Northern Indiana Public Service Company

Nuclear Staff
RR #3, Box 501
Chesterton, IN 46304
August 4, 1978

BAILLY GENERATING STATION N-1

Mr. Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: NORTHERN INDIANA PUBLIC SERVICE COMPANY
BAILLY GENERATING STATION NUCLEAR 1
DOCKET NO. 50-367

Dear Mr. Boyd:

Enclosed are fifteen (15) additional copies of a document titled "DATA BOOK", and twelve (12) additional copies of a proprietary document titled "Thatcher QA Manual, Thatcher QC Manual, Braun NFIM Procedures", both of which were previously submitted on July 14, 1978.

We have also enclosed fifteen (15) copies of a nonproprietary version of the document titled "Thatcher QA Manual, Thatcher QC Manual, Braun NFIM Procedures".

Sincerely,

for John W Dunn

R. J. Bohn
Manager, Nuclear Staff

APS/me

Enclosures

THATCHER ENGINEERING CORPORATION
QUALITY ASSURANCE MANUAL

MANUAL CONTROL NUMBER_____

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This Manual Number _____ is herewith being assigned

To _____

Representing _____

This Day of _____

_____, Chief Q. A. Officer
Robert D. Fletcher, Assignor

_____, _____
Assignee Title

* This page to be signed by Assignee and returned to Thatcher Engineering Corporation's Chief Q. A. Officer

Form #MC-1

TABLE OF CONTENTS

Original Issue: April 1, 1977
Revision #1: September 23, 1977

F O R E W A R D

STATEMENT OF POLICY

The Quality Assurance Program of this corporation is designed to provide quality control by means of systematic planning, systematic management and systematic performance.

It is our intent to not only comply with the letter of Quality Assurance, but also to cooperate in the spirit and purpose of Quality Assurance.

The methods of accomplishing this policy are detailed in the following pages.

Thomas J. Wysockey, President
Thatcher Engineering Corporation

Fred C. Schmednecht,
Corporate Quality Assurance Officer
Thatcher Engineering Corporation

Chief Quality Assurance Officer
Thatcher Engineering Corporation

Original Issue: April 1, 1977
Revision #1: September 23, 1977

MANUAL DESCRIPTION

This manual covers the 18 criteria of Title 10-Atomic Energy, Code of Federal Regulations, Part 50-Licensing of Production and Utilization Facilities, Appendix B - Quality Assurance Criteria for Nuclear Power Plants and Fuel Re-processing Plants. This document will, hereafter, be called 10 CFR 50-B. The manual also incorporates the Quality Assurance standards of the American National Standards Institute, N45 Standards Committee - "Reactor Plants and their Maintenance", N45-2 sub-committee - " "Nuclear Quality Assurance Standards", N45.2-1971 - "Quality Assurance Program Requirements for Nuclear Power Plants". This standard will, hereaftar, be called ANST N45.2-1971.

This manual will state in general terms the commitment of Thatcher Engineering Corporation to conform to all requirements of 10CFR 50-B and ANST N45.2-1971.

When the word "Owner" is used in the manual it shall also include his appointed representative and/or designate.

MANUAL REVISIONS

Throughout the duration of the project it may become necessary to revise and/or expand certain parts of the original Quality Assurance Manual to incorporate unforseen conditions. In this event, the condition shall initiate the revision and dictate the requirements of the revision. The revisions shall be prepared and approved in the same manner as the original manual, i.e. The revision shall be prepared by the appropriate T. E. C. Department and channeled through the Quality Assurance Organization, ultimately reaching the Corporate Quality Assurance Officer for final review and approval. After approval by the Corporate Q. A. Officer,

MANUAL REVISIONS (Cont'd)

the revision shall be submitted to the owner for approval. After owner approval, the revision shall be distributed and inserted into controlled copies of the Quality Assurance Manual for implementation. The Q. A. Record Clerk shall be responsible for revision distribution and manual control in accordance with provisions delineated in Sections 1 and 6. For control purposes, all revisions shall receive numerical designation markings (Revision 1, 2, 3, etc.) and shall be dated.

Under no circumstances shall any manual revision be implemented until owner approval is received.

WORK SCOPE

The socpe of work covered by this manual shall be as designated by the latest revision to the owners specifications.

PROJECT RELATED DOCUMENTS

The project related documents shall be the latest issues of owners specifications, supplements, standards, design drawings, reference drawings, reports, and contract; the latest issues of Thatcher Engineerings Quality Control Procedures and this Quality Assurance Manual; ANSI N45.2, ANSI N45.2.6 and AWS D1.1.

ORGANIZATION

1.0 SCOPE

This section establishes the organizational structure, responsibilities, levels of authority, and interfaces by which Thatcher Engineering Corporation will implement the Quality Assurance Program defined by this Manual.

2.0 ORGANIZATION CHART

Thatcher Engineering Corporation organization for construction of Nuclear projects is shown in figure 1-1.

3.0 RESPONSIBILITIES AND AUTHORITY

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THATCHER ENGINEERING CORPORATION ORGANIZATION CHART

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Solid connecting lines designate administration authority.
Dotted connecting lines designate cooperative communications.

Original Issue: April 1, 1977
Revision #1: June 27, 1977
Revision #2: September 6, 1977

QUALITY ASSURANCE PROGRAM

1.0 SCOPE

This manual describes the field Quality Assurance Program for Nuclear safety related work as defined by Owner design documents to be used by Thatcher Engineering Corporation's personnel.

The Thatcher Engineering Corporation Quality Assurance Program and this manual establish the basis for overall construction quality control. This manual is intended to meet the requirements of Title 10 CFR Part 50, Appendix B and ANSI N45.2.

The term quality control as used in this manual is the process used to verify fabrication and construction compliance with drawings and specifications.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

QUALITY ASSURANCE PROGRAM

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790(B)

QUALITY ASSURANCE PROGRAM

The Corporate Q.A. Officer shall be responsible for final approval of the Q.A. Program and any changes to the Q.A. Program that may become necessary during the course of the project. Manual Revisions are described in the, Introduction, and Section 6, Document Control.

DESIGN CONTROL

1.0 SCOPE

Thatcher Engineering Corporation assumes no responsibility for Design contained in the Design Specification and Drawings. Thatcher Engineering Corporation Design Documents will be confined to shop drawings.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: April 1, 1977
Revision #1: Sept. 23, 1977

PROCUREMENT DOCUMENT CONTROL

1.0 SCOPE

This section describes the system used for the procurement of materials, equipment and services which require compliance with this Program.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

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6.0

THATCHER ENGINEERING CORP.
CHICAGO ILLINOIS
544 W. WASHINGTON STREET
CHICAGO, ILLINOIS 60606

PAPERS, PACKAGES, AND INVOICE

PURCHASE ORDER NUMBER : 3225

SOURCE:

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

PLEASE SUPPLY THE ABOVE DESCRIBED MATERIAL SUBJECT TO TERMS, CONDITIONS, AND SPECIFICATIONS DESCRIBED HEREIN — OUR PURCHASE ORDER NUMBER MUST APPEAR ON ALL OF YOUR CORRESPONDENCE, SHIPPING PAPERS, PACKAGES, AND INVOICES.

THATCHER ENGINEERING CORPORATION

Figure 4-1

AUTHORIZED SIGNATURE

QUESTIONS ON THIS ORDER MAY BE RESOLVED BY CALLING

219/949-2044 OR 312/721-9797

INSTRUCTIONS, PROCEDURES, AND DRAWINGS

1. SCOPE

This section establishes the requirements for the preparation and issuance of written instructions, procedures and drawings that describe, control and verify activities affecting quality.

2.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

DOCUMENT CONTROL

1.0 SCOPE

This section establishes the requirements for the distribution and control of documents, such as design drawings, specifications, procedures, design changes, etc. which are used in activities affecting quality. The intent of this control is to preclude the use of outdated or inappropriate documents.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

3.0

Original Issue: April 1, 1977
Revision #1: September 23, 1977

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Original Issue: April 1, 1977
Revision #1: Sept. 23, 1977

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Original Issue: April 1, 1977
Revision #1: Sept. 23, 1977

DOCUMENT CONTROL

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

FIGURE 6-1

THATCHER ENGINEERING CORPORATION

DOCUMENT TRANSMITTAL

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

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Figure 6-2A

THATCHER ENGINEERING CORPORATION
QUALITY ASSURANCE MANUAL

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To_____

Representing_____

This Day of_____

_____, Chief Q. A. Officer
Robert D. Fletcher, Assignor

_____, _____
Assignee Title

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Form #MC-2

THATCHER ENGINEERING CORPORATION
QUALITY ASSURANCE MANUAL

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_____,_____
Assignee Title

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Form #MC-1

CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

1.0 SCOPE

This section establishes the provisions to ensure that material, equipment and services covered by this Manual conform to the requirements of construction specifications, design drawings and procurement documents.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

1.0 SCOPE

This section establishes the requirements for identification and control of materials, parts and components to ensure that only correct and acceptable items are used.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR 2.790B

Original Issue: April 1, 1977
Revision #1: Sept. 23, 1977

IDENTIFICATION AND CONTROL OF
MATERIALS, PARTS AND COMPONENTS

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

CONTROL OF SPECIAL PROCESSES

1.0 SCOPE

This section describes the methods of control to be used when any special process is included in the project scope of work.

2.0 RESPONSIBILITY AND AUTHORITY

The Corporate Q.A. Officer and/or the Chief Q.A. Officer shall review and approve the written Special Process Procedures and personnel qualification documents. The Chief Inspector shall be responsible for verifying that the Special Processes are performed in accordance with the approved written procedures and by qualified personnel. The record clark shall be responsible for maintaining any records that are required to document personnel qualification and any other records that are generated by the written procedure. The record clerk shall submit his list of qualified personnel to the Chief Inspector. The inspectors shall perform the visual examinations and record the examination results and other required data on the appropriate inspection form.

3.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

CONTROL OF SPECIAL PROCESSES

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTION

1.0 SCOPE

This section establishes the requirements for the testing of materials or components and for the inspection of construction activities affecting quality to assure conformance with design specification and drawing requirements.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: April 1, 1977
Revision #1: September 23, 1977

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3.0

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INSPECTION

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PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

TEST CONTROL

1.0 SCOPE

This section describes the system of controls to be used when testing is required to demonstrate that H-piling will perform satisfactorily in service.

2.0

3.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: April 1, 1977
Revision #1: September 23, 1977

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PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

CONTROL OF MEASURING AND TEST EQUIPMENT

1.0 SCOPE

This section establishes a system for control of measuring and test equipmenr used for the inspection or testing of material, parts or components.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: April 1, 1977
Revision #1: Sept. 23, 1977

CONTROL OF MEASURING AND TEST EQUIPMENT

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: April 1, 1977
Revision #1: Sept. 23, 1977

HANDLING, STORAGE AND SHIPPING

1.0 SCOPE

This section establishes the system for control of handling, storage and shipping of material and equipment to prevent damage, deterioration and loss.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTION, TEST, AND OPERATING STATUS

1.0 SCOPE

This section establishes the system for indicating the status of inspections and tests performed upon material, systems, and components.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

NONCONFORMING MATERIALS, PARTS & COMPONENTS

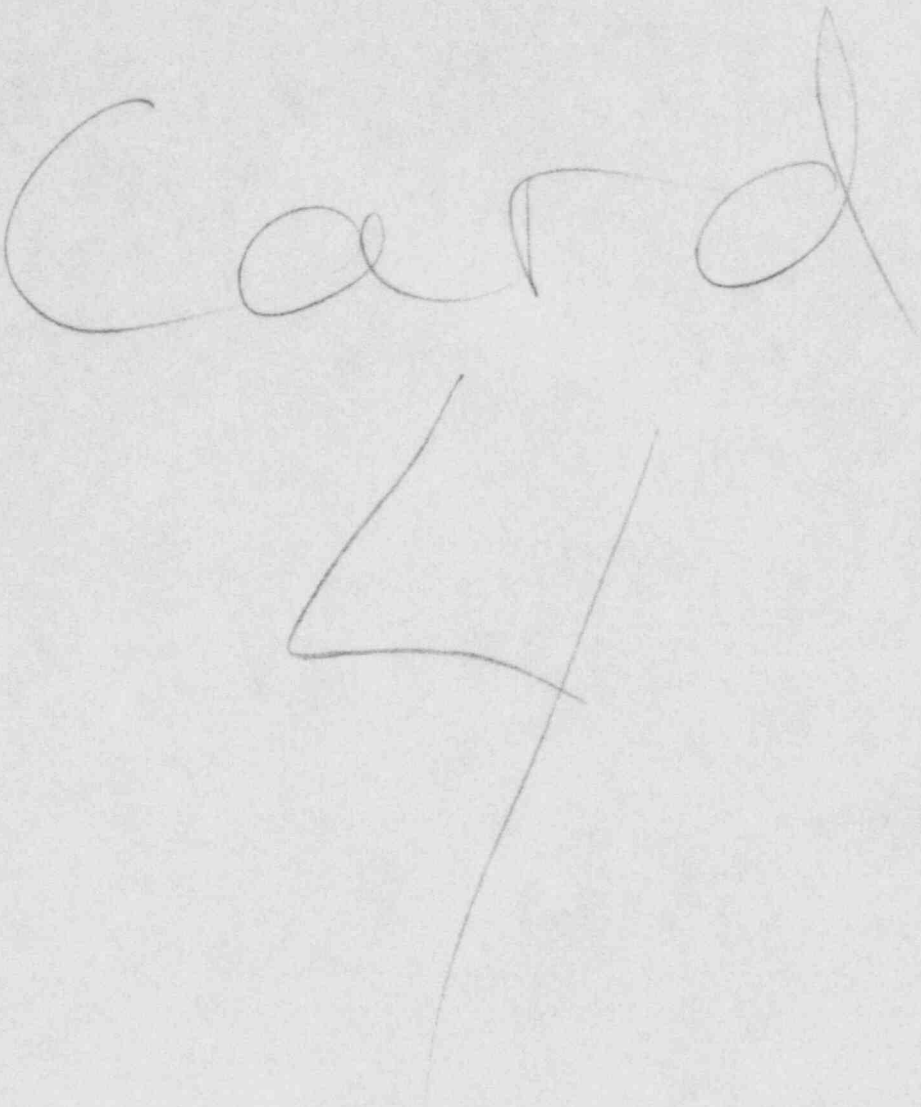
1.0 SCOPE

This section establishes the system for control of materials, parts or components which do not conform to the design specification and drawings and to this Manual, in order to prevent their unauthorized use or installation.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: April 1, 1977
Revision #1: September 23, 1977


Card
4

NONCONFORMING MATERIALS, PARTS OR COMPONENTS

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

CORRECTIVE ACTION

1.0 SCOPE

This section establishes the system for identification, control and correction of conditions adverse to quality to preclude repetition of significant nonconformances.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790(B)

Original Issue: April 1, 1977
Revision #1: September 23, 1977

QUALITY ASSURANCE RECORDS

1.0 SCOPE

This section establishes the system for the control of records which document all required Quality Assurance controls and functions.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

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Original Issue: April 1, 1977
Revision #1: September 23, 1977

QUALITY ASSURANCE RECORDS

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

AUDITS

1.0 SCOPE

This section describes the audit measures that will be used to verify compliance with established Q. A. requirements, methods, procedures and assigned tasks. Audits shall also determine the adequacy of the Q. A. program performance and verify implementation of recommended corrective action.

2.0

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790

Original Issue: April 1, 1977
Revision #1: September 23, 1977

AUDITS

2.1

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

THATCHER ENGINEERING CORPORATION
QUALITY CONTROL PROCEDURE MANUAL
STEEL H-PILE INSTALLATION
BAILLY NUCLEAR I
1978

MANUAL CONTROL NUMBER_____

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to_____

Representing_____

This day of_____

_____, Chief Q. A. Officer
Edward Hutson, Assignor

_____, _____
Assignee Title

* This page to be signed by Assignee and returned to Thatcher Engineering Corporation's Chief Q. A. Officer.

THATCHER ENGINEERING CORPORATION
QUALITY CONTROL PROCEDURE MANUAL
STEEL H-PILE INSTALLATION
BAILLY NUCLEAR 1
1978

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F O R E W A R D

STATEMENT OF POLICY

The Quality Control Procedures in this manual are designed to produce and maintain the highest quality product possible. These procedures are an in depth description of the quality control standards as outlined for nuclear construction. They take into account the need for special controls, processes, test equipment, tools, and skills to attain the required quality set forth by the publisher.

Thomas J. Wysockey, President
Thatcher Engineering Corporation

Fred C. Schmednecht,
Corporate Quality Assurance Officer
Thatcher Engineering Corporation

Edward Hutson,
Chief Quality Assurance Officer
Thatcher Engineering Corporation

Original Issue: Oct. 17, 1977
Revision #1 : June 19, 1978

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DOCUMENT CONTROL

1. GENERAL

This procedure identifies the steps to be used for the receipt and issue of drawings, specifications, amendments, field change requests, engineering change notices, procedures and manuals.

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PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue; July 7, 1978

DOCUMENT CONTROL

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

DOCUMENT CONTROL

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

DOCUMENT CONTROL

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Document Control: Field Change Requests (ECR)

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

THATCHER ENGINEERING CORPORATION

DOCUMENT TRANSMITTAL

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Form ADT-1

RECEIVED BY _____

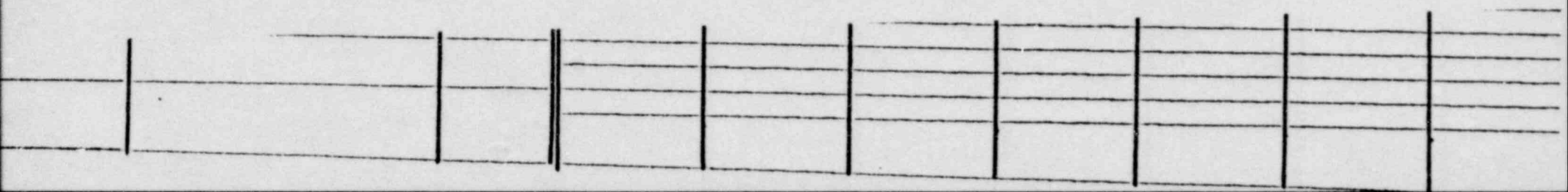
DATE _____

Thatcher Engineering Corporation
Form [illegible]-20

SPECIFICATION AND AMENDMENT DISTRIBUTION LOG

SPECIFICATION NO: _____

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B



CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

CONTROL OF "STICK AND WIRE" ELECTRODES

I.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

CONTROL OF "STICK AND WIRE" ELECTRODES

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PROPRIETARY INFORMATION WITHHELD. 10CFR2.790(B)

C.

Original Issue: July 7, 1978

CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

CONTROL OF "STICK AND WIRE" ELECTRODES

D.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

CONTROL OF "STICK AND WIRE" ELECTRODES

II.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

WELD MATERIALS - RECEIPT INSPECTION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

PREQUALIFIED JOINT WELDING PROCEDURE
PROCEDURE SPECIFICATION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

PREQUALIFIED JOINT WELDING PROCEDURE
PROCEDURE SPECIFICATION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

PREQUALIFIED JOINT WELDING PROCEDURE
PROCEDURE SPECIFICATION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

PREQUALIFIED JOINT WELDING PROCEDURE
PROCEDURE SPECIFICATION

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PREQUALIFIED JOINT WELDING PROCEDURE
PROCEDURE SPECIFICATION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

PREQUALIFIED JOINT WELDING PROCEDURE
PROCEDURE SPECIFICATION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790(B)

PREQUALIFIED JOINT WELDING PROCEDURE
PROCEDURE SPECIFICATION

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PREQUALIFIED JOINT WELDING PROCEDURE
PROCEDURE SPECIFICATION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

PILE RECEIVING AND HANDLING INSPECTION

1. GENERAL

This procedure identifies the methods to be used when receiving Steel H-Pile material.

2. RESPONSIBILITY

The Thatcher Engineering Corp Chief Inspector is responsible for the receipt inspection and documentation of all Steel H-Pile material.

2.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

PILE RECEIVING AND HANDLING INSPECTION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

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To_____

Representing_____

This Day of_____

_____, Chief Q. A. Officer
Robert P Fletcher, Assignor

_____, _____
Assignee Title

*This page to remain in Manual.

Form #MC-2

Thatcher Engineering Corp.
BGS-N-1
Spec. T-2964

Date: _____

H-PILE

R E C E I V I N G R E P O R T
(RR-1)

A.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790

B.

INSPECTIONS

WELD TABLE SPLICE INSPECTION PROCEDURE

1. GENERAL

This procedure identifies the Splicing Procedure to be performed on a welding table to join HP 14 X 89 or 117 sections together to form a pile beam.

2 RESPONSIBILITIES

Each welder is responsible for making each weld splice in accordance with Approved Weld Procedures.

The Inspector is responsible for witnessing the weld splicing work and documenting the data required by this procedure on the Weld Table Splice Report, Form TSR-2.

3.

PROPRIETARY INFORMATION WITHHELD, 10CFR2.790B

Original Issue: July 7, 1978

INSPECTIONS

WELD TABLE SPLICE INSPECTION PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

INSPECTIONS

WELD TABLE SPLICE INSPECTION PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

INSPECTIONS

WELD TABLE SPLICE INSPECTION PROCEDURE

4.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790

Original Issue: July 7, 1978

INSPECTIONS

WELD TABLE SPLICE INSPECTION PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

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WELD TABLE SPLICE INSPECTION PROCEDURE

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WELD TABLE SPLICE INSPECTION PROCEDURE

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PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

WELD TABLE SPLICE INSPECTION PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

WELD TABLE SPLICE TEST PILE # _____

1
TOP

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

COMMENTS

CATCHER ENG.
BGS-N-1
FORM TSK-2

Final INSPECTOR's signature _____ DATE _____

EXHIBIT 1

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

EXHIBIT 2

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

EXHIBIT 3

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

EXHIBIT 4

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

EXHIBIT 5

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790b

INSPECTIONS

PILE DRIVING PROCEDURE INSPECTION

1.

2.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

3.

Original Issue: July 7, 1978

INSPECTIONS

PILE DRIVING PROCEDURE INSPECTION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

PILE DRIVING PROCEDURE INSPECTION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

PILE DRIVING PROCEDURE INSPECTION

4.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

PILE DRIVING PROCEDURE INSPECTION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

PILE DRIVING PROCEDURE INSPECTION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

PILE DRIVING PROCEDURE INSPECTION

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PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

PILE DRIVING PROCEDURE INSPECTION

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PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

THATCHER ENGINEERING CORPORATION
PILE DRIVING INSPECTION RECORD

DATE : / /

SHIFT 12 | 8 | 4

INSPECTOR INITIALS _____

RIG NO. _____ TEC HAMMER NO. _____

PILE LOCATION: BLDG _____ SEC ___ LOC ___

PILE LENGTH = _____

PILE NUMBER _____

117 # TOP SECTION LENGTH _____

VISUAL INSPECTION : ACCEPT ___ REJECT ___

DATES: _____ START _____ FINISH

APPROX. DRIVING TIME ____ HRS ____ MIN

FINAL NO. OF BLOWS = ____ PER ____

Penetration Below Ground	Blows per foot or inch	Driving Notes
0-1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
1		
2		
3		
4		
5		
6		
7		
8		
9		
20		
1		
2		
3		
4		
5		
6		
7		
8		
9		
30		
1		
2		
3		
4		
5		
6		
7		
8		
9		
40		
1		
2		
3		
4		
5		
6		
7		
8		
9		
50		
1		
2		
3		
4		
5		
6		
7		
8		
9		
60		
1		
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70		
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4		
5		
6		
7		
8		
9		
90		
1		
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6		
7		
8		
9		
110		
1		
2		
3		
4		
5		
6		
7		
8		
9		
120		
1		

Driving Records

① TIP SPEC. _____
Elev: Driven _____
Redriven _____

② TOP DRIVEN _____
Ref Elev. _____
Elev: Redriven _____

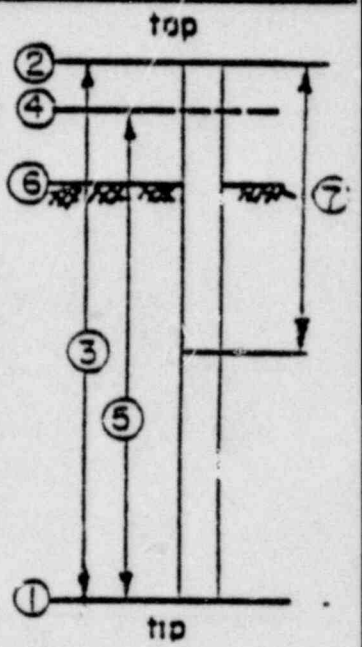
③ DRIVEN LENGTH _____

④ CUTOFF SPEC. _____
ELEV: FINAL _____

⑤ Final Pile Length _____

⑥ Approx Ground Elev. _____

⑦ Final Unspliced Top Section _____



CHECKLIST	SPEC	ACTUAL	DATE
LOCATION	±3"		
ROTATION	10°		
PLUMBNESS	2%		
HEAVE	0.125"		
HAMMER STROKE	36"		

REMARKS:

CHIEF INSPECTOR _____ DATE _____

FORM -6

INSPECTIONS

IN LEAD SPLICE INSPECTION PROCEDURE

1. GENERAL

No in-lead splicing shall be performed without prio_ approval of the Consulting Engineer. All piles shall receive full length fabrication at the welding table whenever possible. In certain cases, added sections will have to be installed after the pile is partially driven. This will occur when additional length is required to meet the blow count criteria. In this case the following responsibilities and procedures shall take place.

2. RESPONSIBILITY

The Inspector at the driving rig shall determine if the driven section of the pile has met the specified blow count requirement. The Chief Inspector shall verify that the driven section of the pile has been checked for location, rotation, and plumbness by the Technical Engineer and that it is within the specified tolerances. Upon receipt of the Consulting Engineers approval he shall release the pile for splicing. The Inspector shall then inspect the splicing operation to verify compliance with this procedure and the applicable splice welding procedure.

3.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

IN LEAD SPLICE INSPECTION PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

IN LEAD SPLICE INSPECTION PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

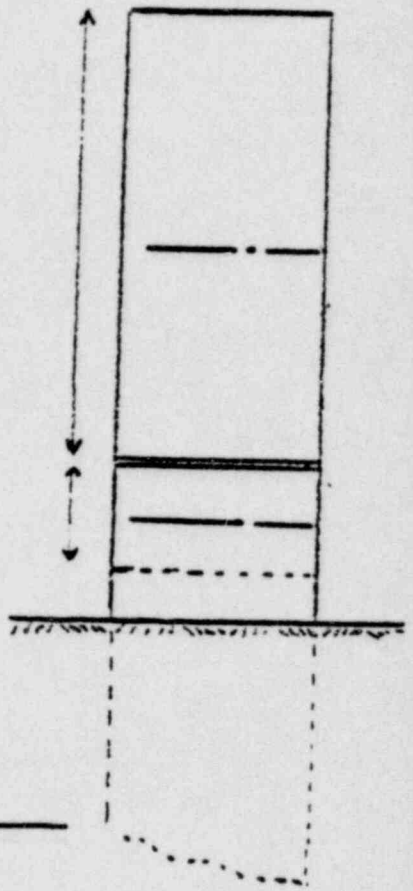
IN LEAD SPLICE INSPECTION PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Thatcher Engineering
BGS- N1
Spec. T-2964

IN LEAD SPLICE REPORT
(LSR-8)

Date:_____



SPLICED SECTION LENGTH =

DRIVEN SECTION CUT OFF LENGTH =

PILE NUMBER#_____

RELEASED FOR SPLICING:_____(CHIEF INSPECTOR)DATE:_____

PILE LOCATION: BLDG_____SECTION_____LOC.#_____

SPLICED SECTION: 89 or 117

DRIVEN SECTION : 89 or 117

DRIVEN SECTION FABRICATION NUMBER:_____ END PREP INSPECTION_____

SPLICE PROCEDURE NUMBER:_____ WELD INSPECTION:_____

SPLICE WELDING PROCEDURE NUMBER:_____ WELD ROD HEAT/LOT NO._____

WELDER:_____

SPLICE STARTED: DATE_____TIME_____

SPLICE COMPLETED: DATE_____TIME_____

PILE SECTION STRAIGHTNESS INSPECTION_____

PILE SECTION PLUMBNESS INSPECTION_____

COMMENTS:

INSPECTOR:_____

REVIEWED BY_____ DATE_____

INSPECTIONS

H-PILE INSPECTION PERSONNEL

QUALIFICATIONS AND TRAINING

1. GENERAL

This procedure establishes the training program and documentation requirements for qualification of H-Pile Inspectors. This procedure is intended to comply with ANSI N45.2.6.

2. RESPONSIBILITY

The Chief Q. A. Officer through the Chief Inspector is responsible for the technical training of H-Pile Inspectors.

The Corporate Q. A. Officer is responsible for certifying the qualifications of the H-Pile Inspectors.

3.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

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Original Issue: July 7, 1978

INSPECTIONS

H-PILE INSPECTION PERSONNEL

QUALIFICATIONS AND TRAINING

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14.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

INSPECTIONS

H-PILE INSPECTION PERSONNEL

QUALIFICATIONS AND TRAINING

1.

2.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

THATCHER ENGINEERING CORPORATION

INSPECTOR QUALIFICATION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Form QI-21
Original Issue:

Certified by Corporate QA Officer	Date
Effective Period of Certification:	

INSPECTIONS

VISUAL WELD INSPECTION PROCEDURE

1. GENERAL

This procedure defines the welding inspection program to be used for all production splice welding performed at the welding table or in the leads of the driving rig. The inspectors shall ascertain that all welding is performed in accordance with the requirements of this program.

2. RESPONSIBILITIES

A. The Chief Q. A. Officer through the Chief Inspector shall furnish inspectors with only approved welding procedure specifications showing the requirements of all welds to be made. (Approved welding specifications are in Section 9).

B. The Inspector shall be present during all welding operations to verify procedure compliance and to make certain that only materials conforming to the requirements of the welding procedure specifications are used.

C. The Records Clerk shall keep all up to date records of all qualified welders on the job. This information will be given to the Inspectors and they shall not allow any welding to be performed by welders who are not qualified.

3.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

INSPECTIONS

VISUAL WELD INSPECTION PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

B.

C.

D.

E.

Original Issue: July 7, 1978

INSPECTIONS

VISUAL WELD INSPECTION PROCEDURE

F.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

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INSPECTIONS

VISUAL WELD INSPECTION PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

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Original Issue: July 7, 1978

INSPECTIONS

VISUAL WELD INSPECTION PROCEDURE

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PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

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Original Issue: July 7, 1978

INSPECTIONS

VISUAL WELD INSPECTION PROCEDURE

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PRORPIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

INSPECTIONS

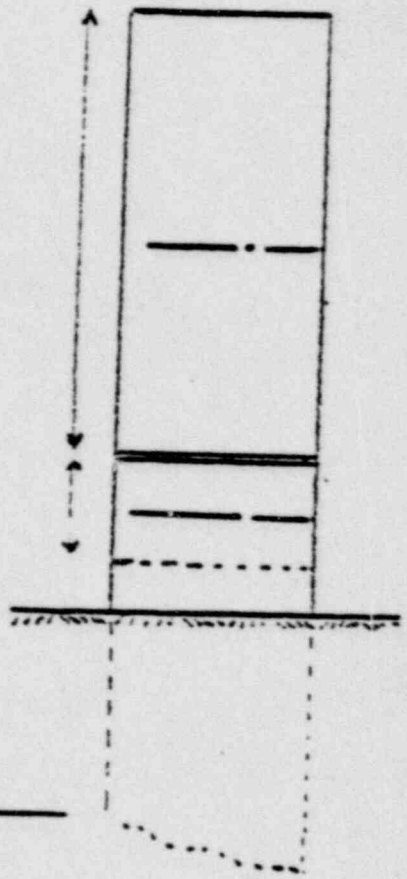
VISUAL WELD INSPECTION PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Thatcher Engineering
BGS- N1
Spec. T-2964

IN LEAD SPLICE REPORT
(LSR-8)

Date:_____



SPLICED SECTION LENGTH =

DRIVEN SECTION CUT OFF LENGTH =

PILE NUMBER#_____

RELEASED FOR SPLICING:_____(CHIEF INSPECTOR)DATE:_____

PILE LOCATION: BLDG_____SECTION_____LOC.#_____

SPLICED SECTION: 89 or 117

DRIVEN SECTION : 89 or 117

DRIVEN SECTION FABRICATION NUMBER:_____ END PREP INSPECTION_____

SPLICE PROCEDURE NUMBER:_____ WELD INSPECTION:_____

SPLICE WELDING PROCEDURE NUMBER:_____ WELD ROD HEAT/LOT NO._____

WELDER:_____

SPLICE STARTED: DATE_____TIME_____

SPLICE COMPLETED: DATE_____TIME_____

PILE SECTION STRAIGHTNESS INSPECTION_____

PILE SECTION PLUMBNESS INSPECTION_____

COMMENTS:

INSPECTOR:_____

REVIEWED BY_____ DATE_____

WELD TABLE SPLICE REPORT FILE # _____

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

ATCHER ENG.
BMS-N-1
FORM TSR.2

FINAL INSPECTOR'S SIGNATURE

INSPECTIONS

CUT OFF INSPECTION PROCEDURE

1. GENERAL

This procedure describes the methods of cutting off pile to assure conformance with the requirements of Sargent and Lundy Specification T-2964.

2. RESPONSIBILITY

The Welder-Burner is responsible for the level cutting.

The Technical Engineer shall be responsible for establishing grades and bench mark references to layout the cut-off grades. He will be responsible to maintain means of establishing grade on the pile from established bench marks. He shall also be responsible for verifying that the top of the pile is level after the cut off is made.

3.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS

CUT OFF INSPECTION PROCEDURE

4.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

VERTICAL PILE LOAD TEST PROCEDURE

1. GENERAL

This procedure describes the method by which the test pile (chosen by the Purchaser) is monitored during the pile installation sequence, the method by which the required vertical test loads are applied to the test pile and the method by which the test pile is monitored during the testing period. This procedure also sets forth the criteria from which the load duration time for each individual load increment is determined.

2. RESPONSIBILITY

An Inspector will be present throughout the installation and testing of the test pile to ensure that all data is documented as required in this procedure, Forms DR6, VPT1. An Inspector is also responsible for the load transfer and monitoring systems being installed as referenced in this procedure, Drawings TEC1, TEC2 and TEC3.

3.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

a.

b.

Original Issue: July 7, 1978

VERTICAL PILE LOAD TEST PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

VERTICAL PILE LOAD TEST PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

VERTICAL PILE LOAD TEST PROCEDURE

4.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

VERTICAL PILE LOAD TEST PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

FORM VPT-1

VERTICAL PILE LOAD TEST

SHEET ___ OF ___

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

FORM VPT1

RECORDED

DATA EXPLANATION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

LATERAL PILE LOAD TEST PROCEDURE

1. GENERAL

This procedure describes the method by which the test pile (chosen by the Purchaser) is monitored during the pile installation sequence, the method by which the required lateral test loads are applied to the test pile and the method by which the test pile is monitored during the testing period. This procedure also sets forth the criteria from which the load duration for each individual load increment is determined.

2. RESPONSIBILITY

An Inspector will be present throughout the installation and testing of the test pile to ensure that all data is documented as required in this procedure, Forms DR6, LPT1 and LPT2. An Inspector is also responsible for the load transfer and monitoring systems being installed as referenced in this procedure, Drawing TEC4.

Prior to performing the test, calibration records for the jack and load cell shall be submitted along with the test pile report forms DR6 to the Purchaser or Purchaser's Representative for review and acceptance.

3.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

a.

b.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

LATERAL PILE LOAD TEST PROCEDURE

(b)

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

LATERAL PILE LOAD TEST PROCEDURE

4

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

LATERAL PILE LOAD TEST PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

FORM LPT-1

LATERAL PILE LOAD TEST

SHEET ___ OF ___

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

FORM LPT-2

LATERAL PILE LOAD TEST

SHEET ___ OF ___

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

FORMS LPT1 AND LPT2 RECORDED

DATA EXPLANATION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

CONTROL OF MEASURING AND TEST EQUIPMENT

INSTRUMENT CALIBRATION

1. GENERAL

This control measure delineates methods and practices to be used to insure and maintain the accuracy of measuring and test equipment to be used in the various measured activities critical to this project's layout and conformance with Specification T-2964.

2. RESPONSIBILITY

The Chief Inspector or his designated representative shall be responsible for the records of the calibrations that have been made and seeing that such records are kept with the other permanent records for checking and updating. He or his designated representative attest by signature to the accuracy of such records when they have conducted the calibrations themselves, and/or read and certify the calibration records which may have been done by others qualified to do the calibrating either on or off the site.

3.

A.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

CONTROL OF MEASURING AND TEST EQUIPMENT

INSTRUMENT CALIBRATION

B.

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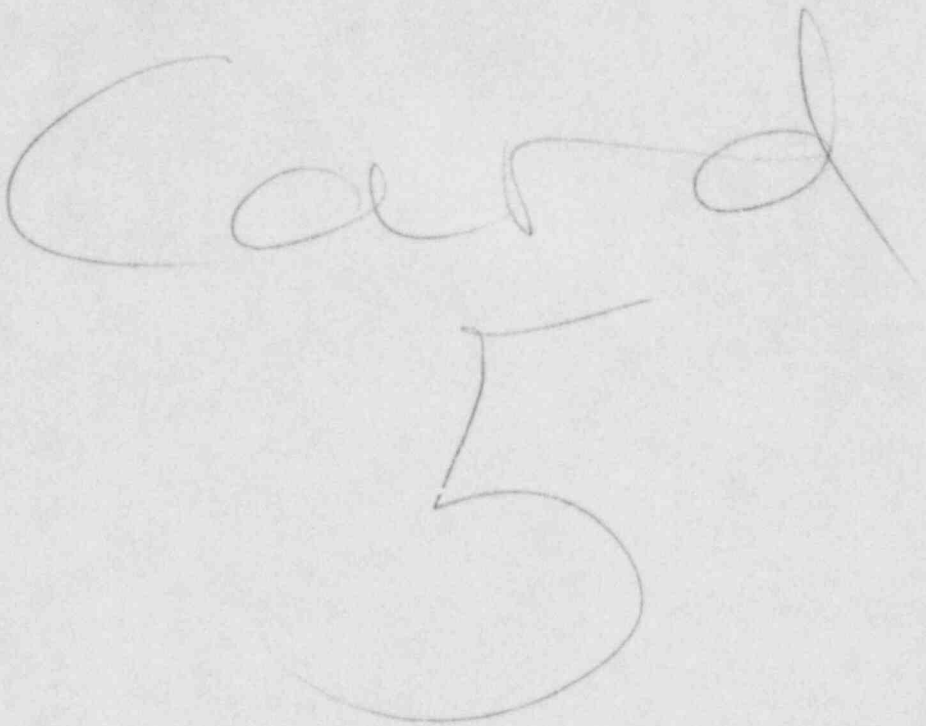
PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B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CONTROL OF MEASURING AND TEST EQUIPMENT

INSTRUMENT CALIBRATION

C.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

CONTROL OF MEASURING AND TEST EQUIPMENT

INSTRUMENT CALIBRATION

D.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

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CONTROL OF MEASURING AND TEST EQUIPMENT

INSTRUMENT CALIBRATION

4.

5.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790(B)

E.

CONTROL OF MEASURING AND TEST EQUIPMENT

INSTRUMENT CALIBRATION

F.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

BGS N-1

THATCHER ENGINEERING CORP.

CALIBRATION RECORD

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

FORM #CS-14 6-6-77

Form CS-15

THATCHER ENGINEERING CORP.

OVEN AND THERMOMETER CHECKS

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

PREQUALIFIED JOINT WELDING PROCEDURE
PROCEDURE SPECIFICATION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

HANDLING, STORAGE AND SHIPPING

PILES

1. GENERAL

This procedure identifies the methods to be used in handling, storage and shipping of steel H-piles. The fundamental intent of this procedure is to maintain the driveability of the steel H-pile material during handling, storage and shipping.

2. RESPONSIBILITY

It is the responsibility of each Thatcher Engineering Corporation craft person to assure the proper handling, storage and shipping of the steel H-piles. Competent craft personnel shall be assigned to perform the handling operation in accordance with the prevailing union agreements. They shall be instructed by supervisory personnel of these handling procedures. The Q. A. Inspectors shall be responsible for monitoring and verifying compliance with these handling procedures.

3. PROCEDURE

A.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

HANDLING, STORAGE AND SHIPPING

PILES

B.

C.

D.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

HANDLING, STORAGE AND SHIPPING

PILES

E.

F.

G.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS, TEST AND OPERATING STATUS

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

INSPECTIONS, TEST AND OPERATING STATUS

INSPECTION PLAN

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

NONCONFORMING MATERIALS, PARTS OR COMPONENTS

NONCONFORMANCE REPORTS

1. SCOPE

This procedure establishes a method for documenting and reporting on-site nonconformances on materials, equipment, and processes which do not conform to the drawings, specifications or established procedures.

2.

PROPRIETARY INFORMATION WITHHELD, 10CFR2.790B

NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

NONCONFORMANCE REPORTS

3. PROCEDURE

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

NONCONFORMANCE REPORTS

c.

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PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

h.

NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

NONCONFORMANCE REPORTS

4.

5.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

BGS - N-1
Spec. #T-2964
Form #NCR-3

THATCHER ENGINEERING CORP.

NONCONFORMANCE REPORT

NCR NUMBER _____

SHEET _____ of _____

SPEC. NO. T-2964

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

THATCHER ENGINEERING CORP.
BGS - N - 1
Spec. #T-2964
Form # NCL-4

NONCONFORMANCE LOG

NCR
NO.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

NONCONFORMANCE TAG

PRORPIETARY INFORMATION WITHHELD. 10CFR2.790B

CORRECTIVE ACTION

1. GENERAL

This procedure describes how the necessity for Corrective Action is determined and how the Corrective Action is implemented to remedy the conditions causing nonconformances.

2. RESPONSIBILITY

The Chief Q. A. Officer is responsible for initiating the Corrective Action Report. He is also responsible for monitoring the Corrective Action and following-up with the issuance of an Effectiveness Report.

Implementation of quality related Corrective Action is the responsibility of the Chief Q. A. Inspector.

The Project Manager and/or Job Superintendent is responsible for the implementation of production related Corrective Action.

3.

A.

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

CORRECTIVE ACTION

B.

1.

PROPRIETARY INFORMATION WITHHELD, 10CFR2.790B

CORRECTIVE ACTION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue: July 7, 1978

CORRECTIVE ACTION

PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

a.

b.

CORRECTIVE ACTION

c.

d.

PROPRIETARY INFORMATION WITHHLED. 10 CFR2.790B

C.

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d.

CORRECTIVE ACTION

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PROPRIETARY INFORMATION WITHHELD. 10CFR2.790B

Original Issue:

PROPRIETARY INFORMATION WITHHELD. 10 CFR2.790B

PROPRIETARY INFORMATION WITHHLED. 10CFR2.790B

Northern Indiana Public Service Company
BGSN-1

NUCLEAR FIELD INSPECTION MANUAL

Project 4915

Part 1.7A (Special for H-Pile Inspection Work) Revision 1 Pages 2 Page 1

INDOCTRINATION PROGRAM H-PILE INSPECTORS

1.0 SCOPE This instruction establishes the indoctrination requirements for C F Braun personnel assigned as inspectors during the H-pile driving program for BGSN-1. Refer to Part 1.7 (pending) for indoctrination requirements for all Braun's Quality Control personnel other than H-pile inspectors. Refer to Part 1.8A for Qualification and Training of Quality Control personnel.

1.1 The purpose of this procedure is to assure that Braun H-pile inspectors understand the technical and QA requirements of their assignment.

2.0 RESPONSIBILITY The Site QC Supervisor is responsible for carrying out the indoctrination requirements.

3.0 PROCEDURE Inspectors assigned to provide receiving inspection and to monitor the pile driving operation shall complete the following reading or review assignments during the first two weeks of their assignment.

A Sections I and IV of the Braun NQAM.

B Parts of the Braun NFIM as required by the Site QC Supervisor depending on the scope of the assigned work.

C S&L Specifications T-2966, T-2966A, and T-2967 and applicable reference standards. Read in detail.

D Review NIPSCO's Outline of Procedure.

E Review 10 CFR 50 APP B and ANSI N45.2.

F Procedures and instructions related to the pile driving work.

G Quality Control Procedures of the pile driving contractor.

H NIPSCO QA Manual

NE

3.1 The Site QC Supervisor shall orally discuss the above reading assignments with the inspector to satisfy himself that the inspector is knowledgeable on the technical and QA requirements of his assignment. In addition, during the first two weeks of his assignment, the Site QC Supervisor shall evaluate the inspector's on-the-job capability by close supervision of his work.

3.2 The Site QC Supervisor and the inspector shall sign and date the attached form filling in the appropriate datas for the reading assignments.

3.3 This instruction shall be implemented at the start of pile driving and shall be discarded at the close of that contract or when superseded by Instruction 1.7.

4.0 ATTACHMENTS

4.1-1.7 Indoctrination Reading Assignments

INDOCTRINATION READING ASSIGNMENTS
H-PILE DRIVING

I have read and understood or reviewed the following documents.

Inspector _____ Date _____

A Sections I and IV of the Braun NQAM _____ Date

B Parts _____ of the Braun NFIM _____ Date

C S&L Specifications T-2966, T-2966A, and T-2967 and applicable reference standards _____ Date

D Reviewed NIPSCO's Outline of Procedures _____ Date

E Reviewed 10CFR50B and ANSI N45.2 _____ Date

F Procedures and instructions related to the pile driving work _____ Date

G Quality Control Procedures of the pile driving contractor _____ Date

H NIPSCO QA Manual _____ Date

I have evaluated Inspector _____ and find him knowledgeable in the technical and QA requirements for the H-pile inspection monitoring work.

Site QC Supervisor _____ Date _____

Part	1
Attachment	4.1-1.7
Revision No	1

Part 1.8A (Special for H-Pile Inspectors) Revision 0 Pages 5 Page 1

PERSONNEL QUALIFICATIONS AND TRAINING

H-PILE INSPECTORS

1.0 SCOPE This instruction establishes the training program for H-Pile inspectors and defines the documentation requirements for their qualifications for this assignment. This instruction is intended to comply with ANSI N45.2.6.

2.0 RESPONSIBILITY The Site QC Supervisor will be qualified as ANSI N45.2.6 Level III and is responsible for technical training of the H-Pile Inspectors. He may delegate training tasks to Level II inspectors. The Manager of Quality Control is responsible for certifying the qualifications of the H-Pile Inspectors including confirmation by signature of the technical training received.

3.0 PROCEDURE The Site QC Supervisor will determine the technical inspection skills and tools required by analyzing the S&L pile driving specification and the driving and quality control procedures of the pile driving contractor. He will bear in mind that first line inspection is by the contractor and Braun's inspectors must be technically competent to monitor the contractor's work and inspection operations.

The following technical skills or knowledge may be required depending on the process techniques used by the contractor.

A Transit operation
B Use of plumb bob
C Use of level
D Use of measuring tape

3.0 PROCEDURE Continued

E Reading of pressure gauges
F Reading of flow meters
G Techniques of counting pile driving blows
H Knowledge and understanding of AWS D1.1 Chapters 1 through 6, inclusive
I Visual inspection of backscarfing or chipping to sound metal
J Flux cored arc welding technique-witness ability only
K Shielded metal arc welding technique-witness ability only
L Reading of radiographs to AWS D1.1 standards
M Identification of welding filler materials in accordance with S&L specification requirements
N Recognition of acceptable filler materials storage techniques
O H-Pile receiving inspection techniques and acceptability standards

3.1 EVALUATION FOR TRAINING The Site QC Supervisor will evaluate the need for training in any of the items of 3.0 based on the inspector's education, experience, preliminary oral examination, and on-the-job performance during the first two weeks of assignment as an H-Pile Inspector. For instance, if the inspector is a graduate civil engineer or if he has long experience with the required tools, then perhaps welding visual inspection training will fulfill the needs of the assignment. Radiograph interpretation will be performed by personnel qualified to Level II competence in accordance with SNT-TC-1A. Pile driving inspectors, if used in radiographic interpretation, will be so qualified.

3.2 DOCUMENTATION When the Site QC Supervisor is satisfied that he has taught the required skills and knowledge to the inspectors, by oral instruction and hands on training with the inspection tools, he will sign the qualifier block on the Inspector Qualification, Form 4.1-1.8 ., attached. The form will then be forwarded to the Manager, Quality Control, for signature certifying that the inspector is qualified for the H-Pile monitoring assignment. The education and experience records of the inspector are documented on Form 4.2-1.8 attached.

3.3 QUALIFICATION LEVELS All H-Pile inspectors will be qualified as Level II in accordance with the requirements of ANSI N45.2.6. This level allows the inspector to evaluate and report on inspection and test results as well as issue NCR's and apply and remove NCT's in accordance with the NFIM procedure 2.1.

3.4 EDUCATION AND EXPERIENCE All inspectors shall have sufficient education and experience to assure understanding of the principles of quality control and the ability to implement the inspection procedures. The following requirements are necessary to qualify as Level II except as noted in 3.5.

(1) High school graduate plus three years related experience in equivalent testing, examination, or inspection activities associated with power plants, heavy industrial facilities, or other similar facilities, or

(2) Completion of college level work leading to an Associate Degree in related discipline plus one year related experience in equivalent testing, examination, or inspection activities associated with power plants, heavy industrial facilities, or other similar faciliti .s, or

3.4 EDUCATION AND EXPERIENCE Continued

(3) Four year college degree plus six months related experience in equivalent testing, examination or inspection activities associated with power plants, heavy industrial facilities, or other similar facilities.

3.5 EXCEPTIONS The education and experience requirements specified for Level II should not be treated as absolute when other factors provide reasonable assurance that the inspector can competently perform on the H-Pile assignment. Other factors may demonstrate capability in the job through previous performance or satisfactory completion of capability testing.

3.6 PHYSICAL CONSIDERATIONS Each inspector shall be physically capable of performing the H-Pile monitoring assignment. Physical standards include

A Natural or corrected near-distance acuity such that the inspector is capable of reading J-I letters on standard Jaeger's Test Type Chart for near-vision or equivalent test.

B Color vision.

Physical considerations shall be verified annually with records maintained in the Site QA File with a copy forwarded to the Manager, Quality Control.

3.7 EFFECTIVENESS This procedure is effective at the start of the H-Pile driving contract but will be filed in the SQAF till the end of the total contract.

4.0 ATTACHMENTS

4.1-1.8 Inspector Qualification
4.2-1.8 Inspector Education and Experience

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INSPECTOR QUALIFICATION

NAME							
QUALIFICATION LEVEL _____ TO ANSI N45.2.6 REQUIREMENTS							
QUALIFIED FOR							
PERIODIC REQUALIFICATION							
VISUAL ACUITY							
COLOR VISION							
DATE							

TRAINING PROGRAMS COMPLETED	DATE	INSPECTOR	TRAINER

SPECIAL EXPERIENCE AND SKILLS

QUALIFIED BY SQCS	DATE	PART 1 NFIM
CERTIFIED BY MQC	DATE	ATTACHMENT 4.1-1.8
NAME		REVISION NO 0

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Inspector Education and Experience

NAME				
ADDRESS		PHONE		
CITY				
SEX	HEIGHT	WEIGHT		MARRIED
BIRTH DATE		BIRTHPLACE	CITIZENSHIP	
PHYSICAL HANDICAPS				

EDUCATION

HIGH SCHOOL OR COLLEGE	MAJOR	FROM	TO	DEGREE AND YEAR
				BACHELOR'S
				MASTER'S
				PROFESSIONAL
				DOCTOR'S

WORK EXPERIENCE

COMPANY	TITLE OR POSITION	FROM	TO

PROFESSIONAL-ENGINEER REGISTRATION

BRANCH	STATE OR COUNTRY	LATEST YEAR	NUMBER

PART 1 NFTM
ATTACHMENT 4.2-1.8
REVISION NO 0

Procedure 2.7 Revision 4 Pages 3 Page 1

SURVEILLANCE OF SITE CONTRACTORS

1.0 SCOPE This instruction establishes a method for Braun surveillance of site contractors. This instruction is based on the contractor providing an approved QA/QC program that meets the requirements specified in the procurement documents.

2.0 RESPONSIBILITY The contractor is responsible for developing and obtaining Braun approval of an Inspection Point Program as a part of his QA/QC program requirements. The contractors approved Inspection Point Program is the basis for establishing Braun's surveillance of the contractor's QC activities.

2.1 The Braun Site QC Supervisor is responsible for the establishment, development, and implementation of the Braun Inspection Plans to provide site surveillance of the contractor's quality control activities.

3.0 PROCEDURE The Site QC Supervisor will assign a QC Engineer the responsibility of reviewing the approved contractor's Inspection Point Program for preparation of the Braun Inspection Plan.

3.1 The QC Engineer, in preparing the Braun Surveillance Program of the contractors, will be required to evaluate the following.

A The scope of the contract and the duration of the schedule.

B The organizational structure of the contractor.

C Contractor's need to develop new procedures and the effectiveness of the implementation of existing procedures.

D Contractor personnel qualifications and training program.

E Review the purchase specification to identify the QC inspection requirements.

F Prepare the Braun Inspection Plan to identify surveillance activities and establish the Braun QC witness and hold points.

3.2 Contractors shall be required to submit documented results of their inspection activities and test results to the responsible QC Engineer for review. The Inspection Reports and forms, used by the contractor to verify the inspection activity, shall contain, as a minimum, the following.

A Contractor's name and contract or purchase order number.

B Inspection activity performed and inspection standards applied.

C Date of inspection, inspector's signature, and date of signature.

The QC Engineer will establish with the contractor the inspection documents that are required to be submitted for review. The time interval following an inspection activity for a copy to be submitted to the QC Engineer for review shall be limited to three days.

3.3 The QC Engineer shall review the contractor's inspection documents prior to submitting them to the QA Records Engineer for filing. This review shall assure the following.

A Reports are correctly identified.

B The descriptions of inspection activities are adequately defined and the correct inspection criteria are identified.

C Inspection reports are traceable to the item, system, structure, or component for which the activity was performed.

D The report is signed and dated by a qualified inspector.

3.4 The responsible QC Engineer shall stamp the contractor's inspection document, as it is received, with the Quality Control Document Review stamp, Attachment 4.1-2.7.

3.4.1 Unacceptable reviews shall be identified on the QC stamp and be signed and dated by the responsible QC Engineer. Comments shall be indicated on the document and a copy retained by the QC Engineer for follow-up. The document shall be returned to the Contract Administrator for transmittal to the contractor for resolution. The responsible QC Engineer shall be responsible for resolving all comments with the contractor.

3.4.2 Acceptable review of contractors inspection documents shall be identified on the QC stamp and be signed and dated by the responsible QC Engineer. The document shall be returned to the Contract Administrator for transmittal to the contractor and a copy sent to the QA Records Engineer for the QA Records File.

4.0 ATTACHMENTS

4.1-2.7 Quality Control Document Review

DOCUMENT REVIEWED
BY
QUALITY CONTROL
☐ ACCEPTABLE ☐ UNACCEPTABLE

BY _____ DATE _____

QUALITY CONTROL STAMP FOR IDENTIFYING CONTRACTOR'S INSPECTION DOCUMENTS FOR REVIEW BY C F BRAUN & CO

Procedure 2.13 Revision 0 Pages 7 Page 1

QUALITY CONTROL INSPECTION PLANS

PART 1

1.0 SCOPE This instruction establishes the method for preparing and implementing the Braun Master and Field Inspection Plans. Inspection plans are prepared for site QC inspection activities and are the controlling documents that identify and document those field QC activities to assure compliance with project requirements.

2.0 RESPONSIBILITY Master Inspection Plans shall be prepared at the jobsite under the direction of the Site QC Supervisor. Master Inspection Plans shall be prepared for all phases of construction except receiving inspection. Incoming materials are inspected in accordance with the recieving inspection procedure. Master Inspection Plans are prepared for each site contract involving construction, fabrication, installation, and construction testing for the following activities as applicable to the particular contract.

A Earthwork

B Concrete

C Foundations

D Structural Steel

E Welding

F Equipment Assembly

G Piping

H Electrical

I Insulation

J Painting

2.1 The Site Quality Control Supervisor is responsible for the preparation of all Master Inspection Plans. He shall also provide administrative and technical direction to the QC Engineers for the preparation and implementation of the Field Inspection Plans.

2.2 QC Engineers are responsible for preparing, and obtaining the Site QC Supervisor's approval, and the implementation of the Field Inspection Plans.

2.3 QC Inspectors are responsible for the implementation of the Field Inspection Plans obtaining approval of the responsible QC Engineer and the performance of inspections in accordance with the Field Inspection Plans. They are also responsible for inspections as a result of the supplemental, technical and administrative direction of the QC Engineers and the Site QC Supervisor.

3.0 PROCEDURE Master Inspection Plans shall be prepared by or under the direction of the Site QC Supervisor. The Master Inspection Plans shall include the general categories of inspection and surveillance activities that are required for each site contract. The Site QC Supervisor shall review the specifications, drawings, and referenced standards to establish the categories of inspection activities and list these activities on the Master Inspection Plan. The Site QC Supervisor shall release Master Inspection Plans for field use by signing each plan. See Appendix A for preparation of Master Inspection Plan.

3.1 Master Inspection Plans may include inspection activities of one or more specifications or drawings. Master Inspection Plans shall designate the inspection points, hold points, witness points, and inspection responsibilities. These will be predicated by the importance and complexity of the activity, degree of proof required and special project considerations.

3.2 Field Inspection Plans are prepared based on Master Inspection Plans and they include the detail inspection requirements for each item shown on the Master Inspection Plan. Each activity listed on the Master Inspection Plan will require a separate Field Inspection Plan. The Field Inspection Plans are scheduled and issued according to the construction activities. See Appendix B for preparation of Field Inspection Plans.

3.3 Preparation of Field Inspection Plans shall list the engineering specifications, and drawings, (including revisions) as well as codes and standards required to perform the inspections listed in the plan. Field Inspection Plans shall also list all unresolved FCR

3.3.1 Field Inspection Plans shall contain all the inspection activities as identified in the Master Inspection Plan applicable to the work to be inspected. The inspection activities shall be broken down to the task level prescribing the inspection task to be performed. Inspection Plans may reference other Inspection Plans as suitable documentation of previously performed inspections. The Field Inspection Report shall be used to supplement the Field Inspection Plan Number.

The final inspection activity specified on the Inspection Plan shall be a statement that all inspection tasks are complete.

3.3.2 Inspection activities shall be listed on the Master Inspection Plan and will identify by code the inspection tasks. These tasks shall consist of review, inspection (visual), test, witness, and hold points.

3.3.3 QC witness points are designated inspection tasks which shall be witnessed by the QC Inspector. Work shall not proceed without the inspection task being satisfactorily completed by the QC Inspector or his signature of a waiver of the witness requirement. If a witness point is waived by the QC Inspector it shall be documented on the Field Inspection Plan or other means traceable to the Field Inspection Plan.

3.3.4 QC hold points are designated inspection tasks and the QC Inspector must be present for the activity. Work shall not proceed without the inspection task being satisfactorily completed. The QC Inspector shall advise the contractor or subcontractor when hold point inspections have been satisfactorily completed so that the work may proceed. QC hold points shall be identified in the Master Inspection Plan and the Field Inspection Plan by inserting - H - under the code column of the Master and Field Inspection Plan form. The QC hold points established by the Site QC Supervisor on the Master Inspection Plans are mandatory. The QC Engineers may establish additional hold points on the Field Inspection Plans.

3.3.5 Field Test Inspection Report forms shall be prepared by the QC Engineers in the field for recording test data. The required test report forms shall be listed in the body of the Field Inspection Plan. Upon their completion, they shall become an integral part of the Field Inspection Plan.

3.3.6 The measuring and testing equipment used in performing the inspection task shall be identified in the Field Inspection Plans. The Field Inspection Report may be used to report inspection of field tests. Serial numbers, calibration, and certification data will be recorded in the Field Inspection Plan at the time of performing the inspection task.

3.4 Changes to the Master Inspection Plans may be required as a result of revisions to drawings and specifications, changes in procurement documents or changes in project requirements. All changes made to the Master Inspection Plan shall be made by the Site QC Supervisor and shall be identified by a revision number and logged on the Inspection Plan Log. Revisions of the Master Inspection Plans shall be issued with the same distribution as previous issues. See Appendix C for preparation of Inspection Plan Logs.

3.4.1 Changes made to a released Master or Field Inspection Plan, for reasons other than revisions to the procurement documents will also require a revision number change and shall be made as follows.

A Deletions will be made by drawing a single line through the activities and tasks to be deleted. All such deletions will require the signature and date of the Site QC Supervisor and/or the QC Engineer responsible for making the deletion and an explanation of the reason for the deletion, ie, not applicable.

B Additions shall be made by entering the appropriate inspection activity and the inspection responsibility. Such entries shall be signed and dated by the Site QC Supervisor and/or the QC Engineer making the entry.

C The modified plans will be distributed by the QA Records Engineer.

3.4.2 Engineering changes which affect completed work shall require the initiation of a new Master Inspection Plan. The new Inspection Plans shall be developed to cover the inspection of the work for compliance with the engineering change. These new inspection plans shall be identified with the plan number which covered the original work plus an alpha suffix, a, b, c, etc, and when completed, shall be attached to the original Inspection Plan.

3.4.3 The Master and Field Inspection Plans are controlled in accordance with Appendix C of this procedure.

3.5 Distribution of Inspection Plans shall be as follows.

A Original Master and Field Inspection Plans shall be maintained in the QA Record File.

Reproduction for distribution by the QA Records Engineer. will only be made from the originals.

B A reproducible copy of the Master Inspection Plan will be made at the jobsite and will be used to prepare the Field Inspection Plan that contains the specific inspection activities.

C QC Engineers shall prepare the Field Inspection Plan and obtain the necessary approvals. The original shall be placed in the QA Record File.

D The QC copy of the Field Inspection Plan shall be used for implementation. The QC Inspector performing the inspection shall return the completed Field Inspection Plan to the responsible QC Engineer for final acceptance and sign off.

E Record copies, originals of all Master and Field Inspection Plans, shall be a part of the QA Record File.

F Reference copies of Master and Field Inspection Plans will be distributed to the following.

1 Project Manager

2 Field Engineer

3 Site QC Supervisor

4 QC Engineer

5 Contractor

G Site contractors operating with their own QA and QC programs may also provide their own inspection plans and inspection reports. Copies of these are sent to the QC office and are retained in the Quality Assurance Record File.

4.0 ATTACHMENTS

4.1-2.13 Master Inspection Plan

4.2-2.13 Field Inspection Plan

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Project 4915

MASTER INSPECTION PLAN

Pages_____ Page_____

Prepared By [12] Site QC Supervisor Date _____

Title [4]

Master Inspection Plan No [1] Rev. [2]

Master Insp Log No [3]

FIELD INSPECTION PLAN ACTIVITY

Activity	Description	Basis	Rev	Code	Responsibility	Remarks
[5]	[6]	[7]	[8]	[9]	[10]	[11]

Section 2
Attachment 4.1-2.13
Revision No 0

Revision No										
Date										
By										

CODE

H - Hold Point
W - Witness Point
T - Test
R - Review (Signature Required)
I - Inspect (Visual)

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FIELD INSPECTION PLAN

Project 4915

Pages ____ Page ____

Prepared By [16] QC Engineer ____ Date ____

Approved By [17] Site QC Supervisor ____ Date ____

Master Inspection Activity [4] Field Inspection Plan No [5]

Description [6]

Master Inspection Plan No [1] Rev [2]

Master Inspection Log No [3]

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]

Section 4.2-2.13
Attachment 2
Revision No 0

Revision No										
Date										
By										

CODE

H - Hold Point
W - Witness Point
T - 100%
R - Review (Signature Required)
I - Inspect (Visual)

APPENDIX A

PREPARATION OF THE MASTER INSPECTION PLAN

Item numbers are shown on Attachment 4.1-2.13

ITEM NO	ENTRY INFORMATION
1	Master Inspection Plan number will be the specification number as T-xxxx.
2	The revision number will be the first issue of the Master Inspection Plan. The first issue shall always be Revision 0. The specification number is described in 8.
3	Master Inspection Log number shall be the next consecutive number from the Inspection Plan Log. See Appendix C.
4	Title shall be the complete title of the specification.
5	The Site QC Supervisor shall review the procurement documents including the specifications and all referenced drawings, standards, and data sheets to establish the inspection activities. These activities shall be a, b, c, d, etc.
6	The following are examples of inspection activities to be listed under description.

a Hydrostatic test

b Liner plate installation welding

c Tolerance of specified mechanical equipment

d Marking and tagging of specified equipment

APPENDIX A

ENTRY INFORMATION

ITEM NO

e Documentation requirements for specified equipment or systems

f Reactor lift

g Reactor vessel test

h Concrete lift No xxx - intake structure

i HVAC main building

7 The basis or requirement for each activity shall be listed. This will consist of identifying from the procurement documents, the specification paragraph number, drawing number, and revision that establishes the requirement.

Example 5 - Activity a, 6 - Description hydrostatic test, 7 - Basis specification T-xxxx, Revision x, Paragraph 2.xxxx.

8 The revision of the specification or drawing used as a basis.

9 The code will list the type of inspection verification, hold point, witness point, etc, the type of inspection verification is shown on the Master Inspection Plan form.

10 The responsibility column shall identify the QC Engineer responsible for the activity, such as QCE (Mechanical, Electrical, Civil, etc).

APPENDIX A

ENTRY INFORMATION

ITEM NO

11 Remarks shall list and describe special instructions, or Field Inspection Report number to clarify the inspection activity.

APPENDIX B

PREPARATION OF THE FIELD INSPECTION PLAN

Item numbers are shown on Attachment 4.2-2.13

ITEM NO	ENTRY INFORMATION
1	The Master Inspection Plan number is taken from the Master Inspection Plan.
2	The revision of the Master Inspection Plan is entered.
3	The Master Inspection Log number is entered, see Appendix A.
4	The Master Inspection Activity a, b, c, etc, lists only one activity for each Field Inspection Plan. A separate Field Inspection Plan is completed for each activity identified on the Master Inspection Plan. Example - Hydrostatic test of Item xxx
5	The field Inspection Plan number shall be assigned by the Site QC Supervisor in accordance with Appendix C.
6	The description shall list the full description of the Master Inspection activity.
7 & 8	The item number(s) shall be assigned by the QC Engineer. The item numbers shall be consecutive and list all the activities each with a new number required to provide adequate assurance that the Master Inspection activity has received the level of inspection required. Example Master Inspection Activity a Description - Hydrostatic test of Item xxx

APPENDIX B

ITEM NO	ENTRY INFORMATION
7 & 8	1.1 Review hydrostatic test procedure and verify approval.
	1.2 Review calibration certificates for following test equipment.
	1.2.1 Pressure gages
	1.2.2 Pressure recorders
	1.2.3 Temperature indicators
	1.3 Inspection of hydrostatic test system for completeness.
	1.4 Review water requirements for test medium and verify test results.
	1.5 Hydrostatic test
	1.6 Review hydrostatic test results for acceptance.
	1.7 The last item number shall have the following statement and shall be signed by the QC Inspector and initialed by the responsible QC Engineer.
	ALL REQUIRED SUPPLEMENTARY RECORDS AND EXCEPTIONS COMPLETED
9	The inspection criteria shall state the inspection acceptance criteria. List by specification paragraph number or drawing the limits of acceptance.

APPENDIX B

ITEM NO	ENTRY INFORMATION
10	The code will have as a minimum the same code as shown on the Master Inspection Plan as the above example. Item 1.5 is a mandatory hold point, other codes will be listed for each item number as 1.1 would be identified as R.
11	Each FCR and NCR shall be listed as they are issued. Inspections shall not be made on an item number where a FCR or NCR has a pending disposition or has not been closed in accordance with established procedures. The Field Inspection Plan will note under this column the date the FCR or NCR has been properly dispositioned which will permit that item number to be completed.
12	Enter the date inspected. This may be the same date as recorded date, if no exceptions are made.
13	Enter exceptions such as test failure, item not ready for inspection, etc.
14	Recorded date is date item was inspected and accepted.
15	Signature of QC personnel making the inspection.

APPENDIX C

PREPARATION OF INSPECTION PLAN LOGS

1.0 SCOPE Inspection Plan Logs are maintained as a current status record of the Master and Field Inspection Plans. Responsibilities and instructions for the maintenance of the Log are included in this Appendix.

1.1 The Inspection Plan Log is a continuous list of each inspection plan of the project, listing the MIPs issued which include the minimum test and inspection requirements of each project control specification, and each FIP issued and performed to satisfy the requirements of each MIP activity.

2.0 RESPONSIBILITY The Site QC Supervisor is responsible for the preparation of the Master Inspection Plan, the review and approval of the Field Inspection Plans, preparation and maintenance of the Inspection Plan Log, and the issuing of Field Inspection Plan numbers.

2.1 The Site QC Engineer for each applicable discipline (Electrical, Mechanical, Civil, etc) is responsible for the preparation of the Field Inspection Plan and obtaining approval from the Site QC Supervisor.

2.2 The applicable Site QC Inspector is responsible for the performance of the Field Inspection Plan as prepared by the QC Engineer for his discipline.

3.0 PROCEDURE Maintenance of the Inspcetion Plan Log, Attachment 4.3-2.13, resulting in a current status of work progress will be performed by the Site QC Supervisor as follows.

APPENDIX C

A When he prepares the Master Inspection Plan, the Site QC Supervisor fills out the Inspection Plan Log through Column 7 in accordance with Attachment 4.4-2.13, Inspection Plan Control.

B The original MIP will be sent to the QARE who will make copies for distribution and maintain the original in the QA Record file.

C A reproducible copy of the MIP will be sent to the applicable QC Engineer for use in preparing the Field Inspection Plan.

D When the FIP is prepared the QC Engineer forwards it to the Site QC Supervisor for review and approval. Upon approval, the Site QC Supervisor enters the date in Column 8 of the Inspection Plan Log and sends it to the QARE who will make copies for distribution and maintain the original in the QA Record File.

E A copy will be sent to the QC Engineer for implementation.

F When the QC Inspector completes the inspection he returns the FIP to the QC Engineer for final acceptance and sign off.

G The QC Engineer forwards the completed record copy of the FIP to the Site QC Supervisor who enters the date that the task was completed in Column 10 of the Inspection Plan Log and sends the FIP to the QARE for retainment in the QA Record File.

3.1 REVISIONS TO MASTER AND FIELD INSPECTION PLANS Changes in requirements to the project specifications, or as a result of a FCR or NCR could result in a revision to a MIP, FIP, and the Inspection Plan Log.

APPENDIX C

3.2 To maintain control of current status and necessary retrievability of the revised documents, the following shall apply.

A A new MIP and/or FIP will be prepared when changes are more than a minor change. The new MIP/FIP will carry the same number as the original, followed by a suffix letter a, b, c, etc.

B The Site QC Supervisor will enter the Inspection Plan number and suffix in Column 11 of the Inspection Plan Log as applicable.

C He will issue a new Inspection Plan Log number for the revised plan and enter it into the Plan Log in Column 12 as applicable.

D The Original of the revised plan along with the superseded plan shall be sent to the QARE for retainment in the QA Record Files.

E Distribution will be as required in Procedure 2.13, QC Inspection Plans.

ATTACHMENTS

4.3-2.13 Inspection Plan Log

4.4-2.13 Inspection Plan Control

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INSPECTION PLAN LOG

Project 4915

Pages_____ Page____

LOG NO	MIP NO	REV NO	ISSUED FOR IMPLEMENTATION	MIP ACTIVITY NO	FIELD INSPECTION PLAN				DATE TASK COMPLETE	REVISION		REVISION LOG NO		REMARKS
					FIP NO	RESPONSIBLE QC ENGINEER	DATE IMPLEMENTED	DATE COMPLETE		MIP	FIP	MIP	FIP	

Section 2
Attachment 4.3-2.13
Revision No 0

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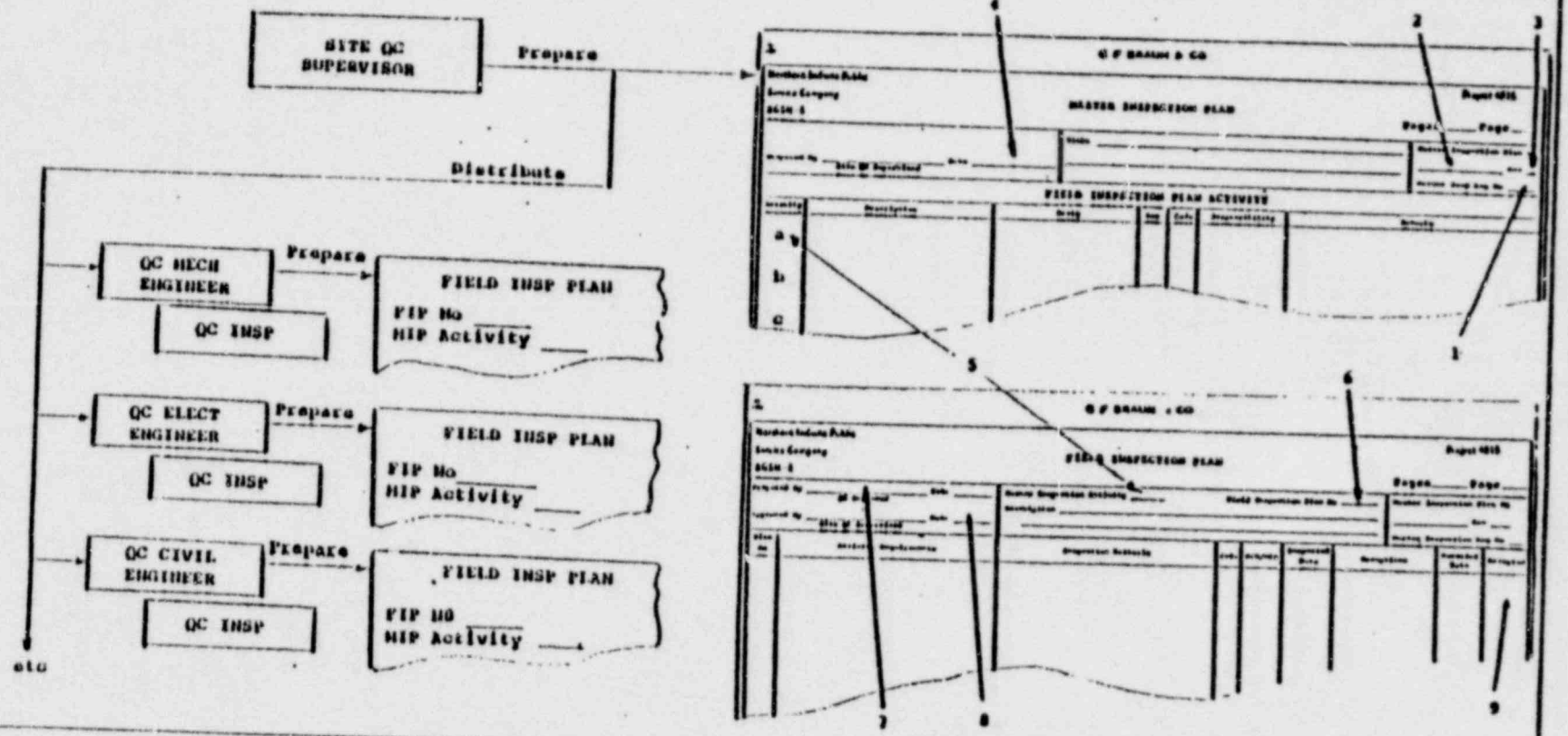
INSPECTION PLAN CONTROL

Project 4816



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INSPECTION PLAN LOG

Project 4816

Pages ____ Page ____

					FIELD INSPECTION PLAN							
										REVISION	REVISION	
LOG NO	HIP NO	REV NO	ISSUED FOR IMPLEMENTATION	HIP ACTIVITY NO	FIP NO	RESPONSIBLE QC ENGINEER	DATE INSPECTED	DATE CLOSED	DATE QUAL'D	HIP	FIP	HIP FIP	REMARKS
1	2	3	4	5	6	7	8	9	10	11		12	

Section 2
Attachment 4.4-2.13
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MASTER INSPECTION PLAN

Project 4915

Pages 1 Page 1

Prepared By David K Maxwell Site QC Supervisor Date 1-3-78

Title Spec T-2964, Steel H-Piling Installation

Master Inspection Plan No T-2964 Rev 0

Master Insp Log No 3

FIELD INSPECTION PLAN ACTIVITY

Activity	Description	Basis	Rev	Code	Responsibility	Remarks
a	Contractor Quality Assurance and Quality Control Manuals	para 115 Form QA-1-BA		R	QCE Civil	
b	Review H-Pile Receiving & Storage	para 113		R	QCE Civil	
c	Pile Driving Inspection	para 306, 307, 308		R	QCE Civil	
d	Vertical Load Pile Tests	para 309.2		H	QCE Civil	
e	Lateral Load Pile Tests	para 309.3		H	QCE Civil	

Revision No										
Date										
By										

CODE

H - Hold Point
W - Witness Point
T - Test
R - Review (Signature Required)
I - Inspect (Visual)

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FIELD INSPECTION PLAN

Project 4915

Pages 17 Page 1

Prepared By [signature] QC Engineer Date 7-3-78

Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity 3

Field Inspection Plan No 1

Description Contractor Quality Assurance & Quality Control Manuals

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
1.1	Verify Quality Assurance Program Submitted and accepted by S&L	Form QA-1-BA, Controlled copies of QA Manual to be submitted to Purchaser and Consulting Engineer immediately after award of contract	R					
1.2	Verify Quality Control Procedures submitted and approved by S&L	para 115 and QA-1-BA QC Procedures must be submitted to S&L for review and approval prior to the start of any work.	R					
	.1 Material Receiving & Inspection		R					
	.2 H-Pile Splicing Inspection		R					
	.3 Pile Driving Inspection		R					
	.4 Final Cut-off		R					
	.5 Weld Procedures		R					
	.6 Welder Qualifications		R					
	.7 Nonconformance Reports		R					
1.3	ALL REQUIRED SUPPLEMENTARY RECORDS AND EXCEPTIONS COMPLETED		R					

Revision No	0									
Date	7/3/78									
By	[initials]									

CODE

H - Hold Point
W - Witness Point
T - Test
R - Review (Signature Required)
I - Inspect (Visual)

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FIELD INSPECTION PLAN

Project 4915

Prepared By Neil Anderson QC Engineer Date 7-3-78

Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity b Field Inspection Plan No 2

Description H-Pile Receiving and Storage

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
2.1	Review Material Receiving & Inspection Procedure & verify approval by S&L	Form QA-1-BA	R					
2.2	Review Material Test Reports for approval by S&L	Form QA-1-BA	R					
2.3	Verify that Contractor is performing according to Procedure		R					
	.1 Verify quantities against Shipping Report	para 115.2	R					
	.2 Verify that material heat numbers are traceable to each pile	para 115.2	R					
	.3 Verify completeness of Pile Material Receiving Report							
2.4	ALL REQUIRED SUPPLEMENTARY RECORDS AND EXCEPTIONS COMPLETED		R					

Revision No	0									
Date	7/3/78									
By	[illegible]									

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FIELD INSPECTION PLAN

Project 4915

Pages 17 Page 3

Prepared By Gleal Rockwell QC Engineer Date 7-3-78

Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity C Field Inspection Plan No 3

Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
3.1	Review Pile Driving Inspection Procedure and verify S&L approval	Form QA-1-BA	R					
3.2	Verify Contractor has submitted manufacturers equipment specifications to S&L.	para 305 Manufacturers equipment specifications for all driving TEC equipment must be submitted to Consulting Engineers.	R					
3.3	Review Contractor Driving Records for conformance to driving criteria	para 308						
	.1 Blow count	500 blows cumulative for last 5 feet or less of driven length. 10 blows per inch for the last inch.	R					

Reactor Building

Area	No. of Piles
A	312
B	399
C	437
D	234

Auxiliary Building

Area	No. of Piles
A	139
B	124

Revision No.	0									
Date	7/3/78									
By	[illegible]									

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Project 4915

FIELD INSPECTION PLAN

Prepared By Wal Hedspeth QC Engineer Date 7-3-78

Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity C Field Inspection Plan No 3

Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	PCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepte
3.3	.1 Blow count Off Gas Filter Building Area — No. of Piles A — 94 Service Building Area — No. of Piles A — 134 B — 136 C — 134 D — 116 E — 108 Radwaste Building Area — No. of Piles A — 177 B — 112 C — 112 D — 164 E — 57		R					

Revision No	0									
Date	7/3/78									
By	W.H.									

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Project 4915

FIELD INSPECTION PLAN

Prepared By [illegible] QC Engineer Date 7-3-78

Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity C Field Inspection Plan No 3

Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Acce
4.3	.2 Location Reactor Building Area — No. of Piles A — 312 B — 399 C — 437 D — 234 Auxiliary Building Area — No. of Piles A — 139 B — 124 Off Gas Filter Building Area — No. of Piles A — 94 Service Building Area — No. of Piles A — 134 B — 136 C — 134 D — 116 E — 108	Not to exceed 3 inch deviation from plan location.	R					

Revision No	0
Date	7/3/78
By	[illegible]

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FIELD INSPECTION PLAN

Project 4915

Pages 17 Page 6

Prepared By Neil Sabuith, QC Engineer Date 7-3-78
Approved By David K Maxwell, Site QC Supervisor Date 7-7-78

Master Inspection Activity C Field Inspection Plan No 3
Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0
Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	PCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepte
4.3	.2 Location Radwaste Building Area — No. of Piles A — 177 B — 112 C — 112 D — 164 E — 57		R					
	.3 Top of Pile elevation Reactor Building Area — No. of Piles A — 312 B — 399 C — 437 D — 234 Auxiliary Building Area — No. of Piles A — 139 B — 124 Off Gas Filter Building Area — No. of Piles A — 94	Not to exceed 1¼ inches for drawing elevations. The reference mark shall be so established such that it is still visible after the final cut-off. The top of pile after hammer driving should be at least 1'6" above the pile cut-off elevation.	R					

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Date	7/3/78										
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FIELD INSPECTION PLAN

Project 4915

Prepared By [illegible] QC Engineer Date 7-3-78
Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity C Field Inspection Plan No 3
Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0
Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
4.3	.3 Top of Pile elevation		R					
	Service Building							
	Area — No. of Piles: A 134; B 136; C 134; D 116; E 108							
	Radwaste Building							
	Area — No. of Piles: A 177; B 112; C 112; D 164; E 57							
	.4 Plumbness	Not to exceed 2% from vertical axis	R					
	Reactor Building							
	Area — No. of Piles: A 312; B 399; C 437; D 234							

Revision No	0									
Date	7/3/78									
By	[illegible]									

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FIELD INSPECTION PLAN

Pages 17 Page 3

Prepared By [signature] Date 7-5-78
QC Engineer

Approved By David K Maxwell Date 7-7-78
Site QC Supervisor

Master Inspection Activity C

Field Inspection Plan No 3

Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
4.3	.4 Plumbness		R					
	Auxiliary Building							
	Area / No. of Piles							
	A 139							
	B 124							
	Off Gas Filter Building							
	Area / No. of Piles							
	A 94							
	Service Building							
	Area / No. of Piles							
	A 134							
	B 136							
	C 134							
	D 116							
	E 108							
	Radwaste Building							
	Area / No. of Piles							
	A 177							
	B 112							
	C 112							
	D 164							
	E 57							

Revision No	0								
Date	7/13/78								
By	[initials]								

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FIELD INSPECTION PLAN

Prepared By [illegible] QC Engineer Date 7-3-78
Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity C Field Inspection Plan No 3
Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0
Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
4.3	.5 Angular Rotation Reactor Building Area — No. of Piles A — 312 B — 399 C — 437 D — 234 Auxiliary Building Area — No. of Piles A — 139 B — 124 Off Gas Filter Building Area — No. of Piles A — 94 Service Building Area — No. of Piles A — 134 B — 136 C — 134 D — 116 E — 108	10° maximum	R					

Revision No	0										
Date	7/3/78										
By	[illegible]										

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FIELD INSPECTION PLAN

Project 4915

Pages 17 Page 10

Prepared By Tyler Hentzell Date 7-3-78
QC Engineer

Approved By David K Maxwell Date 7-7-78
Site QC Supervisor

Master Inspection Activity C Field Inspection Plan No 3

Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
4.3	.5 Angular Rotation		R					
	Radwaste Building							
	Area — No. of Piles							
	A — 177							
	B — 112							
	C — 112							
	D — 164							
	E — 57							
	.6 Heave	Piles forced up .125 inch or greater shall be redriven by the amount of heave to a resistance of 20 blows/inch, or to a maximum of of 100 blows if no movement of the pile occurs during redriving.	R					
	Reactor Building							
	Area — No. of Piles							
	A — 312							
	B — 399							
	C — 437							
	D — 234							
	Auxiliary Building							
	Area — No. of Piles							
	A — 139							
	B — 124							
	Off Gas Filter Building							
	Area — No. of Piles							
	A — [illegible]							

Revision No	0										
Date	7/3/78										
By	[illegible]										

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FIELD INSPECTION PLAN

Project 4915

Prepared By Yael Peskin QC Engineer Date 7-3-78

Approved By David K. Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity C Field Inspection Plan No 3

Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
4.3	.6 Heave Service Building Area — No. of Piles A 134 B 136 C 134 D 116 E 108 Radwaste Building Area — No. of Piles A 177 B 112 C 112 D 164 E 57		R					
4.4	Verify piles for proper top section Reactor Building Area — No. of Piles A 312 B 399 C 437 D 234	para 105.2, HP 14 X 117 full length for Reactor Building. HP 14 X 117 for top 30 feet minimum for all other piles.	R					

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Date	7/3/78										
By	[illegible]										

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FIELD INSPECTION PLAN

Project 4915

Pages 17 Page 12

Prepared By [signature] Date 7-3-78
QC Engineer

Approved By David K Maxwell Date 7-7-78
Site QC Supervisor

Master Inspection Activity C
Description H-Pile Driving Inspection

Field Inspection Plan No 3

Master Inspection Plan No T-2964 Rev 0
Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
1.4	Verify piles for proper top section		R					
	Auxiliary Building							
	Area — No. of Piles							
	A — 139							
	B — 124							
	Off Gas Filter Building							
	Area — No. of Piles							
	A — 94							
	Service Building							
	Area — No. of Piles							
	A — 134							
	B — 136							
	C — 134							
	D — 166							
	E — 108							
	Radwaste Building							
	Area — No. of Piles							
	A — 177							
	B — 112							
	C — 112							
	D — 164							
	E — 57							

Revision No	0								
Date	7/3/78								
By	[initials]								

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FIELD INSPECTION PLAN

Project 4915

Prepared By [illegible] QC Engineer Date 7-3-78

Approved By David K Markwell Site QC Supervisor Date 7-7-78

Master Inspection Activity C Field Inspection Plan No 3

Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
1.5	Review Contractors Pile Tip Reports & verify pile tip elevations Reactor Building Area — No. of Piles A — 312 B — 399 C — 437 D — 234 Auxiliary Building Area — No. of Piles A — 139 B — 124 Off Gas Filter Building Area — No. of Piles A — 94 Service Building Area — No. of Piles A — 134 B — 136 C — 134 D — 116 E — 108	para 105.3, Design Drawings S-47 48,49,50,51,52.	R					

Revision No	0										
Date	7/3/78										
By	[illegible]										

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FIELD INSPECTION PLAN

Project 4915

Pages 17 Page 14

Prepared By [illegible] QC Engineer Date 7-7-78

Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity C Field Inspection Plan No 3

Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
4.5	Review Contractors Pile Tip Reports & verify pile tip elevations Radwaste Building Area — No. of Piles A — 177 B — 112 C — 112 D — 164 E — 57		R					
4.6	Verify In-Lead Splice Inspection Procedure and verify S&L approval	Form QA-1-BA	R					
4.7	Verify Weld Procedures & verify S&L approval.	Form 1701	R					
4.8	Review Welder Qualifications and approve.	Form 1701	R					
4.9	Pile Driving Reports 1 Service Building 2 Auxiliary Building 1 Reactor Building 4 Radwaste Building	Generated by Braun QC	N/A					

Revision No	0										
Date	7/3/78										
By	[illegible]										

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FIELD INSPECTION PLAN

Project 4916

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Prepared By Wm. Redgrick QC Engineer Date 7-3-78

Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity C Field Inspection Plan No 3

Description H-Pile Driving Inspection

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
4.9	Pile Driving Reports 5 Off Gas		R					
4.10	ALL REQUIRED SUPPLEMENTARY RECORDS AND EXCEPTIONS COMPLETED		R					

Revision No	0									
Date	7/3/78									
By	WRL									

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FIELD INSPECTION PLAN

Project 4915

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Prepared By [signature] QC Engineer Date 7-3-78

Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity 4 Field Inspection Plan No 4

Description Vertical Load Pile Tests

Master Inspection Plan No T-2964 Rev 0

Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
5	Vertical Load Pile Tests	para 309.2, ASTM-D1143	H					
5.1	Check jacking jig and calibration record of hydraulic jack.	para 309.2-b3						
5.2	Check top bearing surface of pile.	para 309.2-b4						
5.3	Check dial gauges for calibration, location and supports.	para 309.2-b3						
5.4	Check applied load rate.	para 309.2-b5.1 & b5.3						
5.5	Check location of benchmark and frequency of readings.	para 309.2-b5.2						
5.6	Check rebound reading after removal of load.	para 309.2-b5.4						

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Date	7/3/78										
By	[signature]										

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FIELD INSPECTION PLAN

Prepared By [illegible] QC Engineer Date 7-3-78
Approved By David K Maxwell Site QC Supervisor Date 7-7-78

Master Inspection Activity 6 Field Inspection Plan No. 5
Description Lateral Load Test

Master Inspection Plan No T-2964 Rev 0
Master Inspection Log No 3

Item No	Activity Requirements	Inspection Criteria	Code	FCR/NCR	Inspected Date	Exceptions	Recorded Date	Accepted
6	Lateral Load Test		H					
6.1	Check hydraulic jack for calibration record.							
6.2	Check direction and location of the applied thrust load on test pile.	para 309.3-b2						
6.3	Check calibration, location and supports of dial gauges.	para 309.3-b2						
6.4	Check applied load increments and and readings of deflections and and rebounds.	para 309.3-b4.1 Maximum Test Load 20 tons						
6.5	Check unloading of pile and readings.	para 309.3-b4.1						
6.6	Check cyclic loading and readings.	para 309.3-b4.3 Load to 15 tons and unload 25 times.						

Revision No	0										
Date	7/3/78										
By	[illegible]										

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