



T. PRESTON GILLESPIE, Jr.
Vice President
Oconee Nuclear Station

March 2, 2011

U.S. Nuclear Regulatory Commission
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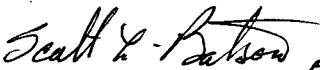
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Subject: Duke Energy Carolinas, LLC
Oconee Nuclear Station, Units 1, 2, and 3
Docket Nos. 50-269, 50-270, and 50-287
Relief Request No. 10-ON-001
Response to Request for Additional Information

By letter dated June 9, 2010 (Agencywide Document Access and Management System (ADAMS) Accession No. ML101660473), Duke Energy Carolinas, LLC (Duke Energy), submitted Relief Request No. 10-ON-001 for the use of an alternative to the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, IWC-2500 for examination of nozzle to shell welds on the Residual Heat Removal (RHR) Heat Exchangers. On December 15, 2010, the NRC Staff electronically requested additional information regarding this request. The additional requested information, as well as Duke Energy's response, is provided in the enclosure.

If you have any questions or require additional information, please contact Corey Gray at (864) 873-6325.

Sincerely,

 FOR T. P. GILLESPIE
T. Preston Gillespie, Jr.
Oconee Site Vice President

Enclosure

A047
NRC

U. S. Nuclear Regulatory Commission
March 2, 2011
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Enclosure

Request for Additional Information

Relief Request 10-ON-001 Alternative to Volumetric Examination Requirements for the Residual Heat Removal (RHR) Heat Exchanger Class 2 Nozzle-to-Shell Welds

Duke Energy Carolinas, LLC

Oconee Nuclear Station, Unit 1, 2, and 3

Docket No. 50-269, -270, -287

1. Please state whether previous inservice inspections of the RHR HXs have detected any signs of leakage or age-related degradation in the subject RHR HX welds at Oconee Nuclear Station, Units 1, 2, and 3.

Response:

- a. VT-2 visual examinations performed on the RHR Heat Exchangers at Oconee Nuclear Station, Units 1, 2, and 3 during the 1st, 2nd, 3rd, and 4th Inservice Inspection Interval have not detected any evidence of leakage from these RHR Heat exchangers, including the welds for which relief has been requested.
- b. Surface examinations performed on the nozzle Mk. "M" and "N" reinforcing pad-to-shell welds and reinforcing pad-to-nozzle welds on the RHR Heat Exchangers at Oconee Nuclear Station, Units 1, 2, and 3 during the 1st, 2nd, 3rd, and 4th Inservice Inspection Interval have not detected any unacceptable indications.
- c. Volumetric examinations performed on the shell-to-head flange welds and shell-to-tubesheet flange welds (adjacent to Nozzles Mk. "M" and "N") on the RHR Heat Exchangers at Oconee Nuclear Station, Units 1, 2, and 3 during the 1st, 2nd, 3rd, and 4th Inservice Inspection Interval have not detected any unacceptable indications. These results provide additional evidence that there has been no service-induced degradation on the I.D. of the LPI Coolers in the vicinity of the Nozzle Mk. "M" and "N" nozzle-to-shell welds for which relief has been requested.

Note: Prior to implementing Code Case N-706, a limited number of C1.10 volumetric examinations were performed on these shell welds during the 4th Inservice Inspection Interval. These Item C1.10 examinations have since been discontinued as a result of implementing Code Case N-706 which was justified, in part, because no service induced degradation or leakage had occurred in the shell circumferential welds.

- d. The nozzle-to-shell welds for which relief has been requested have not received any inservice volumetric examinations. However, the inservice volumetric examinations performed on the adjacent shell-to-head flange and shell-to-tubesheet flange welds during the 1st, 2nd, 3rd, and 4th Inservice Inspection Intervals provide reasonable assurance that the service conditions within the RHR Heat Exchangers have not resulted in any age-related degradation in the nozzle-to-shell welds for which relief has been requested.

March 2, 2011

Memo to File

Subject: Oconee Nuclear Station
Unit 3 EOC-26
Service Water Piping Inspection Program Outage Planning
File No.: OS-210.24

The Service Water Piping Inspection Program (SWPIP) program outage plan for Oconee Unit 3 EOC-26 was originated and reviewed by Geary L. Armentrout (ONS-PCE) and Steve Lefler, Jr. (NGO-MMP). This process involved a detailed review of the following program tools:

- Flow regime models to determine locations most susceptible to corrosion.
- Review of stress analysis models to determine locations of high stress.
- Inspection locations previously inspected that are due for re-inspection.
- Current and previous Industry Issues.

The inspection plan is summarized on the following page and includes the necessary information for outage planning. There are twenty-five (25) inspection locations to be examined using Ultrasonic Testing (UT). All Work Requests written within milestone dates

Note the following:

- **These are 'corrosion' inspections; not 'erosion' inspections. Therefore, grid and prep procedure SM/O/B/8530/002 as well as exam procedure NDE-946 apply.**
- **Where possible, these inspections can be slotted during the pre-outage window, utilizing personnel mobilized to support pre-outage ISI inspections.**

All revisions to the plan will require the signatures of the station SWPIP coordinator and the corporate SWPIP representative in accordance with SWPIP Program requirements. UT Data sheets for each inspection location are also included as an attachment.


Geary L. Armentrout
ONS SWPIP Engineer

cc w attachments:	Kenny McCorkle Jack Crowe Rod Sheffield Willie Ford Dan Harden Paul Terry Steve Lefler, Jr. Sammy Oates John Bryant Sheila Henderson Vance Bowman Danny Winchester	ONS NDE Coordinator ONS Planning NGS Inspection Services NMS Welding ONS Work Control ONS Work Control NGO E/C Coordinator ONS Maintenance Support ONS QA/QC ONS Document Management ONS Core Team Rep (Rapid Response Team) ONS On-Line Work Window Manager
cc w/o attachments:	Andrew Henson Joe Herrick	CNS E/C Coordinator MNS E/C Coordinator

ONS Unit 3 EOC-26
SWPIP Program Inspection Plan, Rev. 0

UT Code	Priority	Description	Status	Comments
Condenser Circulating Water System (CCW)				
C3CCW003	1	12" Pipe	Re-inspection - Ref. WO 01958233	Can do during Pre-outage Window
C3CCW005	1	14" Pipe	Re-inspection - Ref. WO 01958185	Can do during Pre-outage Window
C3CCW006	1	36"x14" Tee	Re-inspection - Ref. WO 01955462	Can do during Pre-outage Window
C3CCW007	1	3" Pipe	Re-inspection - Ref. WO 01955466	Can do during Pre-outage Window
C3CCW008	1	16" Pipe	Re-inspection - Ref. WO 01955467	Can do during Pre-outage Window
C3CCW010	1	8"x4" Tee	Re-inspection - Ref. WO 01958231	Can do during Pre-outage Window
Low Pressure Service Water System (LPS)				
C3LPS002	1	14" Pipe	Re-inspection - Ref. WO 01958229	Can do during Pre-outage Window
C3LPS005	1	24" Pipe	Re-inspection - Ref. WO 01958230	Can do during Pre-outage Window
C3LPS006	1	10" Pipe	Re-inspection - Ref. WO 01956438	Can do during Pre-outage Window
C3LPS007	1	16" Pipe	Re-inspection - Ref. WO 01956388	Can do during Pre-outage Window
C3LPS012	1	8" x 3" Tee	Re-inspection - Ref. WO 01956387	Can do during Pre-outage Window
C3LPS013	1	36"x14" Tee	Re-inspection - Ref. WO 01956385	Can do during Pre-outage Window
C3LPS014	1	14" x 10" Tee	Re-inspection - Ref. WO 01956384	Can do during Pre-outage Window
C3LPS019	1	4" Pipe	Re-inspection - Ref. WO 01956383	Can do during Pre-outage Window
C3LPS020	1	16" Pipe	Re-inspection - Ref. WO 01964143	Can do during Pre-outage Window
C3LPS024	1	8"x1" Tee	Re-inspection - Ref. WO 01955438	Outage Related
C3LPS029	1	8"x1" Tee	Re-inspection - Ref. WO 01956381	Can do during Pre-outage Window
C3LPS032	1	30"x3" Tee w/6" Branch	Re-inspection - Ref. WO 01956379	Can do during Pre-outage Window
C3LPS033	1	8" x 12" Reducer	Re-inspection - Ref. WO 01956377	Can do during Pre-outage Window
C3LPS044	1	3" Pipe	Re-inspection - Ref. WO 01955443	Can do during Pre-outage Window

ONS Unit 3 EOC-26
SWPIP Program Inspection Plan, Rev. 0

UT Code	Priority	Description	Status	Comments
C3LPS046		4" Pipe	Re-inspection - Ref. WO 01955447	Outage Related
C3LPS047	1	2" Pipe	Re-inspection - Ref. WO 01964198	Can do during Pre-outage Window
High Pressure Service Water System (HPS)				
C3HPS002	1	4" Pipe	Re-inspection - Ref. WO 01955450	Can do during Pre-outage Window
C3HPS003	1	4" Pipe	Re-inspection - Ref. WO 01955456	Can do during Pre-outage Window
C3HPS004	1	4" Pipe	NEW inspection - Ref. WO 01955459	Can do during Pre-outage Window
Auxiliary Service Water System (ASW)				
None required this outage				
SSF Auxiliary Service Water System (SAS)				
None required this outage				
Equipment Cooling System (EC)				
None required this outage				
Essential Siphon Vacuum System (ESV)				
None required this outage				
Siphon Seal Water System (SSW)				
None required this outage				
Keowee Turbine Generator Cooling Water System (WL)				
None required this outage				
Keowee Service Water System (KSW)				
None required this outage				
Keowee Turbine Sump Pump System (KTS)				
None required this outage				

Applicable Design Docs: Service Water Piping Insp. Program
Acceptance Criteria: see Attached individual SPS.
Requested By: Kenny L. [Signature] Date: 3/2/11
Requestor Section _____

QA Reviewer Section

Inspector Section

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>C.S.</u>	UT Code #	<u>C3CCW003</u>
Building:	<u>TB Ground Floor</u>	O.D. (nom)	<u>12" Pipe</u>	Flow Diagram	<u>OFD-133A-3.2</u>
Elevation:	<u>Pipe Elev. 800'</u>	Schedule	<u>Std.</u>	Dwg.(s):	<u>O-2400Q</u>
Column:	<u>D/49</u>	Original			
		Wall Thk.	<u>0.375</u>		<u>50 PSIG @ 100° F</u>
System:	<u>CCW</u>	Min. Wall			
		Thk.	<u>0.328" (87.5%)/0.250" (66.7%)</u>		<u>Class F (OSC-523)</u>

Piping/ Fitting is upstream/ downstream of Valve 3CCW-3

Previous inspection data: _____ Remarks: _____

Piping Engineer: GL Armentrout 4322 Date: _____
Bruce Jarrett x-4340

Notes: Inspect pipe in riser

just above elbow. Use 1"x1" grids

starting 1" away from weld to elbow.

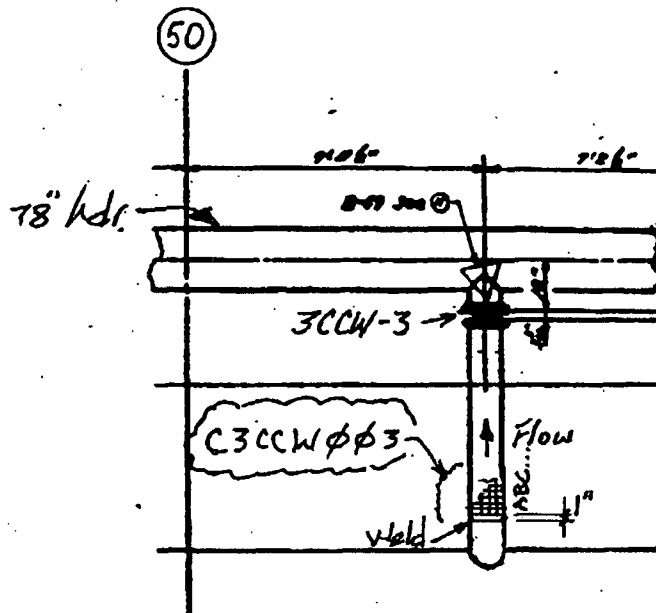
Grid 12 - 1" bands along riser.

Inspect per NDE-946.

Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection

Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted
 (Initial & Date) _____



Looking West

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>C.S.</u>	UT Code #	<u>C3CCW005</u>
Building:	<u>TB Basement</u>	O.D. (nom)	<u>14"</u>	Flow Diagram	<u>OFD-133A-3.2</u>
Elevation:	<u>Pipe Elev. 771'+9"</u>	Schedule	<u>Std.</u>	Dwg.(s):	<u>O-2407A</u>
Column:	<u>BC / 48-49</u>	Original Wall Thk.	<u>0.375"</u>		<u>50 PSIG @ 100° F</u>
System:	<u>CCW</u>	Min. Wall Thk.	<u>0.328" (87.5%), 0.250" (66.7%)</u>		<u>Class F (OSC-1828-03)</u>
				<u>Flow Regime: 3 off 4</u>	<u>3-13-10 (dcp AB01)</u>

Piping/ Fitting is upstream downstream of

Valve ~~3CCW-342~~ 342 *504*

Previous inspection data:

Remarks

Piping Engineer: George Armentrout 4322
Bruce Jarrett x-4340

Date: _____

Notes:

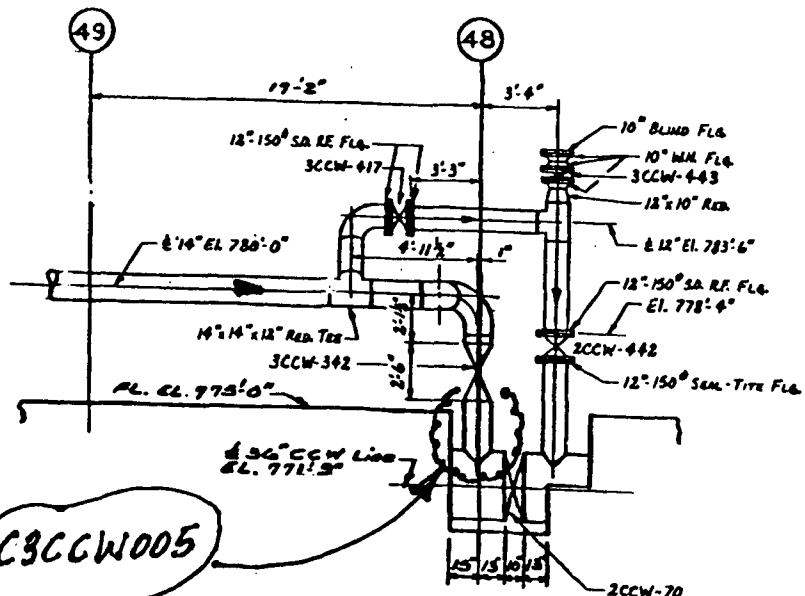
Inspect 14" pipe between valve

3CCW-342 and 36" CCW header

Inspect per NDE-946.

Grid per Procedure

SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection



Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted
(Initial & Date) _____

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>C.S.</u>	UT Code #	<u>C3CCW006</u>
Building:	<u>TB Basement</u>	O.D. (nom)	<u>36"x14" Tee</u>	Flow Diagram	<u>OFD-133A-3.1</u>
Elevation:	<u>Pipe Elev. 771'+9"</u>	Schedule	<u>Std.</u>	Dwg.(s):	<u>O-2407B</u>
Column:	<u>K-J / 50-51</u>	Original			
		Wall Thk.	<u>0.375"</u>		<u>50 PSIG @ 100° F</u>
		Min. Wall			<u>Class F (OSC-1828-</u>
System:	<u>CCW</u>	Thk.	<u>0.328"(87.5%), 0.250"(66.7%)</u>		<u>01)</u>
<u>Flow Regime: 2</u>				<u>3-13-08 (dcp 23)</u>	

Piping/ Fitting is upstream/ downstream of Valve 3CCW-341

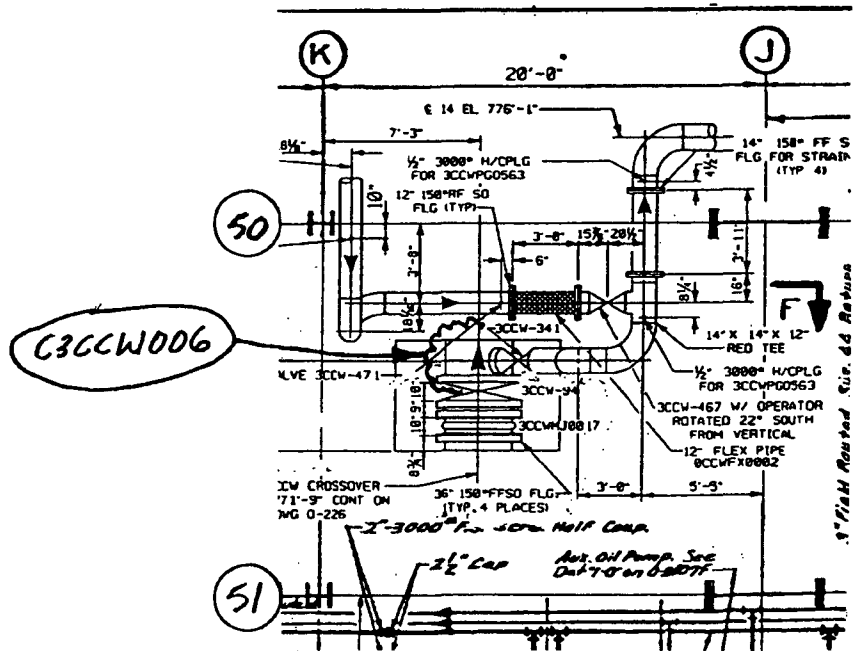
Previous inspection data: _____ Remarks _____

Piping Engineer: Gregory A. Montfort ext. 4322
Bruce Jarrett x 4340 Date: _____

Notes: Inspect 36" x 14" Tee

Inspect per NDE-946.

Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection



Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted (Initial & Date) _____

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>CS</u>	UT Code #	<u>C3CCW007</u>
Building:	<u>TB Basement</u>	O.D. (nom)	<u>3" Pipe</u>	Flow Diagram	<u>OFD-133A-3.2 (G5)</u>
Elevation:	<u>Pipe Elev. 777'+2"</u>	Schedule	<u>40</u>	Dwg.(s):	<u>O-2407A</u>
Column:	<u>G46</u>	Original Wall Thk.	<u>0.216"</u>		<u>50 PSIG @ 100° F</u>
System:	<u>CCW</u>	Min. Wall Thk.	<u>0.189"(87.5%), 0.144"(66.7%)</u>		<u>Class G (OSC-3998)</u>
					<u>Max. Stress location</u>

Piping/ Fitting is upstream/ downstream of valve 3CCW-88

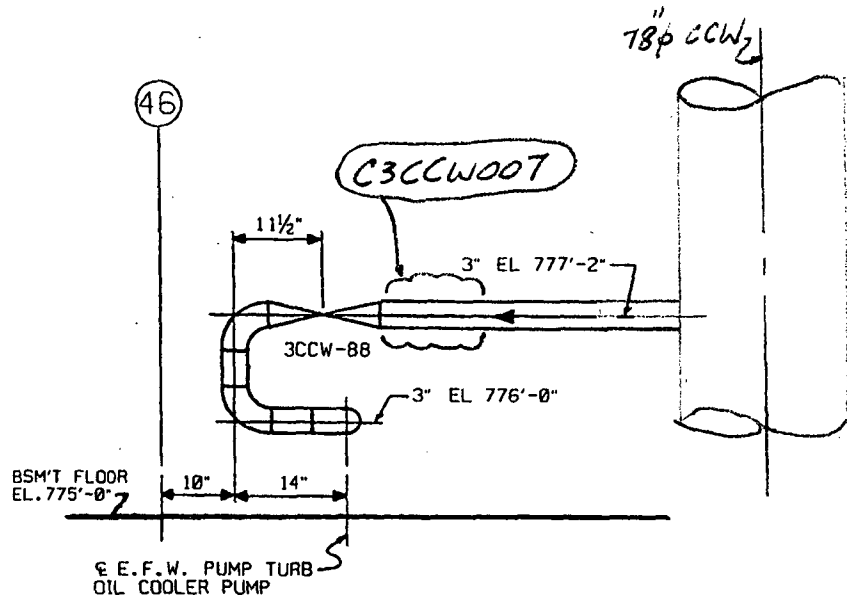
Previous inspection data: GEARY Armentrust ext 4322 Remarks _____

Piping Engineer: Inspect 3" pipe Date: _____

Notes: just upstream of valve

Inspect per NDE-946.

Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection



SECTION C-C (B-8)
 SCALE: 3/4" = 1" - 0"

Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted (Initial & Date) _____

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>CS</u>	UT Code #	<u>C3CCW010</u>
Building:	<u>Turbine Building</u>	O.D. (nom)	<u>8"x4" Tee</u>	Flow Diagram	<u>OFD-133A-3.4 [G-8]</u>
Elevation:	<u>789'</u>	Schedule	<u>40</u>	Dwg.(s):	<u>O-2400Q</u>
Column:	<u>H42</u>	Original			
		Wall Thk.	<u>0.332 / 0.237</u>		<u>50 PSIG @ 100°F</u>
System:	<u>CCW</u>	Min. Wall			
		Thk.	<u>0.282" (87.5%), 0.215" (66.7%)</u>		<u>Class G</u>
			<u>0.207" (87.5%), 0.158" (66.7%)</u>		

Piping/ Fitting is upstream/ downstream of valve 3CCW-97

Previous inspection data:	<u>n/a</u>	Remarks
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Piping Engineer: Geary L. Armentrout Date: 2/24/2007

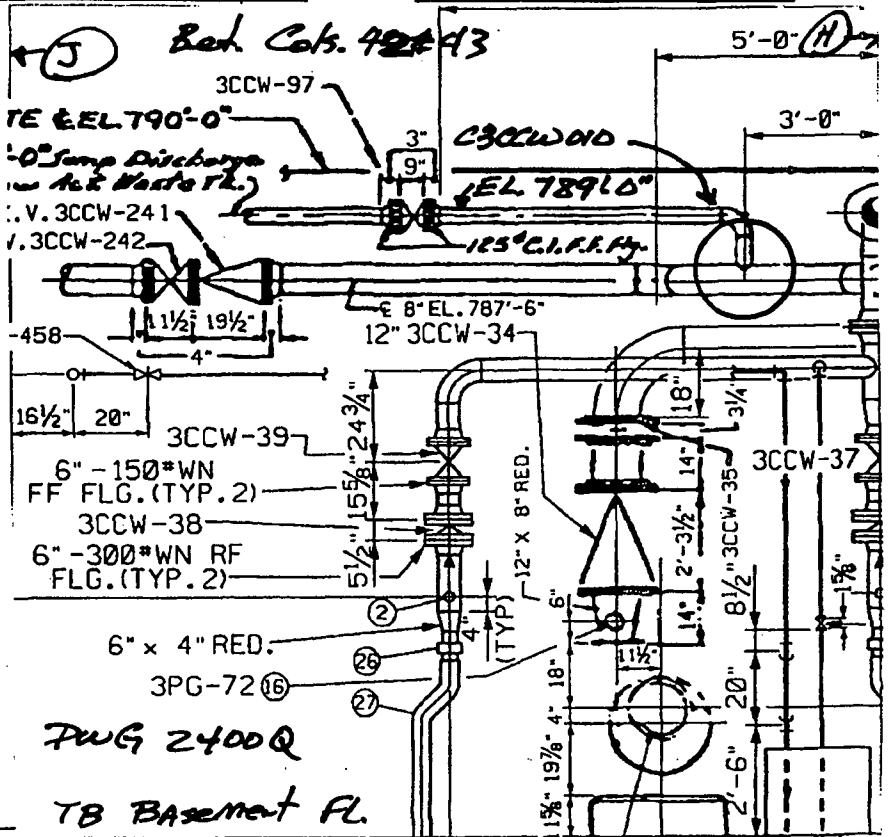
Notes:
Inspect 8"x4" tee
using 1" x 1" grids.

Inspect per NDE-946.

**Grid per Procedure SM/O/B/8530/002
(this is 'Corrosion' - NOT 'Erosion'
Inspection**

Insulation Removed (Initial & Date)

**Surface Prepped and Grid Painted
(Initial & Date)**



PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>C.S.</u>	UT Code #	<u>C3LPS002</u>
Building:	<u>TB Ground Floor</u>	O.D. (nom)	<u>14" Pipe</u>	Flow Diagram	<u>OFD-124A-3.2</u>
Elevation:	<u>Pipe Elev. 804'+3"</u>	Schedule	<u>Std.</u>	Dwg.(s):	<u>O-2401F</u>
Column:	<u>G/55</u>	Original			
		Wall Thk.	<u>0.375</u>		<u>100 PSIG @ 100° F</u>
		Min. Wall			
System:	<u>LPSW</u>	Thk.	<u>0.328" (87.5%)/0.250" (66.7%)</u>		<u>Class G</u>

Piping/ Fitting is upstream/ downstream of

3LPSW-49

Previous inspection data:

Remarks

GEARY Armentrout X-4322
Piping Engineer: ~~Bruce Jarrett X-4340~~

Date:

Notes: Using 1"x1" grids, inspect

pipe and elbow. Start on elbow 1"

away from weld, and grid (1) - 1" band.

Then continue onto pipe with (11) - 1"

bands (starting 1" away from weld).

Inspect per NDE-946.

Grid per Procedure

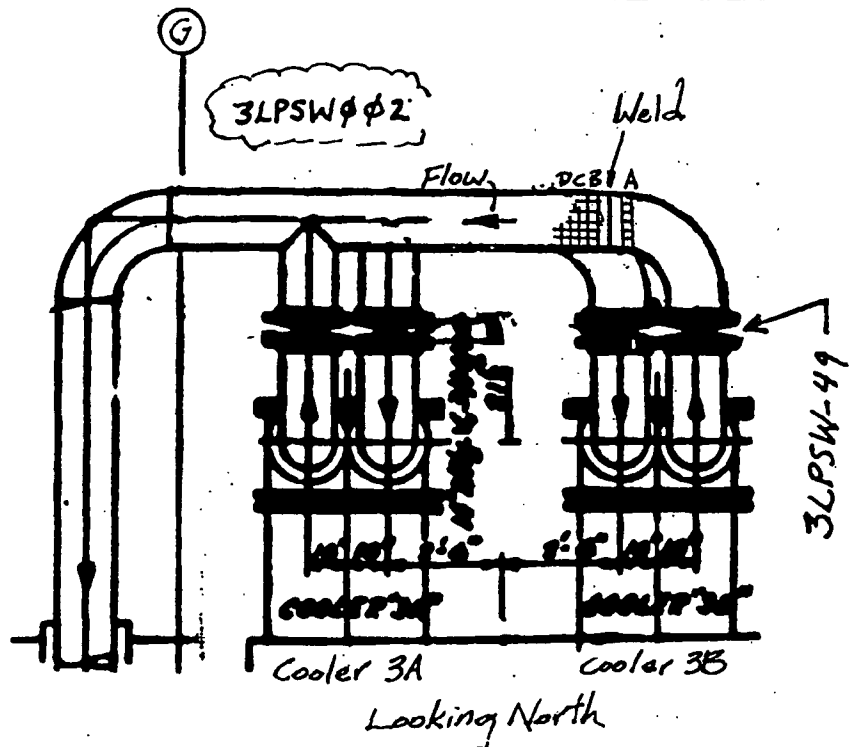
SM/O/B/8530/002 (this is 'Corrosion'

- NOT 'Erosion/Corrosion (E/C)'

Inspection

Insulation Removed (Initial & Date)

Surface Prepped and Grid Painted
(Initial & Date)



PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>C.S.</u>	UT Code #	<u>C3LPS005</u>
Building:	<u>TB Basement</u>	O.D. (nom)	<u>24" Pipe</u>	Flow Diagram	<u>OFD-124A-3.1</u>
Elevation:	<u>Pipe Elev. 789' ± 6"</u>	Schedule	<u>Std.</u>	Dwg.(s):	<u>O-2400J</u>
Column:	<u>L/47</u>	Original Wall Thk.	<u>0.375</u>		<u>100 PSIG @ 100° F</u>
System:	<u>LPSW</u>	Min. Wall Thk.	<u>0.328" (87.5%)/0.250" (66.7%)</u>		<u>Class F (OSC-530)</u>

Piping/ Fitting is upstream/ downstream of valve 3LPSW-132

Previous inspection data: _____ Remarks _____

Piping Engineer: Bruce Jarrett x-4340 Date: _____

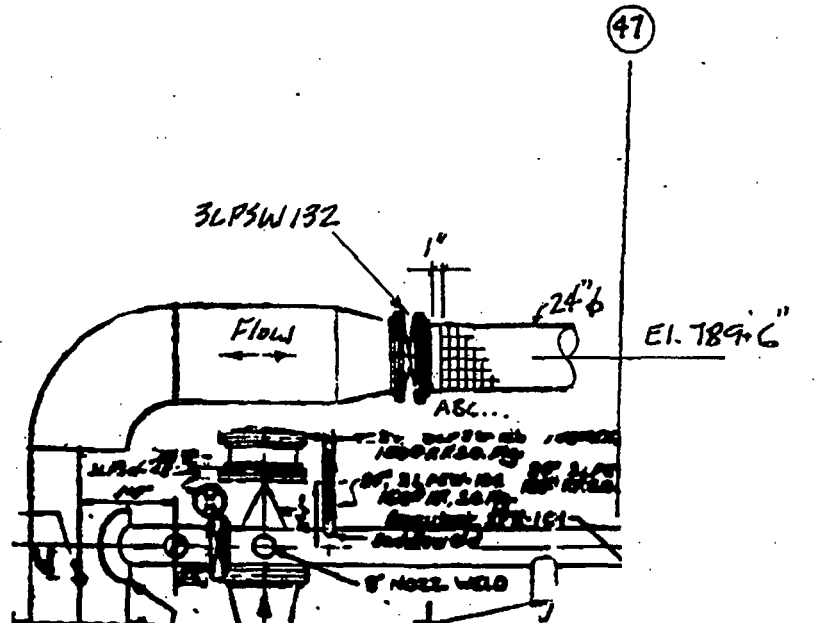
Notes: Using 1"x1" grids, inspect

pipe adjacent to valve. Starting 1"

away from valve, grid (12) - 1" bands.

Inspect per NDE-946.

Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection



Looking East

Basement EI. 775'

Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted (Initial & Date) _____

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>C.S.</u>	UT Code #	<u>C3LPS006</u>
Building:	<u>Aux. Bldg./East Pen Rm.</u>	O.D. (nom)	<u>10" Pipe</u>	Flow Diagram	<u>OFD-124B-3.4/G13</u>
Elevation:	<u>Pipe Elev. 816'+0"</u>	Schedule	<u>XS</u>	Dwg.(s):	<u>O-2439D / F11</u>
Column:	<u>Pen 22</u>	Original			
		Wall Thk.	<u>0.5"</u>		<u>180 PSIG @ 100° F</u>
		Min. Wall			
System:	<u>LPSW</u>	Thk.	<u>0.438"(87.5%), 0.334"(66.7%)</u>		<u>Class F (OSC-532)</u>
					<u>Flow Regime: 4</u>

Piping/ Fitting is upstream/ downstream of Penetration 22 & upstream of valve 3LPSW-15

Previous inspection data:	Remarks
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Piping Engineer: Bruce Jarrett x-4340 Date: _____

Notes: _____

Grid and inspect pipe by procedure.

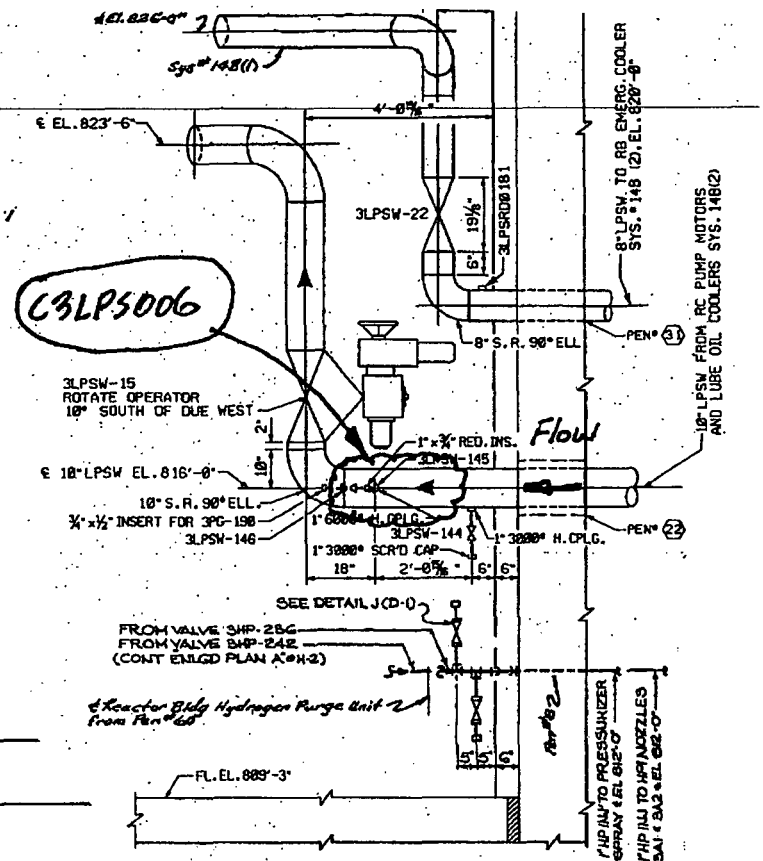
starting 1" away from
weld to elbow.

Inspect per NDE-946.

**Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection**

Insulation Removed (Initial & Date)

Surface Prepped and Grid Painted
(Initial & Date)



Unit: 3 Material: C.S. UT Code # C3LPSW007
 Building: Aux. Bldg. 2nd Flr. O.D. (nom): 16" Pipe Flow Diagram: OFD-124B-3.1/K3
 Elevation: Pipe Elev. 787' Schedule: Std. Dwg.(s): O-2437B
 Column: Qa/96 Wall Thk.: 0.375 100 PSIG @ 100° F
 System: LPSW Thk.: 0.328" (87.5%)/0.250" (66.7%) Class F (OSC-535)

Piping/ Fitting is upstream/ downstream of valve 3LPSW-71

Previous inspection data: _____ Remarks: _____

Piping Engineer: GEARY ARMSTRONG 4322 Date: _____
Bruce Jarrett x4240

Notes: Using 1"x1" grids, inspect

pipe adjacent to valve. Starting 1"

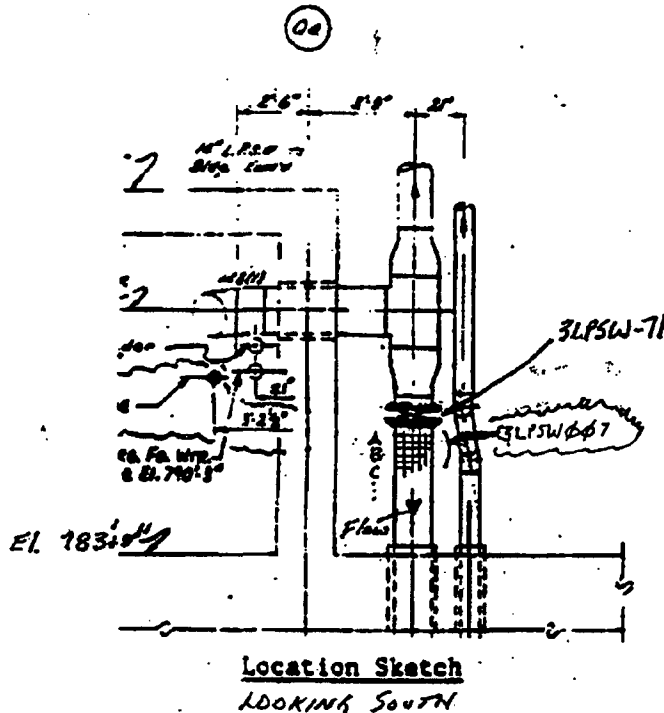
away from valve, grid (12) - 1" bands.

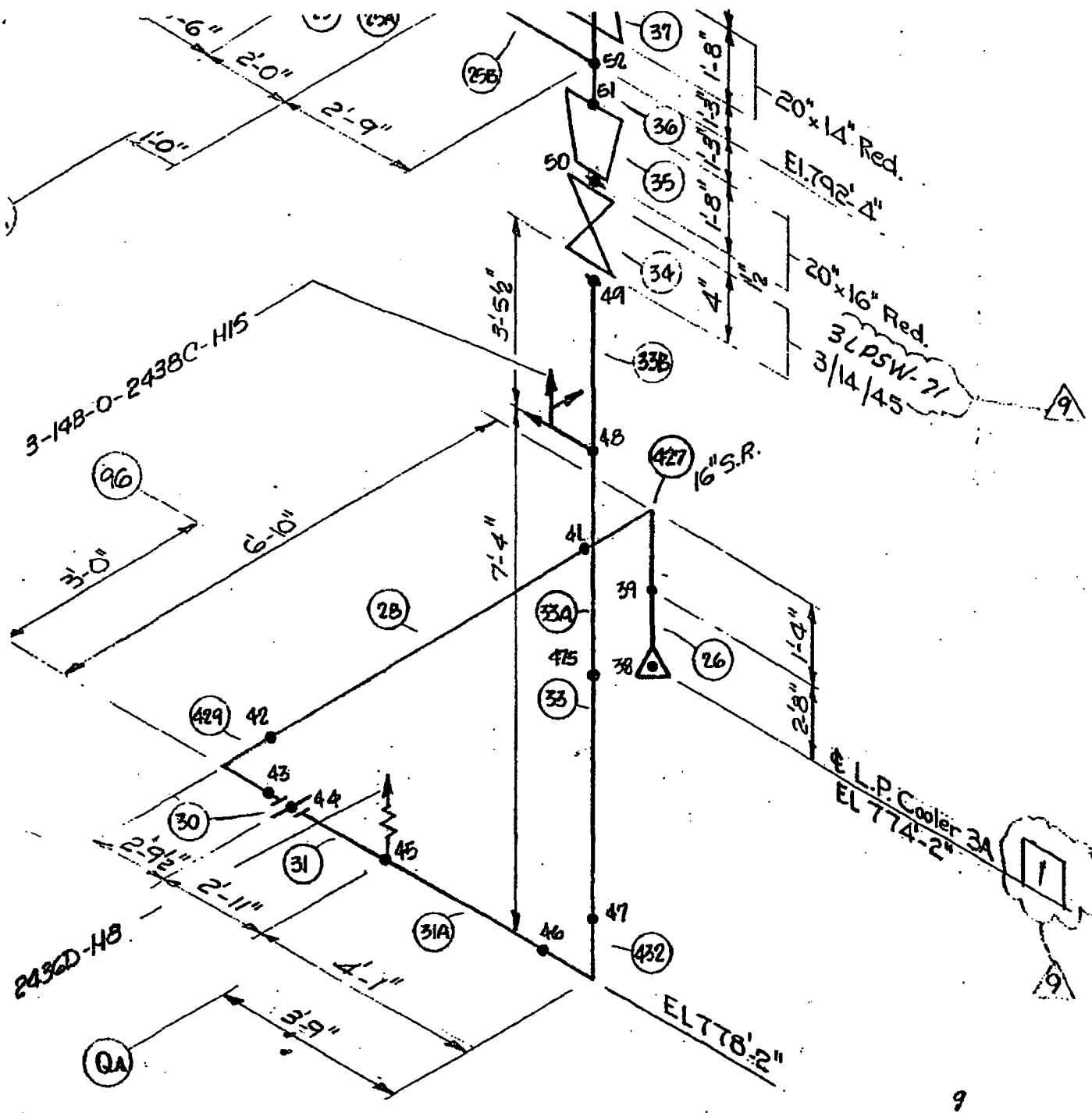
Inspect per NDE-946.

Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection


Insulation Removed (Initial & Date) _____



Surface Prepped and Grid Painted
 (Initial & Date) _____





VERLAP REGION

 : PIPE CLASS BOUNDARIES

 : GATE, GLOBE
 : CHECK VALV

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>C.S.</u>	UT Code #	<u>C3LPS012</u>
Building:	<u>Aux. Bldg.</u>	O.D. (nom)	<u>8"x8" Tee</u>	Flow Diagram	<u>OFD-124B-3.2</u>
Elevation:	<u>Pipe Elev. 825'+0"</u>	Schedule	<u>40</u>	Dwg.(s):	<u>O-2439B</u>
Column:	<u>Q-96</u>	Original Wall Thk.	<u>0.322"</u>		<u>100 PSIG @ 100° F</u>
System:	<u>LPSW</u>	Min. Wall Thk.	<u>0.282"(87.5%), 0.215"(66.7%)</u>		<u>Class F (OSC-535)</u>
		<u>Flow Regime: 4</u>			<u>3-14-06 (dcp 84)</u>

Piping/ Fitting is upstream/ downstream of Valve 3LPSW-79

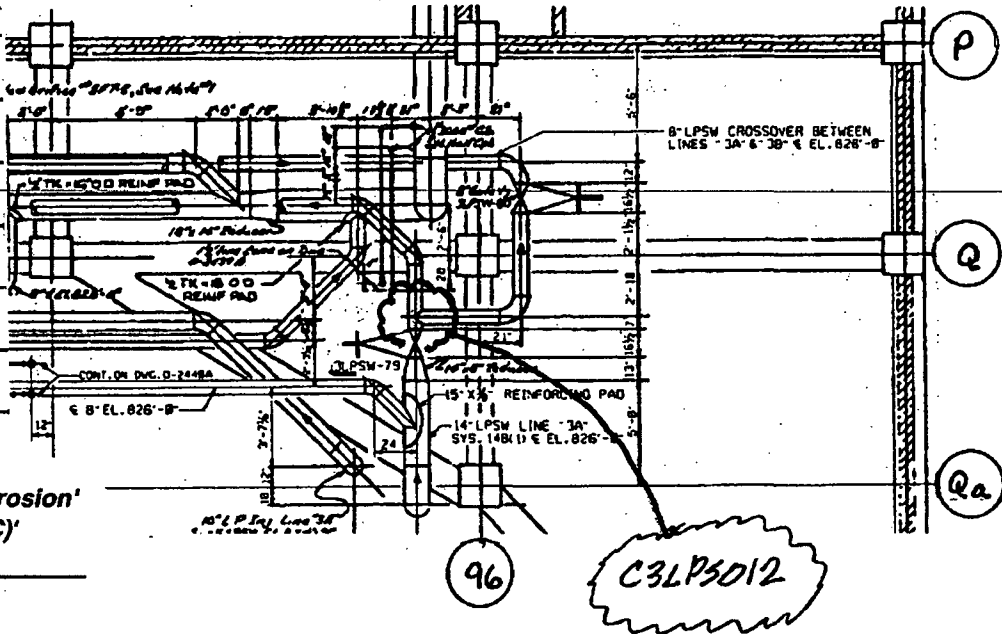
Previous inspection data: _____ Remarks _____

Piping Engineer: Bruce Jarrett x-4340 Date: _____

Notes: Inspect 8" x 8" Tee

Inspect per NDE-946.

Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection



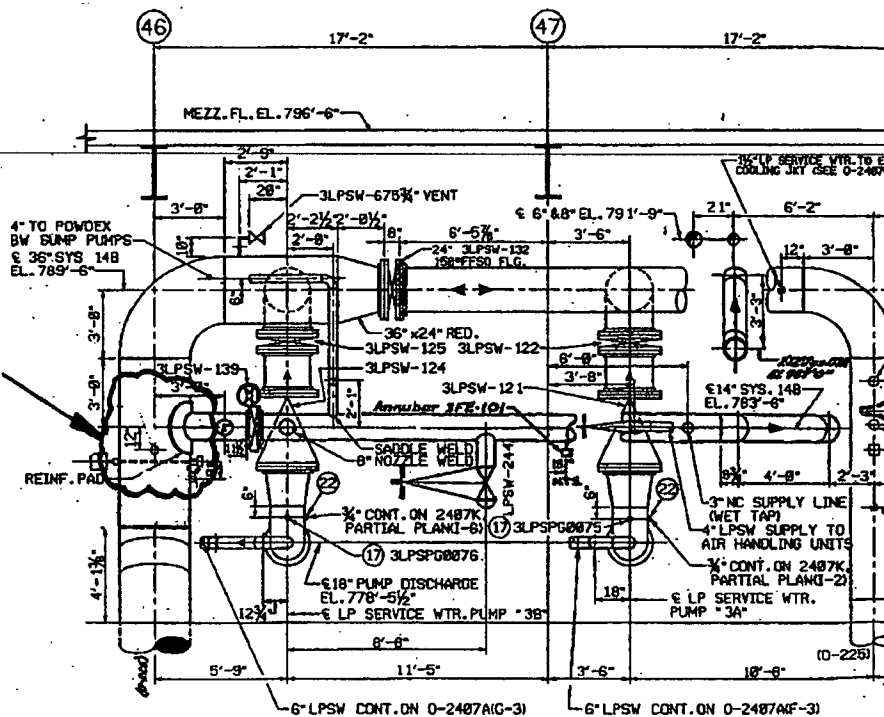
✓

Piping/ Fitting is upstream/ downstream of **Valve 3LPSW-139**

Piping Engineer: GARY ARMENTRANT 4322
Bruce Jarrett x-4340 Date: _____

fabricated tee

**Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection**



Insulation Removed (Initial & Date)

Surface Prepped and Grid Painted
(Initial & Date) _____

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>C.S.</u>	UT Code #	<u>C3LPS014</u>
Building:	<u>Aux. Bldg.</u>	O.D. (nom)	<u>14"x10" Tee</u>	Flow Diagram	<u>OFD-124B-3.1</u>
Elevation:	<u>Pipe Elev. 826'+0"</u>	Schedule	<u>Std.</u>	Dwg.(s):	<u>O-2439B</u>
Column:	<u>Q-Qa / 91</u>	Original Wall Thk.	<u>0.375" / 0.365"</u>		<u>100 PSIG @ 100° F</u>
System:	<u>LPSW</u>	Min. Wall Thk.	<u>0.328"(87.5%), 0.250"(66.7%)</u>		<u>Class F (OSC-533)</u>
	<u>Flow Regime: 4</u>		<u>0.319"(87.5%), 0.243"(66.7%)</u>		<u>3-14-05 (dcp CE01)</u>

Piping/ Fitting is upstream/ downstream of Valve 3LPSW-6

Previous inspection data: _____ Remarks _____

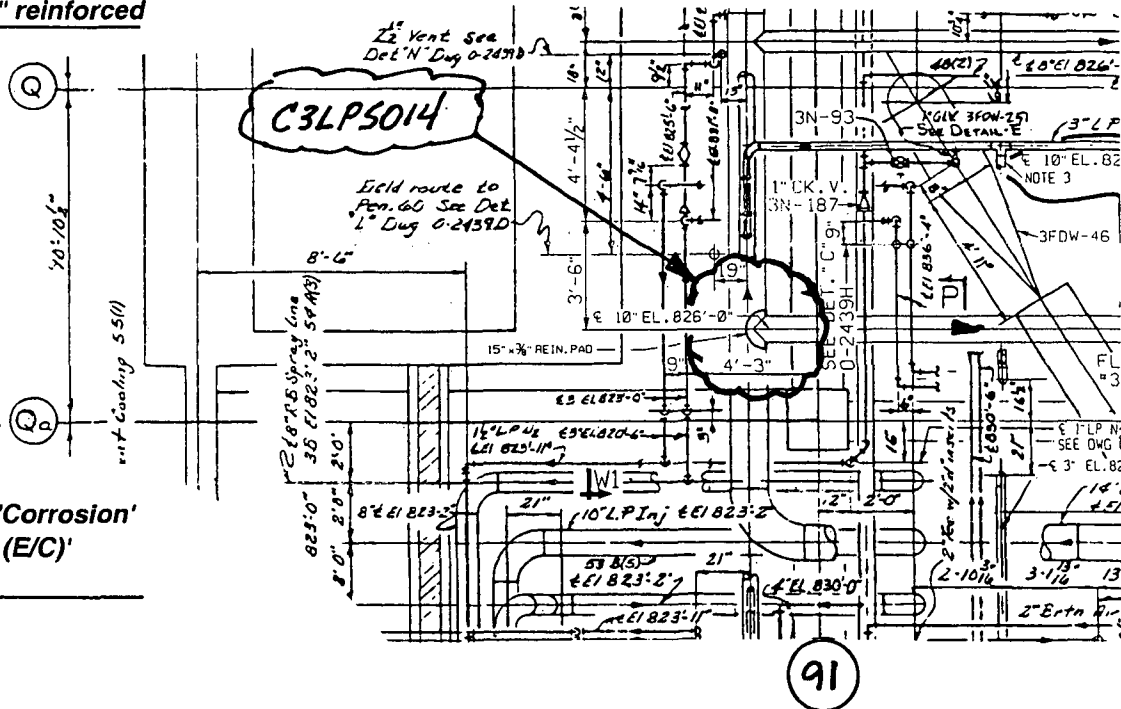
Piping Engineer: Gregory Armentrout x-4322 Date: _____
Bruce Jarrett x-4340

Notes: Inspect 14"x10" reinforced

fabricated tee

Inspect per NDE-946.

Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection



Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted (Initial & Date) _____

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>CS</u>	UT Code #	<u>C3LPS019</u>
Building:	<u>Turbine Bldg.</u> <u>Pipe Elev. 851'+3</u>	O.D. (nom)	<u>4"</u>	Flow Diagram	<u>OFD-124A-3.2 (C11)</u>
Elevation:	<u>13/16"</u>	Schedule	<u>40</u>	Dwg.(s):	<u>O-2517E</u>
Column:	<u>L / 55-56</u>	Original Wall Thk.	<u>0.237"</u>		<u>100 PSIG @ 100° F</u>
System:	<u>LPSW</u>	Min. Wall Thk.	<u>0.207"(87.5%), 0.158"(66.7%)</u>		<u>Class G</u>

Piping/ Fitting is upstream/ downstream of

valve LPSW-842

Previous inspection data:

Remarks

Piping Engineer: *Inspect 4" pipe*

Date:

Notes: *just downstream of*

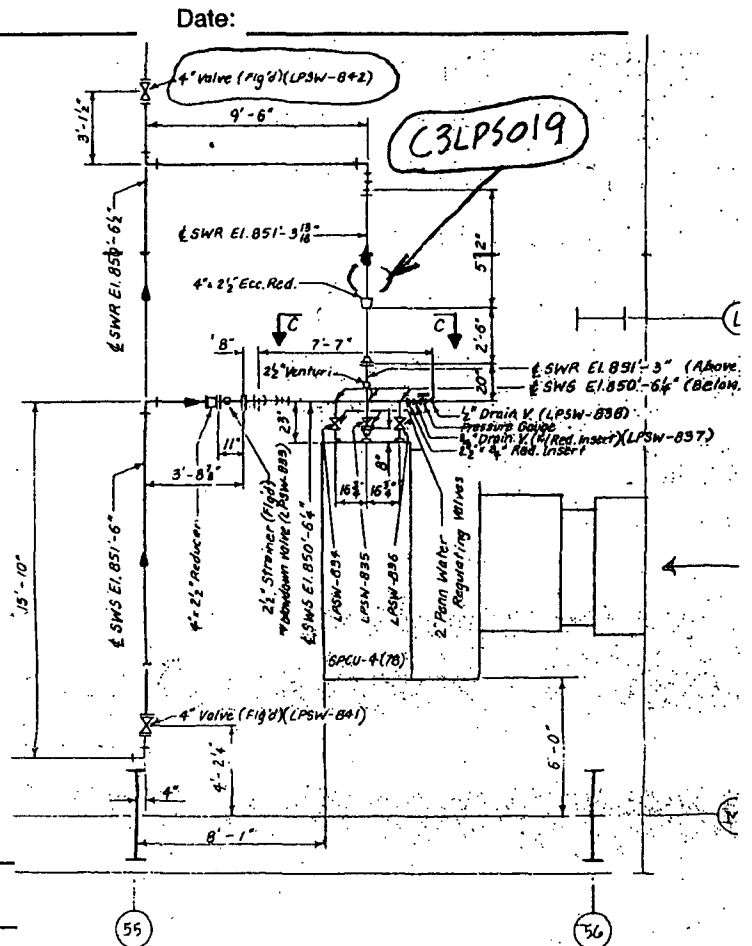
4"x2.5" reducer

Inspect per NDE-946.

**Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection**

Insulation Removed (Initial & Date)

**Surface Prepped and Grid Painted
(Initial & Date)**



PLAN e STATION SUPPORT OFF. + EL. 850 + 0
1/4" = 1' - 0"

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>CS</u>	UT Code #	<u>C3LPS020</u>
Building:	<u>Aux. Bldg 1st Floor</u>	O.D. (nom)	<u>16"</u>	Flow Diagram	<u>OFD-124B-3.1 (H3)</u>
Elevation:	<u>Pipe Elev. 774'+2"</u>	Schedule	<u>Std.</u>	Dwg.(s):	<u>O-2436D & J</u>
Column:	<u>Q-Qa / 91-92</u>	Original Wall Thk.	<u>0.375"</u>		<u>100 PSIG @ 100° F</u>
System:	<u>LPSW</u>	Min. Wall Thk.	<u>0.328"(87.5%), 0.250"(66.7%)</u>		<u>Class F (OSC-533)</u>

Piping/ Fitting is upstream/ downstream of flow transmitter 3FT-77

Previous inspection data: _____ Remarks _____

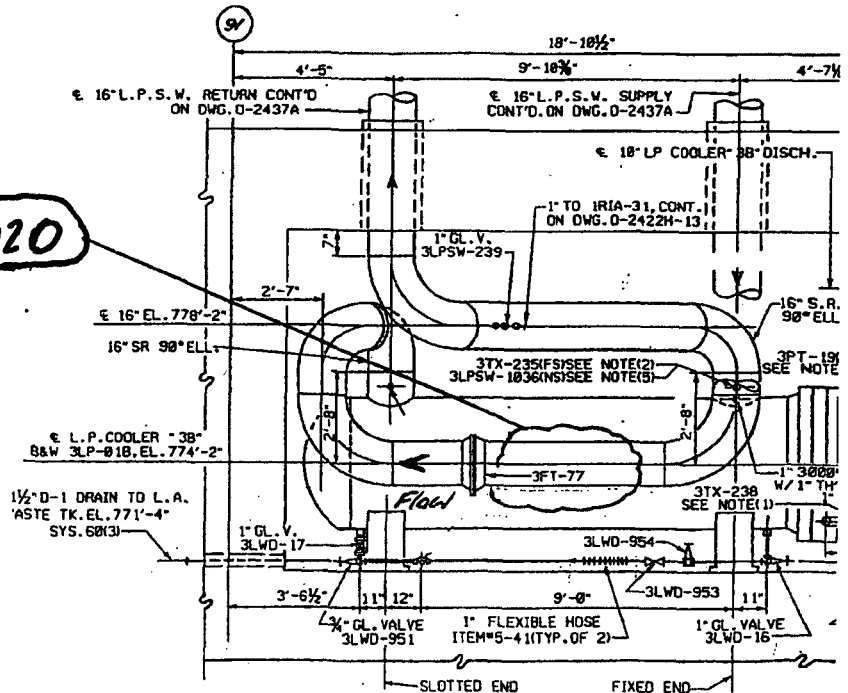
Piping Engineer: Inspect 16" pipe Date: _____

Notes: just upstream of flow

transmitter

Inspect per NDE-946.

**Grid per Procedure
SMO/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection**



Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted (Initial & Date) _____

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>CS</u>	UT Code #	<u>C3LPS024 pg 1 of 2</u>
Building:	<u>RB Ground Floor</u>	O.D. (nom)	<u>8"x1" Tee</u>	Flow Diagram	<u>OFD-124B-3.2 (E7)</u>
Elevation:	<u>Pipe Elev. 814'+0"</u>	Schedule	<u>40</u>	Dwg.(s):	<u>O-2479A & J</u>
Column:	<u>See Attached dwg.</u>	Original			
		Wall Thk.	<u>0.322" / 0.133"</u>		<u>100 PSIG @ 193° F</u>
		Min. Wall			
System:	<u>LPSW</u>	Thk.	<u>0.282"(87.5%), 0.215"(66.7%)</u>		<u>Class F (OSC-8490)</u>
			<u>0.116"(87.5%), 0.089"(66.7%)</u>		

Piping/ Fitting is upstream/ downstream of

valve 21 DELTA 5 100

Previous inspection data:

Piping Engineer: Starting 3" upstream

Notes: of valve 3LPSW-547,

Inspect 2 ft. of 8" pipe using 1" grids,

& also inspect 1" pipe out to valve

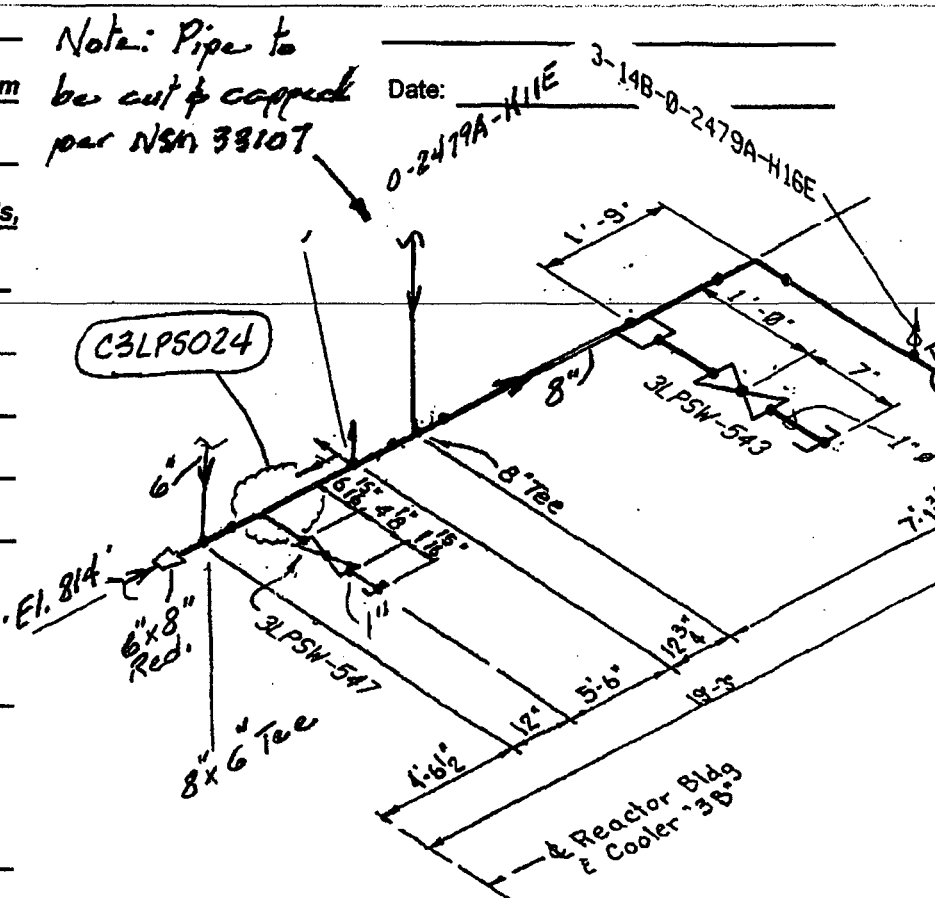
3LPSW-547

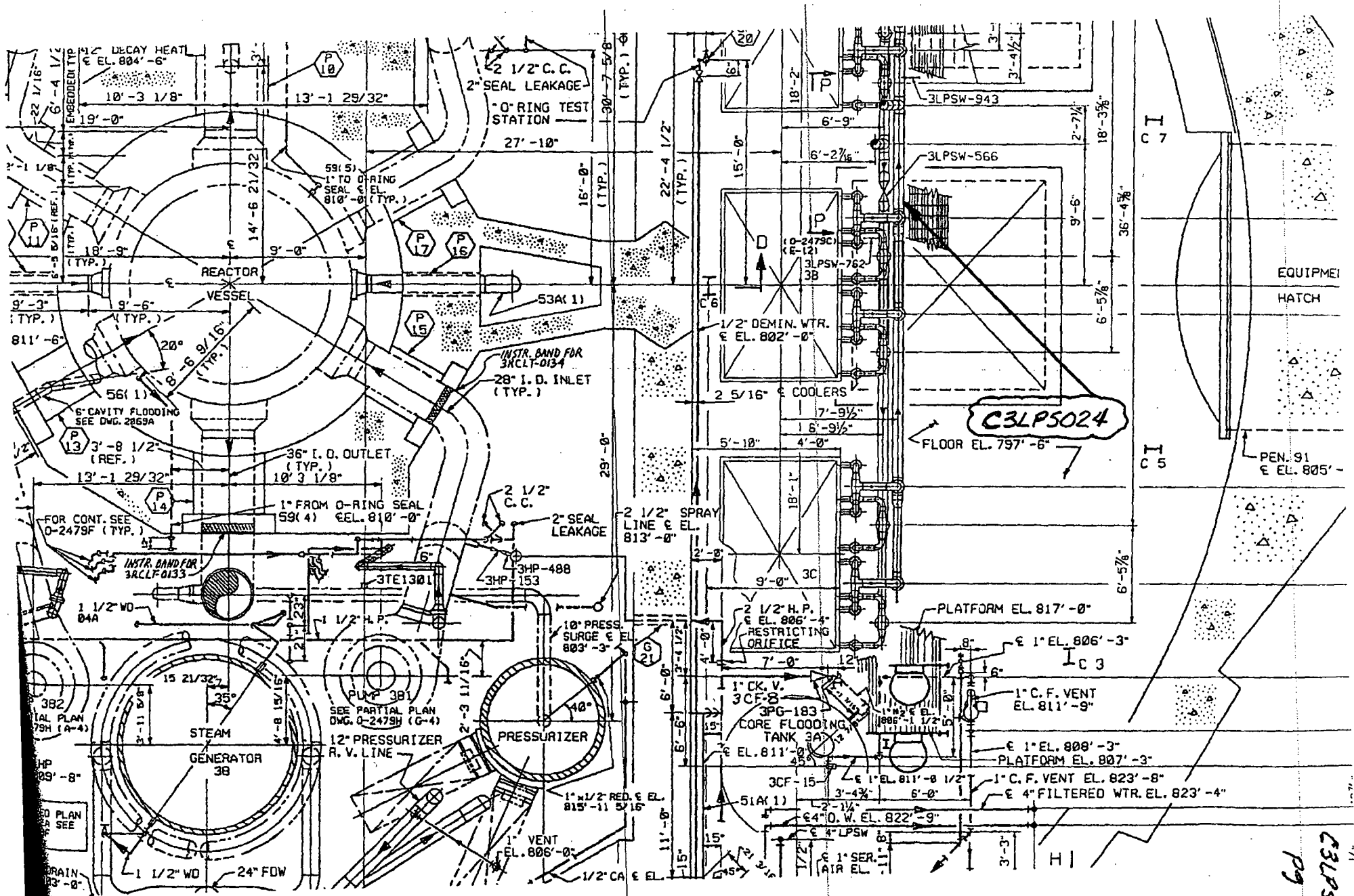
Inspect per NDE-946.

Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection

Insulation Removed (Initial & Date)

**Surface Prepped and Grid Painted
(Initial & Date)**





2479A

C3LP5024
pg 2 of 2

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material:	<u>CS</u>	UT Code #:	<u>C3LPS029</u>
Building:	<u>Auxiliary Building</u>	O.D. (nom):	<u>8"x1" Tee</u>	Flow Diagram:	<u>OFD-124B-3.1 [E-3]</u>
Elevation:	<u>789'-0 1/2"</u>	Schedule:	<u>40</u>	Dwg.(s):	<u>O-2437E [C-7]</u>
Column:	<u>Qa-89</u>	Original Wall Thk.:	<u>0.332 / 0.133</u>		<u>100 PSIG @ 100°F</u>
System:	<u>LPSW</u>	Min. Wall Thk.:	<u>0.282" (87.5%), 0.215" (66.7%)</u>		<u>Class F OSC-533</u>
			<u>0.116" (87.5%), 0.089" (66.7%)</u>		

Piping/ Fitting is upstream/ downstream of 3LPSW-109; 1" Branch contains valve 3LPSW-719
 Previous inspection data: n/a Remarks Compoonet Cooler Section below is looking South

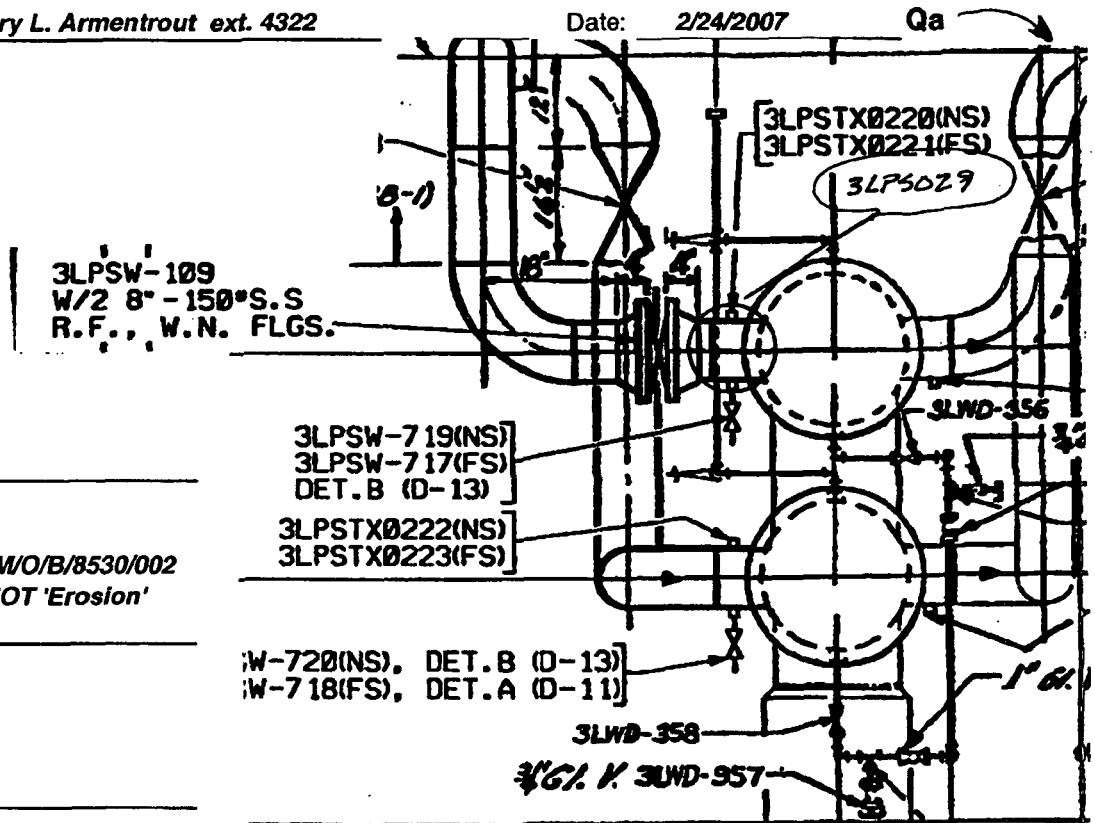
Piping Engineer: Geary L. Armentrout ext. 4322

Date: 2/24/2007

Qa

Notes:

*Inspect 8"x1" tee
using 1" x 1" grids.*



Inspect per NDE-946.

Grid per Procedure SM/O/B/8530/002
(this is 'Corrosion' - NOT 'Erosion'
Inspection

Insulation Removed (Initial & Date)

Surface Prepped and Grid Painted
(Initial & Date)

PIPING/FITTING UT DATA SHEET

Sheet 1 of 2

Unit:	<u>3</u>	Material	<u>CS</u>	UT Code #	<u>C3LPS032</u>
Building:	<u>Turbine Building</u>	O.D. (nom)	<u>30"x3" Tee</u> <u>4" 6" BRANCH</u>	Flow Diagram	<u>OFD-124A-3.1 [G-3]</u>
Elevation:	<u>778'-6"</u>	Schedule	<u>Std. / 40</u>	Dwg.(s):	<u>O-2407A</u>
Column:	<u>K-46</u>	Original Wall Thk.	<u>0.375 / 0.216 / .280</u>		<u>50 PSIG @ 100°F</u>
System:	<u>LPSW</u>	Min. Wall Thk.	<u>0.328" (87.5%), 0.250" (66.7%)</u>		<u>Class F</u>
			<u>0.189" (87.5%), 0.144" (66.7%)</u>		<u>OSC-2714 & OSC-1721</u>

0.245" (87.5%), 0.187" (66.7%) ← 6" Line

Piping/ Fitting is upstream/ downstream of valve 3LPSW-128

Previous inspection data: n/a Remarks

Piping Engineer: Geary L. Armentrout ext. 4322

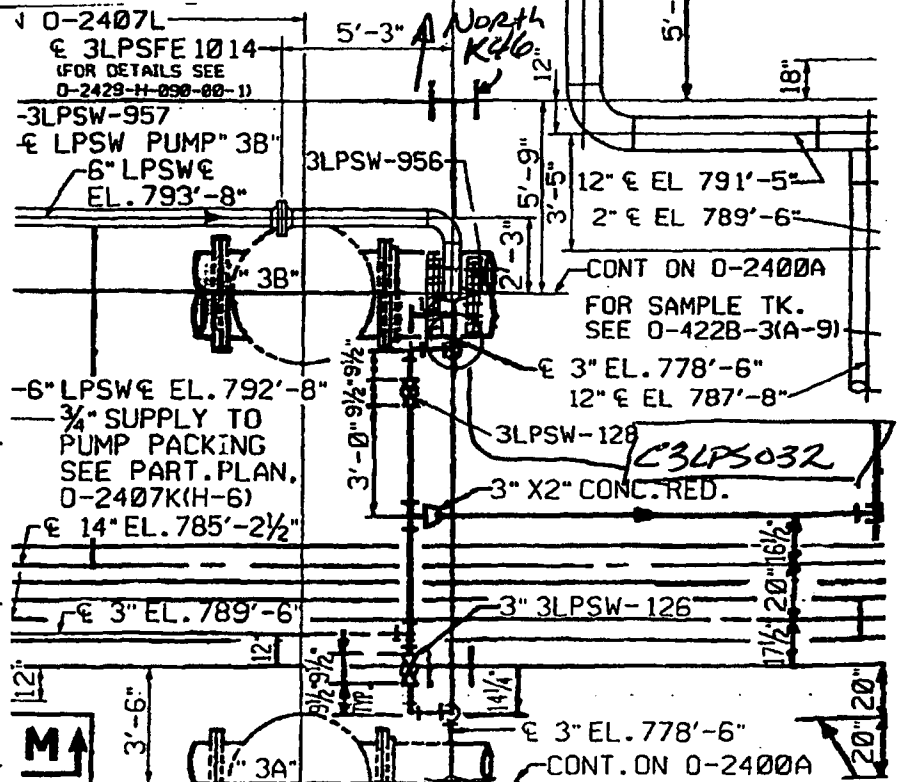
Date: 11/02/2007
2/26/2007

Notes: *
Inspect 30"x3" tee & 6" BRANCH
using 1" x 1" grids.

* 12" o/s & d/s from
center of tee
(2' on 30" line)
total

Inspect per NDE-946.

Grid per Procedure SM/O/B/8530/002
(this is 'Corrosion' - NOT 'Erosion'
Inspection)

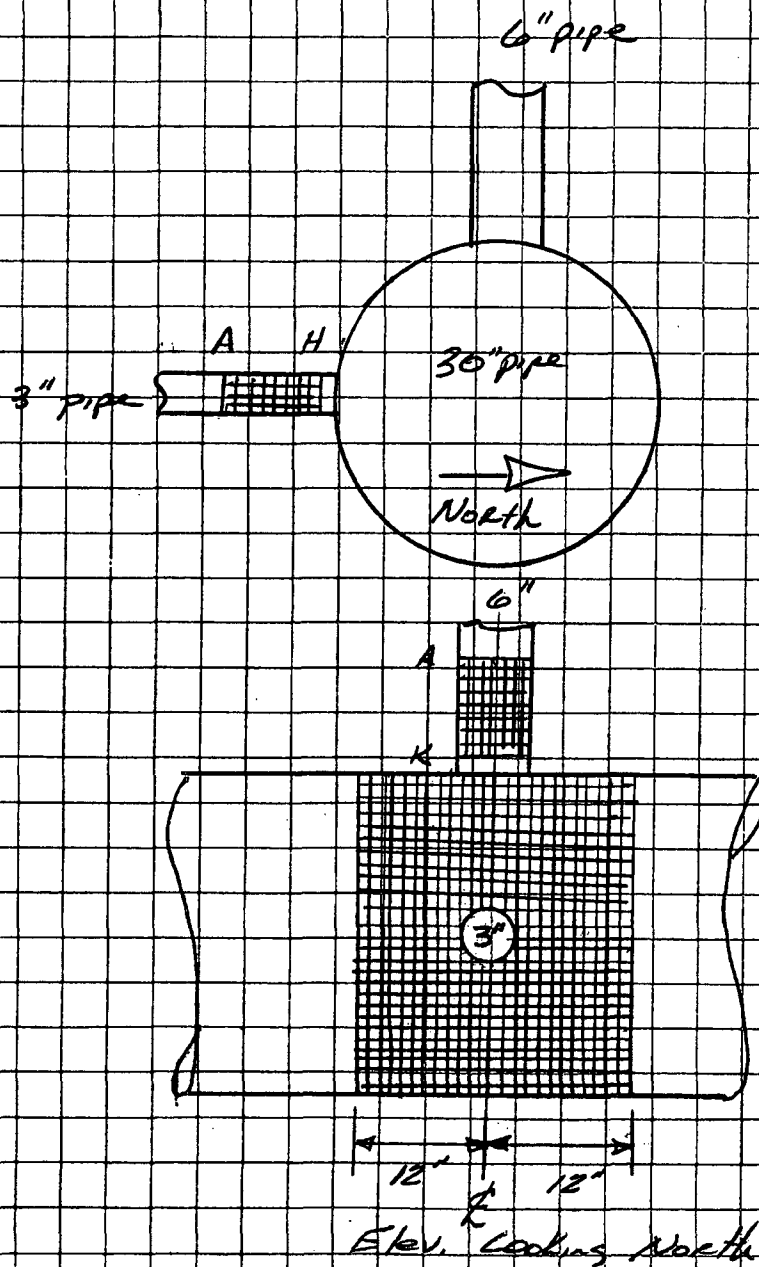


Insulation Removed (Initial & Date)

Surface Prepped and Grid Painted
(Initial & Date)

PLAN VIEW

Station ONS Unit 3 Rev. _____ File No. _____ Sheet 2 Of 2
Subject Piping/Fittings UT DATA Sheet
C3LP5032 By gcr Date 11-17-07
Prob No. _____ Checked By _____ Date _____



PIPING/FITTING UT DATA SHEET

Sheet 1 of 2

Unit:	<u>3</u>	Material:	<u>CS</u> <u>12"x8"</u>	UT Code #:	<u>C3LPS033</u>
Building:	<u>Turbine Bldg</u>	O.D. (nom):	<u>Reducer</u>	Flow Diagram:	<u>OFD-124B-3.1</u>
Elevation:	<u>784'</u>	Schedule:	<u>80</u>	Dwg.(s):	<u>O-2400I</u>
Column:	<u>M46</u>	Original Wall Thk.:	<u>0.500" /</u>		<u>Class F OSC-1357</u>
System:	<u>LPSW</u>	Min. Wall Thk.:	<u>0.438" (87.5%), 0.334" (66.7%)</u>		

The Reducer is Downstream of Valve 3LPSW-356

Previous inspection data: _____

Piping Engineer: Geary Armentrout

Date: 11/18/2007

Notes:

Start Grid at 1" Coupling using 3/4"x3/4" Grids

expanding to 1"x1" Grids at the 12" end

Use continuous scanning first 4 rows (A-D)

Particularly around the coupling which

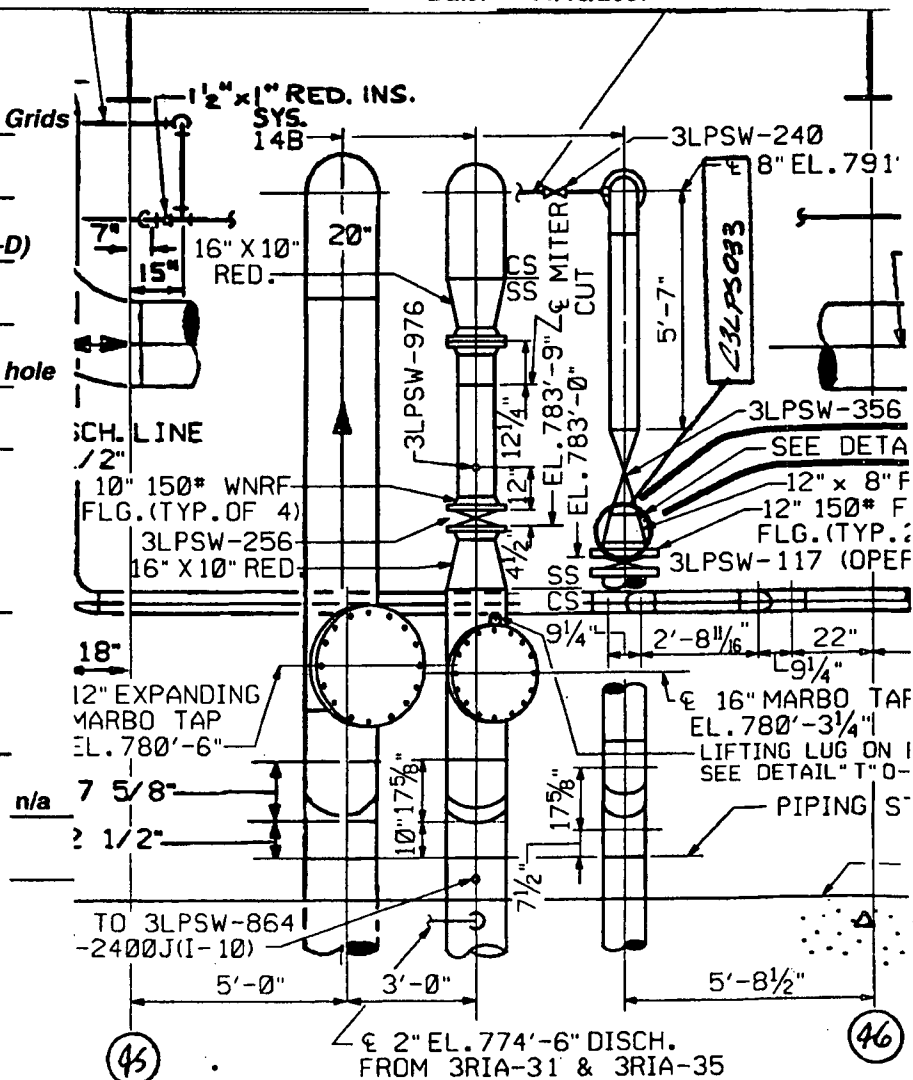
was the location of a cavitation thru-wall hole

Inspect per NDE-946

Grid per Procedure SM/O/B/8530/002
(this is 'Corrosion' - NOT
'Erosion/Corrosion (E/C)' Inspection

Insulation Removed (Initial & Date) _____

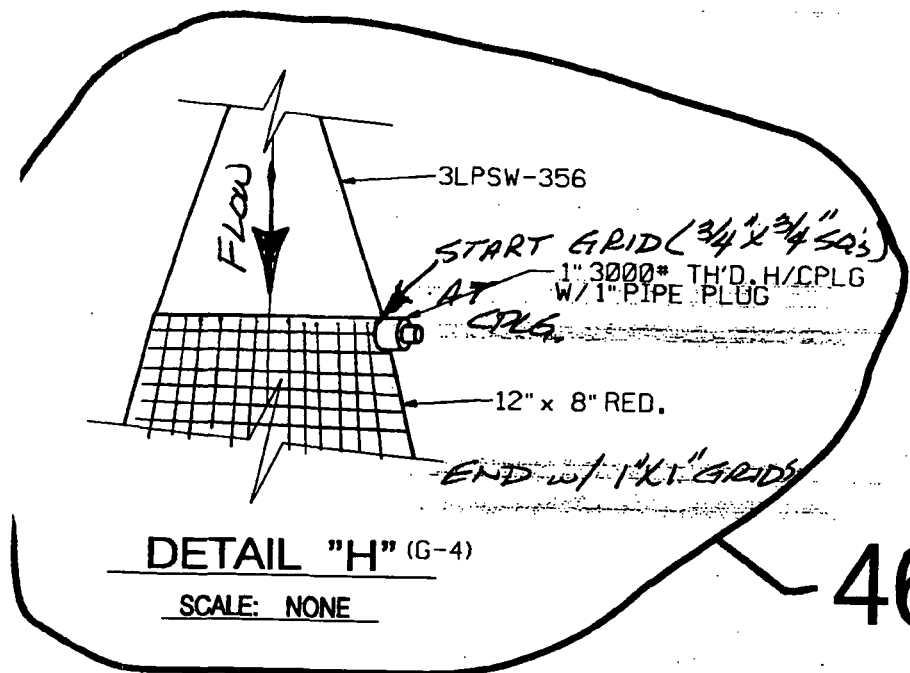
Surface Prepped and Grid Painted
(Initial & Date) _____



PIPING/FITTING UT DATA SHEET

Sheet 2 of 2

UT Code #C3LPS033



PIPING/FITTING UT DATA SHEET

Unit:	3	Material	CS	UT Code #	C3LPS044
Building:	TB Basement	O.D. (nom)	3"	Flow Diagram	OFD 124A-3.1 (G8)
Elevation:	Pipe Elev. 789'+6"	Schedule	40	Dwg.(s):	O-2407A
Column:	K-L / 46-47	Original	Wall Thk. 0216" /		100 psig @ 100°F
System:	LPSW	Min. Wall	Thk. 0.189" (87.5%)	0.144" (66.7%)	Class F (OSC-1721)

The Straight Pipe is Downstream of valve 3LPSW-129

Previous inspection data: _____

Piping Engineer: Geary L. Armentrout

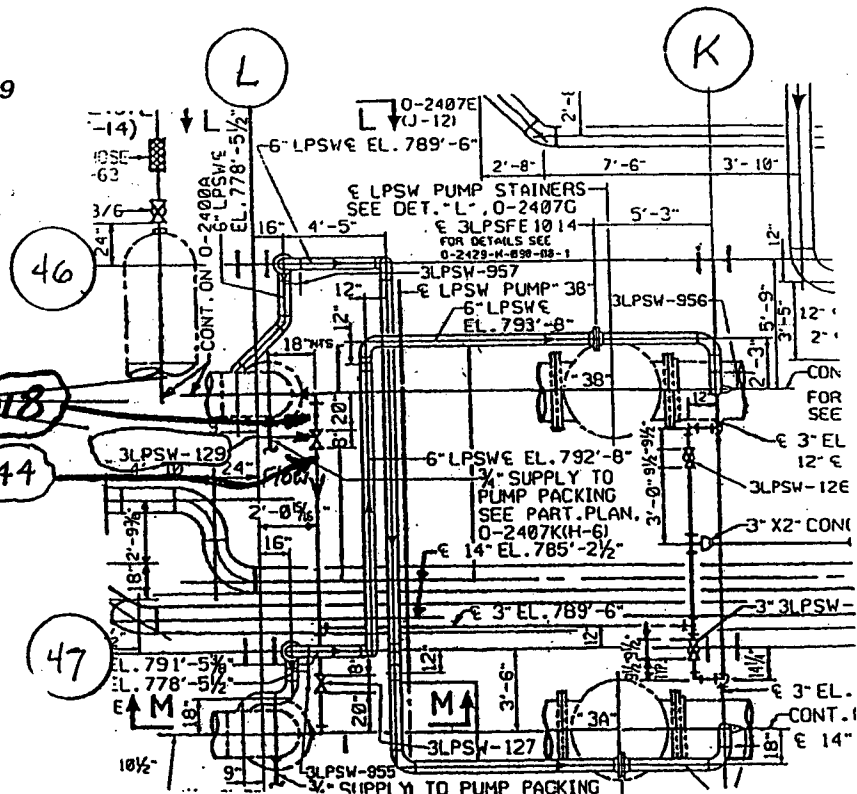
Date: 10/1/2009

Notes:

Inspect 3" pipe upstream of valve 3LPSW-129

Inspect per NDE-946

Grid per Procedure SM/O/B/8530/002
(this is 'Corrosion' - NOT
'Erosion/Corrosion (E/C)' Inspection



Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted
 (Initial & Date) _____

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>Carbon Steel</u>	UT Code #	<u>C3LPS046</u>
Building:	<u>Rx Bldg</u>	"	<u>4"</u>	Flow Diagram	<u>124 OFD-42B-3.4</u>
Elevation:	<u>833'-6"</u>	Schedule	<u>40</u>	Dwg.(s):	<u>O-2480A and C</u>
Column:	<u>West of RBCUs</u>	Original Wall Thk.	<u>0.237" /</u>		<u>100° / 100 psig</u>
System:	<u>LPSW</u>	Min. Wall Thk.	<u>0.207" (87.5%), 0.158" (66.7%)</u>		<u>Class F (OSC 1127-02)</u>

The pipe is upstream of valve 3LPSW-563

Previous inspection data: none

Piping Engineer: Geary L. Armentrout Date: 11/6/2010

Notes:

Survey all 4" pipe between valve & tee including the 4" side of the 10"x 4" tee (about a total length of 1 foot)

SEE ATTACHED SKETCH

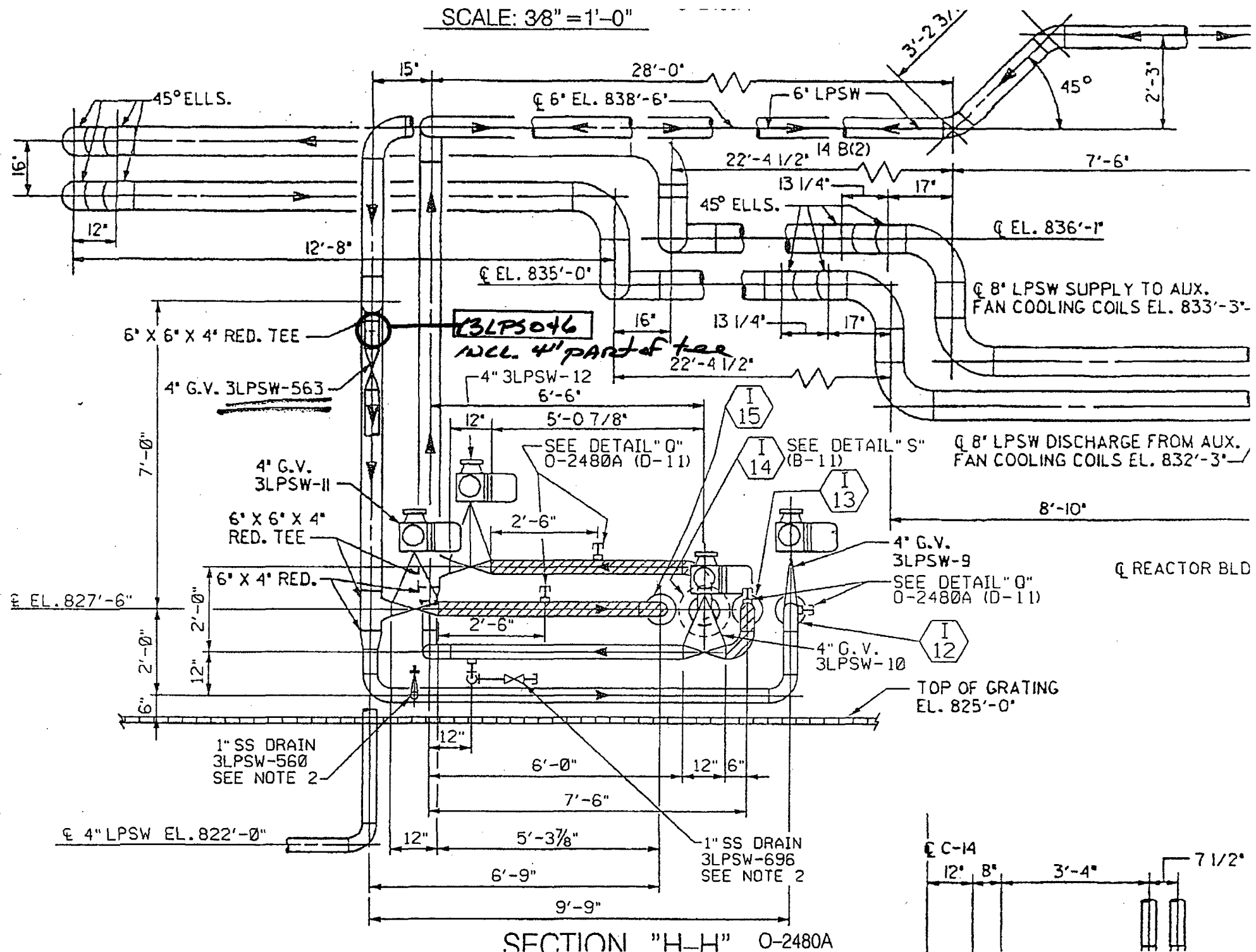
Inspect per NDE-946

Grid per Procedure SM/O/B/8530/002
(this is 'Corrosion' - NOT
'Erosion/Corrosion (E/C)' Inspection

Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted
 (Initial & Date) _____

SCALE: $\frac{3}{8}'' = 1'-0''$



PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>Carbon Steel</u>	UT Code #	<u>C3LPS047</u>
Building:	<u>Turbine Bldg.</u>	"	<u>2"</u>	Flow Diagram	<u>OFD-124A-3.2</u>
Elevation:	<u>775+9</u>	Schedule	<u>80</u>	Dwg.(s):	<u>O-2400G</u>
Column:	<u>H55</u>	Original Wall Thk.	<u>0.218" /</u>		<u>100° / 100 psig</u>
System:	<u>LPSW</u>	Min. Wall Thk.	<u>0.191" (87.5%), 0.145" (66.7%)</u>		<u>Class G</u>

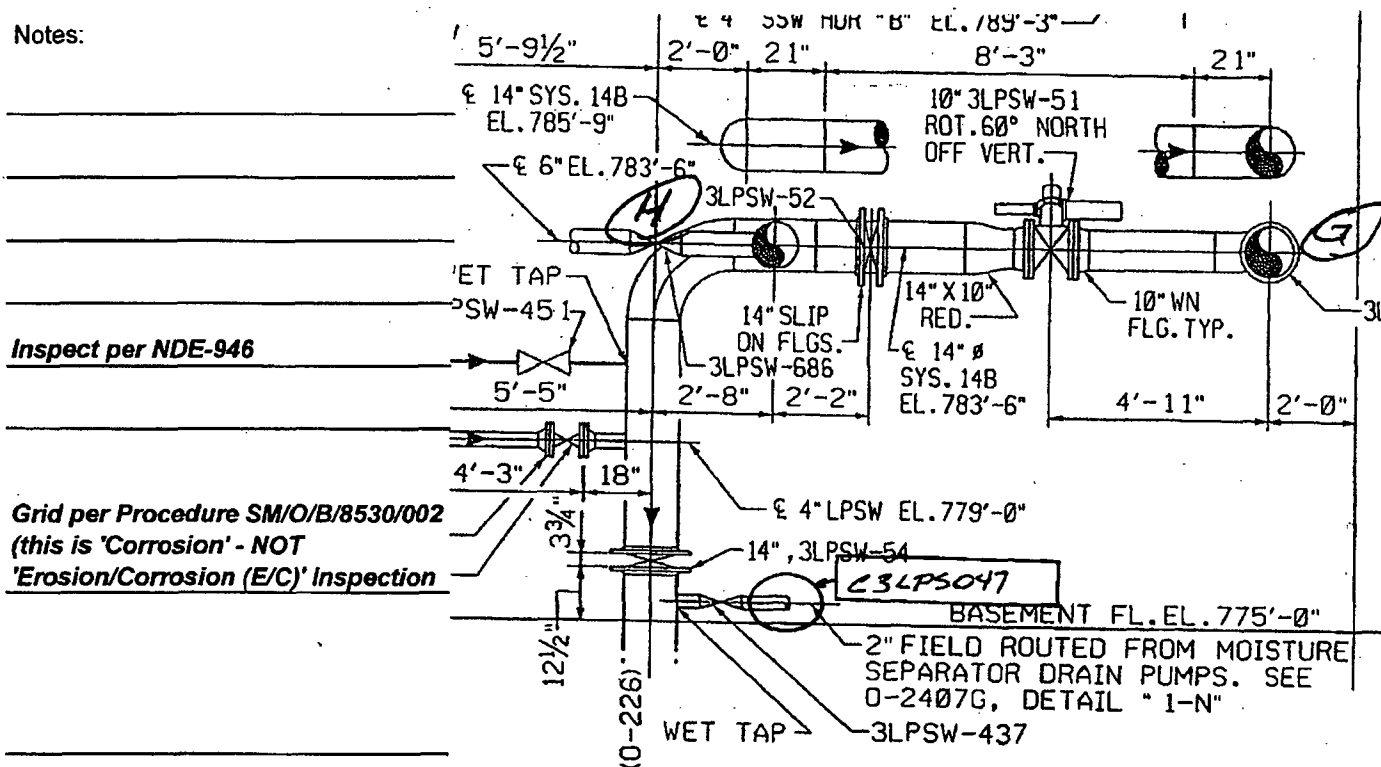
The pipe is upstream of *valve 3LPSW-437*

Previous inspection data: *none*

Piping Engineer: *Geary L. Armentrout*

Date: **1/5/2011**

Notes:



Insulation Removed (Initial & Date)

**Surface Prepped and Grid Painted
(Initial & Date)**

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>CS</u>	UT Code #	<u>C3HPS002</u>
Building:	<u>Aux. Bldg. 1st Flr.</u>	O.D. (nom)	<u>4" Pipe</u>	Flow Diagram	<u>OFD-124C-3.3 (E3)</u>
Elevation:	<u>Pipe Elev. 778'+6"</u>	Schedule	<u>40</u>	Dwg.(s):	<u>O-1436D</u>
Column:	<u>P-Q / 83</u>	Original Wall Thk.	<u>0.237"</u>		<u>150 PSIG @ 100° F</u>
System:	<u>HPSW</u>	Min. Wall Thk.	<u>0.207"(87.5%), 0.158"(66.7%)</u>		<u>Class G</u>

Piping/ Fitting is upstream/ downstream of valve 3HPSW-112

Previous inspection data: _____ Remarks _____

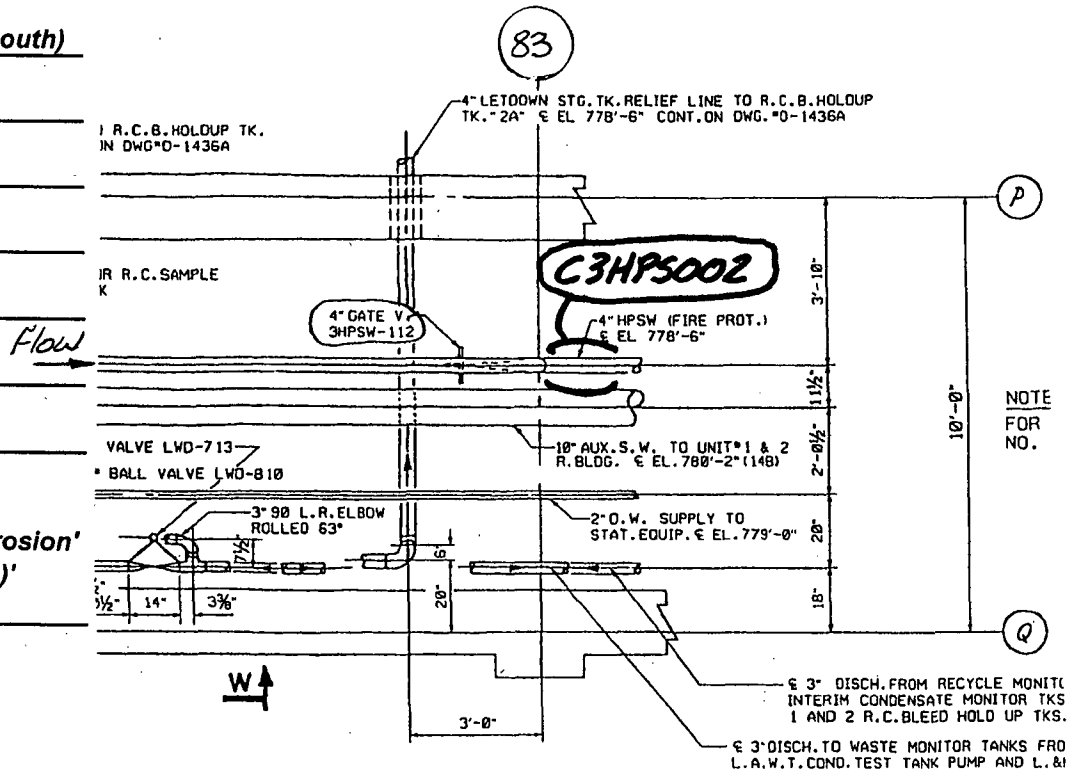
Piping Engineer: Inspect horizontal _____ Date: _____

Notes: pipng just below (south)

of valve 3HPSW-112

Inspect per NDE-946.

**Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection**



Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted (Initial & Date) _____

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material:	<u>CS</u>	UT Code #:	<u>C3HPS003</u>
Building:	<u>Aux. Bldg. 2nd Flr.</u>	O.D. (nom):	<u>4" Pipe</u>	Flow Diagram:	<u>OFD-124C-3.3 (J3)</u>
Elevation:	<u>Pipe Elev. 792'+9"</u>	Schedule:	<u>40</u>	Dwg.(s):	<u>O-1437A</u>
Column:	<u>P-Q / 82</u>	Original Wall Thk.:	<u>0.237"</u>		<u>150 PSIG @ 100° F</u>
System:	<u>HPSW</u>	Min. Wall Thk.:	<u>0.207"(87.5%), 0.158"(66.7%)</u>		<u>Class G</u>

Piping/ Fitting is upstream/ downstream of valve 3HPSW-202

Previous inspection data: _____ Remarks _____

Piping Engineer: Inspect piping

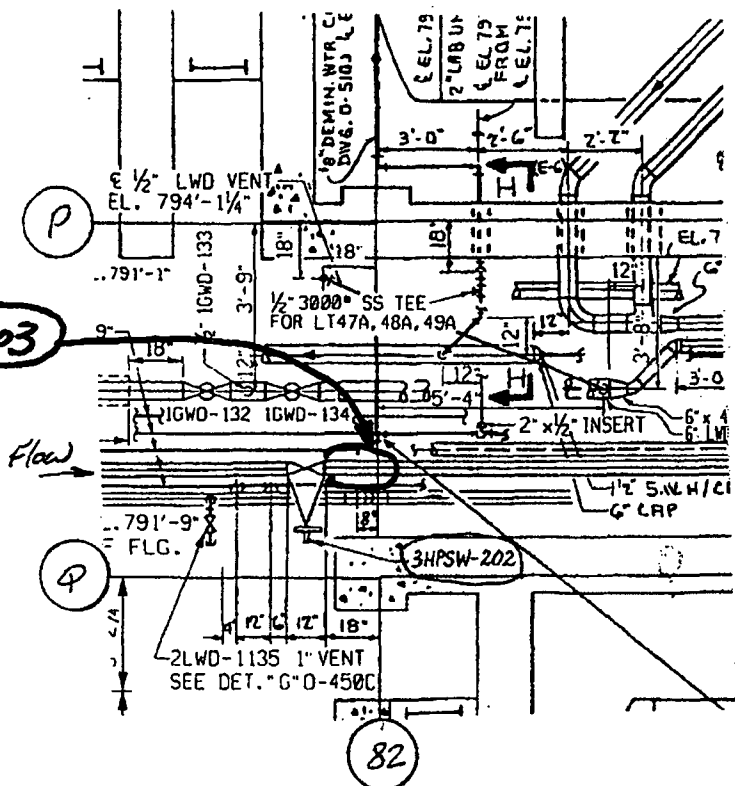
Date: _____

Notes: just downstream of

valve 3HPSW-202

Inspect per NDE-946.

**Grid per Procedure
SM/O/B/8530/002 (this is 'Corrosion'
- NOT 'Erosion/Corrosion (E/C)'
Inspection**



Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted
(Initial & Date) _____

PIPING/FITTING UT DATA SHEET

Unit:	<u>3</u>	Material	<u>CS</u>	UT Code #	<u>C3HPS004</u>
Building:	<u>Intake Structure</u>	O.D. (nom)	<u>4" pipe</u>	Flow Diagram	<u>OFD-124C-3.6 [I-4]</u>
Elevation:	<u>807'-10"</u>	Schedule	<u>40</u>	Dwg.(s):	<u>O-423E</u>
Column:	<u>See Notes & Sketch</u>	Original Wall Thk.	<u>0.237"</u>		<u>150 PSIG @ 100°F</u>
System:	<u>HPSW</u>	Min. Wall Thk.	<u>0.207" (87.5%), 0.158" (66.7%)</u>		<u>Class G</u>

Piping/ Fitting is upstream/ downstream of See Notes and Sketch

Previous inspection data: n/a Remarks _____

Piping Engineer: Geary L. Armentrout ext. 4322 Date: 2/24/2007

Notes:

Inspect 4" HPSW pipe in the trench on the side of the Intake Structure. Location to be centered between CCW Pumps 3'A' and 3'B' using 1" x 1" grids.

Inspect per NDE-946.

Grid per Procedure SM/O/B/8530/002 (this is 'Corrosion' - NOT 'Erosion' Inspection)

Insulation Removed (Initial & Date) _____

Surface Prepped and Grid Painted (Initial & Date) _____

