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TIC

Georgia Power
the southern electric system

Power Generation Department

August 1, 1979

United States Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II - Suite 3100
101 Marietta Street
Atlanta, GA 30303

REFERENCE:
RII:JPO
50-321/50-366
IE Bulletin 79-14

ATTENTION: Mr. James P. O'Reilly

Gentlemen:

Georgia Power Company hereby submits the enclosed information in response to your letter of July 2, 1979, which requested identification of certain items related to the verification of the seismic analyses performed for Plant Hatch Units 1 and 2. For Unit 1, all systems which are to be subjected to the surveillance program are listed in the enclosed report. For Unit 2, those systems for which surveillance was conducted and would be required per IE Bulletin 79-14, Revision 1, are also listed. Lists of design documents which were sources of input information for the seismic analyses are submitted for a representative system (core spray) in lieu of massive comparable listings for all safety-related systems. Additionally, a complete document package for this example system is forwarded to the Director of the Office of Inspection and Enforcement for his examination in conjuction with his review of this submittal.

If you have any questions or comments in this regard, please contact my office.

Very truly yours,

L. T. Gucwa

for W. A. Widner
Manager of Nuclear
Operations

WEB/mb

Enclosure

xc: Director of the Office of Inspection and Enforcement
(w/enclosur and document package)

Director of the Division of Operating Reactors, Office
of Nuclear Reactor Regulation
(w/enclosure)

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OFFICIAL COPY

EDWIN I. HATCH NUCLEAR PLANT UNITS 1 and 2

THIRTY (30) DAY REPORT

for

IE BULLETIN #79-14

Background:

During the construction phases for Units 1 and 2 of the E. I. Hatch Nuclear Plant (HNP) various mechanisms were employed to control and document variances between the as-designed and as-built plant. In the early stages of construction, where much work was still to be accomplished and the construction schedule seemed to contain sufficient lead time for piping system erection, changes in the as-designed piping were initiated by documented telephone conversations between the construction and design engineers. Changes were incorporated into the design drawings through the handling of Design Change Notices (DCNs) initiated by the engineering office per the Engineering Procedures Manual. As the construction phase progressed and the schedule became more compressed, and as the construction engineers became more knowledgeable as to design parameters a more expedient method of design revision became necessary. System piping changes were initiated via the telephone conversations as above and documented with As-Built Notices (ABNs). The ABNs were forwarded to the engineering office for review and approval, but not necessarily prior to the change being effected at the plant site. With the construction phase drawing to a close and piping system preoperational testing in process, the changes to piping systems took on a new urgency, and systems engineers and designers travelled between the engineering office and the plant site to speed the approval of changes, and therefore the finalization of the plant systems.

Where changes were required in certain identified piping systems which had been subjected to rigorous stress analyses, such as systems subject to a wide range of temperature variation during operation and systems required to function following a seismic event, stress analysts were consulted prior to implementing changes to ascertain the impact of the change on the piping as-analyzed condition.

In recognition of the fact that although mechanisms where in place to minimize non-analyzed deviations, deviations might exist in the as-built plant that were unknown to the designers and stress analysts; a surveillance program was operated in the late construction phase for HNP-2 concluding immediately prior to fuel load. A description of the HNP-2 program follows later in the text.

In light of the potential for differences between the as-designed and the as-built conditions for piping systems (see examples in Appendix A, IE Bulletin #79-14) and as required by IE Bulletin 79-14, an inspection and/or surveillance program as described below shall be implemented for HNP-1.

HNP Inspection Programs:

To determine the accuracy of the as-designed and analyzed information for HNP-1, as compared to the as-built conditions, an inspection and/or surveillance program has been developed. The program includes appropriate documentation requirements for this effort, as described and defined in plant procedure HNP-1-10124, "Surveillance Procedure for Safety Related Seismic Class I Systems".

The program is limited to piping ($\geq$ 2½ inch nominal diameter)[1] systems within HNP-1 which have been subjected to seismic analyses and are safety related (ie - required either to mitigate the consequences of a design bases accident, necessary to bring the plant to a cold shutdown condition following a seismic event, or required to provide support service for systems included in the aforementioned classifications). Thus the program includes those systems and portions of systems which comprise the reactor coolant pressure boundary, serve as emergency core cooling systems, serve to isolate and maintain the integrity of the primary containment, and attach to, or intertie with systems important to safeguarding the health and safety of the public. The program does not include system piping $\leq$ 2 inch nominal diameter which has been installed in accordance with the Small Pipe Field Manual (the so-called "cook book" method).

The program shall be operated under the direction of the site construction supervisor who shall designate a person, identified as the surveillance coordinator, to perform the day-to-day management and supervision of the program. The surveillance coordinator shall staff and train several two man surveillance teams to be employed in the inspection and/or surveillance of:

1. Pipe run geometry
2. Pipe support location
3. Pipe support design
4. Pipe support function
5. Clearances
6. Piping attachments and
7. Valve location and orientation

At the time of inspection, each inspection and/or surveillance team shall be provided with a surveillance package consisting of:

1. An isometric drawing of the piping subsystem to be surveyed, highlighted to define the boundaries of the surveillance task,
2. Pipe support drawings applicable to the highlighted isometrics,
3. A blank surveillance checklist for each support device drawing provided in item (2) above,
4. A blank as-built sketch pad for each support device drawing provided in item (2) above,
5. A blank valve surveillance data sheet, and
6. A blank pipe geometry information form, for the isometric drawing provided in item (1) above.

As a part of the surveillance routine, the following constraints, limitations and/or accuracies shall be imposed:

(1) And also $\leq$ 2" nominal dia. piping subjected to dynamic analyses.

1. No pipe insulation removal(2) shall be effected for the purpose of this program.
2. Pipe segment lengths shall be verified with an accuracy of at least ± 1'0".(3)
3. Pipe support location shall be verified with an accuracy of at least ± 1'0".(3)
4. Valve angular orientation with respect to the pipe run shall be verified ± 15 degrees (for valves with extended, remote actuating operators).
5. Piping included in the inaccessible envelope shall be surveyed prior to plant startup.
6. Variances between design drawings and the as-built plant shall be reported for review and acceptance by engineering, on the forms provided in the surveillance package.

The terminology, accessible and inaccessible, as used in IE Bulletin #79-14 is taken to mean visible and/or inspectable without excessive radiation exposure with the plant at power.

At least one of the personnel employed on the two man inspection teams shall be qualified and/or certified to Level I (minimum) or Level II inspection capability as delineated in ANSI N45.2.6-1973, "Qualifications of Inspection, Examination, and Testing Personnel for the Construction Phase of Nuclear Power Plants". Additionally, an IE Bulletin #79-14 orientation session shall (and has) been provided for those engineers and inspectors who will participate in this surveillance program. This training shall be documented for further reference.

Where variances between the design drawings and the as-built piping systems are identified, the engineers familiar with the stress analyses performed as a part of the original design process shall review each variance, assess the impact of the variance on the seismic qualification of the system, and if necessary recommend changes to the piping system to bring the system pipe stress parameters into alignment with the criteria in the plant safety analysis report, and also provide documentation to the plant operating staff to allow piping changes and reporting of the non-conformance.

As a result of numerous factors, such as advances in the regulatory environment, better direction from the quality assurance organizations involved, and revisions of the piping codes employed for plant engineering and design, during the construction phase for HNP-2, a documented effort was made in the interest of assuring the as-built plant, plant drawings and plant analyses were all compatible. This effort was accomplished in accordance with Georgia Power Company's Generating Plant Construction Procedure number MD-T-02 entitled "Field Pipe Support Surveillance".

Since the completion of this surveillance program in HNP-2, the plant operating personnel have employed Design Change Request Documents and As-Built

(2) Piping insulation shall be removed on selected piping systems as dictated by the success/failure rate found in piping attachments on bare uninsulated piping.

(3) Where segments lengths/pipe support locations are estimated in close proximity to equipment nozzles, accuracy shall be ± 6 inches.

Notices to maintain the plant physical condition compatible with the plant drawings and analyses.

In light of the above, it is our position that additional surveillance need not be performed for HNP-2 in response to IE Bulletin #79-14. Further, a complete report of the analyses changed and/or rerun as a result of the HNP-2 construction surveillance program shall be provided as a part of the sixty (60) day report.

Attachments:

The several attachments to this report are discussed and described as follows:

Attachment Identification	Description of Attachment
1. Procedure MD-T-02	This document describes the surveillance program conducted on HNP-2. This program was completed in July, 1978.
2. Istruction MI-T-02	This document supplements procedure MD-T-02 and describes the personnel training employed for those people who participated in the HNP-2 surveillance program.
3. HNP-2 System List	This document provides a listing, by MPL identification number and noun name, of those systems for which surveillance was conducted and would be required per IE Bulletin #79-14.
4. HNP-1 System List	This document provides a listing, by MPL identification number and noun name, of those systems to be subjected to the surveillance program per IE Bulletin #79-14.
5. Core Spray Document Package HNP-1	Sample documentation for HNP-1 for use during surveillance per IE Bulletin #79-14.
6. Core Spray Document Package HNP-2	Sample documentation for HNP-2 to be prepared based on prior surveillance of HNP-2.

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GENERATING PLANT CONSTRUCTION

PROCEDURE

E. I. Hatch - Unit #2
PROJECT

MD-T-02
PROCEDURE NUMBER

Field Pipe
Support Surveillance
PROCEDURE TITLE

FILE NUMBER

REV	DESCRIPTION	SUPV	PROJECT CONST. MGR.	MGR. NUCL. PLT. CONST.	QAE	DATE
2	Complete Revision.	DBR			CCB	2-10-78
3	Revised as Noted.	DBR			CCB	4-24-78

GEORGIA POWER COMPANY

GENERATING PLANT CONSTRUCTION

PROCEDURE

E. I. Hatch - Unit #2

PROJECT

MD-T-02

PROCEDURE NUMBER

Field Pipe
Restraint Surveillance

PROCEDURE TITLE

FILE NUMBER

REV	DESCRIPTION	SUPV	PROJ SUPT	SUPT PLT CONST	QAE	DATE
0	Issue for Use					9/6/74
1	Revised as Noted.					12-13-74

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I. PURPOSE

The purpose of this procedure is to provide requirements and guidance for the performance of field surveillance of pipe supports and restraints for the Georgia Power Company Generating Plant Field Construction Department.

II. SCOPE

This procedure applies to the field surveillance of pipe restraints and supports performed by the Mechanical Section of the Georgia Power Company Generating Plant Field Construction Department. It provides requirements and guidance for the development, implementation, performance and documentation of this surveillance.

III. RESPONSIBILITY

The Mechanical Project Section Supervisor shall be responsible for appointing a Surveillance Engineer. The Surveillance Engineer shall be responsible for the performance and documentation of the surveillance. The Surveillance Engineer shall insure that problems uncovered during surveillance are resolved.

The Architect Engineer shall be responsible for identifying the pipe systems which require surveillance, for performing stress analysis on these systems, for providing the Surveillance Engineer with copies of the stress analysis problem sets and for assisting the surveillance engineer with resolution of problems. After a surveillance problem set is issued, it is the responsibility of the Architect Engineer to advise the Surveillance Engineer of any subsequent revisions in the analysis.

IV. PROCEDURE

A. Preparation

1. The Architect Engineer shall identify the systems requiring surveillance to the Surveillance Engineer and shall supply him with copies of the required stress analysis problem sets. The stress analysis problem sets consist of individual support sketches, hanger and restraint load summary sheets, anchor and nozzle load summary sheets when furnished, and stress isometric drawings on which hanger, restraint anchor, and nozzle locations are identified. Bergen-Patterson mark numbers will be used to identify all anchors, supports, and restraints. The Surveillance Engineer shall prepare a documentation package for each stress problem which shall contain the stress problem set, field pipe support inspection form(s) (See Exhibit MD-T-02 *01), field pipe support re-examination form(s) (See Exhibit MD-T-02 *03), and a copy of all correspondence pertinent to the approval of that problem.

B. Field Surveillance

The following items are to be checked by the Surveillance Engineer or his assistant:

1. Routing of pipe, location of connections, valves, flanges, etc.
2. Heavy motor operators on valves not noted on stress isometrics.
3. Location of all pipe supports: Rigid and spring hangers, anchors, penetrations, restraints, hydraulic and mechanical snubbers, nozzles.
4. Type of Support: Rigid and spring hangers, anchors penetrations, restraints, hydraulic and mechanical snubbers.

5. Direction of Supports

6. Setting for correct load:

   a. Spring Hangers - Pins shall be pulled after hydro and insulation are finished and spring will be set to cold position as marked on the spring.

   b. Hydraulic and Mechanical Snubbers - set to cold position using dimension given on restraint sketch for each snubber.

7. Necessary Clearances: Clearance from piping, equipment. etc. and clearance for thermal movement.

8. Load capability of supports and back-up structures based on the design loads shown on the summary sheets.

9. Type of branch connection: TEE, Stub-in, reinforcement.

The Surveillance Engineer shall prepare a copy of the Field Pipe Support Inspection form (See Exhibit MD-T-02 *01) for each problem set. Form 1 (See Exhibit MD-T-02 *01) shall list each individual hanger or restraint. The Surveillance Engineer shall verify snubber size for all mechanical and hydraulic snubbers. If spring pins have been pulled, it shall be checked in the appropriate column. The setting for correct load shall also be recorded. The Surveillance Engineer shall initial and date each as it is approved.

C. Problems and Deviations

Discrepancies between the field installation and the hanger restraint installation drawings shall be corrected in the field where possible. Discrepancies between the field installation and the stress iso's including routing of pipe; location of

valves, flanges, connections and pipe supports; direction and type of support; clearances from [illegible]ng and equipment load capability; clearances for thermal movement; and interferences that prevent installation per design shall be reported to the Architect Engineer (See Exhibit MD-T-02 *02).

For each individual problem deviation, or discrepancy, the Surveillance Engineer shall list the stress problem number and iso number; the support number, data point, and/or location of the question; and give a full and complete description of the problem, including mark numbers, reference drawings, change notices, etc. This will be done on the field surveillance question form. (See Exhibit MD-T-02 *02)

Valve eccentricities caused by motor operators, air operators or gear operators, shall be noted also on Form 2 (See Exhibit MD-T-02 *02) and forwarded to the Architect Engineer for inspection.

D. Re-Examination

After a discrepancy has been noted and corrected, the support will be re-checked. The Field Surveillance Engineer shall prepare the Field Pipe Support Re-Examination Form (See Exhibit MD-T-02 *03). The Surveillance Engineer shall verify snubber size for all mechanical and hydraulic snubbers. If spring pins have been pulled, it shall be checked in the appropriate column. The setting for correct load shall also be recorded. The Surveillance Engineer shall initial and date each individual support as it is approved.

E. Approval and Documentation

The Surveillance Engineer shall approve a stress problem when:

1. There are no deviations from the stress problem in the field. For this situation Form 1 (See Exhibit MD-T-02 *01) should show all hangers checked and initialed.
2. Any deviations that exist have been approved by the Architect Engineer. For this situation, written approval from the Architect Engineer for each individual question shall be included in the stress problem documentation package. These hangers and restraints shall be checked and initialed on Form 3 (See Exhibit MD-T-02 *03) or approved by the Architect Engineer.

The Surveillance Engineer shall furnish the Architect Engineer with any and all information required from the field to resolve and approve problems. This includes, but is not limited to, As-Built sketches, correct dimensions, correct locations, valve orientations, etc.

3. As each system is completed, the Surveillance Engineer will transfer all documentation on that system to the EMDFR for review.

The EMDFR will review each documentation package to insure that the following items are included.

a. Approved Stress Analysis Load Summary Sheets
b. Stress Isometrics
c. Stress Analysis Problems as Applicable
d. Field Pipe Support Inspection Forms
e. All Deviation Reports properly signed off

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f. Approved Support Sketches

The EMDFR will turn over each completed package to the Power Generation Department - Unit #2 for permanent filing.

Any non-conformance to this procedure will be reported in accordance with the "Non-Conformance Control" procedure.

F. Design Approval in the Field

As-Builts and support sketches that show deviations found during support surveillance may be approved by the Architect Engineer and the Support Design Engineer in the field. The As-Built and support sketch with changes noted shall be stamped with a surveillance approval stamp (See Exhibit MD-T-02 #04). A designated representative of the Architect Engineer and the Support Design Engineer will sign the stamp indicating the support is approved with respect to load carrying capacity. The Surveillance Engineer will sign the stamp verifying that the surveillance was done. This drawing will be the latest approved drawing subject to final revision for documentation. 3

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PROCEDURE NUMBER	REV.
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Exhibit MD-T-02 *01

PLANT E. I. HATCH - UNIT NO. II

FIELD PIPE SUPPORT INSPECTION

System MDL No. and Name _____

Isometric No. _____

Bechtel Stress Analysis Problem No. _____

Support Mark No.	Snubber Size / Pins Pulled	Support Setting	Remarks Action Needed	Approved	Date
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Exhibit MD-T-02 *02

Stress Problem # Iso #	Support # and/or Data Point #	Problem, Deviation or Comment

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Exhibit MD-T-02 *03

PLANT E. I. HATCH - UNIT NO. II

FIELD PIPE SUPPORT RE-EXAMINATION

System MPL No. and Name _____

Isometric No. _____

Bechtel Stress Analysis Problem No. _____

Support Mark No.	Snubber Size / Pins Pulled	Support Setting	Remarks Action Taken	Approved	Date
				842	98

Support Review
G. P. C. _____
Date: _____
Approval: _____
B-P- _____
Date: _____
Bechtel- _____
Date: _____

GEORGIA POWER COMPANY

GENERATING PLANT CONSTRUCTION DEPARTMENT

Guide to Support Devices Inspection

INSTRUCTION TITLE

MI-I-02

INSTRUCTION NUMBER

Rev	Description	Eng. Supv. Date	Insp. Supv. Date	A.P.S.S.-M. Date	P.S.S.-M. Date
0	Original Issue.	3/15/78	3-15-78	3-15-78	3/15/78

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I. PURPOSE

The purpose of this instruction is to establish guidelines for the inspection of all support devices used on piping systems.

II. SCOPE

This instruction applies only for the Mechanical Section and is intended to provide uniform methods and tolerances for both the Inspection and Engineering groups use, when checking installation or installed support devices. Support devices will include hangers, snubbers, restraints, and anchors for purposes of this instruction.

III. RESPONSIBILITY

Ultimate responsibility for implementation rests with the Project Section Supervisor Mechanical and extends to the Assistant Project Section Supervisor Mechanical. Direct responsibility for use of this instruction rests with the Inspection Supervisor, Engineering Supervisor, and Hanger Surveillance Engineer.

IV. REFERENCES

A. MD-T-02 - Field Pipe Restraint Surveillance

B. MD-T-03 - Piping Installation

C. SS-2109-1 - Furnishing, Fabrication, Delivering, Erecting Piping and Pipe Sunport.

D. Bergen-Patterson Catalog No. 66R

E. Bergen-Patterson Catalog No. 76NF

F. Pacific Scientific PSA Catalog

G. AWS - A2.4-76 - Symbol s for Welding and Non-Destructive Testing

V. DEFINITIONS

A. Stress Isometric Drawing - Design drawing supplied by Bechtel.

B. Individual Sketch - Drawing by Bergen-Patterson of a unique device, will have an individual mark number.

VI. INSTRUCTION

A. Location

Before any inspection or evaluation of the support device is made, if must first be determined that the device is located properly. This is accomplished by using the appropriate Stress Isometric Drawing or Bergen-Patterson location drawing. First locate some known point on the drawing. From this point you will be able to locate the particular mark number and data point of the support device that you are checking. Tolerances for this location are shown in SS-2109-1, Part E - Section VI, Page 9b (See VI.D.1). Once you have accomplished the above you know whether the device is on the correct line and located at the correct place.

B. Installation

You are now ready for a detailed check of the particular device. To accomplish this you need the individual sketch for this particular device. This drawing gives you a detailed picture of what the device should be, with all necessary dimensions and reference for vendor part numbers. Information on the sketch that should be checked in detail is:

1. Device is installed to agree with elevation or plan view shown on sketch.
2. All welds are as indicated.
3. Dimensions shown are correct.
4. Vendor parts specified are used.
5. If applicable, cold load settings and snubber settings are as specified.
6. Poor workmanship such as loose nuts, cotter pins, double nuts, etc. must be corrected.
7. Fluid level in hydraulic snubbers.

C. Training

Instruction will be needed on unique measurements. This training will be provided by the Inspection Supervisor or the Hanger Surveillance Engineer. It will include, but not be limited to, measurements on:

1. "A" dimension on Mechanical Snubbers.
2. "T" or "C" dimension on hydraulic snubbers.
3. ("C.L") Cold Load setting on variable springs.
4. Pin to pin lengths.
5. Fillet Welds.
6. Strut Diameter.
7. Bolt Diameter.
8. WF - Wide Flange Beams.
9. Angle Iron

D. Deviations

Due to erection problems, tolerances for support devices must be provided. The most common are listed below. Any questions or exceptions should be discussed with your immediate supervisor, Inspection Supervisor or Hanger Surveillance Engineer.

Allowable Deviations are:

1. Device Location

Pipe Size	Deviation (± pipe diameter)
3" & 4"	2 1/2
6"	2
8" & 10"	1 1/2
12" & Larger	One pipe diameter

2. "A", "T", and "C" dimension on snubber is (± 1/4") plus or minus one quarter inch. This is allowed by Telephone Confirmation #2409.
3. Angular deviation, in degress, allowed from that shown on sketches. This is allowed by SS-2109-1, Part E, Section VI.
   a. Mechanical and hydraulic snubbers - ± 7 1/2°
   b. Rigid struts - ± 5°
4. Telephone Confirmation which approve changes from the original sketch.

5. Approve "As-Built" drawings showing existing conditions.

E. Reporting

Problems which are not covered by Section "D" should be discussed with the Inspection Supervisor or Hanger Surveillance Engineer. Inspectors who have uncovered items which cannot be approved should write an open report on that device. These open reports shall be directed to the Hanger Surveillance Engineer by the Inspection Supervisor after his review. Resolution to open items will be directed to the Inspection Supervisor by the Hanger Surveillance Engineer to assist in closing.

HNP-2 SYSTEMS LIST

NOTE: Only The Safety And Seismic Class I Portions Of The Above Systems Need Be Considered For IE Bulletin #79-14.

MPL IDENTIFIER	SYSTEM NOUN NAME
2B21	Nuclear Boiler System
2B31	Reactor Recirculation System
2C11	Control Rod Drive System
2C41	Standby Liquid Control System
2E11	Residual Heat Removal System
2E11	RHR Service Water System
2E21	Core Spray System
2E32	MSIV Leakage Control System
2E41	HPCI System
2E51	RCIC System
2G11	Radwaste System
2G31	RWCU System
2G41	Fuel Pool Cooling System
2G51	Torus Drainage and Purification System
2N11	Main Steam System (T Bldg.)
2P11	Condensate Supply System
2P41	Service Water System
2P42	RVCCW System
2P52	Instrument Air System
2P64	Chill Water System
2R43	Diesel Start-up Air System
2T46	Standby Gas Treatment System
2T48	Containment Purge and Inerting System
2T49	Post LOCA H2 Recombiner System

HNP-1 SYSTEMS LIST

NOTE: Only The Safety And Seismic Class I Portions Of The Above Systems Need Be Considered For IE Bulletin #79-14.

MPL IDENTIFIER	SYSTEM NOUN NAME
B21	Nuclear Boiler System
B31	Reactor Recirculation System
C11	Control Rod Drive System
C41	Standby Liquid Control System
E11	Residual Heat Removal System
E11	RHR Service Water System
E21	Core Spray System
E41	HPCI System
E51	RCIC System
G11	Radwaste System
G31	RWCU System
G41	Fuel Pool Cooling System
N11	Main Steam System (T Bldg.)
P11	Condensate Supply System
P41	Service Water System
P42	RBCCW System
P52	Instrument Air System
R43	Diesel Start-up Air System
T46	Standby Gas Treatment System
T48	Containment Purge and Inerting System
Z41	Control Room Environmental System

PROJECT: E. I. Hatch Unit 1

SYSTEM: Core Spray (Large Bore Piping)

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
E21-100	16" Suction From Torus	G	12-3-74
E21-101	Disch. To R.P.V. Pump "A"	N	12-3-74
E21-102	Disch. To R.P.V. Pump "B"	N	12-3-74
E21-103	Condensate to Pump Suction From Anchor Pt. In R. Bldg.	G	12-3-74
E21-104	3" Min. Flow Test Line	C	12-3-74
E21-105	3" Min. Flow Test Line	C	12-3-74
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PROJECT: E. I. Hatch Unit 1

SYSTEM: Core Spray (Large Bore)

VALVE DRAWINGS

VENDOR	IDENTIFICATION NO.	TITLE	REVISION	DATE
Powell	F001 A&B	16"-150# Gate Valve	0	5-26-72
Powell	F002 A&B	14"-150# Gate Valve	6	1-8-71
Crane	F004 A&B	10"-600# Gate Valve	B	9-29-70
Crane	F005 A&B	10"-600# Gate Valve	B	3-29-70
Rockwell	F006 A&B	10"-600# Check Valve	B	7-29-71
Crane	F007 A&B	10"-600# Gate Valve	E	6-11-71
Powell	F010 A&B	3"-300# Globe Valve	3	10-21-70
Powell	F015 A&B	10"-300# Globe Valve	10	3-6-73
Fisher	F019 A&B	16"-150# B'Fly Valve	D	11-2-71
Walworth	F031 A&B	3"-300# Gate Valve	A	5-29-70
Powell	F036 A&B	3"-150# Check Valve	6	3-23-73
Walworth	F003 A&B	12"-300# Check Valve	B	4-23-71

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PROJECT: E. I. Hatch Unit 1

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
1E21-CSH-1	Core Spray Support Details	1	8-19-71
1E21-CSH-10		2	4-12-72
1E21-CSH-11		2	9-27-71
1E21-CSH-41		0	7-3-72
1E21-CSH-43		0	7-3-72
1E21-CSH-45		2	6-27-73
1E21-CSH-18		0	11-6-70
1E21-CSH-19		2	11-6-70
1E21-CSH-20		1	9-27-71
1E21-CSH-42		1	6-22-72
1E21-CSH-44		0	7-3-72
1E21-CSH-46		2	6-22-73
1E21-CSH-21		3	3-2-72
1E21-CSH-22		3	9-21-73
1E21-CSH-23		1	4-8-73
1E21-CSH-24		1	6-28-71
1E21-CSH-25		1	6-28-71
1E21-CSH-35		0	8-27-71
1E21-CSH-36		1	6-3-74
1E21-CSH-37		0	8-27-71

PROJECT: E. I. Hatch Unit 1

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
1E21-CSH-38	Core Spray Support Details	0	8-27-71
1E21-CSH-39		1	5-16-73
1E21-CSH-40		5	2-1-74
1E21-CSH-68		0	7-3-72
1E21-CSH-69		0	7-3-72
1E21-CSH-70		1	6-25-73
1E21-CSH-71		1	6-22-72
1E21-CSH-72		0	7-3-72
1E21-CSH-73		2	8-15-73
1E21-CSH-74		1	6-22-73
1E21-CSH-75		1	6-22-73
1E21-CSH-76		1	6-22-73
1E21-CSH-77		0	7-3-72
1E21-CSH-78		0	7-3-72
1E21-CSH-79		0	7-3-72
1E21-CSH-80		1	6-22-73
1E21-CSH-26		2	3-2-73
1E21-CSH-27		1	6-28-71
1E21-CSH-28		1	4-8-73
1E21-CSH-29		1	6-28-71

PROJECT: E. I. Hatch Unit 1

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
1E21-CSH-30	Core Spray Support Details	2	4-11-72
1E21-CSH-31		1	5-22-74
1E21-CSH-32		0	8-27-71
1E21-CSH-33		1	5-16-73
1E21-CSH-34		4	9-13-73
1E21-CSH-54		0	7-3-72
1E21-CSH-55		0	7-3-72
1E21-CSH-56		1	1-15-73
1E21-CSH-57		1	8-21-72
1E21-CSH-58		2	8-15-73
1E21-CSH-59		0	7-3-72
1E21-CSH-60		0	7-3-72
1E21-CSH-61		0	7-3-72
1E21-CSH-62		0	7-3-72
1E21-CSH-63		0	7-3-72
1E21-CSH-64		0	7-3-72
1E21-CSH-65		1	5-22-74
1E21-CSH-66		0	7-3-72
1E21-CSH-67		0	7-3-72
1E21-CSH-81		0	7-3-72

PROJECT: E. I. Hatch Unit 1

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
1E21-CSH-82	Core Spray Support Details	0	7-3-72
1E21-CSH-1		1	8-19-71
1E21-CSH-2		3	4-8-73
1E21-CSH-3		1	8-19-71
1E21-CSH-4		2	8-19-71
1E21-CSH-5		2	8-19-71
1E21-CSH-6		3	3-21-73
1E21-CSH-7		3	4-10-72
1E21-CSH-8		4	9-21-73
1E21-CSH-12		1	8-19-71
1E21-CSH-13		1	8-19-71
1E21-CSH-14		1	8-19-71
1E21-CSH-15		2	6-3-74
1E21-CSH-16		4	6-3-74
1E21-CSH-17		3	9-21-73
1E21-CSH-47		0	7-3-72
1E21-CSH-48		0	7-3-72
1E21-CSH-49		0	7-3-72
1E21-CSH-50		1	6-22-73
1E21-CSH-51		0	7-3-72

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PROJECT: E. I. Hatch Unit 1

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
1E21-CSH-52	Core Spray Support Details	0	7-3-72
1E21-CSH-53		0	7-3-72
1E21-CSH-91		0	4-4-73
1E21-CSH-92		1	8-14-73
1E21-CSH-93		1	8-14-73
1E21-CSH-94		1	8-14-73
1E21-CSH-95		0	4-4-73
1E21-CSH-96		0	4-4-73
1E21-CSH-97		0	4-4-73
1E21-CSH-83		0	4-5-73
1E21-CSH-84		0	4-4-73
1E21-CSH-85		1	8-14-73
1E21-CSH-86		0	4-4-73
1E21-CSH-87		1	4-4-73
1E21-CSH-88		1	8-14-73
1E21-CSH-89		0	4-4-73
1E21-CSH-90		0	4-4-73

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PROJECT: E. I. Hatch Unit 1

SYSTEM: Core Spray (Large Bore)

FLOOR AND WALL PENETRATION DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
H-16290	Penetrations in Reactor Building Walls Below EL. 130'-0"	4	2-7-74
H-16292	Penetrations in Walls Below EL. 158'-0" & Floor EL. 130'-0" Reactor Building	8	6-24-77
H-16293	Reactor Bld'g. Penetrations Walls Below EL. 185'-0" and Floor EL. 158'-0" & EL. 164'-0"	6	2-7-74
H-16110	Types of Penetration Seals For Pipe & Duct	4	2-15-78

PROJECT: E. I. Hatch Unit 2

SYSTEM: Core Spray (Large Bore Piping)

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
2E21-100	Core Spray Sys. Side A&B Pump Suction From Torus & Condensate Storage Tank	F	12-14-77
2E21-101	Pump "A" Discharge to R.P.V.	H	12-16-77
2E21-102	Pump "B" Discharge to R. P. V.	K	12-16-77

PROJECT: E. I. Hatch Unit 2

SYSTEM: Core Spray (Large Bore)

VALVE DRAWINGS

VENDOR	IDENTIFICATION NO.	TITLE	REVISION	DATE
Wm. Powell	F001 A&B	20"-150# Gate Valve	1	2-28-74
Wm. Powell	F002 A&B	14"-150# Gate Vlave	4	9-26-72
Walworth	F003 A&B	12"-300# Check Valve	C	4-16-73
Wm. Powell	F004 A&B	10"-600# Gate Valve	8	11-7-74
Wm. Powell	F005 A&B	10"-600# Gate Valve	8	11-7-74
Rockwell	F006 A&B	10"-900# Check Valve	F	9-17-75
Wm. Powell	F007 A&B	10"-900# Gate Valve	6	12-9-74
Walworth	F010 A&B	3"-300# Globe Valve	A	4-2-74
Walworth	F015 A&B	10"-300# Globe Valve	D	9-24-75
Fisher	F019 A&B	20"-150# Butterfly Valve	F	6-5-73
Walworth	F031 A&B	3"-300# Gate Valve	A	8-29-73
Walworth	F036 A&B	3"-150# Check Valve	G	8-29-73
Wm. Powell	F065 A&B	2.5"-150# Gate Valve	1	10-21-75

PROJECT: E. I. Hatch Unit 2

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
2E21-CS-H1	Core Spray Support Details	2	9-2-75
2E21-CS-H2		2	9-12-78
2E21-CS-H3		3	4-2-75
2E21-CS-H4		2	9-2-75
2E21-CS-H5		4	9-12-78
2E21-CS-H6		3	10-14-77
2E21-CS-H7		1	9-12-78
2E21-CS-H8		2	12-1-77
2E21-CS-H9		2	9-12-78
2E21-CS-H10		2	9-12-78
2E21-CS-H11		1	10-12-77
2E21-CS-H12		1	9-12-78
2E21-CS-H13		1	9-12-78
2E21-CS-H14		3	9-12-78
2E21-CS-H15		3	9-12-78
2E21-CS-H16		2	9-12-78
2E21-CS-H17		1	9-12-78
2E21-CS-HR18		2	12-1-77
2E21-CS-H19		2	9-12-78
2E21-CS-H20		1	9-12-78

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PROJECT: E. I. Hatch Unit 2

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
2E21-CS-H21	Core Spray Support Details	2	9-12-78
2E21-CS-H22		2	9-12-78
2E21-CS-H23		2	9-12-78
2E21-CS-H24		2	12-1-77
2E21-CS-H25		1	12-1-77
2E21-CS-A26		2	9-12-78
2E21-CS-A27		2	9-12-78
2E21-CS-A28		2	9-12-78
2E21-CS-A29		1	9-12-78
2E21-CS-H30		3	9-12-78
2E21-CS-H31		3	9-12-78
2E21-CS-A32		2	10-13-77
2E21-CS-A33		2	10-13-77
2E21-CS-A34		2	9-12-78
2E21-CS-R35		1	12-1-77
2E21-CS-R36		1	12-1-77
2E21-CS-R37		2	9-12-78
2E21-CS-R38		3	12-1-77
2E21-CS-R39		1	12-1-77
2E21-CS-R40		2	9-12-78

PROJECT: E. I. Hatch Unit 2

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
2E21-CS-R41	Core Spray Support Details	3	9-12-78
2E21-CS-R42		2	9-12-78
2E21-CS-R43		1	9-12-78
2E21-CS-R44		1	9-12-78
2E21-CS-R45		1	9-12-78
2E21-CS-R47		3	9-12-78
2E21-CS-R48		3	9-12-78
2E21-CS-R49		2	9-12-78
2E21-CS-R50		2	9-12-78
2E21-CS-R51		2	12-1-77
2E21-CS-R53		2	9-12-78
2E21-CS-R54		3	9-12-78
2E21-CS-R55		1	9-12-78
2E21-CS-R56		3	9-12-78
2E21-CS-R57		2	9-12-78
2E21-CS-R58		2	9-12-78
2E21-CS-R59		0	5-26-77
2E21-CS-R60		0	2-11-77
2E21-CS-H62		2	9-12-78
2E21-CS-H63		2	9-12-78

PROJECT: E. I. Hatch Unit 2

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
2E21-CS-R64	Core Spray Support Details	1	9-12-78
2E21-CS-R66		1	9-12-78
2E21-CS-R67		3	9-12-78
2E21-CS-R69		3	9-12-78
2E21-CS-R70		1	12-2-77
2E21-CS-R71		2	9-12-78
2E21-CS-R72		3	9-12-78
2E21-CS-R74		3	9-12-78
2E21-CS-R75		1	9-12-78
2E21-CS-R76		1	9-12-78
2E21-CS-R77		1	9-12-78
2E21-CS-A78		1	9-12-78
2E21-CS-H79		3	9-12-78
2E21-CS-R80		1	9-12-78
2E21-CS-R81		1	9-12-78
2E21-CS-R82		1	9-12-78
2E21-CS-H83		2	9-12-78
2E21-CS-R84		3	9-12-78
2E21-CS-R85		1	9-12-78
2E21-CS-H86		2	9-12-78

PROJECT: E. I. Hatch Unit 2

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
2E21-CS-R87	Core Spray Support Details	1	9-12-78
2E21-CS-H88		3	10-14-77
2E21-CS-R89		1	10-14-77
2E21-CS-R90		2	9-12-78
2E21-CS-H91		3	9-12-78
2E21-CS-H92		3	10-14-77
2E21-CS-H93		3	9-1-77
2E21-CS-H94		3	9-12-78
2E21-CS-H95		3	9-12-78
2E21-CS-H96		2	9-12-78
2E21-CS-H97		2	9-12-78
2E21-CS-R98		0	5-26-77
2E21-CS-R99		0	2-11-77
2E21-CS-R101		1	5-26-77
2E21-CS-R102		2	9-12-78
2E21-CS-R103		2	9-12-78
2E21-CS-R104		2	9-12-78
2E21-CS-R105		2	9-12-78
2E21-CS-R106		3	9-12-78
2E21-CS-R107		3	9-12-78

PROJECT: E. I. Hatch Unit 2

SYSTEM: Core Spray (Large Bore)

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
2E21-CS-R108	Core Spray Support Details	2	9-12-78
2E21-CS-H109	↓	2	9-12-78
2E21-CS-R110	↓	2	9-12-78

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PROJECT: E. I. Hatch Unit 2

SYSTEM: Core Spray (Large Bore)

FLOOR AND WALL PENETRATION DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
H-26302	Reactor Bld'g. Penetrations in Walls & Floors Below EL. 130'-0"	3	6-2-75
H-26303	Penetrations in Walls Below EL. 158'-0" & Floor EL. 130'-0" Reactor Building	7	8-5-77
H-26304	Penetrations in Wall Below EL. 185'-0" & Floor EL. 158'-0" & EL. 134'-0" Reactor Building	9	5-11-79
H-16110	Types of Penetration Seals For Pipe and Duct	4	2-15-78
		842	223