



QUALITY ASSURANCE PROGRAM PLAN
FOR
INSERVICE INSPECTION PROGRAM
SHOREHAM

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Copy No. 5 Assigned to: Mr. M. Milligan- LILCO

| SPEC. NO. <u>80A0448</u> | | PROJECT APPLICATION <u>5536</u> | PREPARED BY <u>abutzul</u> |
|--|----------------|--------------------------------------|-------------------------------|
| LATEST REV. <u>8</u> DATE <u>1/18/82</u> | | | DATE <u>5-16-77</u> |
| REV. DESCRIPTIONS START ON PAGE NO. <u> </u> | | | |
| APPROVED BY | DATE | ORGANIZATION | |
| A. Uziel <u>[Signature]</u> | <u>5-16-77</u> | Project Manager | |
| L. A. Johnson <u>[Signature]</u> | <u>5-16-77</u> | ISI Program Manager | |
| G. T. Hamilton <u>[Signature]</u> | <u>5-16-77</u> | Nuclear Services Division, Gen. Mgr. | |
| T. W. Powers <u>[Signature]</u> | <u>5-16-77</u> | Conam Division, President | |
| W. J. Manion <u>[Signature]</u> | <u>5-16-77</u> | NES Division, President | |
| T. LaGuardia <u>[Signature]</u> | <u>5-16-77</u> | Quality Assurance Manager | |
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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 NES Document 80A9021, Appendix A.

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 liason.

The Quality Assurance Manual defines the policies and practices employed by Nuclear Energy Services, Inc. (NES) in meeting the requirements of 10 CFR 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 that are effected during the life of the contract shall be submitted to LILCO for review and comment.

2. ORGANIZATION

2.1 PROGRAM 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 General Manager ISI 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 NES project organization is shown in Section (1) of the QA Manual. Mr. J. A. Munson 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.



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, routine 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:

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



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 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:

M. H. Milligan
Project Engineer
Long Island Lighting Company
P.O. Box 604
Wading River, New York 11792



3.3.4 Revisions to the Preservice Program Plan will be distributed in accordance with the following guidelines:

1. NES will submit nine (9) review copies of each proposed revision to LILCO for comment and approval. NES will submit the copies prior to final NES sign-off and printing of the revision.
2. NES will submit twenty-five (25) final copies of each approved revision of LILCO.



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 AND CERTIFICATIONS

4.1 CONTROLLED DOCUMENTS

Controlled documents will be generated under this project in accordance with the requirements of the NES Document Control Procedure (NES Spec. 80A9003).

Revisions to the Preservice Program Plan, Document 80A0482, require LILCO approval prior to issuance of the revision. NES will obtain approval by requiring a LILCO signature on the Change Request and Authorization Form, prior to the NES Quality Assurance Manager's approval. A sample Change Request and Authorization Form is shown in Figure 4.2.

Appendix P of the Preservice Inspection Plan (NES Document 80A0482) lists project 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.



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. A. Pennanen for M. Stamm)
- 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 issued to document field changes.



4.6 APPROVAL ACTION PERIODS

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

| <u>Document</u> | <u>Working Days</u> |
|----------------------------|---------------------|
| Quality Assurance Plan | 20 |
| Examination Procedures | 20 |
| Inservice Inspection Plan | 30 |
| Preservice Inspection Plan | 30 |
| Changes to above | 20 |

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.

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 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.



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 QA organization at Shoreham I.



8. DESIGN CRITERIA AND REVIEWS

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





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





| | | | |
|-----------------|----------------------|---------------------|----------------------|
| Document Number | Present Revision No. | Project(s) Affected | SHEET _____ OF _____ |
|-----------------|----------------------|---------------------|----------------------|

DOCUMENT TITLE:

REQUESTED BY: _____ Date _____

REQUIRED APPROVALS

| TITLE/DEPT. | SIGNATURE | DATE | TITLE/DEPT. | SIGNATURE | DATE |
|-------------|-----------|------|-------------|-----------|------|
| 1. | | | 5. | | |
| 2. | | | 6. | | |
| 3. | | | 7. | | |
| 4. | | | 8. | | |

PRESENT REQUIREMENTS:

CHANGE TO:

REASON FOR CHANGE:

Fig. 4.2

DISPOSITION OF PARTS (WHEN APPLICABLE)

| PARTS STATUS | COMPLY | ACCEPT AS IS | REWORK | SCRAP | LMTD. USE (EXPLAIN) | NOTES & EXPLANATION |
|---|--------|--------------|--------|-------|---------------------|---------------------|
| ON ORDER NOT YET PRODUCED | | | | | | |
| IN PROCESS BEYOND EFFECTIVE OPERATION | | | | | | |
| IN PROCESS PRIOR TO EFFECTIVE OPERATION | | | | | | |
| COMPLETED PARTS | | | | | | |



REVISION LOG

| REV. NO. | DATE | PAGE NO. | DESCRIPTION |
|----------|---------|--------------|--|
| 1 | 10-77 | 3 | Change 2.2.2.i 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>Grb</i> |
| 7 | 5/80 | 4,5 11,12 | to add LILCO approval requirement for Program Plan, revise LILCO Proj. Eng., add Fig. 4.2, CRA-1324 <i>Grb</i> |
| 8 | 1/25/82 | 1-9 | to reflect organizational changes, Para 3.3.2 deleted H. P. Boylan & R. A. Plant Para 1.3 deleted ref. to Appendix P, Para. 4.1 changed "those" to "Project", Deleted Fig. 2.1 CRA 2287. <i>Grb</i> |



NUCLEAR ENERGY SERVICES, INC.

MASTER DOCUMENT LIST NO. 80A2941 REV. 10

DATE 7-10-79 SHEET 1 OF 2

Project Title SHOREHAM PRESERVICE INSPECTION PROGRAM PLAN

PROJECT NO. 5536 TASK NO. 010

Block Size: 80X2941 To 80X2951

PROJECT ENGINEER APPROVAL J. MUNSON

| ITEM NO. | DOCUMENT NO. | APPROVAL DATE | LATEST REV. NO. | LATEST REV. DATE | LATEST CRA NO. | TITLE | REMARKS | |
|----------|--------------|---------------|-----------------|------------------|----------------|--|--|---|
| 1 | 80A2941 | 7-9-77 | 10 | 5-21-81 | 1883 | MASTER DOCUMENT LIST | CONTROLLED COPY VALID ONLY IF THIS STAMP IS RED | |
| 2 | 80A0448 | 5-16-77 | 8 | 1-25-82 | 2287 | QUALITY ASSURANCE PLAN FOR INSERVICE INSPECTION PROGRAM | | |
| 3 | 80A0462 | 6-10-75 | 2 | 9-3-81 | 2087 | MANUAL ULTRASONIC EXAM. PROC. FOR REACTOR PRESSURE VESSEL, CIRCUM. & LONG. WELDS | | |
| 4 | 80A0467 | 9-23-77 | 4 | 10-30-78 | 559 | UT EXAM. PROC. FOR CLOSURE HEAD & FLANGE WELDS | | |
| 5 | 80A0468 | 10-3-77 | 1 | 8-19-81 | 2079 | UT EXAM. PROC. FOR REACTOR VESSEL TO FLANGE WELD & STUD LIGAMENTS | | |
| 6 | 80A0469 | 10-20-77 | 4 | 12-3-81 | 2238 | MANUAL UT EXAM. PROC. FOR CLOSURE HEAD & VESSEL NOZZLE WELDS | | |
| 7 | 80A0470 | 2-1-78 | 1 | 11-3-78 | 567 | AUTO. UT EXAM. PROC. FOR VESSEL NOZZLE WELDS | | |
| 8 | 80A0471 | 11-18-77 | 0 | | | MANUAL UT EXAM. PROC. FOR VESSEL WELDS & STABILIZER BRACKET WELDS | | |
| 9 | 80A0472 | 9-23-77 | 1 | 10-14-77 | 317 | LIQUID PENETRANT EXAM. PROC. | | |
| 10 | 80A0473 | 9-23-77 | 3 | 7-8-80 | 1373 | VISUAL EXAM. PROC. | | △ |
| 11 | 80A0474 | 2-15-78 | 1 | 11-3-78 | 568 | REMOTE UT EXAM. FOR NOZZLE SAFE END WELDS | | |
| 12 | 80A0475 | 2-15-78 | 5 | 12-11-81 | 2244 | MANUAL UT EXAM. PROC. FOR VESSEL NOZZLE SAFE ENDS & CLOSURE HEAD NOZZLE FLANGE WELDS | | |
| 13 | 80A0476 | 10-19-77 | 0 | | | UT EXAM. PROC. FOR CLOSURE HEAD STUDS & NUTS & RECIRC. PUMP STUDS & NUTS | | |
| 14 | 80A0478 | | | | | AUTO. UT EXAM. PROC. FOR NOZZLE INNER RADII | | |
| 15 | 80A0479 | 10-6-81 | 0 | | | MANUAL UT EXAM. PROC. FOR NOZZLE INNER RADII | | |

