



LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

P.O. BOX 618, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

August 21, 1979

SNRC-422

Mr. Steven A. Varga, Chief
Light Water Reactors Branch 4
Division of Project Management
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Shoreham Nuclear Power Station - Unit 1
Docket No. 50-322

Dear Mr. Varga:

Enclosed herein are ten (10) copies of each of the following field changes/revisions to the Preservice Inspection Program for the Shoreham Nuclear Power Station - Unit 1:

FIELD CHANGES

- #80A0462 - 1
- #80A0467 - 1
- #80A0468 - 1
- #80A0471 - 1
- #80A0425 - 1
- #80A0476 - 1
- #80A0481 - 1
- #80A0481 - 2

REVISIONS

- #80A0448 Rev. 6
- #80A2941
- #80A0482 Rev. 1
- #80A0469 Rev. 3
- #80A0486 Rev. 1

These documents are furnished to comply with LILCO's response No. 1 to NRC request 121.16. Please remove and destroy superceded material and insert the documents listed above.

Very truly yours,

J. Musler for J.P. Novarro

J. P. Novarro
Project Manager
Shoreham Nuclear Power Station

DTR:jm

Enclosures

1229 297

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MAT ENCL(3)
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NUCLEAR ENERGY SERVICES, INC.

NES DIVISION

SHELTER ROCK ROAD
DANSBURY, CONN. 06810
(203) 748-3581

MAY 9, 1979
Date

#12

ISI FIELD CHANGE AUTHORIZATION

Document Title ULTRASONIC EXAMINATION PROCEDURE FOR PIPING BUTT WELDS AND LONGITUDINAL WELDS Document No. 80A-0481 Rev. 3

Field Change No. 0481-2 Originator J. Jensen

Description of Field Change:

5.3.1. THE ULTRASONIC COUNT RATE SHALL BE SUITABLE FOR USE ON NUCLEAR PLANT MATERIAL AND BE CERTIFIED NOT TO EXCEED 50 PPM HALOGENS AND 200 PPM SULFUR.

Reason for Change:

TO INCORPORATE G.E. REQUIREMENTS.

POOR ORIGINAL

1229 298

Approvals:

<u>NES LIII</u>	<u>J. Jensen UT</u>	<u>5-9-79</u>
<u>Product Mgr</u>	<u>APPROVED PER PHONE CON ENG Gmb 5/24/79</u>	<u>5-9-79</u>
<u>LILCO QA</u>	<u>F.X. Schones NDT III</u>	<u>5/18/79</u>

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11-2-78

Date

ISI FIELD CHANGE AUTHORIZATION

Document Title ULTRASONIC EXAMINATION PROCEDURES FOR PIPING BUTT WELDS (Longitudinal Welds) Document No. 80A0481 Rev. 3

Field Change No. 0981-1 Originator F. CARR

Description of Field Change:

PAGE 25, STEP 2 - ADJUST SENSITIVITY TO PROVIDE 80% FSH INDICATION FROM THE APPROPRIATE HOLE GIVING MAXIMUM RESPONSE. MARK POSITION ON SCREEN. (SEE SECTION 8.1 (2) OR 8.3 (2).

Reason for Change:

CLARIFICATION OF STEP 2.

1229 299

POOR ORIGINAL

Approvals:

NES III
PROJ. MANAGER
A. IACO R.A.

APPROVED Per Phone CON. E. Anderson For F. CARR
APPROVED PER PHONE CON. E. Anderson For G. Griffith
Chick Smith

6/22/79
6-20-79
6-2-79

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MAY 9, 1979
Date

ISI FIELD CHANGE AUTHORIZATION

Document Title ULTRASONIC EXAMINATION PROCEDURE FOR CLOSURE HEAD AND RECIRCULATION PUMP STUDS AND NUTS Document No. 80A0476 Rev. 0

Field Change No. 0476-1 Originator J. Jensen

Description of Field Change:

5.3.1. THE ULTRASONIC COUPLANT SHALL BE SUITABLE FOR USE ON NUCLEAR PLANT MATERIAL AND BE CERTIFIED NOT TO EXCEED 50 PPM HALOGENS AND 200 PPM SULFUR.

Reason for Change:

TO INCORPORATE G.E. COMMENTS.

POOR ORIGINAL

1229 300

Approvals:

NES LIT	<u>J. Jensen UT LIT</u>	<u>5-9-79</u>
Project Mgr.	<u>Approved For Release by J.P.G. Gmb 5-21-79</u>	<u>5-9-79</u>
LILCO QA	<u>F.X. Schaefer NDT III</u>	<u>5/18/79</u>

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May 9, 1979
Date

ISI FIELD CHANGE AUTHORIZATION

Document Title MANUAL ULTRASONIC EXAMINATION FOR VESSEL NOZZLE SAFENESS AND CLOSURE HEAD NOZZLE - FLANGE WELDS Document No. 80A0475 Rev. 0

Field Change No. 0475-1 Originator J. Jensen

Description of Field Change:

5.3.1 THE ULTRASONIC COMPLIANT SHALL BE SUITABLE FOR USE ON NUCLEAR PLANT MATERIAL AND BE CERTIFIED NOT TO EXCEED 50 PPM HALOGENS AND 200 PPM SULFUR.

Reason for Change:

TO INCORPORATE G.E. REQUIREMENTS

POOR ORIGINAL

1229 301

Approvals:

<u>NES LIT</u>	<u>J. Jensen UT III</u>	<u>5-9-79</u>
<u>PRODUCT MGR</u>	<u>APPROVED PER PHONE CON GAT GNB 5.24.79</u>	<u>5-9-79</u>
<u>ILCO QA</u>	<u>F.X. Schauer NDT III</u>	<u>5/18/79</u>

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NES DIVISION

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(203) 748-3587

MAY 9, 1979
Date

ISI FIELD CHANGE AUTHORIZATION

Document Title Manual Ultrasonic Examination Procedure for vessel welds and stabilizers BRACKET WELDS Document No. BOA0471 Rev. 0

Field Change No. 0471-1 Originator J. Jensen

Description of Field Change:

S.3.1 THE ULTRASONIC COUPLANT SHALL BE SUITABLE FOR USE ON NUCLEAR PLANT material and be certified not to exceed 50 ppm Halogens and 200 ppm Sulfur.

Reason for Change:

TO INCORPORATE G.E. REQUIREMENTS

POOR ORIGINAL

1229 302

Approvals:

NES LIT J. Jensen UT III 5-9-79

PROJECT MGR. APPROVED FOR FROM COM RAG Gmb 5-24-77 5-9-77

UIC QA F.X. Schaner NDT III 5/18/79

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Figure 4.1



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(203) 748-3581

MAY 9, 1979
Date

ISI FIELD CHANGE AUTHORIZATION

Document Title ULTRASONIC EXAMINATION PROCEDURE FOR REACTOR VESSEL TO FLANGE WELDS AND STUB LIGAMENT Document No. 80A0468 Rev. 1

Field Change No. 0468-1 Originator J. Jensen

Description of Field Change:

S.3.1 THE ULTRASONIC COUPLANT shall be suitable for use on nuclear plant material and be certified not to exceed 50 ppm Halogens and 200 ppm sulfur.

Reason for Change:

TO Incorporate G.E. REQUIREMENTS

POOR ORIGINAL

1229 303

Approvals:

NES LIT	<u>J. Jensen</u> UT LIT	<u>5-9-79</u>
PROJECT MGR.	PROJECT MANAGER APPROVED PER VICE COM. ^{DATE 5-24-79}	<u>5-9-79</u>
FIELD QA	<u>F.X. Schauer</u> (DIT) TL	<u>5/18/79</u>

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MAY 9, 1979
Date

ISI FIELD CHANGE AUTHORIZATION

Document Title ULTRASONIC EXAMINATION PROCEDURE for CLOSURE HEAD TO FLANGE WELD Document No. 80A0467 Rev. 4

Field Change No. 0467-1 Originator J. Jensen

Description of Field Change:

S.3.1 THE ULTRASONIC Couplant shall be suitable for use on Nuclear plant material and be certified not to exceed 50 PPM Halogens and 200 ppm Sulfur.

Reason for Change:

TO INCORPORATE G.E. REQUIREMENTS.

POOR ORIGINAL

1229 304

Approvals:

NES LTH	<u>J. Jensen CPT LTH</u>	<u>5-9-79</u>
PROJECT MGR.	<u>PROJECT MANAGER APPROVED per FASME COM. 819</u>	<u>5-9-79</u>
HLCO QA	<u>F.X. Schinner NDT III</u>	<u>5/18/79</u>

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MAY 9, 1977
Date

ISI FIELD CHANGE AUTHORIZATION

Document Title MANUAL ULTRASONIC EXAMINATION PROCEDURE FOR REACTOR PRESSURE VESSEL, CIRCUMFERENTIAL AND LONGITUDINAL WELDS Document No. 8CA0462 Rev. 2

Field Change No. 0462-1 Originator J. Jensen

Description of Field Change:

5.3.1 THE ULTRASONIC COUPLANT shall be suitable for use on NUCLEAR plant material and be certified not to exceed 50 ppm HALOGENS and 200 ppm Sulfur

Reason for Change:

TO INCORPORATE G. E. REQUIREMENTS

POOR ORIGINAL

1229 305

Approvals:

<u>NES LIII</u>	<u>J. Jensen UT CO</u>	<u>5-9-79</u>
<u>PROJ. MNG.</u>	<u>Project Manager approved per phone call</u>	<u>5-9-79</u>
<u>LILCO Q.A.</u>	<u>F.X. Schonee 5/18/79 NDT III</u>	<u>5/18/79</u>

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ULTRASONIC EXAMINATION PROCEDURE FOR
 JET PUMP INSTRUMENTATION NOZZLE SAFE-END
 TO MANIFOLD WELDS

LONG ISLAND LIGHTING COMPANY
 SHOREHAM NUCLEAR POWER STATION

CONTROLLED
COPY #20

Rev. No.	Date
0	5/22/79
1	7/3/79

ORIGINATOR:

V. R. Proutis 5/21/79
 DATE

APPROVALS:

Ges/ Fran M. Smith 5/22/79
 NES Project Mgr. DATE

F. T. Lan 5/21/79
 NES Field Operations Mgr. DATE
 Level III, SNT-TC-1A

G. Osawany 5/22/79
 NES QA Mgr. DATE

Michael B. Smith 7/10/79
 LILCO DATE

LILCO DATE

POOR ORIGINAL

1229 306

RECORD OF REVISIONS

Rev. No.	Date	Description	Reason	Prepared by	Approved by	
					NES	LILCO
1	7/3/79	<p>Changed Ref. Std. No. to 04-080S-SSF in para. 6.2(5) and throughout procedure.</p> <p>Added additional column "Notch Depth (%T)" to Figure 2.</p> <p>Changed note in Fig. 3 to read "..per Section 8.4."</p>	<p>To incorporate LILCO review comments.</p> <p>CRA-910</p>	<p>V. Prantis</p> <p><i>V. Prantis</i></p>	<p>NES</p> <p><i>FC</i></p>	<p>LILCO</p> <p><i>MJS</i></p> <p><i>7/10/79</i></p>



ULTRASONIC EXAMINATION PROCEDURE
FOR JET PUMP INSTRUMENTATION NOZZLE SAFE-END
TO MANIFOLD WELDS

1.0 SCOPE

1.1 Area of Examination

This document covers the ultrasonic examination procedures for the Jet Pump Instrumentation Nozzle (N8) Safe-End to Manifold Welds.

1.2 Type of Examination

1.2.1 Volumetric examination shall be performed using ultrasonic pulse echo nominal 45° angle beam and 0° straight beam techniques applied to the outside surface of the Jet Pump Instrumentation Nozzle Safe-End to Manifold Welds.

1.2.2 Examinations shall be performed manually using contact search units (transducers).

1.3 Time of Examination

These procedures shall govern the preservice examination and re-examination of repaired areas of the RPV nozzle safe-end and transition welds as required by the ASME Boiler and Pressure Vessel Code, Section XI.

1.4 Weld Configuration

The Jet Pump Instrumentation Nozzle Safe-End to Manifold Welds covered by this procedure are shown in Figure 1.

1.5 Materials

The Jet Pump Instrumentation Nozzle Safe-Ends and Manifolds are constructed of stainless steel.

1229 308



2.0 REFERENCES

2.1 Reference Documents

The following documents form a part of this examination procedure:

- (1) ASME Boiler and Pressure Vessel Code, Section XI, 1971 Edition and the Summer of 1972 Addenda.
- (2) ASME Boiler and Pressure Vessel Code, Section V, Article 5, 1971 Edition.
- (3) ASNT Recommended Practice, SNT-TC-1A, Supplement C, Third Edition (1971).
- (4) ConAm Procedure for Certifying Inspection Personnel, CUTP-1, Rev. 5, August, 1978.
- (5) NES Procedure for Ultrasonic Instrument Linearity Verification, 80A9053, Rev. 0, October, 1978, as modified by para. 2.3.2 of this procedure.

2.2 Applicable Drawings

The following component drawings are part of this procedure:

CE Drawing 234-233 S&W Dwg. No. 92D866

2.3 Operational Manuals

The equipment operational manuals for the particular ultrasonic instruments used form a part of this procedure.

3.0 PROCEDURE CERTIFICATION

The examination procedures described in this document comply with Section XI of the ASME Boiler and Pressure Vessel Code, 1971 Edition including Summer 1972 Addenda, except where examination coverage is limited by part geometry or access.

1229 309

4.0 PERSONNEL CERTIFICATION

4.1 Personnel Certification Requirements

- 4.1.1 Each person performing ultrasonic examination governed by this procedure shall be certified in accordance with References 2.1(1), 2.1(3), and 2.1(4).
- 4.1.2 An examination crew shall consist of one or two members as needed. At least one member of each crew shall have a minimum qualification of Level II in accordance with the above referenced documents. The remaining member(s) shall have a minimum qualification of Level I.

4.2 Personnel Records

- 4.2.1 Records of personnel qualification shall be maintained by Examination Contractor.
- 4.2.2 A copy of the examiner's certification summary and a current eye test, as required by SNT-TC-1A, shall be filed with each permanent examination record, with a copy submitted to the Plant Owner, or his Agent, prior to performing examinations per this procedure.

5.0 EXAMINATION REQUIREMENTS

5.1 Surface Preparation

All examination surfaces shall be cleaned and free of dirt, weld spatter, etc., or any other condition which would interfere with the examination or impair proper transmission of the sound beam.

Where the surface or other conditions do not permit a meaningful examination, the examiner shall record the location and the particular interfering condition in the space provided on the Calibration Data Sheet, and report same to the examination supervisor for corrective action or disposition.

1229 310



5.2 Liquid Couplant

- 5.2.1 The ultrasonic couplant shall be suitable for use on nuclear plant materials and be certified to have less than 50 ppm halogens and 200 ppm sulfur.
- 5.2.2 The couplant shall be supplied in clean containers of sufficient quantity to perform the examination.
- 5.2.3 Where required, the examiner shall be responsible for removing couplant from the examination surface at the conclusion of the examination.

5.3 Examination Frequency

- 5.3.1 The nominal examination frequency shall be 5.0MHz for all straight beam examinations in order to achieve resolution of the 1/2T hole during calibration. The nominal examination frequency for all angle beam examinations shall be 2.25MHz.
- 5.3.2 Other pulse frequencies shall be used if such variables as material attenuation, grain structure, etc., necessitate their use to achieve penetration or resolution. This information shall be recorded on the data sheet.

5.4 Examination Angles and Coverage

- 5.4.1 The intent of this procedure is to provide maximum examination coverage. Each weld shall be scanned with minimum 25% overlap of the transducer width (diameter) for each scan pass.
- 5.4.2 The rate of search unit movement shall not exceed six (6) inches per second.
- 5.4.3 Each weld and the required volume (WRV) of metal up to the thickness transition on each side of the weld shall be ultrasonically examined using 45° angle beam techniques. They shall be applied in two directions perpendicular to the weld axis and in two directions parallel with the weld axis, on both sides of the weld, except where restricted by part geometry or access.

1229 311



- 5.4.4 Straight beam techniques shall be applied to the required examination volume (WRV) and to all parent material through which angle beams will pass during angle beam examination of the WRV. Indications outside the WRV may be evaluated in accordance with paragraph 10.1.1 of this procedure.
- 5.4.5 Other beam angles or longitudinal waves may be used as determined necessary: i.e., for evaluation of reflectors, to compensate for geometric constraints, etc. All information shall be recorded on the data sheets.
- 5.4.6 Where examination surface, geometry, or other conditions (weld, contour, access, etc.) do not permit a meaningful ultrasonic examination to be performed, the examiner shall record the area of non-examination and the particular interfering condition in the space provided on the Calibration Data Sheet (Figure 5). In addition, he shall make a sketch of the weld and adjacent conditions on the reverse side of the Calibration Data Sheet.
- 5.4.7 All welds examined shall be entered in the space provided on the Calibration Data Sheet. If there are no recordable indications, it shall be so noted in the appropriate column.
- 5.4.8 Coverage for the weld specified in this procedure is shown in Figure 1.

5.5 Weld Identification

Each weld shall be located and identified per the appropriate weld map located in the Program Plan Book (NES 80A0482).

5.6 Datum Point

- 5.6.1 The examiner shall verify that there has been marked a reference datum point on each weld from which all examination data and reported indications shall be referenced.

1229 312



5.6.2 Datum points shall be marked by the use of low stress stamps or vibratooling and shall not be deeper than 3/64".

5.6.3 The datum point for all safe-end and transition welds shall be located at the highest point on the weld centerline.

6.0 EQUIPMENT REQUIREMENTS

6.1 Examination Contractor's Equipment

The following test equipment, or its equivalent, shall be provided by the Examination Contractor (as a minimum) for examination of welds specified in this procedure.

- (1) Pulse Echo Ultrasonic Instrument.
- (2) Search Unit, 5.0MHz, 0°, 1/4"-1/2" dia.
- (3) Search unit, 2.25MHz, 45° shear, 1/4" dia.
- (4) Search unit, 2.25MHz, 45° longitudinal, 1/2" dia.
- (5) Couplant.
- (6) Camera.
- (7) Thermometer.

6.2 Plant Owner's Equipment

- (1) Scaffolding.
- (2) Water, Air, and Electricity.
- (3) Adequate Temporary Lighting.
- (4) Moving or Lifting Devices.
- (5) Calibration Standard No. 04-080S-SSF.
- (6) Test Surface Preparation (cleaning and finishing).
- (7) Drawings of each examination area.
- (8) Post-examination cleanup.



1229 313



7.0 CALIBRATION REQUIREMENTS

7.1 Calibration Data Sheets

Calibration Data Sheets shall be numbered 486-1, 486-2, 486-3, etc., at the time of calibration and shall be signed by the examiner(s) upon completion. Supplements (Figures 6, 7, and 8) shall be used as required, and signed by the examiner(s) upon completion.

7.2 Calibration Standards

7.2.1 The calibration standard designated in 6.2(5) shall be used for basic instrument calibration and for establishing reference sensitivity levels for examination of the specified welds. (See Figure 2)

7.2.2 The identity of the calibration standard used for performing calibration shall be recorded on each Calibration Data Sheet. Figure 5 is an example of the Calibration Data Sheet to be used with this procedure.

7.2.3 Calibration procedures for the examination shall be performed using the OD surface of the calibration standard.

7.2.4 The temperature of the calibration standard shall be within 25°F of the component temperature. Calibration standard and component temperatures shall be recorded on the Calibration Data Sheet.

7.3 Reference Sensitivity Level

7.3.1 The reference sensitivity level shall be the distance-amplitude curve initially obtained directly from the calibration standard and shall be the sensitivity level used for evaluating and recording all indications.

7.3.2 During actual weld scanning, the reference sensitivity level shall be increased a minimum of 2X (6dB). The actual scan sensitivity shall be recorded on the data sheet.

1229 314



7.4 Times of Calibration

- 7.4.1 Basic instrument calibration shall be performed using the appropriate calibration standard, search units, and instrumentation immediately prior to the examination of the welds specified in this procedure.
- 7.4.2 Instrument vertical and amplitude control linearity checks shall be performed at the beginning of each day of examination in accordance with the technique in the procedure referenced in paragraph 2.1(5) using an angle beam search unit applied to a code calibration standard.
- 7.4.3 Examination system calibration checks shall be performed at least at the beginning and at the completion of each four (4) hour period of examination and/or at the change of Level II examination personnel, equipment, search units, coupler shoes, etc., and at the completion of the examination of each similar series of welds in accordance with Sections 8.2 and 8.5 of this procedure.

7.5 Calibration Response

- 7.5.1 Calibration response shall be checked at the reference sensitivity level.
- 7.5.2 Signal response obtained during calibration check shall be within plus or minus 20% of that established during basic instrument calibration.
- 7.5.3 If any point on the Distance-Amplitude Correction (DAC) curve is below the 20% limit, the examiner shall:
- (1) Mark all data sheets since previous calibration check, "VOID".
 - (2) Recalibrate examination system.
 - (3) Re-examine voided areas.

1229 315



7.5.4 If any point on the DAC curve is above the 20% limit, the examiner shall:

- (1) Recalibrate examination system.
- (2) Re-evaluate all indications recorded since the previous calibration check at the corrected sensitivity level.

7.5.5 If any point on the DAC curve has moved horizontally more than 5% of the sweep line from its original settings, the examiner shall:

- (1) Correct the sweep calibration and note it on the Calibration Data Sheet.
- (2) Void any data sheets made since the previous calibration check which have recorded indications and re-examine those areas.

8.0 EXAMINATION SYSTEM CALIBRATION

8.1 Straight Beam Calibration of WRV

Straight beam calibration shall be performed as follows and as shown in Figure 4.

- (1) Adjust the instrument sweep controls so that the examination area is displayed on the CRT screen. Mark the horizontal screen positions selected for the hole or holes directly on the CRT screen and on the chart on the Calibration Data Sheet.
- (2) Position search unit to obtain maximum response from the side drilled ($1/4T$ if $T \geq 1"$ or $1/2T$ if $T < 1"$) calibration hole. Adjust sensitivity control to provide a signal amplitude of 80% of Full Screen Height (FSH) and mark location and amplitude on CRT screen.
- (3) This is the reference sensitivity. Record all sensitivity control settings on the appropriate Calibration Data Sheet.
- (4) This completes calibration for thicknesses of one (1) inch or less. (No DAC is necessary for weld thicknesses one (1) inch or less).
- (5) Record all data and instrument settings on the Calibration Data Sheet, and sign and date upon completion.

1229 316



8.2 Straight Beam Calibration Check

Straight beam calibration check as required by paragraph 7.4.3 shall be performed as follows:

- (1) Adjust the sensitivity control settings to match those recorded for the calibrated reference sensitivity. See paragraph 8.1(5).
- (2) Reposition search unit at each respective test hole and observe maximum signal response amplitudes.
- (3) See Section 7.5 for signal response requirements during calibration check.

8.3 Angle Beam Calibration One and One-Half Full Vee Technique

One and one-half vee path calibration shall be the preferred method of calibration for the examinations described in this procedure and shall be accomplished as shown in Figure 4.

- (1) Obtain maximized signal responses from the appropriate notches and adjust sweep settings to place the signal responses respectively at CRT divisions 2, 4, 6, and 8.
- (2) Position search unit to obtain maximum response from the 1-1/2T hole. Adjust sensitivity control to provide a signal amplitude of 80% of FSH and mark location (near division 3) and amplitude on CRT screen.
- (3) Without changing sensitivity, position the search unit for maximum responses from the calibration holes at 1/2T, 2-1/2T, and 3-1/2T positions respectively and mark locations and amplitudes on the CRT screen.
- (4) This is the primary reference sensitivity. Record all sensitivity control settings on the appropriate Calibration Data Sheet.
- (5) If the instrument is equipped with an electronic DAC device, the primary reference response shall be equalized at 80% of FSH over the distance range to be employed in the examination.

1229 317



- (6) Plot a DAC curve by connecting the signal response positions with a continuous line extending over the full examination range.
 - (7) Note position and amplitude of ID and OD notch responses through 2T calibration range (ID at 1T, OD at 2T).
 - (8) Upon completion of calibration, ensure that all data and instrument settings are recorded on the Calibration Data Sheet. The examiner(s) shall sign the completed data sheet, noting applicable SNT-TC A Levels.
- 8.4 Angle beam position calibration shall consist of fabricating an indication locating strip (indexing strip) as follows and as shown in Figure 3 :
- (1) Position search unit to obtain peak indication from the ID notch.
 - (2) Place a taped ruler or other suitable strip material against the front of the search unit and mark the distance from the test surface to the notch (in inches and in terms of T) on the strip where it crosses the surface scribe line over the holes. (Mark the search unit if it covers the scribe line.)
 - (3) Successively position the search unit to peak on the 1T, 2T, and 3T notches. Mark the respective distance from the surface (in inches and in terms of T) on the strip where it crosses the surface line over the notch.
 - (4) The date, angle, calibration standard identity, examination surface (clad or unclad), and search unit serial number shall be recorded on the locating strip.

8.5 Angle Beam Calibration Check

Angle beam calibration check as required by paragraph 7.4.3 shall be performed as follows:

- (1) Adjust the sensitivity control settings to match those recorded for the calibrated reference sensitivity. See paragraph 8.1(3) or 8.3(4).
- (2) Reposition search unit at each respective test hole and observe signal response amplitudes and horizontal screen positions.
- (3) See Section 7.5 for signal response requirements during calibration checks.

1229 318



9.0 EXAMINATION PROCEDURES

- 9.1 Straight beam examinations of the weld and required volume zone shall be performed at a minimum scanning sensitivity level of 2X (6dB) greater than the calibrated reference sensitivity.
- 9.2 Straight and Angle Beam Examination
- 9.2.1 Straight beam and angle beam examination of the weld and required volume shall be performed at a minimum scanning sensitivity level of 2X (6dB) greater than the calibrated reference sensitivity level.
- 9.2.2 A rectilinear scan pattern shall be used allowing a minimum of 25% overlap of the transducer element width (diameter) for each scan pass.
- 9.2.3 See Table 1 and Figure 1 for examination summary and scan path distances. Refer to the Preservice Inspection Program Plan for detailed weld locations and identifications.
- 9.2.4 Continue scanning sequences until all welds have been examined. Examinations shall not be considered complete until all recordable indications have been evaluated per paragraph 10.1.2.

10.0 EVALUATION CRITERIA

10.1 Recording of Indications

- 10.1.1 For straight beam examinations of base metal for laminations, all areas giving indications equal to or greater than the remaining back reflection shall be recorded on the appropriate data sheet prior to angle beam examination of the weld and required volume. When a 0° indication is encountered in the base material, the back surface signal from the component shall be adjusted to 80% FSH, prior to recording the indication extent.

Each recorded area shall be identified as to distance from surface, length, and position relative to the weld datum point.

1229 319



10.1.2 For straight beam and angle beam examinations of weld and required volume, all indications showing a signal amplitude response equal to or greater than 50% of the reference response shall be recorded on the appropriate data sheet at the time of weld examination and prior to removing the equipment.

Each recorded indication shall be identified as to depth (as percent of thickness), distance from surface, length, signal amplitude, and location relative to the weld datum point.

10.1.3 Indications from all welds shall be reported in inches forward (towards the vessel) or backward (away from the vessel) from the weld centerline and inches CW or CCW from the weld datum point when looking at the vessel.

10.2 Evaluation of Indications

10.2.1 Evaluation of all indications shall be made at the reference sensitivity and in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section XI, IS-300. All evaluations shall be performed by a Level II or Level III examiner.

10.2.2 All indications showing signal amplitude responses equal to or greater than 20% of the reference response shall be evaluated.

10.2.3 Recordable indications shall be reported to the Plant Owner, or his Agent, in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section XI, IS-600. Disposition of evaluation results shall be made in accordance with Owner's Plant Procedures.

11.0 EXAMINATION RECORDS

11.1 Certification of Records

The Examiner shall complete and sign all data sheets immediately upon the completion of each weld examination. The data sheets may be reviewed by the authorized Code Inspector.

1229 320

11.2 Filing of Records

The examiner shall be responsible for submitting to the Plant Owner, or his Agent, a complete documented set of examination records including certification of personnel qualifications with a current eye test report in accordance with SNT-TC-1A.

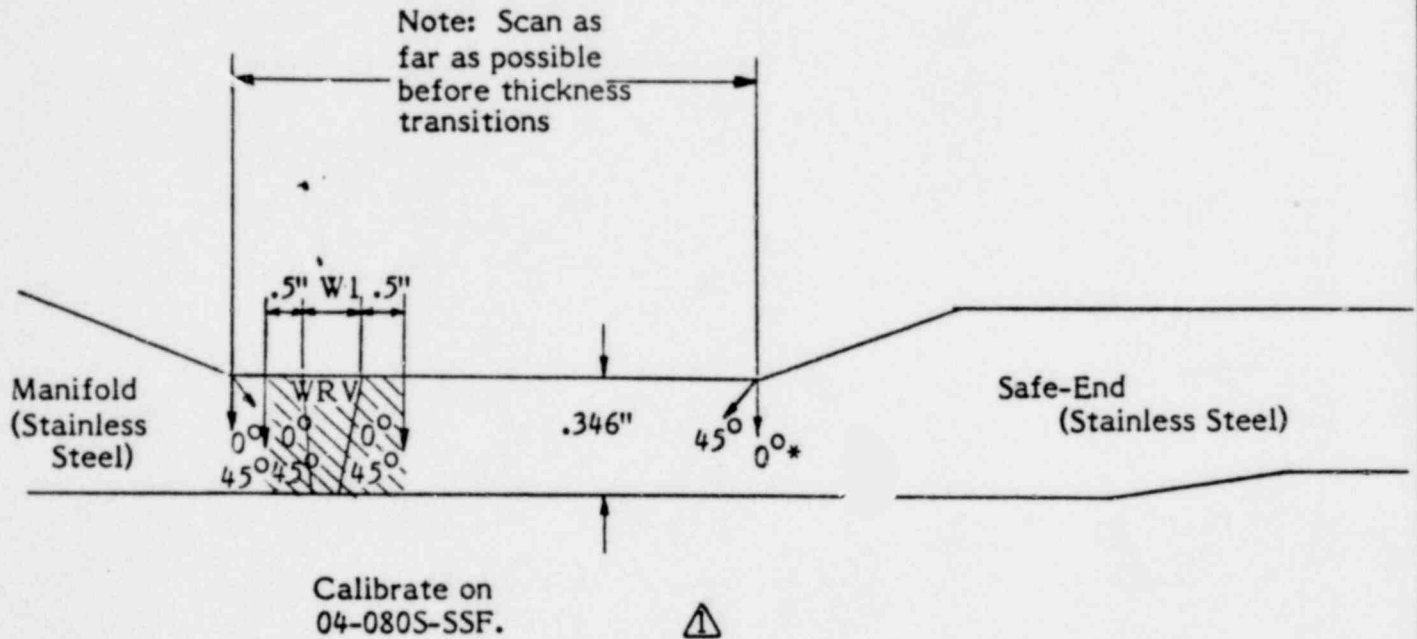
11.3 Procedure Corrections and Additions

11.3.1 All procedure corrections and/or additions required during the pre-service examinations shall be made in accordance with requirements of NES QA Program Plan NES 80A0448.

11.3.2 The examiner shall contact the LILCO representative on site to initiate all changes. Field changes shall be noted on the cover page and in the text of the field copies as appropriate. Formal revision shall incorporate such changes and all changes shall be documented in the record of revisions section of this procedure.

1229 321





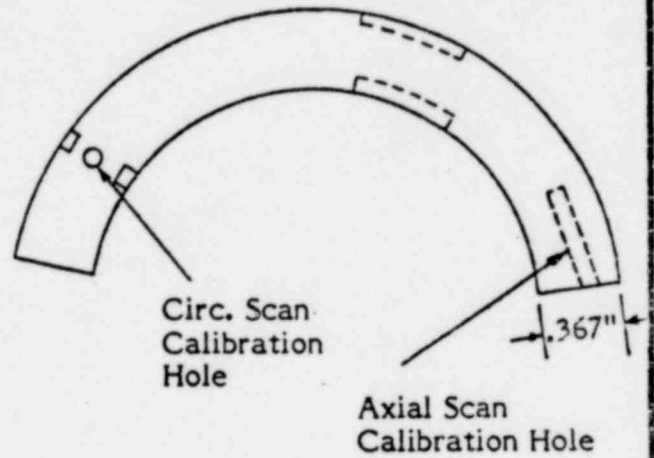
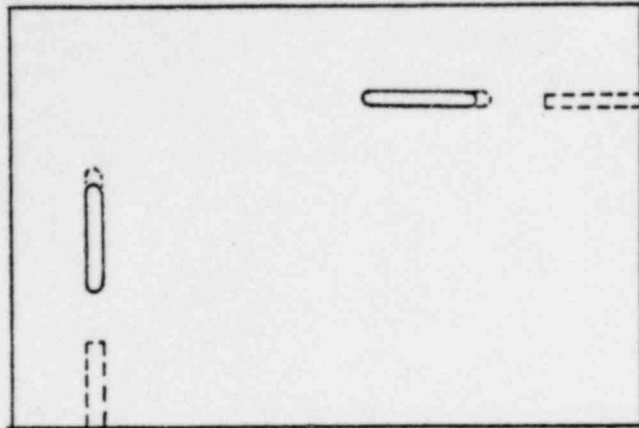
POOR ORIGINAL

1229 322

Legend

- ⊥ Perpendicular to Weld
- ≡ Parallel to Weld
- * Base Metal
- ▨ WRV Weld and Required Volume

FIGURE 1. ULTRASONIC EXAMINATION PROCEDURE FOR JET PUMP INSTR. NOZZLE SAFE-END TO MANIFOLD WELDS.



Calibration Block ID	Nominal O.D.	Wall T	Hole Dia.	Hole Location	Hole Length	Material	Notch Depth (%T)
04-080S-SSF	4.50"	.367"	3/32	1/2T	1.5"	SS	10%T

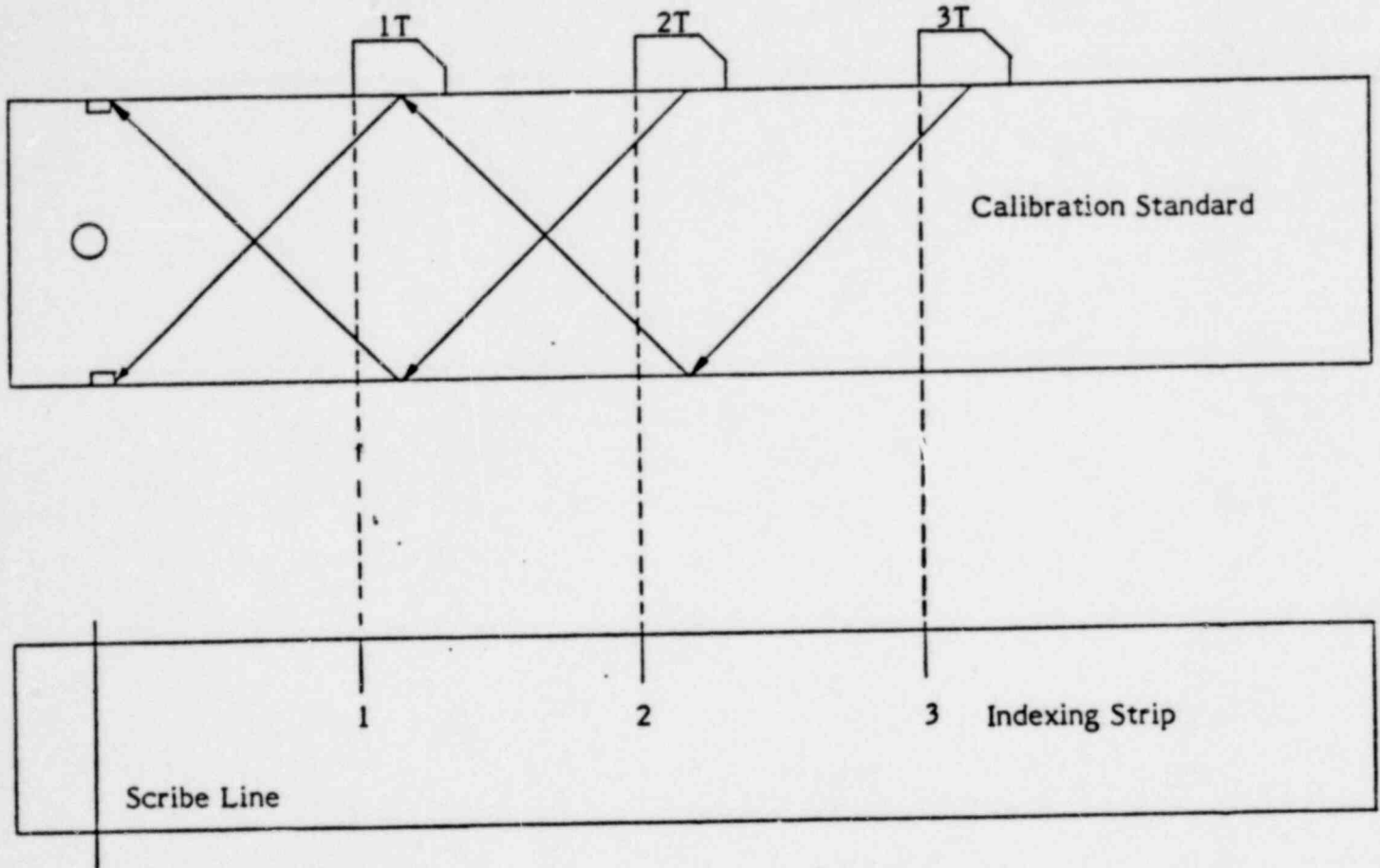
△

POOR ORIGINAL

1229 323

FIGURE 2. ULTRASONIC CALIBRATION STANDARD 04-080S-SSF.

△



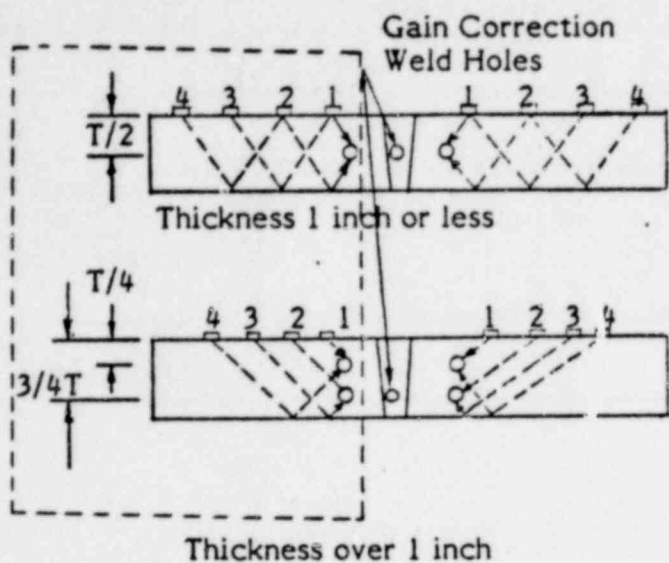
Fabricate position (surface location) scale as per Section 8.4.



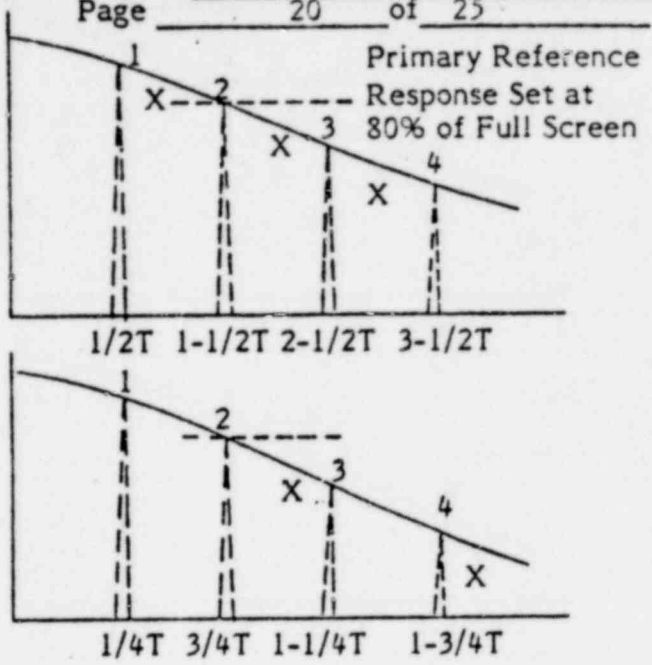
1229 324

FIGURE 3. POSITION CALIBRATION ONLY.

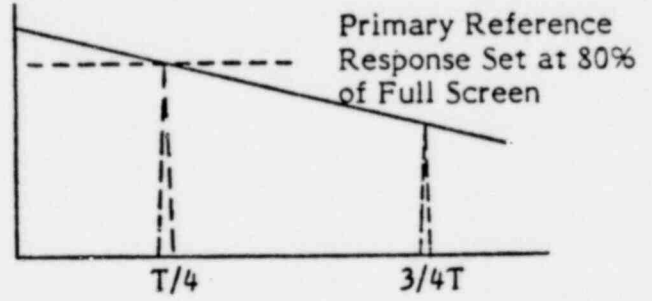
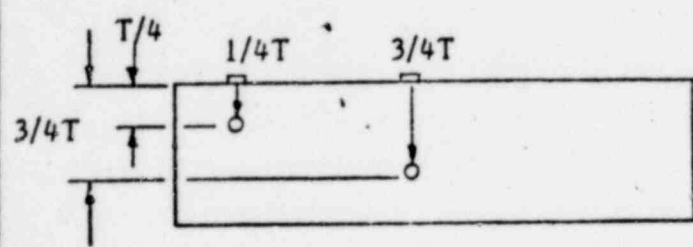




Note: Broken Line Shows Calibration For Non-Bimetallic Blocks



SEARCH UNIT LOCATION & DAC CURVES FOR ANGLE BEAM CALIBRATION



SEARCH UNIT LOCATIONS & DAC CURVE FOR STRAIGHT BEAM CALIBRATION

- STEP 1 For straight beam calibration on thicknesses one(1) inch and less, use 1/2T hole only with 80% FSH as a reference response. No DAC necessary.
- STEP 2 Adjust sweep controls so that the entire examination area is displayed on the CRT.
- STEP 3 Adjust sensitivity to provide 80% FSH indication from hole giving maximum response. Mark position on screen.
- STEP 4 Position search unit for maximum response from remaining holes. Mark position on screen. Divide into two zones, if high attenuation makes it necessary.
- STEP 5 Plot DAC by connecting points marked on screen with line extended to cover entire examination range. Check gain setting against equivalent response from the weld (gain correction) hole.
- STEP 6 Record all sweep and sensitivity control settings on respective data sheet.
- STEP 7 Position search unit for maximum response from the surface notches and "X" mark screen and data sheet to indicate amplitude.

POOR ORIGINAL

1229 325

FIGURE 4 REFERENCE SENSITIVITY AND DAC CALIBRATION PROCEDURES FOR ULTRASONIC EXAMINATION OF WELDS

Plant/Unit _____
 Comp/System _____

**FIGURE 5
 CALIBRATION DATA SHEET**

Data Sheet No. _____
 Procedure No. _____
 Subject _____
 Rev/Change No. _____
 Calibration _____
 Block No. _____
 Surface _____
 Block Temp _____ °F
 Comp. Temp _____ °F

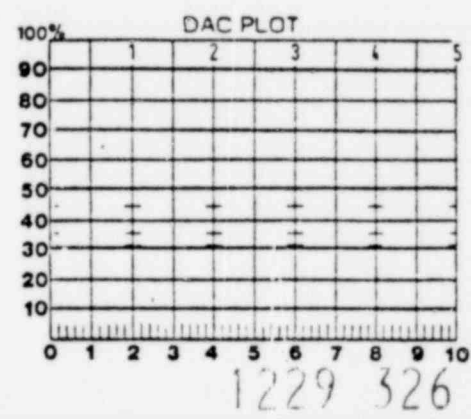
INSTRUMENT SETTINGS	
Mfg/Model No.:	
Serial No. :	
Sweep Length :	
Sweep Delay :	
Pulse Length/Damping:	
Freq.: Rep. Rate:	
Filter: Video: Jack:	
DEC/Gate Switch: Range:	
Mode Select: Reject:	
Gain (coarse): (fine):	

SEARCH UNIT	
Scan Angle: Mode:	
Fixturing (if any):	
Style or Type No. :	
Size & Shape :	
Frequency :	
Serial No/Brand:	
Measured Angle :	
Cable Type & Length:	
Couplant Brand:	
Couplant Batch:	

IDENT.	DEPTH in.	AMPL. %	ATTEN. dB

INSTR. LINEARITY CAL.				
Amplitude				
	High	Low	High	Low
1			5	
2			6	
3			7	
4			8	

SCAN AREA	
0° WRV	
0° Mat'l	
↳ to Weld	
↳ to Weld	



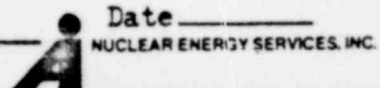
AMPL. CONTROL LINEARITY		
Initial	Δ dB	Result
80	-6	
80	-12	
40	+6	
20	+12	

EXAMINATION WELD/AREA	RECORDABLE INDICATION		COMMENTS/REASON FOR INCOMPLETED SCAN(S)
	Yes	No	

CALIBRATION CHECKS	TIME
Initial Cal.	
Intermediate	
Intermediate	
Intermediate	
Final Cal.	

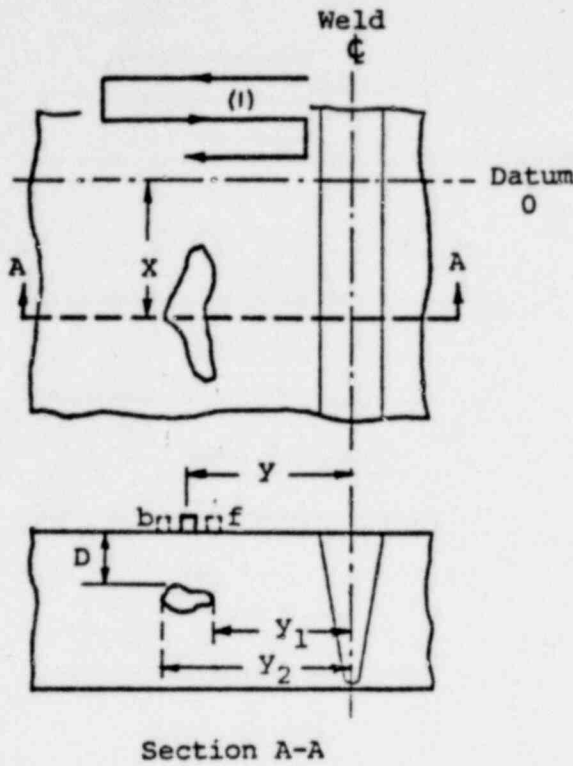
ADDITIONAL SHEETS? (CHECK BOX)		
Continuation	Beam Plot	
Supplements	None	

EXAMINERS 1 _____ Date _____ Level _____
 2 _____ Date _____ Level _____
 REVIEWER _____ Date _____



SUPPLEMENT A

INDICATION REPORT SHEET
STRAIGHT BEAM



Procedure No. _____
 Subject _____
 Weld No. _____
 Page _____ of _____
 Attached to Cal. _____
 Data Sheet No. _____

Notes :

- (1) X-axis increments not to exceed allowable scan increments.
- (2) End points shall be: (a) 50% of DAC (6db) for WRV Straight Beam exam, (b) equal to Remaining Back Reflection (RBR) for base material lamination exam.
- (3) This column for WRV Straight Beam exam only.
- (4) This column for base material lamination exam only.

INDI- CATION NO.	SIDE OF WELD	D (in T/8s)	X ⁽¹⁾	MAX ⁽³⁾ % DAC (±db)	RBR ⁽⁴⁾ % FSH	Y @ MAX % DAC	FORWARD	BACK
							(f) ENDPOINT	(b) ENDPOINT
							Y ₁ ⁽²⁾	Y ₂ ⁽²⁾

COMMENTS

EXAMINERS

1. _____ Date 1229 327 Level _____

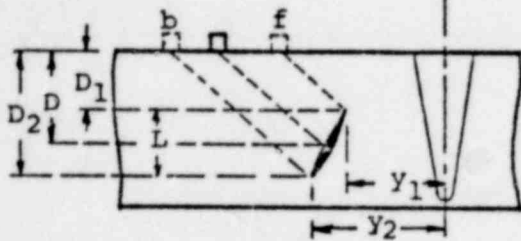
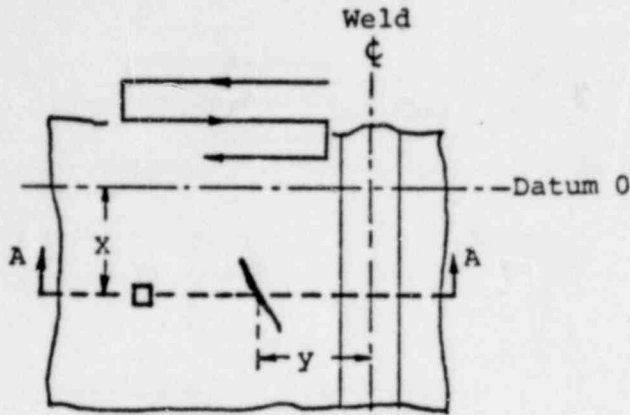
2. _____ Date _____ Level _____

REVIEWER _____ Date _____

FIGURE 6

SUPPLEMENT B

INDICATION REPORT SHEET
 ⊥ ANGLE BEAM



Section A-A

Procedure No. _____
 Subject _____
 Weld No. _____
 Page _____ of _____
 Attached to Cal. _____
 Data Sheet No. _____

Notes:

- (1) X-axis increments not to exceed allowable scan increments
- (2) End points shall be 50% of DAC (6db)
- (3) Data must be recorded from both sides. If indication cannot be found from the opposite side, so state.

INDI-CATION NO.	SIDE OF (3) WELD	X ⁽¹⁾ (in)	MAXIMUM INDICATION			FORWARD (f) ENDPOINT ⁽²⁾		BACK (b) ENDPOINT ⁽²⁾		CALC. L	
			MAX % DAC	D @ MAX (T/8s)	Y @ MAX (in)	D ₁	y ₁ (in)	D ₂	y ₂ (in)	in.	%T

COMMENTS

EXAMINERS

1229 328

1 _____ Date _____ Level _____

2 _____ Date _____ Level _____

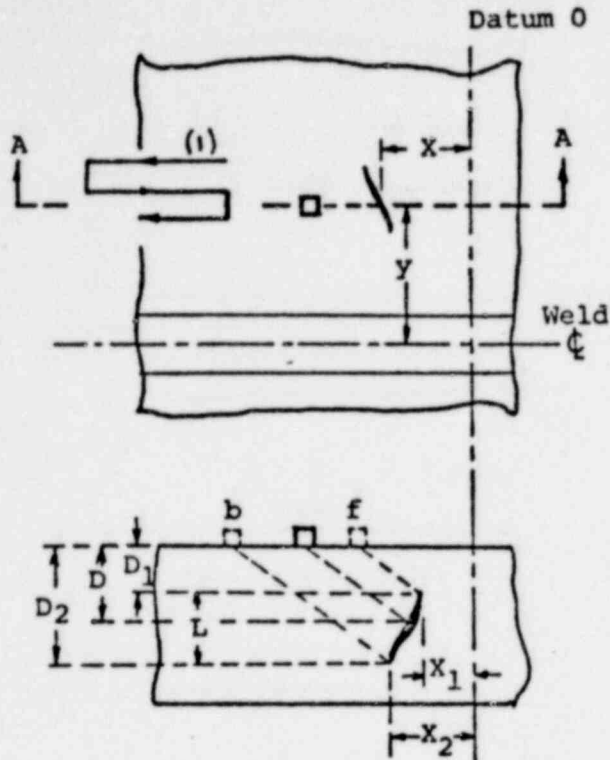
FIGURE 7

REVIEWER _____ Date _____

SUPPLEMENT C

INDICATION REPORT SHEET
= ANGLE BEAM

Procedure No. _____
 Subject _____
 Weld No. _____
 Page _____ of _____
 Attached to Cal. _____
 Data Sheet No. _____



Notes :

- (1) Y-axis increments not to exceed allowable scan increments
- (2) End points shall be 50% of DAC (6db)
- (3) Data must be recorded from both sides. If indication cannot be found from the opposite side, so state.

Section A-A

INDI-CATION NO.	SIDE OF WELD (3)	y (1) (in)	MAXIMUM INDICATION			FOREWARD (f) ENDPOINT (2)		BACK (b) ENDPOINT (2)		CALC. L
			MAX % DAC	D @ MAX (T/8s)	X @ MAX (in)	D ₁	X ₁ (in)	D ₂	X ₂ (in)	

COMMENTS

EXAMINERS

1229 329

1. _____ Date _____ Level _____
 2. _____ Date _____ Level _____

REVIEWER _____ Date _____

FIGURE 8

TABLE I
 WELD IDENTIFICATION

Weld No.	Description	Reference Block	Reference Figures	Notes
10-303A	Jet Pump Inst. Nozzle (N8-A) Safe-End to Manifold Weld	04-080S-SSF	1,2	
10-303B	Jet Pump Inst. Nozzle (N8-B) Safe-End to Manifold Weld	04-080S-SSF	1,2	

1229 330

80A0482

SHOREHAM NUCLEAR
POWER STATION
UNIT I
PRESERVICE INSPECTION
PROGRAM PLAN

PREPARED FOR
LONG ISLAND LIGHTING COMPANY
HICKSVILLE, NY

CONTROLLED
COPY #18 BY
NUCLEAR ENERGY SERVICES, INC.
DANBURY, CT

1229 331

REV. NO.	DATE
0	2-17-78
1	7-11-79

PREPARED BY *Albertuzel*
Shoreham ISI Proj. Mgr

APPROVED BY *W. J. Mann for L.I.*
ISI Program Manager

J. S. La Guardia
QA Manager

RECORD OF REVISION

Rev. No.	Date	Description	Reason	Prep'd by	App'd by
1	7-11-79	<p>Add Appendix P to Preservice Inspection Program Plan.</p> <p>Add on Table of Contents Page under 4 Appendices "Appendix P Controlled Documents".</p> <p>Add to page 3.3 new paragraph to read. "Appendix P contains a list of Controlled Documents, denoting the current revision, that are contained within the Shoreham Preservice Inspection Program". CRA 877</p>	LILCO request	SP.	Gmt

1229 332



TABLE OF CONTENTS

	<u>Page</u>
1. INTRODUCTION	1-1
2. BASES FOR PRESERVICE INSPECTION PROGRAM	2-1
2.1 NRC Regulations	2-1
2.2 Definition of LILCO Intent	2-1
2.3 Methods of Examination	2-2
2.4 Schedule	2-2
2.5 Augmented PSI Requirements	2-3
3. PRESERVICE INSPECTION PROGRAM BOOK DESCRIPTION	3-1
3.1 Exemptions and Exceptions	3-1
3.2 System Classifications	3-1
3.3 Zone Designations	3-1
3.4 Program Plan and Schedule	3-1
3.5 System Isometrics and Sketches	3-2
3.6 Quality Assurance	3-2
3.7 Examination Procedures	3-2
3.8 UT Calibration Blocks	3-2
3.9 Records and Reports	3-2
3.10 Evaluation Criteria	3-2
3.11 Personnel Qualification Requirements	3-3
3.12 Pre-examination Requirements	3-3
3.13 ASME Code Section XI (1971 and Summer 1972 Addenda)	3-3
4. APPENDICES	
Appendix A Exemptions and Exceptions	
Appendix B System Classifications	
Appendix C Zone Designations	
Appendix D Program Plan and Schedule	
Appendix E System Isometrics and Sketches	
Appendix F Quality Assurance	
Appendix G Examination Procedures	
Appendix H UT Calibration Blocks	
Appendix J Records and Reports	
Appendix K Evaluation Criteria	
Appendix L Personnel Qualification Requirements	
Appendix M Pre-examination Requirements	
Appendix N ASME Code Section XI (1971 and Summer 1972 Addenda)	
Appendix P Controlled Documents	



1229 333



3.11 Personnel Qualification Requirements

Personnel performing nondestructive examination operations during the Shoreham preservice inspection program implementation shall have been qualified with procedure(s) prepared in accordance with SNT-TC-1A as recommended in IS-220 of Section XI. NES procedures for certifying inspection personnel are discussed and presented in Appendix L.

3.12 Pre-Examination Requirements

In addition to the requirements for clearance and access specified by IS-140 of Section XI, Appendix M also lists those other tasks which must be accomplished prior to conducting the examinations.

3.13 ASME Code, Section XI (1971)

Appendix N contains a copy of Section XI (1971 Edition) of the ASME Boiler and Pressure Vessel Code with the applicable Addenda (Summer 1972), "Rules for Inservice Inspection of Nuclear Reactor Cooling Systems".

3.14 Controlled Documents

Appendix P contains a list of controlled documents, denoting the current revision, that are contained within the Shoreham Preservice Inspection Program.



1229 334



APPENDIX P

List of Controlled Documents



1229 335



APPENDIX P



Controlled Documents

Master Document List (MDL) 80A2941 summarizes the current revision of all documents contained in the Shoreham Inservice Inspection Program. MDL 80A2941 will be revised as necessary to maintain an up-to-date status of the documents contained within the Program Plan.

1229 336





QUALITY ASSURANCE PROGRAM PLAN

FOR

INSERVICE INSPECTION PROGRAM

SHOREHAM

CONTROLLED COPY

1229 337

SPEC. NO. 80A0448		PROJECT APPLICATION 5536		PREPARED BY <i>abutzijel</i>	
LATEST REV. <u>6</u> DATE <u>7/10/79</u>				DATE <u>5-16-77</u>	
REV. DESCRIPTIONS START ON PAGE NO. <u>11</u>					
APPROVED BY	DATE	ORGANIZATION			
A. Uziel <i>abutzijel</i>	05-16-77	Project Manager			
L. A. Johnson <i>L.A. Johnson</i>	5-16-77	ISI Program Manager			
G. T. Hamilton <i>G.T. Hamilton</i>	5-16-77	Nuclear Services Division, Gen. Mgr.			
T. W. Powers <i>T.W. Powers</i>	5-16-77	Conam Division, President			
W. J. Manion <i>W.J. Manion</i>	5-16-77	NES Division, President			
T. LaGuardia <i>T. LaGuardia</i>	5-16-77	Quality Assurance Manager			



1. INTRODUCTION

The Quality Assurance program to be implemented for the Shoreham Nuclear Power Station - Preservice/Inservice Inspection Project, (hereafter called ISI), is governed by three basic document sets. They are:

1. Nuclear Energy Services, Inc. "Inservice Inspection Program Quality Assurance Manual: 80A9021" (QA Manual)
2. The Project Quality Assurance Program Plan (QAPP) (herein); and
3. The individual implementing procedures invoked by the above (see Appendix P of the Preservice Inspection Plan, NES Document 80A0482, which lists those documents contained in the Preservice Inspection Plan and the current revision). △

This Project Quality Assurance Program Plan is specific to the Shoreham ISI Project. The QAPP includes the detailed quality assurance requirements that are common to all tasks of the project including organization, management, and liaison.

The Quality Assurance Manual defines the policies and practices employed by Nuclear Energy Services, Inc. (NES) in meeting the requirements of 10 CRF 50, Appendix B. Since the manual applies to all work performed by the company, it is not project-specific. Any significant changes to this manual which are effected during the life of the contract shall be submitted to LILCO for review and comment. △

2. ORGANIZATION

2.1 Project Structure

Nuclear Energy Services (NES) provides consistent, routine, and uniform management for ISI projects. A Project Manager is assigned for each ISI project. The Project Manager is responsible for the technical and financial performance of the entire project. He retains this responsibility throughout the duration of the project. The Project Manager is a member of the Projects Department and reports to the Vice President, Inspection Services, through the Manager of Projects.

Each project is divided into tasks, i.e. major groupings of work activities. A Task Engineer is appointed for each task who is responsible to the Project Manager for satisfactory technical and budgetary performance of the task effort. The task engineer will be appointed from the department with the greatest involvement in the task. The project organization for the Shoreham Project is shown in Figure 2.1. Mr. Geoffrey M. Griffiths is assigned as Project Manager for this program.

2.2 Project Responsibilities

The responsibilities of key NES project personnel are described in Section (1) of the QA Manual.

The Shoreham ISI Project Organization is depicted in Figure 2.1.

1229 338



3. COMMUNICATION

3.1 Communication Guidelines

- 3.1.1 Informal communication between Nuclear Energy Services personnel and cognizant personnel within LILCO and S&W is encouraged for purposes of exchanging information. This is necessary to facilitate efficient accomplishment of the project. The NES Project Manager will be advised of the content of such informal communications.
- 3.1.2 Communications that involve transmittal of documents, data required or input to task work, or data resulting from task work shall be made in writing by the NES Project Manager with acknowledgements.
- 3.1.3 All communications from Nuclear Energy Services involving transmittal of controlled documents or requests for approval shall be directed to the LILCO and S&W Project Engineers.

3.2 Trip Reports

Every trip made by Nuclear Energy Services personnel shall be documented by a trip report (internal distribution only) which clearly defines the subject of the trip, and summarizes all discussions and decisions.

3.3 Correspondence

- 3.3.1 All correspondence from Nuclear Energy Services, Inc. consist of an original plus three copies and shall contain the following subject heading:

SPECIFICATION NO. SH1-397
INSERVICE INSPECTION PROGRAM
SHOREHAM NUCLEAR POWER STATION - UNIT 1
(J. O. NO. 11600.02)
LONG ISLAND LIGHTING COMPANY
BROOKHAVEN TOWNSHIP, LONG ISLAND, NEW YORK

- 3.3.2 Contractual correspondence relative to or affecting prices, terms, conditions, price adjustments, deliveries, return of materials for credit, routing of shipments, inspection, and expediting or that which changes the price or scope of an order, even though discussing engineering matters, shall be addressed to:

H. P. Boylan
Purchasing Agent
Long Island Lighting Company
Shoreham Document Control Room
175 East Old Country Road
Hicksville, Long Island, New York 11801

1229 339



and one copy (except for proposals and quotations) to:

Project Engineer - J.O. No. 11600.02
Attention: Principal Piping Engineer
Stone & Webster Engineering Corporation
P. O. Box 2325
Boston, Massachusetts 02107

Technical correspondence and drawing transmittals shall be addressed to:

Project Engineer - J.O. No. 11600.02
Attention: Principal Piping Engineer
Stone & Webster Engineering Corporation
P. O. Box 2325
Boston, Massachusetts 02107

Three copies of correspondence pertaining to technical matters shall be sent to the above address to the attention of R. A. Plant, Chief, Procurement Quality Control Division.

3.3.3 Correspondence dealing with aspects of the field such as labor, shipping, and planning of work shall be addressed to:

General Superintendent of Construction
Attention: Resident Engineer
Stone & Webster Engineering Corporation
P. O. Box 604
Wading River, New York 11792

and three copies to:

Project Engineer J.O. No. 11600.02
Attention: Principal Piping Engineer
Stone & Webster Engineering Corporation
P. O. Box 2325
Boston, Massachusetts 02107

In addition, four copies of all correspondence (except for proposals and quotations) both contractual and technical with enclosures shall be sent to:

B. McCaffrey
Project Engineer
Long Island Lighting Company
P. O. Box 604
Wading River, New York 11792

1229 340

6



3.4 Correspondence Files

The NES Project Manager shall maintain a chronological file of all project correspondence, both incoming and outgoing.

3.4.1 Outgoing Correspondence

Outgoing correspondence shall be identified with a serial number of the form PPPP-XXX. PPPP shall be the project identification (5536). XXX shall be the chronological sequence number of the correspondence (001 through 999).

3.4.2 Incoming Correspondence

Incoming correspondence shall be retained in the project files in chronological order based on receipt date.

4. DOCUMENT CONTROL & CERTIFICATIONS

4.1 Controlled Documents

Controlled documents will be generated under this project in accordance with the requirements of the NES Document Procedure (NES Spec. 80A9003). Appendix P of the Preservice Inspection Plan (NES Document 80A0482) lists those documents contained in the Preservice Inspection Plan and the current revision. △

4.2 Calibration Block Certification

Calibration blocks shall be certified in accordance with applicable NES procedures. Records of calibration block certifications will be kept in the project files, and provided to LILCO with delivery of calibration blocks, if fabricated. The certifications may be witnessed and/or the documentation reviewed by qualified LILCO personnel at LILCO's option.

4.3 Equipment Certification

Records of verification of ultrasonic instrument linearity and transducer performance in accordance with the applicable NES procedures are maintained by NES in accordance with the QA Manual. Copies of equipment certification records will be provided in ISI examination reports. Copies of applicable equipment certifications shall be provided prior to conduct of ISI examinations in support of regulatory or enforcement authority requirements. △

4.4 Consumables Certifications

Records of chemical analysis and/or certification of consumable materials are kept by NES in accordance with the QA Manual and implementing procedures. Copies of applicable consumables certifications will be provided in ISI examination reports. Copies of applicable consumable certifications shall be provided prior to conduct of ISI examinations in support of regulatory or enforcement authority requirements. △

1229 341



4.5 Examination Procedures

4.5.1 NES shall prepare required examination procedures in accordance with applicable NES procedures, and retain a controlled copy in the project files. A controlled copy of each procedure shall be provided to LILCO for approval prior to conduct of the associated ISI examination.

4.5.2 LILCO shall review each examination procedure and return an approved copy to NES prior to conduct of ISI examinations. Copies of the LILCO approved procedure will be used for performance of ISI examinations.

4.5.3 Field Changes to Procedures

Examination Procedures and the PSI/ISI program plan may be modified in accordance with NES Procedure 80A9060 Rev. 0, Inservice Inspection Field Change Procedure, with the following modifications:

- A. The Project Manager shall be responsible for control of and shall approve Field Changes.
- B. Approvals obtained from telephone conversations shall be documented as follows: (e.g. E. Anderson for F. T. Carr.)
- C. The Project Manager will issue a Field Change Number when his approval is solicited.
- D. ISI Field Change Authorization form, Figure 4.1, will be used to document field changes.

4.6 Approval Action Periods

Approval actions should be accomplished by LILCO within the following periods after receipt:

	<u>Working Days</u>
Quality Assurance Plan	20
Examination Procedures	20
Inservice Inspection Plan	30
Preservice Inspection Plan	30
Changes to Above	20

5. AUDITS

5.1 Internal

A minimum of one audit shall be performed by the NES Manager of Quality Assurance or his representative during the accomplishment of the basic tasks comprising the project scope. Any "unsatisfactory" conditions noted in an audit will require a formal re-audit to assure correction of the condition.

1229 342



5.1.1 The Quality Assurance Manager shall cause the following project Tasks to be audited during the course of performance of the work scope.

- (1) Boundary Diagrams
- (2) Zone Designations
- (3) Weld and Hanger Isometrics
- (4) Ten-Year ISI Program Plan Book
- (5) Examination Procedures
- (6) Calibration Block Drawings
- (7) Calibration Blocks
- (8) Manual UT, PT, and Visual Examinations
- (9) Automated UT Examination

5.1.2 Each audit shall be performed in accordance with an audit check list approved by the Quality Assurance Manager.

Check lists will be completed by a designated representative of the Quality Assurance Manager. Check lists will be signed by the person preparing the check list, countersigned by the Task Engineer and approved by the Quality Assurance Manager. Completed check lists shall be retained in the Project File (by the Project Manager) and in the QA File (by the QA Manager).

5.2 External

LILCO and/or S&W may perform audits of any task work. Audits performed at Nuclear Energy Services' facilities shall be accommodated by Nuclear Energy Services personnel. A minimum of three (3) days prior written notice to the Project Manager for such an audit is required to assure availability of cognizant task personnel during the audit.

5.3 General

An exit interview shall be held at the completion of all audits between the auditor(s) and the cognizant NES personnel. All deficiencies shall be thoroughly discussed at that time.

The auditor shall issue a written audit report within ten working days of the audit.

The Quality Assurance Manager shall ensure by formal audit that any noncompliance item is corrected within 30 days. The time for correcting a noncompliance may be extended by the QA Manager, if the circumstances warrant. △

1229 343



6. CUSTOMER NOTIFICATION POINTS

LILCO will be notified within one day in the event of occurrence of any of the following specific items:

- A. The location of any reportable indications.
- B. Field Change to examination procedures.
- C. Instrumentation found to be out of calibration during ISI examinations.

7. RECORD RETENTION

The preservice and inservice inspection reports shall be submitted to the customer within 45 days after completion of the inspections. These inspection records and all other controlled documents listed in Appendix P of the Preservice Inspection Plan (NES Document 80A0482) shall be retained by the customer for the service lifetime of the component examined. All basic calibration blocks shall be retained on site for use in subsequent inservice examinations. Maintenance of these blocks on site shall be controlled by the Q.A. organization at Shoreham 1. △6

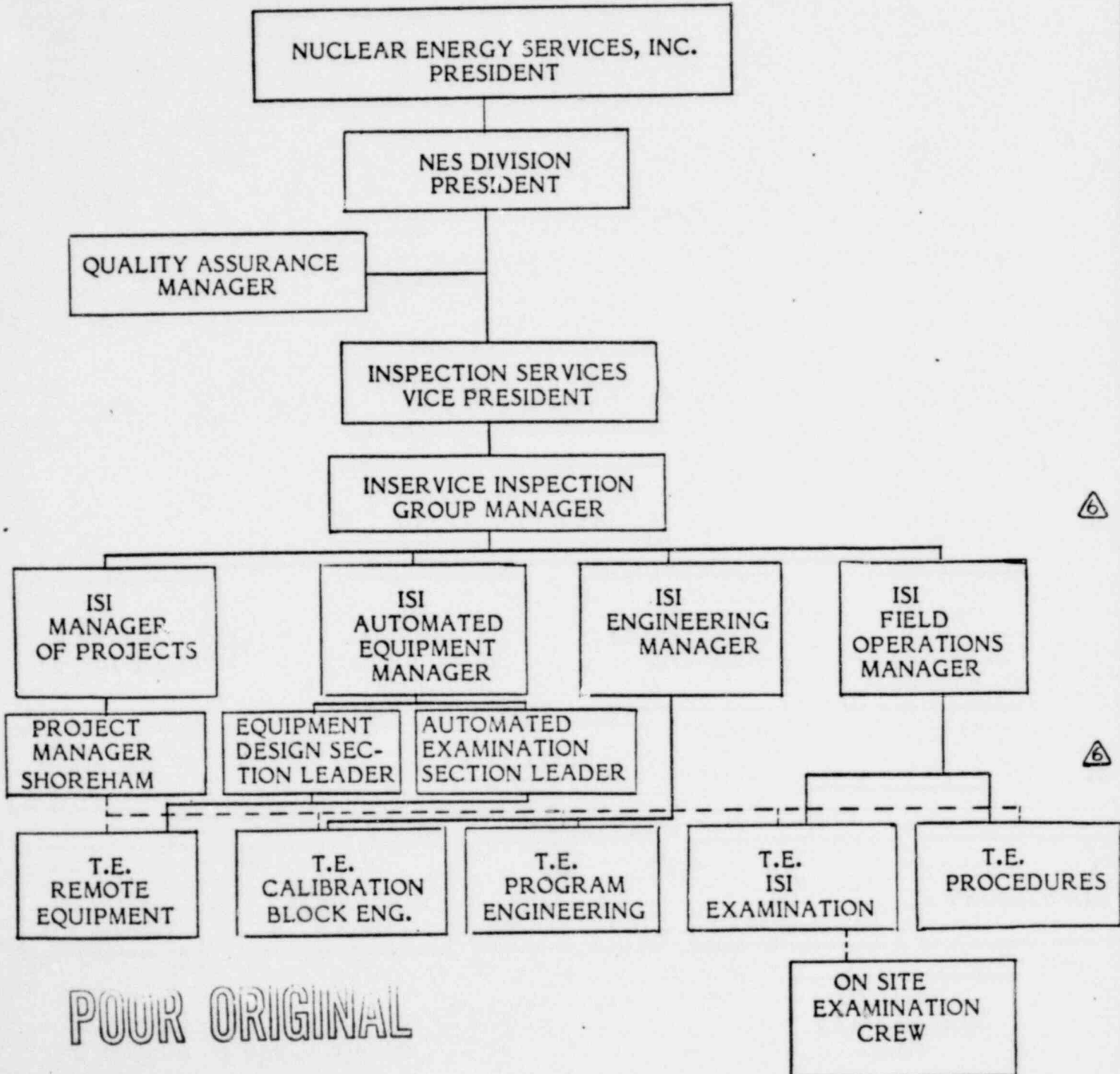
8. DESIGN CRITERIA AND REVIEWS

- 8.1 NES will perform a design review of NES-supplied calibration blocks in accordance with Section 3.3.6 of 80A9021. △6

1229 344



NUCLEAR ENERGY SERVICES, INC.
ORGANIZATION CHART
SHOREHAM NUCLEAR POWER STATION
PRESERVICE/INSERVICE INSPECTION PROJECT



POOR ORIGINAL

Line Organization _____
Project Organization - - - - -
T. E. = Task Engineer

FIGURE 2.1

1229 345



NUCLEAR ENERGY SERVICES, INC.

NES DIVISION

SHELTER ROCK ROAD
DANBURY, CONN. 06810
(203) 748-3581

_____ Date _____

ISI FIELD CHANGE AUTHORIZATION

Document Title _____ Document No. _____ Rev. _____

Field Change No. _____ Originator _____

Description of Field Change:
(Print Legibly)

Reason for Change:
(Use additional page, if necessary)

Approvals:

Distribute to all Controlled Copy holders of affected Document.

Note: A copy of this authorization shall be attached to the affected document until a subsequent revision incorporates the field change.

Figure 4.1



An Automation Industries, Inc. Company

1229 346



REVISION LOG

REV. NO.	DATE	PAGE NO.	DESCRIPTION
1	10-77	3	Change 2.2.2.1 to "An audit of each task work effort will be performed..."
		6	4.2 Add "(internal distribution only)"
		6	4.3 Change "J. P. Allen" to "E. J. Brabazon", "R. A. Plant" to "J. M. Kelly", change number of copies to 3 each.
		7	5.1 Add "This list shall be kept up-to-date"
		7	5.2 Change "shall" to "should", add "after receipt", change days to "20, 20, 30, 20" respectively.
		7	5.3.1 Add "qualified"
		8	5.3.2.1 Change "25PS-002 Rev. 1" to "Rev. 2"
		8	5.3.2.1 Change Conam site to "Danbury, Connecticut"
		9	Table 5.1 Add 80A0481, 80A0467, 80A0472, 80A0473
		1	Add "Program" to title
		11	6.2 (8) add "PT"
		12	Add Section 9
2	10-77	2	1(1) "Delete Rev. 0, July 9, 1976"
		9	Table 5.1 Change "Rev. 0" to "Rev. 1" for 80A9021 "Rev. 0" to "Rev. 2" for 80A0448
		12	9.3: Change to: "Area 9 of Paragraph 2.3.1 of QA Manual 80A0921..."
3	12-77	8	Para. 5.4.A: Delete "(On Site)"
		10,11	Table 5.1: General Revision
4	2-78	10,11	Table 5.1: Update rev. no.s
5	10/78	1-12	to reflect organizational changes, update revision numbers, update QAPP to correspond with latest Rev. of QA Manual, NES 80A9021
6	7/79	1-12	General revision to incorporate LILCO comments. CRA-864 <i>GMB</i>

DATE 7-10-79 SHEET 1 OF 2
 PROJECT NO. 5536 TASK NO. 010
 PROJECT ENGINEER APPROVAL M. G. [Signature]

NUCLEAR ENERGY SERVICES, INC. MASTER DOCUMENT LIST NO. 80A2941 REV. 0
 Project Title SHOREHAM PRESERVICE INSPECTION PROGRAM PLAN

Block Size: 80X2941 To 80X2951

ITEM NO.	DOCUMENT NO.	APPROVAL DATE	LATEST REV. NO.	LATEST REV. DATE	LATEST CRA NO.	TITLE	REMARKS
1	80A02941	7-9-79	0			MASTER DOCUMENT LIST	
2	80A04448	5-16-77	6	7-10-79	864	QUALITY ASSURANCE PLAN FOR INSERVICE INSPECTION PROGRAM	
3	80A04462	6-10-75	1	12-8-75	99	MANUAL ULTRASONIC EXAM. PROC. FOR REACTOR PRESSURE VESSEL, CIRCUM. & LONG. WELDS	
4	80A04467	9-23-77	4	10-30-78	559	UT EXAM. PROC. FOR CLOSURE HEAD & FLANGE WELDS	
5	80A04468	10-31-77	0			UT EXAM. PROC. FOR REACTOR VESSEL TO FLANGE WELD & STUD LIGAMENTS	
6	80A04469	10-20-77	3	6-28-79	930	MANUAL UT EXAM. PROC. FOR CLOSURE HEAD & VESSEL NOZZLE WELDS	
7	80A04470	2-1-76	1	11-3-78	567	AUTO. UT EXAM. PROC. FOR VESSEL NOZZLE WELDS	
8	80A04471	11-18-77	0			MANUAL UT EXAM. PROC. FOR VESSEL WELDS & STABILIZER BRACKET WELDS	
9	80A04472	7-23-77	1	10-14-77	317	LIQUID PENETRANT EXAM. PROC.	
10	80A04473	9-23-77	1	10-14-77	318	VISUAL EXAM. PROC.	
11	80A04474	2-15-78	1	11-3-78	568	REMOTE UT EXAM. FOR NOZZLE SAFE END WELDS	
12	80A04475	2-15-78	0			MANUAL UT EXAM. PROC. FOR VESSEL NOZZLE SAFE ENDS & CLOSURE HEAD NOZZLE FLANGE WELDS	
12	80A04476	10-17-77	0			UT EXAM. PROC. FOR CLOSURE HEAD STUDS & NUTS & RECIRC. PUMP STUDS & NUTS	
14	80A04478					AUTO. UT EXAM. PROC. FOR NOZZLE INNER RADIUS	
15	80A04479					MANUAL UT EXAM. PROC. FOR NOZZLE INNER RADIUS	

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DATE 7-10-79 SHEET 2 OF 2
PROJECT NO. 5536 TASK NO. 010
PROJECT ENGINEER APPROVAL [Signature]

MASTER DOCUMENT LIST NO. 80A2941 REV. 0
Project Title SHOREHAM - PRESERVICE INSPECTION
PROGRAM PLAN

NUCLEAR ENERGY SERVICES, INC.

Block Size: 80X2941 to 80X2951

ITEM NO.	DOCUMENT NO.	APPROVAL DATE	LATEST REV. NO.	LATEST REV. DATE	LATEST GRA NO.	TITLE	REMARKS
16	80A0480	2-15-78	1	11-3-78	569	AUTO. UT EXAM. PROC. FOR VESSEL WELDS	
17	80A0481	2-23-77	3	9-5-78	515	UT EXAM. PROC. FOR PIPING BUTT & LONG. WELDS	
18	80A0482	2-17-78	1	7-11-79	877	SHOREHAM NUCLEAR POWER STATION UNIT PSI PLAN	
19	80A0485	5-31-79	0			ULTRASONIC EXAM. PROC. FOR CRD HOUSING WELDS	
20	80A0486	5-22-79	1	7-3-79	910	UT PROC. FOR JET PUMP INSURUMENTATION NOZZLE SAFE-END TO MANIFOLD WELD	
21	80A0487	5-31-79	0			GENERAL MAGNETIC PARTICLE EXAM.	
22	80A2942						

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