

Central File

DUKE POWER COMPANY

POWER BUILDING

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VICE PRESIDENT
STEAM PRODUCTION

August 1, 1979

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Mr. James P. O'Reilly, Director
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, GA 30303

RII:JPO
50-269
50-270
50-287

Dear Mr. O'Reilly:

With regard to your letter dated July 2, 1979 which transmitted IE Bulletin 79-14, please find attached Duke Power Company's response to Item 1 for Oconee Nuclear Station.

For your information, the following is a description of the schedule by which Duke Power Company intends to complete the required inspections on each Oconee unit.

- The report in response to Item 2 on the results of inspection of all normally accessible systems will be provided by November 1, 1979 for Units 1, 2 and by the end of the current refueling/maintenance outage for Unit 3. This is anticipated to be about September 15, 1979.
- The report in response to Item 3 on the results of inspection of normally inaccessible systems will be provided for Unit 1 by the end of its forthcoming refueling outage, currently anticipated for December 30, 1979; for Unit 2 by the end of its forthcoming refueling outage, currently anticipated for February 15, 1980; and for Unit 3, the report will be provided by November 1, 1979.

This schedule represents our best effort to provide a complete response to the items of this Bulletin, consistent with available manpower. It should be noted that in excess of 200 persons will be directly involved in this effort both on site and in staff support. In order to support completion

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Mr. James P. O'Reilly, Director
August 1, 1979
Page Two

of the Unit 3 inspections prior to restart, onsite activities are proceeding 24 hours a day, 7 days a week. Even so, the September 15, 1979 date is optimistic. This schedule seeks to maintain the normal refueling schedule for Units 1 and 2 and to complete as early as possible the required inspections.

It is considered that this program is realistic and that Duke Power Company will provide its best efforts toward meeting the above commitments.

Very truly yours,

William O. Parker Jr.
William O. Parker, Jr. *by WAH*

RLG/sch

Attachment

OCONEE NUCLEAR STATION
USNRC IE Bulletin 79-14, Revision 1
30-Day Response

Item 1:

Identify inspection elements to be used in verifying that the seismic analysis input information conforms to the actual configuration of safety-related systems. For each safety-related system, submit a list of design documents, including title, identification number, revision and date, which were sources of input information for the seismic analyses. Also submit a description of the seismic analysis input information which is contained in each document. Identify systems or portions of systems which are planned to be inspected during each sequential inspection identified in Items 2 and 3. Submit all of this information within 30 days of the date of this bulletin.

Response 1

The inspection elements which Duke Power Company will use to verify that seismic piping analysis input information conforms to the actual configuration of seismically analyzed safety related systems are outlined in Attachment 1. Attachment 1 is a revision 0 information copy of the basic document which specifies a surveillance program to be implemented at Oconee Nuclear Station, satisfying applicable requirements of USNRC IE Bulletin 79-14, Revision 1. This document will be converted to an Oconee Nuclear Station Quality Assurance Controlled Maintenance Procedure for use by site personnel.

Table 1 is a generic summary of source documents used as input to seismic piping analysis at Oconee Nuclear Station. The applicable seismic input source documents for each system are being prepared in accordance with the requirements of Attachment 1 and assembled into system field surveillance data packages. The seismic input data contained in these packages will be verified by a system walk down surveillance at the site. The specific documents contained in the system 20B-20 surveillance data package are listed in Table 2 as a typical example. Table 3 summarizes the systems or portions of systems identified by Duke Power Company as requiring as-built verification of seismic input data to comply with the Licensee Actions outlined in USNRC IE Bulletin 79-14, Revision 1.

OCONEE NUCLEAR STATION
SEISMIC INPUT DATA DOCUMENT SUMMARY
FOR SEISMIC PIPING STRESS ANALYSIS
USNRC IE BULLETIN 79-14
TABLE 1

| Building | | | Units | | | Document Title | Valve I & Orien | Valve I | Pipe D | Pipe S | Insula | Pipe P | Seism Spect | Seism | Seism | Dampi | Seism |
|----------|----|----|-------|---|---|---|--------------------|---------|--------|--------|--------|--------|----------------|-------|-------|-------|-------|
| RB | AB | TB | 1 | 2 | 3 | | | | | | | | | | | | |
| X | X | X | X | X | X | Oconee FSAR | | | | X | | | X | | X | X | |
| X | X | X | X | X | X | Duke Power Co. Nuclear and Conventional Power Plants Power Piping Quality As- surance Manual & Spec | | | | X | | | | | | | |
| X | X | X | X | X | X | Insulation Thickness Data Sheet 8-27-69 | | | | | X | | | | | | |
| X | X | X | X | | | Duke Power Co., Piping Layouts Drawings 0-400 thru 0-489 | X | | X | | | X | | | | | |
| X | X | X | | | | Drawings 0-1400 thru 0-1489 | X | | X | | | X | | | | | |
| X | X | X | | X | | Drawings 0-240 thru 0-2510 | X | | X | | | X | | | | | |
| X | X | X | | | X | Duke Power Co., Flow Diagrams Drawings PO 100A-1 thru 144A-3 | | | | | X | | | | | | |
| X | X | X | X | X | X | Valve Mnfr's.Dwgs. & Catalogs* | | X | | | | | | | X | | X |
| X | X | X | X | X | X | Duke Power Co., Calculations, Files OS-431, 432, 433, 576 | | | | | | | | | | | |

*Mnfrs. include Allis Chalmers, Crane, Crosby, Dresser, Fisher, Grinnel, Kerotest, Leslie, Longergan, Pacific, Phil Gear, Powell, Pratt, Rockwell, Velan, Walworth,

OCONEE NUCLEAR STATION
USNRC IE Bulletin 79-14

Typical Surveillance Data Package
TABLE 2

SYSTEM NO: 20B-20 BUILDING Auxiliary UNIT 3

SYSTEM DESCRIPTION: Penetration Room Ventilation System

CONTENTS OF SURVEILLANCE PACKAGE:

| | <u>Document Title</u> | <u>Revision No.</u> | <u>Date</u> | <u>Description</u> |
|----|-----------------------------------|---------------------|-------------|--------------------------------------|
| A. | System Summary Signoff Form | 0 | 7-26-79 | Surveillance Data Package Status |
| B. | Piping Clearance Form | 0 | 7-26-79 | Surveillance Report of Interferences |
| C. | Valve Data Form | 0 | 7-26-79 | Valve List |
| D. | Support/Restraint Data Form | 0 | 7-27-79 | Support/Restraint List |
| E. | Support/Restraint Design Drawings | | | Support Restraint Details |
| | Sketch No. 3-4300 | 0 | 4-25-73 | |
| | 3-4301 | 1 | 1-8-73 | |
| | 3-4302 | 1 | 1-8-73 | |
| | 3-4303 | 0 | 4-25-73 | |
| | 3-4304 | 1 | 9-6-73 | |
| | 3-4304A | 0 | 4-25-73 | |
| | 3-4305 | 1 | 9-6-73 | |
| | 3-4306 | 1 | 9-6-73 | |
| | 34 | 1 | 5-15-72 | |
| | 44 | 1 | 5-15-72 | |
| F. | Valve Drawings | | | |
| | OM 247-151 | 0 | 10-1-69 | Valve Details |
| | OM 247-152 | 0 | 10-1-69 | |
| | OM 247-153 | 0 | 10-1-69 | |
| | OM 247-154 | 0 | 9-30-69 | |
| | OM 249-158 | 0 | 3-31-75 | |
| G. | Piping Layout Drawing 0-2515 | 3 | 5-21-75 | Piping Layout |

NUCLEAR SAFETY RELATED SEISMICALLY DESIGNED SYSTEMS

TABLE 3

| System Symbol | Title | BUILDING | |
|------------------|---|----------|--------------------------------|
| | | Reactor | Auxiliary and/or Turbine |
| 01A | STEAM, MAIN: GENERATOR TO TURBINE | X | X |
| 01A-4 | STEAM, MAIN; TO EMERGENCY FDW PUMP TURBINE | X | X |
| 03 | FEEDWATER PUMPS DISCHARGE | X | X |
| 04A | FLUSH-DRAINS | | X |
| 07A | FEEDWATER, L.P., RECIRCULATING TO UST | | X |
| 08 | VENTS, MISCELLANEOUS | | X |
| 09 | SAFETY AND RELIEF VALVE DISCHARGE | | X |
| 13 | WATER, CONDENSER CIRCULATING | | X |
| 14(A) | WATER, SERVICE, H. P. | X | X |
| 14(B) | WATER, SERVICE, L. P. | X | X |
| 19 | AIR COMPRESSED; SERVICE, INSTRUMENTATION, BREATHING | | X |
| 20B-20 | VENTILATION | X | X |
| 20B-21 | PURGE LINES, AT R. B. WALL | X | X |
| 31 | WATER, DEMINERALIZED | X | X |
| 48 | NITROGEN, GAS, SUPPLY | X | |
| 50 | REACTOR COOLANT | X | X |
| 51A | INJECTION AND LETDOWN, H. P. | X | X |
| 51B | INJECTION, H. P. AND PURIFICATION, L. P. | X | X |
| 53A | INJECTION, L. P.: CORE FLOOD AND DECAY HEAT REMOVAL | X | X |
| 53B | INJECTION, L. P. AND DECAY HEAT REMOVAL | | X |
| 54A | REACTOR BUILDING, SPRAY PUMP; SECTION AND DISCHARGE | X | X |
| 54B | REACTOR BUILDING, SPRAY; HEADER AND DISTRIBUTION | X | X |
| 55 | COMPONENT COOLING; CLOSED SYSTEM | X | X |
| 56 | SPENT FUEL COOLING | X | X |
| 57 | PRESSURIZER R. V. VENT | | X |
| 58 | VENTS, AUXILIARY BUILDING, COMPONENT | X | X |
| 59 | DRAINS, R. B.; COMPONENT | | X |
| 61 | LIQUID WASTE DISPOSAL (NUCLEAR) | X | X |
| 63 | CHEMICAL ADDITION | X | X |
| 64 | SAMPLING, LIQUID, NUCLEAR | X | X |
| 67 | MONITORING, GASEOUS, RADIOACTIVE | X | |
| 69 | LEAK RATE TEST, R. B. | X | X |
| 03A | FEEDWATER, H. P., EMERGENCY PUMP DISCHARGE | | |

Portions or all of these systems contain Nuclear Safety Related piping designed for Seismic Loadings.

Those portions of systems that contain piping of less than 2 1/2" diameter, seismically analyzed using conservative criteria analysis in lieu of computer dynamic analysis, will not be surveyed per the requirements of USNRC IE Bulletin 79-14, Revision 1.

ATTACHMENT 1

SPECIFICATION NO. OS-0020.00-00-0002

DATE July 31, 1979

**FOR INFORMATION
AND/OR REVIEW ONLY**

DUKE POWER COMPANY

OCONEE NUCLEAR STATION

UNITS 1, 2 & 3

Title: USNRC I&E Bulletin 79-14 and 79-02
Pipe Configuration and Pipe Support

Surveillance Procedure

REVISION LOG

1 _____
2 _____
3 _____
4 _____
5 _____

6 _____
7 _____
8 _____
9 _____
10 _____

VERIFICATION OF SPECIFICATION

Station and Unit Number: Oconee Units 1, 2, 3,
 Title of Specification: USNRC I&E Bulletin 79-14 and 79-02
Pipe Configuration and Pipe Support Surveillance Procedure

Specification Number: OS-0020.00-00-0002

Revision: Original issue.

This document specifies items related to nuclear safety. In accordance with established procedures, its quality has been assured. Signatures certify that the above specification was originated, checked, approved and inspected (or waived) as noted below:

Prepared By: J. Z. Rehn Date: 7/31/79

Checked By: M. S. Silb Date: 7/31/79

Approved By: R. B. Puring Date: 8/1/79

Inspection Waived By: _____ Date: _____

Inspection Waived For: _____ ELECTRICAL _____ MECHANICAL _____ CIVIL

Inspected By: J. L. Miller Date: 8-1-79

Inspected By: T. C. McMillan Date: 8/1/79

QUALITY ASSURANCE T. C. Roberts Date: 8-1-79

 (FOR ASME CODE ITEMS)

 Division Date: _____
 Design Engineering Department

This is to certify that the above specification has been reviewed by me, the undersigned, and is correct, complete, and in compliance with _____ Edition including the _____ Addendum of ASME Code, Section III, Paragraph _____.

(SEAL)

SIGNATURE: _____

NAME: _____
 Registered Professional Engineer

No. _____

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ATTACHMENTS:

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| #1 | Piping Surveillance Data Package | System Summary Signoff Form |
| #2 | " " " " | Piping Clearance Form |
| #3 | " " " " | Valve Data Form |
| #4 | " " " " | S/R Data Form |
| #5 | " " " " | S/R Physical Configuration Form |
| #6 | " " " " | Expansion Anchor Summary |
| #7 | " " " " | Guidelines for Support Sketches |
| #8 | " " " " | Support/Restraint Design Tolerances |
| #9 | " " " " | Expansion Anchor Type |

Oconee Nuclear Station
Pipe Configuration and
Pipe Support Surveillance Procedure

1.0 General

1.1 Introduction

This procedure shall be used to identify and document "As-Built" pipe configuration and pipe support physical configuration data for all Nuclear Safety Related portions of piping systems designed for seismic loadings with the exception of small diameter piping identified and exempted in Section 1.2. This procedure complies with the Licensee inspection actions required by the U. S. Nuclear Regulatory (USNRC) Commission's IE Bulletin No. 79-14 and additionally provides certain pipe support information necessary to comply with Licensee inspection actions required by USNRC IE Bulletin No. 79-02. This procedure is issued by Design Engineering for use by Oconee Nuclear Station to generate controlled maintenance procedures as required to execute the inspection program.

1.2 Scope

As required by USNRC IE Bulletin No. 79-14, surveillance shall be performed on the seismic portions of Nuclear Safety Related systems. Certain portions of adjacent non-seismic and/or Non-Nuclear Safety Related piping will be surveyed, if necessary, to verify all piping which was included in a specific seismic analysis problem boundary. The surveillance boundaries for each system shall cover all piping that was computer analyzed for seismic loadings and all piping greater than or equal to 2 1/2" diameter that was seismically analyzed using criteria methods. These surveillance boundaries shall be identified and defined by Design Engineering.

In addition to the surveillance boundaries identified for IE Bulletin No. 79-14, all piping less than 2 1/2" diameter that was seismically analyzed using criteria methods will be included in the surveillance boundaries for IE Bulletin 79-02, only. These surveillance boundaries shall be identified and defined by Design Engineering. Only pipe support/restraints installed using expansion anchors will be surveyed as required to comply with the requirements of USNRC IE Bulletin 79-02, Revision 1, on this piping.

2.0 Preparation

2.1 The Surveillance Team Leader shall be supplied with surveillance data packages for each piping system or sub-system which shall consist of a list of all materials, which shall include piping composites and/or isometrics which indicate support/restraint (S/R) mark numbers and general S/R locations, valve locations, valve power operator orientations, and valve identification numbers, system layout dimensions and surveillance boundaries (henceforth called Piping Design Drawings); support/restraint (S/R) Design

2.0 Preparation, con't.

Drawings with locations and pipe attachment details (when applicable), Valve Data Forms (Attachment #3), Valve Manufacturer's drawings, System Summary Signoff Sheet (Attachment #1), and S/R Data Forms (Attachment #4). These data packages shall be prepared and issued by Design Engineering and/or Bechtel Power Corporation.

2.2 Each surveillance data package shall be checked and logged out of Design Engineering by the IEB 79-14 Project Manager. Each package shall be logged in at the site by the Surveillance Coordinator. This shall be verified by completing the applicable portions of the Systems Summary Signoff Form (Attachment #1) which will be included with each surveillance data package.

2.3 The Surveillance Coordinator shall set up a numbering system for supports which do not have an existing support sketch (Section 5.1.6). The unique number should be prefaced by letters indicating the Surveillance Team and the System in order to prevent duplication of sketch numbers.

2.4 Using the information in the surveillance data package, the Surveillance Team shall locate the piping system to be inspected and, by using the Piping Design Drawings, determine the surveillance boundaries of the systems for IE Bulletin 79-14 and 79-02, as defined on the Piping Design Drawings. The Surveillance Team Leader shall determine the most effective and efficient method to inspect the system to obtain the "As-Built" data defined in Section 3.0.

3.0 "As-Built" Data for IE Bulletin 79-14

For the surveillance boundaries identified for IE Bulletin 79-14, in the surveillance data package, the following information shall be verified and any discrepancies that exceed the specified tolerances shall be recorded and reported as defined in Sections 5.0 and 6.0, for each piping system or portion of system. In addition, any visual observations of possible general discrepancies (e.g. distressed hangers, cracked concrete, corrosion or corrosive environments) shall be recorded by the team leader and reported in Section D(5) of Attachment #1 under remarks.

3.1 Pipe Run Geometry

The piping run lengths to each branch, piping change of direction ($>150^\circ$), and diameter transition, to within the larger of $\pm 6"$ or $\pm 3\%$ of the applicable dimension shown on the Piping Design Drawings.

3.2 Clearance

3.2.1 That all piping is greater than 2" (measured from the OD of the insulation/OD of pipe if uninsulated) from any possible interference (i.e. other piping, components, structural members, wall or floor sleeves, but excluding sealing for fire protection or negative pressure). Piping within 2" of these

3.2 Clearance, con't.

possible interferences and the interference shall be carefully inspected to verify that no visual damage exists which is attributable to insufficient clearance. All locations where visual evidence of binding with an interference exists, shall be reported (Section 5.0) to Design Engineering for review.

- 3.2.2 That all gaps between the S/R and the piping as defined on the S/R Design Drawings are within specified tolerances (Section 3.5.1).

3.3 Valves

The location of all valves, to within the smaller of $\pm 1'-0"$ or \pm four (4) nominal pipe diameters. The orientation of the power operator, (motor, air actuated, hydraulic, etc.) to within $\pm 10^\circ$. The Design Engineering Tag Number, Steam Production I.D. Number and visually confirm that valve configuration is the same as that defined by the valve manufacturer's drawing.

3.4 Supports/Restraints Locations

The piping axial location of all S/R's to within $\pm 1'-0"$; except if the location is on the opposite side of any pipe fitting or component except non-reducing socket weld coupling.

3.5 Support/Restraint Design

- 3.5.1 Support/restraint physical configuration: That dimensions, gap sizes, member sizes, weld details and general physical configuration conform to the S/R Design Drawing. That support components (e.g. rods, snubbers, spring hangers) conform to those specified on the S/R Design Drawing. Dimensional discrepancies greater than those defined by Attachment #8 shall be noted on the S/R Design Drawing. An "As-Built" sketch shall be made for any supports which vary such that the existing hanger sketches cannot be marked to record the dimensional discrepancies (Section 5.0). Attachment #7 provides guidance as to the minimum information that must be provided on the existing and/or "As-Built" support sketches.

- 3.5.2 Base plates: That dimensions, weld attachments, and expansion anchor details conform to the S/R Design Drawings. Dimensional discrepancies, greater than those defined in Attachment #8 shall be noted on the S/R Design Drawing. "As-Built" sketches shall be made of the base plates (Section 5.0) if the discrepancies cannot be shown on the S/R Design Drawing. The minimum information shown on Attachment #7 must be provided on the existing support sketch and/or "As-Built" support sketch.

- 3.5.3 Concrete expansion anchors: The type of expansion anchors

3.5 Support/Restraint Design, con't.

shall be determined in each plate as shown on Attachment #9. In addition to expansion anchor type, the number and size of expansion anchors shall be determined and recorded on the S/R physical configuration Data Form, Attachment #5, for each S/R and Expansion Anchor Summary Form, Attachment #6, for the system summary.

- 3.5.4 Pipe Attachments: All lugs are correctly located to act as intended, are welded as specified; pipe clamps are secure, properly bolted, properly connected to their rod; turnbuckles show sufficient spare threads to assure full engagement. Insulation shall not be removed to complete this verification.
- 3.5.5 Support Components: Support components (e.g. snubbers, spring hangers) are in their working range and are within the specified travel range.

4.0 "As-Built" Data for IE Bulletin 79-02

For the surveillance boundaries identified for IE Bulletin 79-02, in the surveillance data package, the following information shall be verified and any discrepancies that exceed the specified tolerances shall be recorded and reported as defined in Sections 5.0 and 6.0, for each S/R that utilizes concrete expansion anchors. In addition, any visual observations of possible general discrepancies (e.g. distressed hangers, cracked concrete, corrosion or corrosive environments) shall be recorded by the team leader and reported in Section D(5) of Attachment #1 under remarks.

4.1 Supports/Restraints Locations

The piping axial location of all S/R's that utilize concrete expansion anchors to within $\pm 1'-0"$; except if the location is on the opposite side of any pipe fitting or component except non-reducing socket weld coupling.

4.2 Support/Restraint Design

For all S/R's that utilize concrete expansion anchors:

- 4.2.1 Support/restraint physical configuration: That dimensions, gap sizes, member sizes, weld details and general physical configuration conform to the S/R Design Drawing. That support components (e.g. rods, snubbers, spring hangers) conform to those specified on the S/R Design Drawing. Dimensional discrepancies greater than those defined by Attachment #8 shall be noted on the S/R Design Drawing. An "As-Built" sketch shall be made for any supports which vary such that the existing hanger sketches cannot be marked to record the dimensional discrepancies (Section 5.0). Attachment #7 provides guidance as to the minimum information that must be provided on the existing and/or "As-Built" support sketches.

4.2 Support/Restraint Design, con't.

4.2.2 Base plates: That dimensions, weld attachments, and expansion anchor details conform to the S/R Design Drawings. Dimensional discrepancies, greater than those defined in Attachment #8 shall be noted on the S/R Design Drawing. "As-Built" sketches shall be made of the base plates (Section 5.0) if the discrepancies cannot be shown on the S/R Design Drawing. The minimum information shown on Attachment #7 must be provided on the existing support sketch and/or "As-Built" support sketch.

4.2.3 Concrete expansion anchors: The type of expansion anchors shall be determined in each plate as shown on Attachment #9. In addition to expansion anchor type, the number and size of expansion anchors shall be determined and recorded on the S/R physical configuration Data Form, Attachment #5, for each S/R and Expansion Anchor Summary Form, Attachment #6, for the system summary.

4.2.4 Pipe attachments: All lugs are correctly located to act as intended, are welded as specified; pipe-clamps are secure, properly bolted, properly connected to their rod; turn-buckles show sufficient spare threads to assure full engagement. Insulation shall not be removed to complete this verification.

4.2.5 Support components: Support components (e.g. snubbers, spring hangers) are in their working range and are outside of the specified travel range.

5.0 Verification of the "As-Built" Data and Reporting and Recording of Discrepancies

5.1 The "As-Built" data as defined in Sections 3.0 and 4.0 shall be verified and discrepancies (outside of the tolerances specified in Sections 3.0 and 4.0) in the piping system information recorded and reported by returning the completed surveillance data package to the IEB 79-14 Project Manager only.

This information shall be recorded as follows:

5.1.1 Pipe Run Geometry

The system condition (hot or cold) shall be recorded on the Piping Design Drawings. The Piping Design Drawings contained in the Surveillance Data Package shall be "red lined" to indicate all dimensional discrepancies. All other dimensions shall be "yellowed out" as they are verified. "Red lined" is using a red ballpoint pen. "Yellowed out" is using a yellow felt tip pen.

5.1.2 Clearances

Any observed damage to piping material or insulation or evidence of system binding shall be reported on Attachment #2. S/R gaps exceeding the specified (Section 3.5.1 and 4.2.1) tolerances shall be "red lined" on the S/R Design Drawing. If insulation precludes inspection, so note this fact on the S/R Design Drawing. If no damage is observed on the system, this fact should be indicated on Attachment #2.

5.1.3 Valves

5.1.3.1 The Piping Design Drawings, contained in the Surveillance Data Package shall be "red lined" to indicate all dimensional discrepancies related to valve location and orientation and any valve type discrepancies. The Valve Data Form, Attachment #3, shall be completed for all valves. All other valve related dimensions shall be "yellowed out" as they are verified.

5.1.3.2 If additional valves are found in the system that are not identified on the Piping Design Drawings, their location and orientation shall be marked (to within tolerances specified in Section 3.3), elevation shall be shown for clarity on the Piping Design Drawings, and all requested data reported on the Valve Data Form, Attachment #3.

5.1.4 Support/Restraint Location

The S/R Design Drawings contained in the Surveillance Data Package shall be "red lined" to indicate all dimensional discrepancies related to S/R location. The S/R Data Form, Attachment #4, shall be completed for all S/R's. If additional S/R are found in the system that are not identified, the procedures outlined in Section 5.1.6 shall be followed. All other location dimensions shall be "yellowed out" as they are verified.

5.1.5 Support/Restraint Physical Configuration

The S/R Design Drawing contained in the Surveillance Data Package shall be "red lined" to indicate all dimensional and/or hardware discrepancies related to support physical configuration, base plates, concrete expansion anchors, support component travel and/or types (e.g. rods, snubber, springs) and pipe attachments. For each individual S/R that utilizes concrete expansion anchors, applicable sections of Attachments #5 and #6 shall be completed. For S/R's pre-

5.1.5 Support/Restraint Physical Configuration, con't.

viously inspected under USNRC Bulletin No. IE 79-02 surveillance program, copies of Enclosure 13.3 and 13.4 of Ocone Procedure MP/01A/3018/50 may be substituted for Attachments #5 and #6 (i.e. reinspection is not required) applicable data shall be transferred to Attachment #4. For all other S/R's, Attachment #5 shall be completed. All other details and dimensions shall be "yellowed out" as they are verified. If verification is not possible because of insulation, this fact shall be recorded on the S/R Design Drawings.

5.1.6 Support/Restraints Without Existing Drawings

The following tasks shall be completed by the Surveillance Team for supports/restraints not having existing S/R Design Drawings:

4.1.6.1 Location of Pipe S/R: The location and elevation of the S/R shall be marked (to within the tolerances specified in Sections 3.4 and 4.1) on the Piping Design Drawing.

5.1.6.2 Support physical configuration: An "As-Built" sketch showing dimensions, member sizes, weld details, and general construction shall be prepared. Attachment #7 provides guidance as to the minimum information that must be provided on the "As-Built" sketch. "As-Built" sketches for S/R's identified during IEB 79-02 surveillance may be substituted for the purposes of this surveillance program.

5.1.6.3 Base Plates: Concrete expansion anchored base plate details must be prepared in accordance with Attachment #7. The number of base plates shall be entered on Attachment #6.

5.1.6.4 Attachments #4 and #5: Attachments #4 and #5 shall be completed for each support/restraint.

5.1.6.5 Concrete expansion anchors: The support number, number of expansion anchors, type of expansion anchors and size of expansion anchors shall be entered on Attachments #5 and #6 for each support.

6.0 Reporting of Significant Discrepancies

6.1 The following are defined as significant discrepancies that may affect the system operability. They must be immediately reported to Design Engineering for system operability evaluation and possible reportability to the USNRC. The Surveillance Coordinator shall determine what is a significant discrepancy based on the following:

6.0 Reporting of Significant Discrepancies, con't.

- 6.1.1 Supports/Restraints defined in the Surveillance Data Package that do not exist.
 - 6.1.2 Support/Restraints that utilize support components (snubber, spring hanger) other than those defined on the applicable S/R Design Drawing.
 - 6.1.3 Support/Restraints whose direction of action is greater than 45° from that defined on the applicable S/R Design Drawing.
 - 6.1.4 Support/Restraint span lengths (distance to adjacent support) that vary by $\pm 20\%$ or greater from those defined on the applicable Piping Design Drawing.
 - 6.1.5 Valve locations that are greater than $\pm 5'$ or 20 nominal pipe diameters from those defined on the applicable Piping Design Drawing. Valves located that are not defined on the applicable Piping Design Drawing.
 - 6.1.6 Piping run lengths (as defined in Section 3.1) that vary by $\pm 20\%$ or greater from those defined on the applicable Piping Design Drawings.
- 6.2 Any significant discrepancy (as defined in Section 5.1) shall be reported by the Surveillance Coordinator at once to the IEB 79-14 Project Manager, by phone, and a sketch of the discrepancy description shall be telecopied to the IEB 79-14 Project Manager within 8 hours.

7.0 Review and Transmittal of Surveillance Data Package to Design Engineering

- 7.1 Upon completion of surveillance of a piping system or sub-system, the Surveillance Team Leader shall turn over the complete document package to the Surveillance Coordinator. The Surveillance Coordinator shall review the package to assure that information is complete and accurate and that "As-Built" sketches have sufficient information. The Piping Surveillance Data Package, System Summary Signoff Form, Attachment #1, shall be filled out, signed, and dated by the Surveillance Coordinator.
- 7.2 Team members should use extreme care to assure that all requested data is provided and is legible. Re-analysis of the support/restraint will be based on this information and insufficient detail will result in re-surveillance as required. Retraining shall be required for any team member that fails to complete the Surveillance Package correctly.
- 7.3 Once the Surveillance Coordinator has signed the Completion of Surveillance portion of Attachment #1, he shall log out the Surveillance Data Package by completing and signing Section E of Attachment #1 and transmit to the IEB 79-14 Project Manager.

- 7.4 The IEB 79-14 Project Manager shall log in the Surveillance Package and then assign the package to the appropriate organization for review and resolution of any discrepancies.

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ATTACHMENT NO. 1
 PIPING SURVEILLANCE DATA PACKAGE
 SYSTEM SUMMARY SIGNOFF FORM

SYSTEM _____
 SYSTEM NO. _____
 BUILDING _____ UNIT _____

A) Design Engineering Preparation

- | | |
|---|----------------|
| 1) Composites Marked to show: | YES () NO () |
| a) Location of each branch, change of direction, and diameter transition | YES () NO () |
| b) Location, orientation and D. E. & S. P. (if known) ID No. of each valve | YES () NO () |
| c) Location and Mark No. of each S/R | YES () NO () |
| 2) Valve Data Form Completed | YES () NO () |
| 3) S/R Data Form Completed | YES () NO () |
| 4) Valve drawings or data sheets included | YES () NO () |
| 5) S/R Design Drawings included | YES () NO () |
| 6) List of all items in Surveillance Data Package | YES () NO () |
| 7) Package Complete | YES () NO () |

Responsible Engineer _____
 Date _____

B) Transmittal to Site

Surveillance data package transmitted to site on _____
 IEB 79-14 Project Manager _____

C) Log-in of Surveillance Package at Site

Surveillance data package received on _____ YES () NO ()
 Surveillance data package complete per Item A(6)
 Surveillance Coordinator _____

D) Completion of System Surveillance

- | | |
|--|----------------|
| 1) Location of each branch, change of direction, and diameter transition verified | YES () NO () |
| Piping Design Drawings marked for all discrepancies | YES () NO () |
| 2) Piping clearances verified | YES () NO () |
| Piping Clearance Form completed | YES () NO () |

- 3) Valve location, orientation and physical configuration verified. YES () NO ()
Piping Design Drawings marked for all location, orientation, YES () NO ()
and physical configuration discrepancies. YES () NO ()
Valve Data Form completed YES () NO ()
- 4) Support/Restraint location verified YES () NO ()
S/R Design Drawings marked for all location discrepancies. YES () NO ()
S/R Data Form and S/R physical configuration form completed. YES () NO ()
S/R physical configuration verified. YES () NO ()
S/R Design Drawing marked for all physical configuration YES () NO ()
discrepancies.
- 5) Information complete and accurate. YES () NO ()
As-Built sketches sufficient. YES () NO ()
Package complete. YES () NO ()
Remarks (sheet attached) YES () NO ()
Surveillance Coordinator _____
Date _____
- E) Transmittal to Design Engineering
Surveillance data package transmitted to Design Engineering
on _____
Surveillance Coordinator _____
- F) Log-in of Surveillance package at Design Engineering
Surveillance package received on _____ YES () NO ()
System package complete
IEB 79-14 Project Manager _____

ATTACHMENT NO. 2
Piping Surveillance Data Package
Piping Clearance Form

SYSTEM _____

SYSTEM NO. _____

BUILDING _____ UNIT _____

TEAM LEADER _____

DATE _____

Damage observed on pipe

Visual Evidence of pipe binding with interferences

Damage observed on insulation

YES () NO ()

YES () NO ()

YES () NO ()

Location marked on Piping Design Drawing No. _____
at elevation _____

YES () NO ()

Sketch of damaged area attached or shown below

Description of damaged area : _____

ATTACHMENT NO. 3
Piping Surveillance Data Package
Valve Data Form

SYSTEM _____

SYSTEM NO. _____

BUILDING _____ UNIT _____

TEAM LEADER _____

DATE _____

| 3 Valve Design Eng. Tag. No. | 2,3 Valve Drawing in Surv. Package (YES/NO) | Vendor Drawing No. | 4 Steam Prod. ID No. | | Orientation /Location as specified (YES/NO) | 1,2 Valve Physical Configuration verified (YES/NO) |
|------------------------------------|--|-----------------------|----------------------------|-------------------------------|--|---|
| | | | ID NO. | Field Verified (YES/NO) | | |
| | | | | | | |
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| | | | | | | |

1. Is valve same configuration as shown on reference drawing? Record all remarks.
2. If no drawing is available, field shall record type, vendor and vendor identification number if available.
3. Defined by Design Engineering
4. If S.P. ID No. is not correct or listed, field shall list correct No.

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ATTACHMENT NO. 4
Piping Surveillance Data Package
S/R Data Form

SYSTEM _____

SYSTEM NO. _____

BUILDING _____ UNIT _____

TEAM LEADER _____

DATE _____

| ¹ Support Mark No. | ¹ Support Drawing in Surv. Package (YES/NO) | ¹ S/R Design Drawing No. | ¹ Support Surveillance in 79-02 (YES/NO) | Location as specified (YES/NO) | Physical configuration verified (YES/NO) |
|----------------------------------|---|---|---|--------------------------------------|---|
| | | | | | |
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1 Supplied by Design Engineering

7/26/79

ATTACHMENT NO. 5
Piping Data Package
S/R Physical Configuration Form

SYSTEM _____
SYSTEM NO. _____
BUILDING _____ UNIT _____
SUPPORT NUMBER _____
TEAM LEADER _____
DATE _____

1. Support physical configuration.

- a) Dimensions verified
b) Dimensional discrepancies shown on S/R Design Drawing
c) "As-Built" sketch required YES _____ (attached)
d) Location shown of Piping Design Drawing (if required)
e) Remarks: _____

YES () NO ()
YES () NO ()
YES () NO ()
YES () NO ()

2. Concrete Expansion Anchors:

- a) Number of anchors _____
b) Type of anchors _____
c) Size of anchors _____
d) Anchor information listed on Attachment #6

YES () NO ()

3. Sign off

1. Information complete and accurate
2. "As-Built" sketches sufficient
3. Remarks: _____

YES () NO ()
YES () NO ()

Surveillance Coordinator _____
Date _____

ATTACHMENT # 6
Piping Surveillance Data Package
Expansion Anchor Summary

TEAM LEADER _____

¹Show reference number on the S/R Design Drawings.

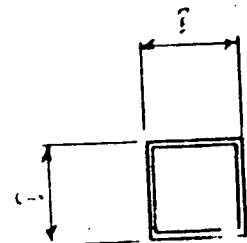
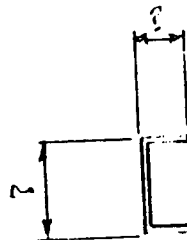
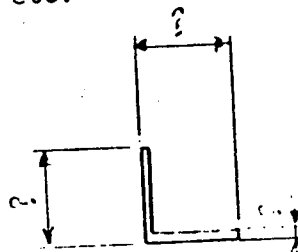
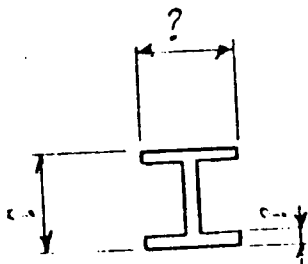
7/26/79

ATTACHMENT # 7
Piping Surveillance Data Package
GUIDELINES FOR SUPPORT SKETCHES

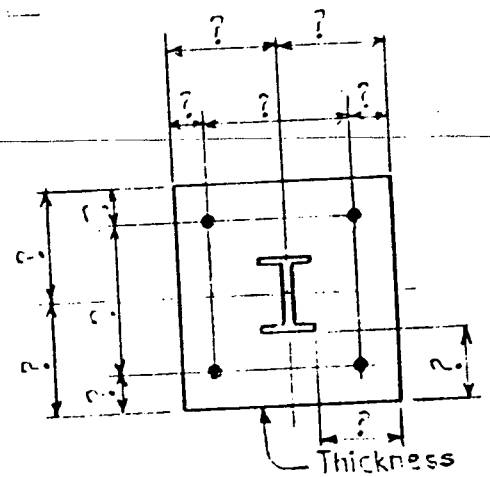
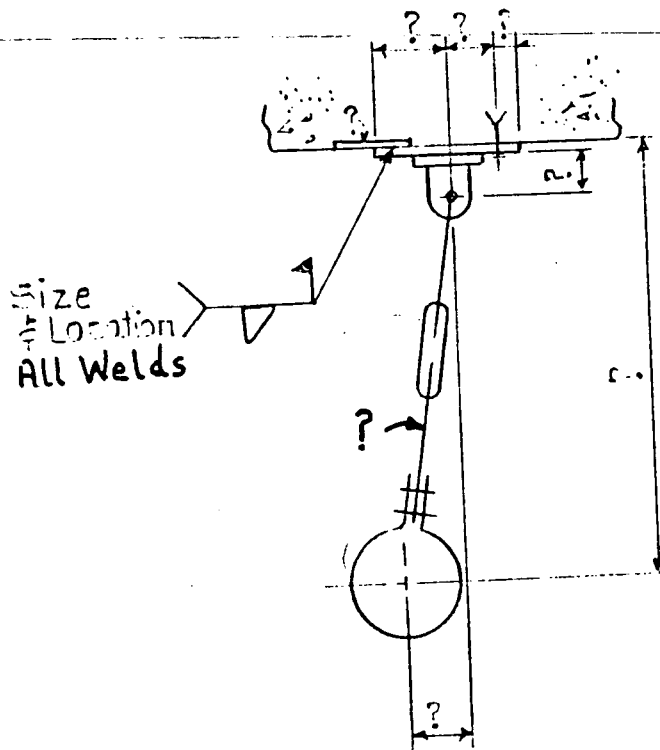
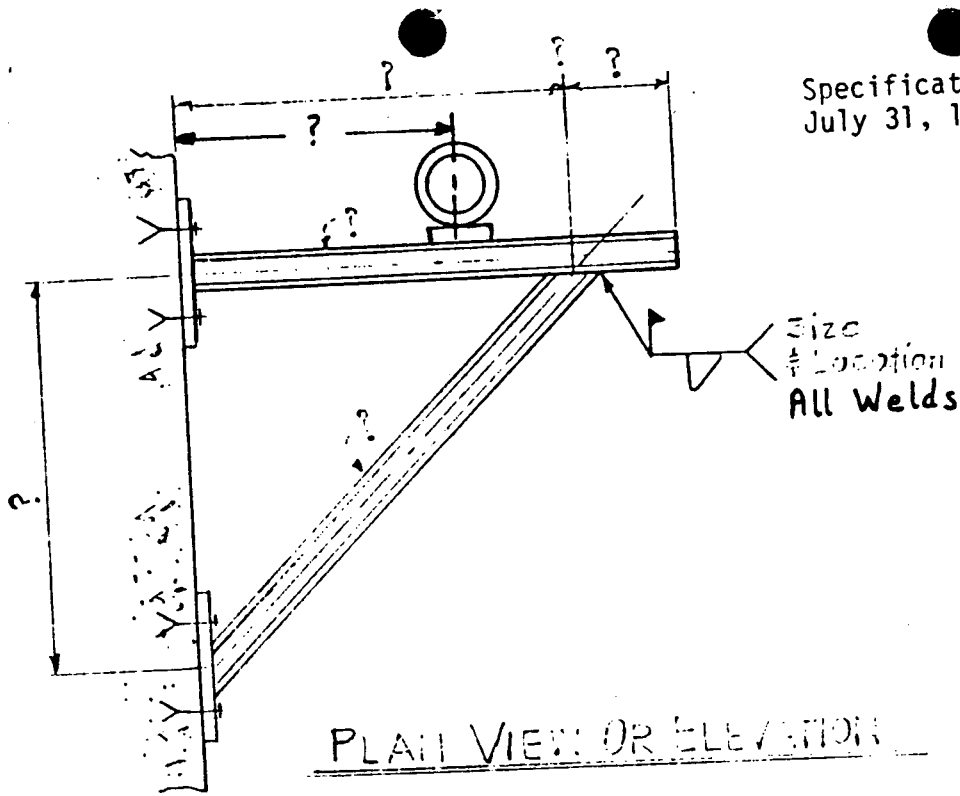
Specification OS-0020.00-00-0002
July 31, 1979

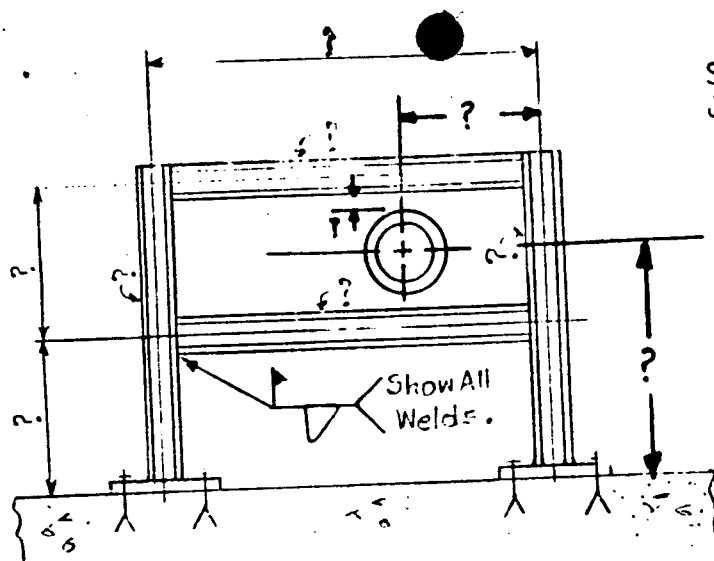
The following are required for all sketches if applicable:

1. Size of members: Wide flange shapes, angles, channels, tube steel, plates, etc.



2. All welds, length and sizes or all around.
3. Complete plate details showing size, centerline of anchors, edge distances off center dimensions of attachments, etc.
4. If attached to embed steel, show welds.
5. Show orientation of steel members on plates.
6. Specify on sketches whether plan or elevation view.
7. Show direction of applied load or loads.

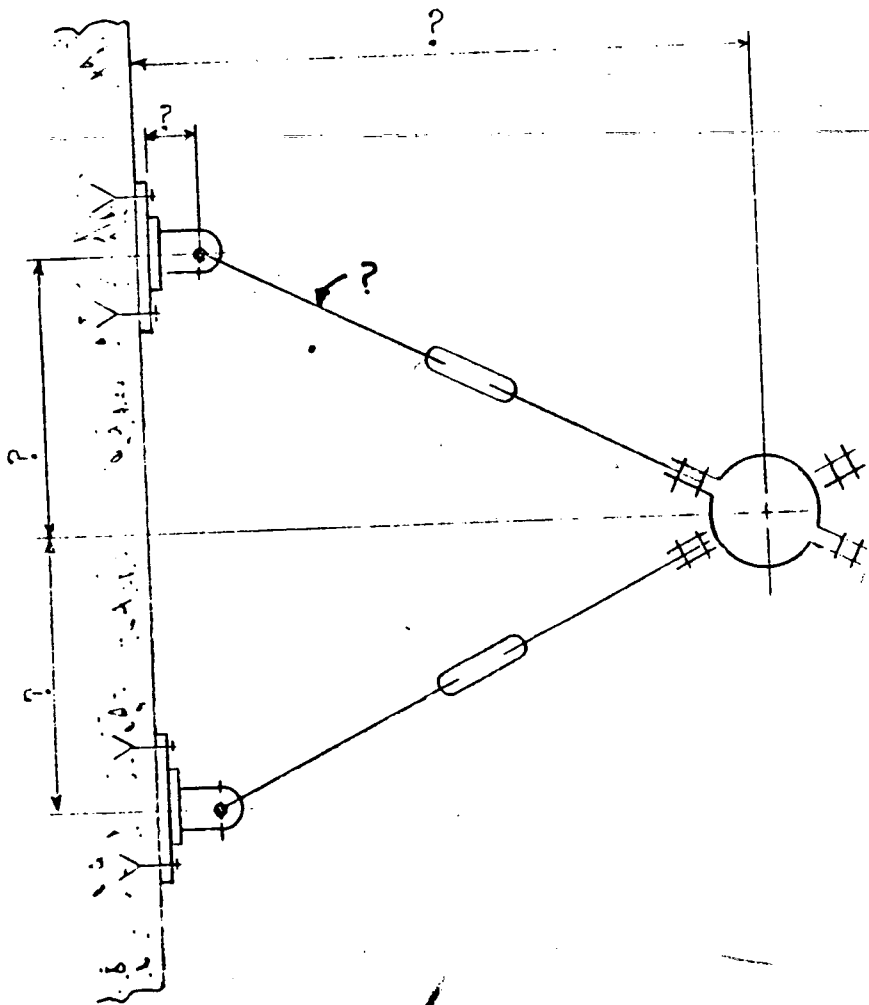




Show Welds, Gaps,
Plate Details
And All ?

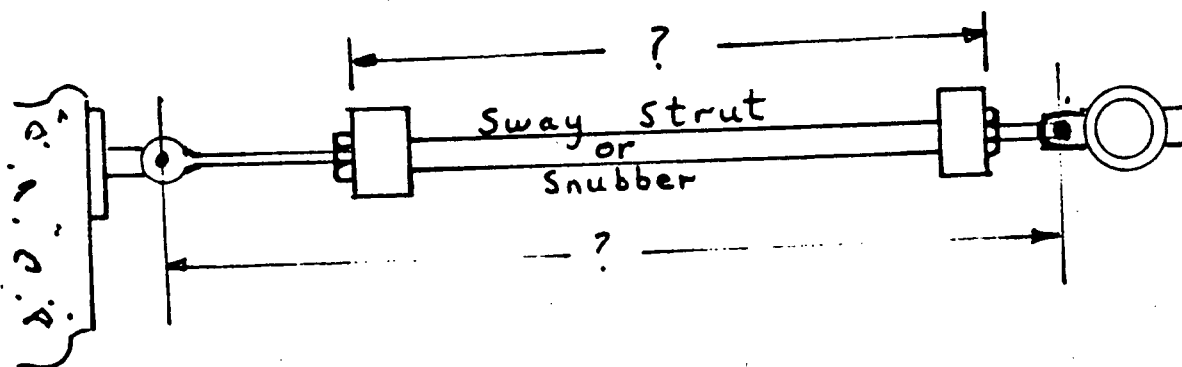
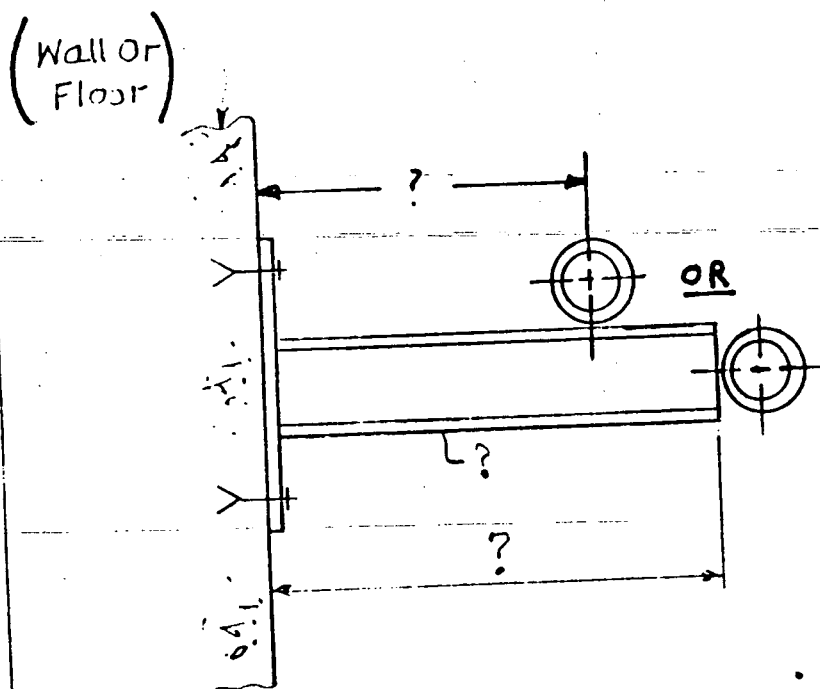
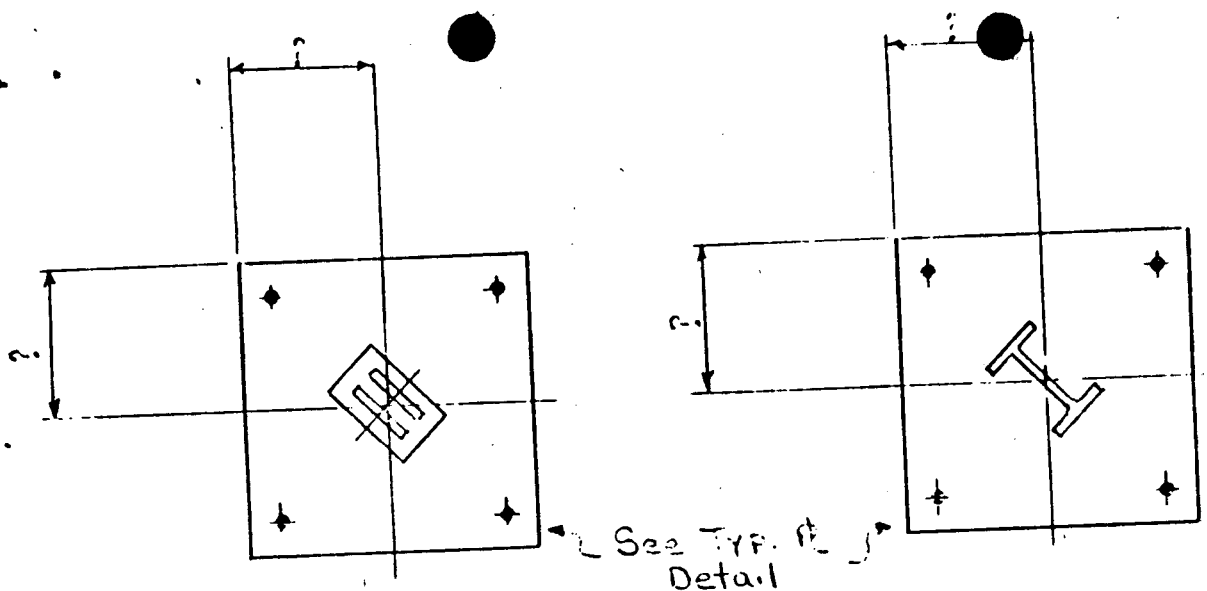
(Could Be On
Wall Or Floor)

PLAN VIEW OR ELEVATION



Show Welds,
Plate Details
And All ?

PLAN VIEW OR ELEVATION



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ATTACHMENT # 7
SHEET 4 OF 4

ATTACHMENT NO. 8

Piping Surveillance Data Package
Support/Restraint Design Tolerances

The following is a set of acceptable tolerances for Support/Restraint construction and erection. Dimensions that exceed these tolerances shall be recorded and reported to Design Engineering as defined in Section 5.0.

1.0 Structural lengths and W dimensions of struts and snubbers may vary by $\pm 10\%$ (2" maximum), while rods may be of any length required to make up the assembly.

2.0 Location of the pipe support along the axis of the pipe may vary $\pm 1'-0"$ unless otherwise specified on the S/R Design Drawing.

3.0 Beam attachments may vary $\pm 6"$ in the direction of the span of the beam. Attachments to embedded plates may vary $\pm 1'-0"$ but shall be completely on the embedded plate.

4.0 When the sketch indicates a $1/16"$ clearance on each side of the pipe, this may be interpreted to mean that the cumulative gap be $1/8"$ maximum with the pipe touching one side or the other but not both.

5.0 Shear lugs welded to the pipe are used to restrain axial forces by bearing against clamps or structural shape. If a clearance gap is not specified between bearing surface and lug, the lug should be in contact with the bearing surface.

The lug location is allowed one lug thickness deviation circumferentially from the design position as long as full bearing is maintained.

6.0 Springs may be located anywhere on the rod between support steel and pipe attachment. Springs shall be checked to insure that there is no apparent damage and that the load indicator is on the scale.

7.0 Rod sway angle shall be limited to exclude binding at the load pin.

For a single sway strut the allowable deviation from the load axis is $\pm 5^\circ$. When a double strut design is specified, the distance between the end attachments should be as specified $\pm 2"$.

For snubbers the allowable deviation from the load axis is 5° .

8.0 On base plates, bolt to edge distance may vary $+1"$, $-1/4"$.

Support/Restraint Design Tolerances, con't.

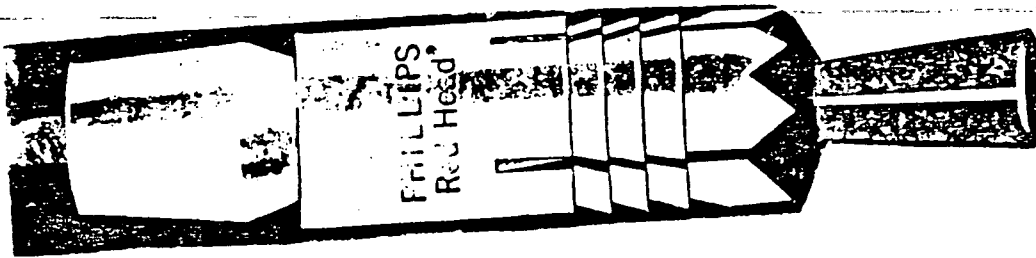
Structural members welded on plates are allowed $\pm 3/4$ " from location shown on the hanger sketch.

- 9.0 Threaded components should have full thread engagements with the internally threaded member.
- 10.0 Pipe may be located any where on unbraced cantilevers; for braced cantilevers, pipe contact location may vary $+ 1$ " or -4 " from the sketch and the distance between the end attachments should be as specified ± 2 ".
- 11.0 Grouting should be at a thickness of 1 " with a tolerance of $+1$ ", $-1/2$ ".

ATTACHMENT NO 9
PIPING SURVEILLANCE DATA PACKAGE
EXPANSION ANCHOR TYPE

1. Self-Drilling Anchors

- a) A bolt would indicate this type of anchor.
- b) A nut on a threaded rod could indicate this type of anchor. The visible rod end should also show evidence of saw-cutting to confirm that this anchor is of the self-drill type.
- c) If this anchor type cannot be confirmed in accordance with the above, its type should be identified as "sleeve or self-drill" on Attachments No 5 and No 6.

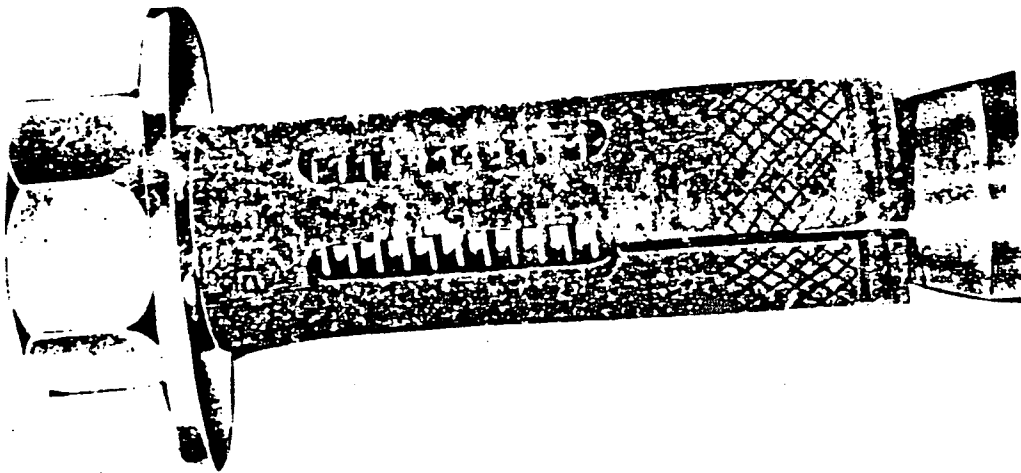


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ATTACHMENT NO 9
PIPING SURVEILLANCE DATA PACKAGE
EXPANSION ANCHOR TYPE

2. Sleeve Anchors

- a) A nut on a threaded rod could indicate this type of anchor.
- b) Threads go all the way to the end of the rod. The end of the rod will not show evidence of saw-cutting.
- c) If this anchor type cannot be confirmed in accordance with the above, its type should be identified as "sleeve or self-drill" on Attachments No 5 and No 6.



ATTACHMENT NO 9
PIPING SURVEILLANCE DATA PACKAGE
EXPANSION ANCHOR TYPE

3. Wedge Anchors

- a) A nut on a threaded rod could indicate this type of anchor.
- b) Threads on a rod do not go all the way to the end of the rod. There will be an unthreaded nipple on the end. This will confirm that this anchor is a wedge type.

