
Verified	N/A	N/A	N/A	N/A
Final	0012	5/15/2012	CAL-RHOM-090	TR

tyler Raymond	II	5/15/2012
Initial Examiner	Level	Date
Andre' Rachal	II	5/15/2012
GE Data Analyst Review	Level	Date

MB 5/16/12
6m 5/16-12

**HITACHI****ULTRASONIC CALIBRATION DATA SHEET****Z-Scan****(Automated with Phased Array)**Site Grand GulfUnit 1Project GG RF18Report Number GGRF-APR-024Calibration Sheet No. APC-073Weld N06B-KB-OVLYProcedure No. GEH-UT-249Version/Revision 0DRR N/AInstrument
Zetec / Z-Scan
Manufacturer / ModelZPA-5583
System Serial No.1.106
Acquisition Software1.106
Analysis SoftwareSearch Unit
GEIT
Manufacturer02297D/01X1HR
Serial No.(18 x 10) mm
Total Aperture115-000-575
Search Unit Model Number:1.5 MHz
Freq. (MHz)360-152-316
Wedge NumberCable
2(64 Conductor 38 GA)
Type2(0.6m/8.0m)
Length1
No. of ConnectorsCalibration Standard
CAL-508-AX-1
Serial No.SS
Material63.5 mm
Nominal Thickness63.5 mm
Measured ThicknessThermometer
272501
Serial No.105
Temp (°F)

Couplant

Demin Water
TypeN/A
Couplant Batch:Calibration

Cal Angle 70°
 Orientation Axial
 Type SDH
 Depth 10.1
 Amplitude 80-90%
 Sweep 24.2
 Focal Law Gain 10 dB
 Channel Gain 29 dB

General

Timebase Start 0.00 mm Range 115.600 mm
 Mode Half Path

Digitizer

Digitizing Frequency 100.0 MHz Recurrence 2000 Hz
 Averaging 1 Samples 668
 Acquisition Rate 666 Hz Synchro Pulse ☒ A Scan
 Data Sample Size ☒ 8 bits ☐ 12 bit Compression 6

Field Simulator N/A S/N N/APulser / Receiver

Reflector N/A
 Max Amplitude N/A
 Sweep N/A
 Gain (dB) N/A
 Skew N/A
 Angle Used N/A

Configuration: PA Pulse Echo
 Pulser Element P1 Scale Type LIN
 Voltage 115 V Rectification Bipolar
 Pulse Width 333 ns High Pass 1.1 MHz
 Receiver Element R1 Low Pass 3.4 MHz
 Smoothing 1.5 MHz

Calibration Verification

	Time	Date	Block	Operator
Initial	1510	5/13/2012	CAL-508-AX-1	MC
Verified	1823	5/14/2012	CAL-RHOM-090	MC
Verified	N/A	N/A	N/A	N/A
Verified	N/A	N/A	N/A	N/A
Final	0012	5/15/2012	CAL-RHOM-090	TR

Probe

Wave Type Longitudinal Wedge Delay 2.463 μ sec.
 Velocity 5770 m/sec.
 LKCW/LKCCW
 0° or 180°

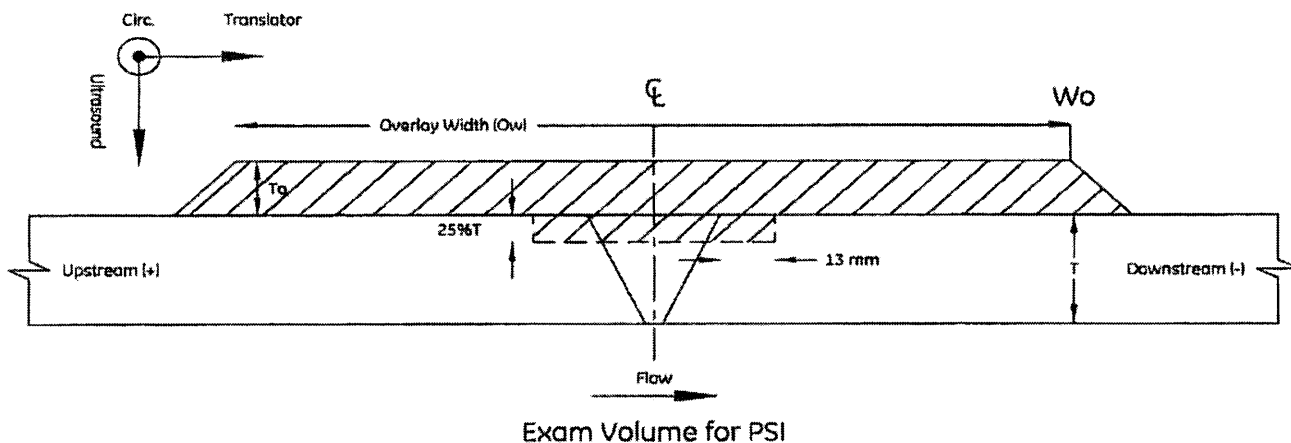
Tyler Raymond II 5/15/2012
 Initial Examiner Level Date
 Andre Rachal II 5/15/2012
 GE Data Analyst Review Level Date

MA 5/16/12
 for 5-16-12

**HITACHI**

SP2000 - Piping Scan Plan for PSI Weld Overlays

PDI Demonstration



Procedure: GEH-UT-249 V0
Weld ID.: N06B-KB (OVLY)
Weld Length: 1299 mm
Component OD: 16.27 inches
Pipe Thickness (T): 35.0 mm
Overlay Thickness (To): 25.0 mm
CL to Wo: 99 mm
Overlay Width (Ow): 190 mm

SCANNING SEQUENCE FOR CIRCUMFERENTIAL FLAWS

Scan / Skew	Probe	Scan (Translator) mm			Index (Circumferential) mm			Initials
		Min.	Max.	Resolution	Min.	Max.	Resolution	
LKUP 0°	AS	-10	200	1	0	1324	5	AR
LKDN 180°	AS	-10	200	1	0	1324	5	AR

Wedge: 360-152-315

Probes: 115-000-575

SCANNING SEQUENCE FOR AXIAL FLAWS

Scan / Skew	Probe	Scan (Circumferential) mm			Index (Translator) mm			Initials
		Min.	Max.	Resolution	Min.	Max.	Resolution	
LKCW 0°	AS	0	1324	1	0	190	5	AR
LKCC 180°	AS	0	1324	1	0	190	5	AR

Wedge: 360-152-316

Probes: 115-000-575

25 mm/sec. - Maximum scan speed

295.431 Trans. cts/mm

202.309 Circ. cts/mm

16" Track diameter

UPST OF OVLY Mounted

Angle	Axial Focus Depth	Circ. Focus Half Path	Min TB MP (mm)	Max TB MP (mm)	Minimum Samples
0°	25	N/A	70	88	480-600
25°	43	N/A	77	97	480-600
45°	34	48	99	124	480-600
60°	15	30	140	175	480-600
70°	6	18	102	128	480-600

Data Analyst: Andre' Rachal

Date: 5/14/12

UT2000 Scan Plan Rev0, Rev0, Rev0 12/11/09

Attachment 2 to

GNRO-2012/00051

Liquid Penetrant Examination Report ISI-VE-12-179



Liquid Penetrant Examination

Site/Unit:	<u>GGNS / 1</u>	Procedure:	<u>QAP 9.21</u>	Outage No.:	<u>RF-18-ISI</u>
Summary No.:	<u>G1.R1.16.959</u>	Procedure Rev.:	<u>5</u>	Report No.:	<u>ISI-VE-12-179</u>
Workscope:	<u>AUG</u>	Work Order No.:	<u></u>	Page:	<u>1</u> of <u>1</u>
Code:	<u>ASME 2001 Ed, 2003 Add</u>	Cat./Item:	<u>R-A/R1.16</u>	Location:	<u>Upper Annulus/ 141° az.</u>
Drawing No.:	<u>RPV-11-01</u>	Description:	<u>RHR/LPCI INLET NOZZLE-TO-SAFE END CIRC WELD</u>		
System ID:	<u>RHR / LPCI</u>				
Component ID:	<u>N06B-KB</u>				
Limitations:	<u>None</u>				

Comments:

This report is to document the PSI examination of N06B-KB overlay.

Final PT performed by WSI quality personnel.

PT was performed in accordance with Grand Gulf Nuclear Station (GGNS) Relief Request ISI-17, ASME Section III, NB2500, NB 3500 and WSI's QAP 9.21 Rev. 5, Attachments 11.2 / 11.4.

No relevant indications were noted. The exam volume consisted of the entire Weld overlay and ½ inch of base metal on the nozzle side and ½ inch on the Safe-End side.

See the attached WSI Liquid Penetrant Report (205837-PT-03) for all signatures.

Results: Accept ☒ Reject ☐ Eval ☐

Percent Of Coverage Obtained > 90%: Yes - 100

Reviewed Previous Data: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Folan, David			5/14/2012	N/A		
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			Briley, Michael W.		5/15/2012
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Russell, Ben		5/15/2012

Liquid Penetrant Inspection Report

PROJECT DATA

Project No: 205837 Report No: 205837 -PT- 03 Page: 1 of 1
 Customer: Entergy PO No: 10310356 PN: N/A
 Site/Plant: Grand Gulf Nuclear Generating Station Descr: Traveler 205837-TR-109 R/O, Step 8.4
 Unit 1 Date: 05/14/12 Time: 11:10 HR

Specification(s) and Code(s): Relief Request ISI-17, ASME Section III, NB2500 & NB5300,
 ASME Code Cases N-504-4 & N-638-4

Acceptance Criteria: QAP 9.21, Attachments 11.2 & 11.4 WSI QAP: 9.21 Rev. 5

MATERIALS, EQUIPMENT, & CALIBRATION

Penetrant Mfg/Designation: Dubl-Chek Sherwin DR-40 Batch No: 821-D1
 Cleaner Mfg/Designation: Dubl-Chek Sherwin DR-60 Batch No: 818-D4
 Developer Mfg/Designation: Dubl-Chek Sherwin DR-100 Batch No: 817-D6
 Light Meter S/N: WSI-8981 Calibration Due Date: 02/02/13
 Pyrometer S/N: WSI-0141 Calibration Due Date: 01/22/13
 Light Source: FLASHLIGHT Auxiliary Equipment: MIRROR

INSPECTION DATA

Temperature: 90 °F Light Intensity: 375 fc
 Pre-Cleaning Drying Time: 5 min. Penetrant Dwell Time: 10 min. Visual Exam Sat: ☒
 Penetrant Removal Dry Time: 5 min. Developer Dwell Time: 10 min.
 Post Cleaning: Solvent & Wipes

INSPECTION RESULTS

Identification (S/N)	Qty	Acc	Rej	Mat Type	Thickness	Comments/NCR
Final Weld Overlay Nozzle N6B	1	✓		P3 - P43	~ .90" - .97"	No relevant indications noted. Note: Examination area includes the entire final Weld Overlay plus an additional 1/2" of base material on the Nozzle side, and a 1/2" on the Safe End side.

Inspection Performed By: David Folan Level: II PT
 Signature (must be signed):  Date: 05/14/12
 Client Approval (if required):  Date: 5/15/2012
 ANII Acceptance (if required):  Date: 5-15-12