NDE TABLE - NORTHSIDE UNIT NO. 1 -MAIN STEAM AND HP BYPASS								
Location	**Description**	**Type of Testing**	**Comments**	**Pipe Material**	**Pipe Size**	**Wall Thk/SCH**	**Priority**	**Suggested Testing Freq.**
101	Straight Pipe	R	Straight section 3 ft south of 1st SRV	ASTM SA335, GR P91	24" OD	2.123" Min Wall	1	5yrs or 35,000 op. hrs
102	O-Let	V, WFMT	Branch fitting for south SRV	ASTM SA335, GR P91	24" OD	2.123" Min Wall	1	5yrs or 35,000 op. hrs
103	O-Let	V, WFMT	Branch fitting for north SRV	ASTM A335, GR P91	24" OD	2.123" Min Wall	1	5yrs or 35,000 op. hrs
104a	Girth Weld	V, WFMT, U-WT, HT, LPA	South side of block valve (inlet)	ASTM A335, GR P91	24" OD	2.123" Min Wall	1	5yrs or 35,000 op. hrs
104b	Girth Weld	V, WFMT, U-WT, HT	North side of block valve (outlet)	ASTM A335, GR P91	24" OD	2.123" Min Wall	1	5yrs or 35,000 op. hrs
105	Girth Weld	V, WFMT, U-WT, HT, LPA	Reducer outlet	ASTM A335, GR P91	15.1" ID	1.551" Min Wall	1	5yrs or 35,000 op. hrs
106	Welded Attachment	V, WFMT, PMI, R	Stanchion used for axial stop. Replication on pipe run, not stanchion	ASTM A335, GR P91	15.1" ID	1.551" Min Wall	2	10yrs or 70,000 op. hrs
108a	Girth Weld	V, WFMT, U-WT. HT, LPA	North side of HPBP Tee (inlet)	ASTM A335, GR P91	15.1" ID	1.551" Min Wall	1	5yrs or 35,000 op. hrs
108b	Girth Weld	V, WFMT, U-WT. HT, LPA	Vertical outlet of HPBP tee	ASTM A335, GR P91	8"	XXS	1	5yrs or 35,000 op. hrs
108c	Girth Weld	V, WFMT, U-WT. HT, LPA	South side of HPBP Tee (outlet)	ASTM A335, GR P91	15.1" ID	1.551" Min Wall	1	5yrs or 35,000 op. hrs
109a	Girth Weld	V, WFMT, U-WT. HT, LPA	North girth weld to lateral	ASTM A335, GR P91	15.1" ID	1.551" Min Wall	1	5yrs or 35,000 op. hrs
109b	Girth Weld	V, WFMT, U-WT. HT, LPA	Upper girth weld to lateral	ASTM A335, GR P91	9" ID	.924" Min Wall	1	5yrs or 35,000 op. hrs
109c	Girth Weld	V, WFMT, U-WT. HT, LPA	South girth weld to lateral	ASTM A335, GR P91	9" ID	.924" Min Wall	1	5yrs or 35,000 op. hrs
110	Welded Attachment	V, WFMT, PMI	Beam welded to pipe for support	ASTM A335, GR P91	9" ID	.924" Min Wall	2	10yrs or 70,000 op. hrs
111	Girth Weld	V, WFMT, U-WT, HT, LPA	Reducer inlet	ASTM A335, GR P91	9" ID	.924" Min Wall	2	10yrs or 70,000 op. hrs
112	Girth Weld	V, WFMT, U-WT, HT	Reducer outlet	ASTM A335, GR P91	9" ID	.924" Min Wall	2	10yrs or 70,000 op. hrs
113	Welded Attachment	V, WFMT	Attachment lug for spring support	ASTM A335, GR P91	12.75" OD	2.125" Min Wall	1	5yrs or 35,000 op. hrs
114a	Girth Weld	V, WFMT, LPA, OD, U-WT	Inlet of northern stop valve	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
114b	Girth Weld	V, WFMT, LPA, OD, U-WT	Northern outlet of northern stop valve	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
114c	Girth Weld	V, WFMT, LPA, R, OD, U-WT	Southern outlet of northern stop valve	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
116	Girth Weld	V, WFMT, U-WT, HT, LPA, R	Turbine Inlet, north side vertical nozzle	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
118	Girth Weld	V, WFMT, U-WT, HT, LPA	Turbine Inlet, north side horizontal nozzle	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
120	Welded Attachment	V, WFMT	Stanchion used for axial stop	ASTM A335, GR P91	9" ID	.924" Min Wall	1	5yrs or 35,000 op. hrs
121	Welded Attachment	V, WFMT, PMI	Beam welded to pipe for support	ASTM A335, GR P91	9" ID	.924" Min Wall	2	10yrs or 70,000 op. hrs
122	Girth Weld	V, WFMT, U-WT, HT, LPA	Reducer inlet	ASTM A335, GR P91	9" ID	.924" Min Wall	2	10yrs or 70,000 op. hrs
123	Girth Weld	V, WFMT, U-WT, HT	Reducer outlet	ASTM A335, GR P91	9" ID	.924" Min Wall	2	10yrs or 70,000 op. hrs
124	Welded Attachment	V, WFMT	Attachment lug for spring support	ASTM A335, GR P91	12.75" OD	2.125" Min Wall	1	5yrs or 35,000 op. hrs
125a	Girth Weld	V, WFMT, U-WT, LPA, OD	Inlet of southern stop valve	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
125b	Girth Weld	V, WFMT, LPA, OD, U-WT	Northern outlet of southern stop valve	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
125c	Girth Weld	V, WFMT, LPA, OD, U-WT	Southern outlet of southern stop valve	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
126	Straight Pipe	R, U-WT	Straight section 4 ft east of stop valve	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
127	Girth Weld	V, WFMT, U-WT, HT, LPA	Turbine Inlet, south side vertical nozzle	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
128	Straight Pipe	R, U-WT	Straight section 4 ft east of stop valve	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
129	Girth Weld	V, WFMT, U-WT, HT, LPA	Turbine Inlet, south side horizontal nozzle	ASTM A335, GR P91	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
130	Girth Weld	V, WFMT, U-WT, HT, LPA	HPBP valve outlet	ASTM A335, GR P22	24" OD	40	1	5yrs or 35,000 op. hrs
131	Girth Weld	V, WFMT, U-WT, HT, LPA	HPBP valve inlet	ASTM A335, GR P91	10.75" OD	160	1	5yrs or 35,000 op. hrs
132	Girth Weld	V, WFMT, LPA	Reducer outlet	ASTM A335, GR P91	10.75" OD	160	1	5yrs or 35,000 op. hrs
133	Girth Weld	V, WFMT	Reducer inlet	ASTM A335, GR P91	8.625" OD	160	1	5yrs or 35,000 op. hrs
134	Elbow	U-WT	Create wall thickness map on extrados	ASTM A335, GR P22	24" OD	40	1	5yrs or 35,000 op. hrs
135	Girth Weld	V, WFMT, U-WT, HT, LPA	Pipe weld between dissimilar metals	P22 and 106B	20" OD	40	1	5yrs or 35,000 op. hrs

NDE TABLE - NORTHSIDE UNIT NO. 1 - COLD REHEAT								
Location	**Description**	**Type of Testing**	**Comments**	**Pipe Material**	**Pipe Size**	**Wall Thk/SCH**	**Priority**	**Suggested Testing Freq.**
201	O-Let	V, WFMT	Branch fitting for west SRV	A672 C70 CL21	30" ID	.65" Min Wall	1	5yrs or 35,000 op. hrs
202	O-Let	V, WFMT	Branch fitting for middle SRV	A672 C70 CL21	30" ID	.65" Min Wall	1	5yrs or 35,000 op. hrs
203	O-Let	V, WFMT	Branch fitting for east SRV	A672 C70 CL21	30" ID	.65" Min Wall	1	5yrs or 35,000 op. hrs
205	Welded Attachment	V, WFMT, PMI	Stanchion used for axial stop	A672 C70 CL21	30" ID	.65" Min Wall	2	10yrs or 70,000 op. hrs
206a	Girth Weld	V, WFMT, U-WT, HT, LPA	North side of HPBP tee	A672 C70 CL21	30" ID	.65" Min Wall	1	5yrs or 35,000 op. hrs
206b	Girth Weld	V, WFMT, LPA	Top weld to HPBP tee	A106 B	20" OD	40	1	5yrs or 35,000 op. hrs
206c	Girth Weld	V, WFMT, LPA	South side of HPBP tee	A672 C70 CL21	30" ID	.65" Min Wall	1	5yrs or 35,000 op. hrs
207a	Girth Weld	V, WFMT, U-WT, HT, LPA	Outlet of wye	A672 C70 CL21	30" ID	.65" Min Wall	1	5yrs or 35,000 op. hrs
207b	Girth Weld	V, WFMT, LPA	North side inlet of wye	A106 B	20" OD	40	1	5yrs or 35,000 op. hrs
207c	Girth Weld	V, WFMT, LPA	South side inlet of wye	A106 B	20" OD	40	1	5yrs or 35,000 op. hrs
208	Girth Weld	V, WFMT, U-WT, HT, LPA, R	Turbine Inlet, perform replication adjacent to the turbine	A106 B	20" OD	40	1	5yrs or 35,000 op. hrs
209	Girth Weld	V, WFMT, U-WT, HT, LPA, R	Turbine Inlet, perform replication adjacent to the turbine	A106 B	20" OD	40	1	5yrs or 35,000 op. hrs
210	Straight Pipe	V	Near desuperheater confirm dented pipe has been replaced	A672 C70 CL21	30" ID	.65" Min Wall	1	Verification Only
211a	Girth Weld	V, WFMT, LPA	East girth weld on new spool approx 3' upstream of support 1990	A672 C70 CL21	30" ID	.65" Min Wall	1	Pending results
211b	Girth Weld	V, WFMT, LPA	West girth weld on new spool approx 3' upstream of support 1990	A672 C70 CL21	30" ID	.65" Min Wall	1	Pending results
212	O-Let	V, WFMT	6 inch connection from aux steam line	A672 C70 CL21	30" ID	.65" Min Wall	1	5yrs or 35,000 op. hrs
213	O-Let	V, WFMT	8 inch connection for CR extraction to No. 1 heater	A672 C70 CL21	30" ID	.65" Min Wall	1	5yrs or 35,000 op. hrs

NDE TABLE - NORTHSIDE UNIT NO. 1 - HOT REHEAT AND LOW PRESSURE BYPASS								
Location	**Description**	**Type of Testing**	**Comments**	**Pipe Material**	**Pipe Size**	**Wall Thk/SCH**	**Priority**	**Suggested Testing Freq.**
301	Straight Pipe	R, OD, U-WT	Straight section 3 feet south of SRV	ASTM A335, GR P22	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
302	O-Let	V, WFMT, U-WT	Branch fitting for SRV	ASTM A335, GR P22	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
303	Girth Weld	V, WFMT, U-WT, HT, LPA	Reducer inlet	ASTM A335, GR P22	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
304	Girth Weld	V, WFMT, U-WT, HT, LPA	Reducer outlet	ASTM A335, GR P22	28" ID	1.459" Min Wall	2	10yrs or 70,000 op. hrs
305	Welded Attachment	V, WFMT, PMI, R	Welded attachment used for axial stop. Replication on pipe, not welded attachment	ASTM A335, GR P22	28" ID	1.459" Min Wall	2	10yrs or 70,000 op. hrs
307a	Girth Weld	V, WFMT, U-WT, HT, LPA	Inlet of wye	ASTM A335, GR P22	28" ID	1.459" Min Wall	1	5yrs or 35,000 op. hrs
307b	Girth Weld	V, WFMT, U-WT, HT, LPA	East side outlet of wye	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	1	5yrs or 35,000 op. hrs
307c	Girth Weld	V, WFMT, U-WT, HT, LPA	West side outlet of wye	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	1	5yrs or 35,000 op. hrs
308a	Girth Weld	V, WFMT, U-WT, HT, LPA	North side of LPBP tee	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	1	5yrs or 35,000 op. hrs
308b	Girth Weld	V, WFMT, U-WT, HT, LPA	Outlet going to the low pressure bypass line	ASTM A335, GR P22	18" OD	100	1	5yrs or 35,000 op. hrs
308c	Girth Weld	V, WFMT, U-WT, HT, LPA	South side of LPBP tee	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	1	5yrs or 35,000 op. hrs
309	Straight Pipe	R	Straight section 2 feet north of drip pot 14"HR-10248-1-EEAS-HC before turbine connection	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	1	5yrs or 35,000 op. hrs
310	Welded Attachment	V, WFMT	Attachment stanchion for spring support	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	2	10yrs or 70,000 op. hrs
311a	Girth Weld	V, WFMT, U-WT, HT, LPA	Reducer inlet	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	1	5yrs or 35,000 op. hrs
311b	Girth Weld	V, WFMT, U-WT, HT, LPA, OD	Reducer outlet to north CRV	ASTM A335, GR P22	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
312a	Girth Weld	V, WFMT, U-WT. HT, LPA	North side of LPBP tee	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	1	5yrs or 35,000 op. hrs
312b	Girth Weld	V, WFMT, U-WT. HT, LPA	Outlet going to the low pressure bypass line	ASTM A335, GR P22	18" OD	100	1	5yrs or 35,000 op. hrs
312c	Girth Weld	V, WFMT, U-WT. HT, LPA	South side of LPBP tee	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	1	5yrs or 35,000 op. hrs
313	Straight Pipe	R	Straight section west of support at node 760 before turbine connection	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	1	5yrs or 35,000 op. hrs
314	Welded Attachment	V, WFMT	Attachment stanchion for spring support	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	2	10yrs or 70,000 op. hrs
315a	Girth Weld	V, WFMT, U-WT, HT, LPA	Reducer inlet	ASTM A335, GR P22	22.7" ID	1.183" Min Wall	1	5yrs or 35,000 op. hrs
315b	Girth Weld	V, WFMT, U-WT, HT, LPA, OD	Reducer outlet to south CRV	ASTM A335, GR P22	Field Verify	Field Verify	1	5yrs or 35,000 op. hrs
316	Girth Weld	V, WFMT	Condenser Nozzle Connection	A106 B	30" OD	STD	1	5yrs or 35,000 op. hrs
317	Girth Weld	V, WFMT, U-WT, HT, LPA	LPBP valve outlet	ASTM A335, GR P22	30" OD	STD	1	5yrs or 35,000 op. hrs
318	Girth Weld	V, WFMT, U-WT, HT, LPA	LPBP valve inlet	ASTM A335, GR P22	30" OD	1.391" Min Wall	1	5yrs or 35,000 op. hrs
319	Girth Weld	V, WFMT, U-WT, HT, LPA	Pipe weld between dissimilar metals	ASTM A335, GR P22 and A106B	30" OD	STD	2	10yrs or 70,000 op. hrs
321	Straight Pipe	R	Straight section between reducers	ASTM A335, GR P22	24" OD	100	2	10yrs or 70,000 op. hrs
322a	Girth Weld	V, WFMT, U-WT, HT	South side of reducing tee	ASTM A335, GR P22	24" OD	100	2	10yrs or 70,000 op. hrs
322b	Girth Weld	V, WFMT, U-WT, HT	18 inch outlet of reducing tee	ASTM A335, GR P22	18" OD	100	2	10yrs or 70,000 op. hrs
322c	Girth Weld	V, WFMT, U-WT, HT	North side of reducing tee / reducer outlet	ASTM A335, GR P22	24" OD	100	2	10yrs or 70,000 op. hrs
323	Elbow	U-WT	Perform wall thickness map on extrados	ASTM A335, GR P22	30" OD	STD	1	5yrs or 35,000 op. hrs

NDE TABLE - NORTHSIDE UNIT NO. 1 - BOILER FEEDWATER								
Location	**Description**	**Type of Testing**	**Comments**	**Pipe Material**	**Pipe Size**	**Wall Thk/SCH**	**Priority**	**Suggested Testing Freq.**
801	Girth Weld	V, LPA, WFMT	Southern boiler feed pump discharge connection	A106 C	10.75" OD	160	1	5yrs or 35,000 op. hrs
802	Elbow	V, U-WT	Perform wall thickness map	A106 C	10.75" OD	160	1	5yrs or 35,000 op. hrs
803	Girth Weld	V, LPA, WFMT	Northern boiler feed pump discharge connection	A106 C	10.75" OD	160	1	5yrs or 35,000 op. hrs
804	Elbow	V, U-WT	Perform wall thickness map	A106 C	10.75" OD	160	1	5yrs or 35,000 op. hrs
805a	Reducer	V, U-WT	Wall thickness map for valve inlet reducer. Use 4" grid.	A106 C	10.75" OD	160	1	5yrs or 35,000 op. hrs
805b	Tee	V, U-WT	Wall thickness map for valve outlet tee. Use 6" grid.	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
806a	Reducer	V, U-WT	Wall thickness map for valve inlet reducer. Use 4" grid.	A106 C	10.75" OD	160	1	5yrs or 35,000 op. hrs
806b	Tee	V, U-WT	Wall thickness map for valve outlet tee. Use 6" grid.	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
807a	Elbow	V, U-WT	Wall thickness map on valve upstream of valve	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
807b	Elbow	V, U-WT	Wall thickness map on valve downstream of valve	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
808	Girth Weld	V, LPA, WFMT	Inlet connection to heater #2	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
809	Elbow	V, U-WT	Perform wall thickness map	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
810	Tee	V, U-WT	Wall thickness map for valve outlet tee. Use 6" grid.	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
811a	Elbow	V, U-WT	Wall thickness map on valve upstream of valve	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
811b	Elbow	V, U-WT	Wall thickness map on valve downstream of valve	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
812	Girth Weld	V, LPA, WFMT	Outlet connection to heater #1	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
813	Elbow	V, U-WT	Perform wall thickness map	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
814	Tee	V, U-WT	Wall thickness map for valve outlet tee. Use 6" grid.	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
814a	Girth Weld	V, LPA, WFMT	Heater #1 bypass tee north connection	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
814b	Girth Weld	V, LPA, WFMT	Heater #1 bypass tee south connection	A106 C	14" OD	160	1	5yrs or 35,000 op. hrs
814c	Girth Weld	V, LPA, WFMT	Heater #1 bypass tee east connection	A106 C	12.75" OD	160	1	5yrs or 35,000 op. hrs

6609-MS1-0

LINE NO.	MATERIAL	PIPE ø	WALL THK.	TEMP. (°F)	PRESS. (PSIG)	INSULATION (IN)
15.1"ID MS-10201-1-HGAS-HC	A335-P91	MID=15.1"	MW=1.551"	DESIGN=1016 OPER.=1006	DESIGN=2650	5 1/2"
9"ID MS-10202-1-HGAS-HC		MID=9"	MW=.924"			
9"ID MS-10203-1-HGAS-HC		OD=8 5/8"	SCH.XXS			
8" MS-10210-1-HGAS-HC		OD=10 3/4"	SCH.160			4 1/2"
DRAIN LINE		OD=8 5/8"				

NOTES:

1) SHAW TO PROVIDE THESE NOTED PIECES 1 FOOT LONGER THAN REQUIRED (PLAIN-END) – FIELD CUT TO FIT AND WELD PREP.
2) SHAW TO PROVIDE 2FT. OF 4"SCH.XXS AND PIPE CAP. 1-MS-53
3) SUPPORTS AT NODE #'S 380, 440 AND 830 ARE ON HOLD PER FWUSA (A335-P91).

LEGEND

- FIELD WELD
- SHOP WELD
- SPRING HANGER
- RIGID HANGER
- GUIDE SUPPORT
- AXIAL SUPPORT
- SLIDING SUPPORT
- SNUBBER SUPPORT
- DRAIN POT CONNECTIONS
- ALL BENDS = 3D EXCEPT AS NOTED
- ELBOW
- RT PLUG
- XXXX SUPPORT NODE No.
- P T PRESSURE & TEMP. CONN.
- INSULATION SUPPORT LUGS

LINE SIZE "A"
WELDOLET (A182 F91)
POCKET SIZE "B"
"C"
WELD CAP
2"-9000# S.W. (A182 F22) HALF COUPLING

LINE "A"	POCKET "B"	DIM. "C"	QT.
15.1"ID	OD=10 3/4"	2'-6"	4
9"ID	OD=8 5/8"	2'-0"	1

DRIP POT DETAIL

1 1/2"OD WELDED THERMOWELL BY FWUSA
FULL PENETRATION WELD (SHOPWELD)
15.1"ID

WELDED THERMOWELL DETAIL
TYP. (6) PLCS.

1"-6000# SOCKOLET-A182 F91
15.1"ID

PRESSURE CONNECTION DETAIL
TYP. (3) PLCS.

INSULATION LUGS
TYPICAL DETAIL

DETAIL FOR SUPPORT
AT NODE 615 (N11817.5)
AT NODE 1050 (TURB. BLDG.)

DETAIL FOR SUPPORT
AT NODE 1045 (TURB. BLDG.)

DETAIL FOR SUPPORT
AT NODE # 1055 (TURB. BLDG.)
AT NODE # 1110 (TURB. BLDG.)

DETAIL B

WELD BEVEL DETAIL
FOR LINE No. 15.1"ID MS-10201-1-HGAS

WELD BEVEL DETAIL
DETAIL "A"

WELD BEVEL DETAIL
FOR LINE No. 9"ID MS-10202,3-1-HGAS

WELD BEVEL DETAIL
FOR MS 1 & MS 2

WELD BEVEL DETAIL
8"MS-10210-1-HGAS-HC

LINE No. 15.1"ID MS-10201-1-HGAS-HC

LINE No.	H	T
9"ID MS-10202,3-1-HGAS-HC	.924"	1 1/16"
8" MS-10210-1-HGAS-HC	.766"	7/8"
10" MS-10221,4,7&30-1-HGAS-HC	.904"	1 1/8"
6" MS-10233-1-HGAS-HC	.624"	11/16"

ACCESS HOLE & PLUG FOR RADIOGRAPHIC INSPECTION

DETAIL FOR SUPPORT
AT NODE 290 (CFB. BLDG.)

DETAIL FOR SUPPORT
AT NODE 300 (CFB. BLDG.)

ISSUED FOR ERECTION

NO.	REVISIONS	BY	DATE
0	APPROVED FOR CONSTRUCTION	DI / AI	11/15/00
D	PARTIAL ISSUE FOR ERECTION	DI / AI	7/07/00
C	ISSUE FOR DETAILING	DI / AI	5/01/00
B1	INTERNAL ISSUE (SHAW)	AI / AI	3/20/00
B	UPDATED ISOMETRIC	DI / AI	2/9/00
A	FIRST ISSUE	DI / AI	10/12/99

Designed		7/07/00
Drawn	CH	10-1-99
Checked	AI	10-1-99
Approved	GK	10-1-99
By		Date

Project NO. J6609 | Format | Scale NONE | Drawing NO. 6609-MS1 | Sheet 1 OF 1 | Rev. 0

FRONEK COMPANY, INC.
The Shaw Group Inc.

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JEA NORTHSIDE UNIT No. 1 & 2 REPOWERING PROJECT
EQUIPMENT No. :
B & V DRAWING #62.2201.05-C3002

MAIN STEAM UNIT #1 BOILER
REPOWERING PROJECT
JEA NORTHSIDE UNIT No. 1
FOSTER WHEELER USA CORPORATION

116291

6609-HR1-0

LINE NO.	MATERIAL	PIPE Ø	WALL THK.	TEMP. (°F)	PRESS. (PSIG)	INSULATION (IN)
28"ID HR-10219-1-EEAS-HC	A335-P22	MID = 28"	1.459" MW	DESIGN=1016 OPER.=1006	DESIGN=680	5 1/2"
28"ID HR-10204-1-EEAS-HC						
22.7"ID HR-10205-1-EEAS-HC		MID = 22.7"	1.183" MW		DESIGN=710	
22.7"ID HR-10206-1-EEAS-HC						
18"HR-10213-1-EEAS-HC		18" OD	SCH.100			
18"HR-10214-1-EEAS-HC						
DRAIN LINES		14" OD	SCH.80			

NOTES:

1. SUPPORTS AT NODE No. 580 & 550 & 540 ARE ON HOLD PER FWUSA

LEGEND

- FIELD WELD
- SHOP WELD
- SPRING HANGER
- RIGID HANGER
- GUIDE SUPPORT
- AXIAL SUPPORT
- SLIDING SUPPORT
- SNUBBER SUPPORT
- DRAIN POT CONNECTIONS
- ALL BENDS = 3D EXCEPT AS NOTED
- ELBOW
- RT PLUG
- XXXX SUPPORT NODE No.
- P T PRESSURE & TEMP. CONN.
- INSULATION SUPPORT LUG

DETAIL FOR SUPPORT AT NODE 182 (CFB BLDG.)

DETAIL FOR SUPPORT AT NODE 150 & 180 (CFB BLDG)

WELD BEVEL DETAIL FOR LINE No. 28" ID HR-10204,219-1-EEAS

WELD BEVEL DETAIL FOR LINE No. 22.7" ID HR-10205,6-1-EEAS

WELD BEVEL DETAIL FOR LINE No. 18" HR-10213,4-1-EEAS

WELD BEVEL DETAIL FOR DRAIN LINES

WELD BEVEL DETAIL FOR HR 1 & HR 2

WELD BEVEL DETAIL DETAIL "A"

DETAIL FOR SUPPORT AT NODE 51 (CFB BLDG.)

INSULATION LUGS TYPICAL DETAIL MATERIAL: ALLOY

DETAIL FOR SUPPORT AT NODE 420 (N11827.5) AT NODE 190 (CFB BLDG.)

SHEAR LUG DETAIL (ALLOY)

SUPPORT NODE No.	EL.	L	F
60	165'-0"	2"	5/8"
68	121'-6"	2"	3/8"

DETAIL FOR SUPPORT AT NODE 770 (TURBINE BLDG.) AT NODE 939 (TURBINE BLDG.)

DETAIL FOR SUPPORT AT NODE 695 (TURB. BLDG.) AT NODE 820 (TURB. BLDG.)

DETAIL FOR SUPPORT AT NODE 820 (TURB. BLDG.)

DETAIL FOR SUPPORT AT NODE 250 (E9547.5)

DRIP POT DETAIL

PIPE SIZE			
LINE "A"	POCKET "B"	DIM. "C"	QT.
28"ID	00=14"	3'-3"	4
22.7"ID	00=14"	3'-0"	2

DETAIL FOR SUPPORT AT NODE 900 (TURB. BLDG.)

WELDED THERMOWELL DETAIL TYP. (6) PLCS.

PRESSURE & VENT. CONNECTION DETAIL TYP. (3) PLCS.

DETAIL FOR SUPPORT AT NODE (TURB. BLDG.)

ACCESS HOLE & PLUG FOR RADIOGRAPHIC INSPECTION

0	APPROVED FOR CONSTRUCTION	CH	11/06/98			
D	PARTIAL ISSUE FOR ERECTION	CH	7/07/98	Designed		
C	ISSUE FOR DETAILING	AI	4-28-98	Drawn	CH	10/1/99
B1	INTERNAL ISSUE (SHAW)	AI	3/26/98	Checked	AI	10/1/99
B	UPDATED ISOMETRIC	CH	1-23-98	Approved	GK	10/1/99
A	FIRST ISSUE	CH	10-14-97	By		Date
NO.	REVISIONS	BY	DATE	Project NO. J6609	Format	Scale NONE

Drawing NO. 6609-HR1 | Sheet 1 OF 1 | Rev. 0

ISSUED FOR ERECTION

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JEA NORTHSIDE UNIT No. 1 & 2 REPOWERING PROJECT

EQUIPMENT No. :

B & V DRAWING #62.2201.06-C3004

HOT REHEAT UNIT #1 BOILER

REPOWERING PROJECT

JEA NORTHSIDE UNIT No. 1

FOSTER WHEELER USA CORPORATION

6609-CR1-0

LINE NO.	MATERIAL	PIPE ø	WALL THK.	TEMP. (°F)	PRESS. (PSIG)	INSULATION (IN)
30"ID CR-10218-1-DAAS-HC	A672 C70 CL.21	MID=30"	.65" MW	DESIGN=670 OPER.=821	DESIGN=680	5"
30"ID CR-10209-1-DAAS-HC						
20"CR-10207-1-DAAS-HC	A106 Gr.B	OD=20"	SCH.40		DESIGN=710	
20"CR-10208-1-DAAS-HC		OD=16" & 12 3/4"				
20"CR-10211-1-DAAS-HC						
DRAIN LINE		OD=8 5/8"				
8"CR-10217-1-DAAS-HC						3 1/2"
6"CR-10215-1-DAAS-HC		OD=6 5/8"	SCH.XS			
6"CR-10216-1-DAAS-HC						

NOTES:

1) CR DESUPERHEATER ASSEMBLY TE524/525, TW524, TE526/527 AND TW526 INTEGRALLY MOUNTED.
2) SHAW TO PROVIDE 10ft OF 8" SCH.40 1-CR-67
3) SHAW TO PROVIDE 10ft OF 6" SCH.XS 1-CR-68
4) SUPPORTS AT NODE #'S 2350, 2310 AND 2300 ARE ON HOLD PER FWUSA.
5) SHAW TO PROVIDE 2ft OF 4" SCH. XS (A106 Gr. B) 1-CR-69

LEGEND

- FIELD WELD
- SHOP WELD
- SPRING HANGER
- RIGID HANGER
- GUIDE SUPPORT
- AXIAL SUPPORT
- SLIDING SUPPORT
- SNUBBER SUPPORT
- DRAIN POT CONNECTIONS
- ALL BENDS = 3D
- ELBOW
- XXXX SUPPORT NODE No.
- P T PRESSURE & TEMP. CONN.
- INSULATION SUPPORT LUG

INSULATION LUGS
TYPICAL DETAIL
MATERIAL: CARBON STEEL

SHEAR LUG DETAIL

DETAIL FOR SUPPORT
AT NODE #'S 1630, 1660, 1680, 1780, & 1800 (CFB BLDG.)

DETAIL FOR SUPPORT
AT NODE #'S 2330, 2590, (TURB. BLDG.)

DETAIL FOR SUPPORT
AT NODE 1745 (CFB BLDG.)

DETAIL FOR SUPPORT
AT NODE 2095 (N11817.5)
AT NODE 1760 (CFB BLDG.)

DRIP POT DETAIL

LINE "A"	POCKET "B"	DIM. "C"	(D)	QT.
30"ID	OD=16"	3'-8"	16" WELDOLET	5
20"OD	OD=12 3/4"	3'-0"	12" RED. TEE	2

THREADED THERMOWELL DETAIL
TYP. (4) PLCS.

PRESSURE CONNECTION DETAIL
TYP. (3) PLCS.

WELD BEVEL DETAIL
FOR SAFETY VALVE CONN.

WELD BEVEL DETAIL
FOR LINE No. 20" CR-10207,8 & 11-1-DAAS

WELD BEVEL DETAIL
FOR LINE No. 30" ID CR-10209,218-1-DAAS

WELD BEVEL DETAIL
DETAIL "A"

WELD BEVEL DETAIL
DRAIN LINES

WELD BEVEL DETAIL
FOR LINE No. 8" CR-10217-1-DAAS

WELD BEVEL DETAIL
FOR LINE No. 6" CR-10215,16-1-DAAS-HC

DETAIL-1

DETAIL-2

DETAIL FOR SUPPORT
AT NODE 2495 (TURBINE BLDG.)

ISSUED FOR ERECTION

NO.	REVISIONS	BY	CH	DATE
0	APPROVED FOR CONSTRUCTION	DI	M	11/16/98
D	PATRIAL ISSUE FOR ERECTION	DI	M	1-17-98
C	ISSUED FOR DETAILING	DI	M	4-17-98
B1	INTERNAL ISSUE (SHAW)	DI	M	5/28/98
B	UPDATED ISOMETRIC	DI	M	2-19-98
A	FIRST ISSUE	DI	M	10-14-97

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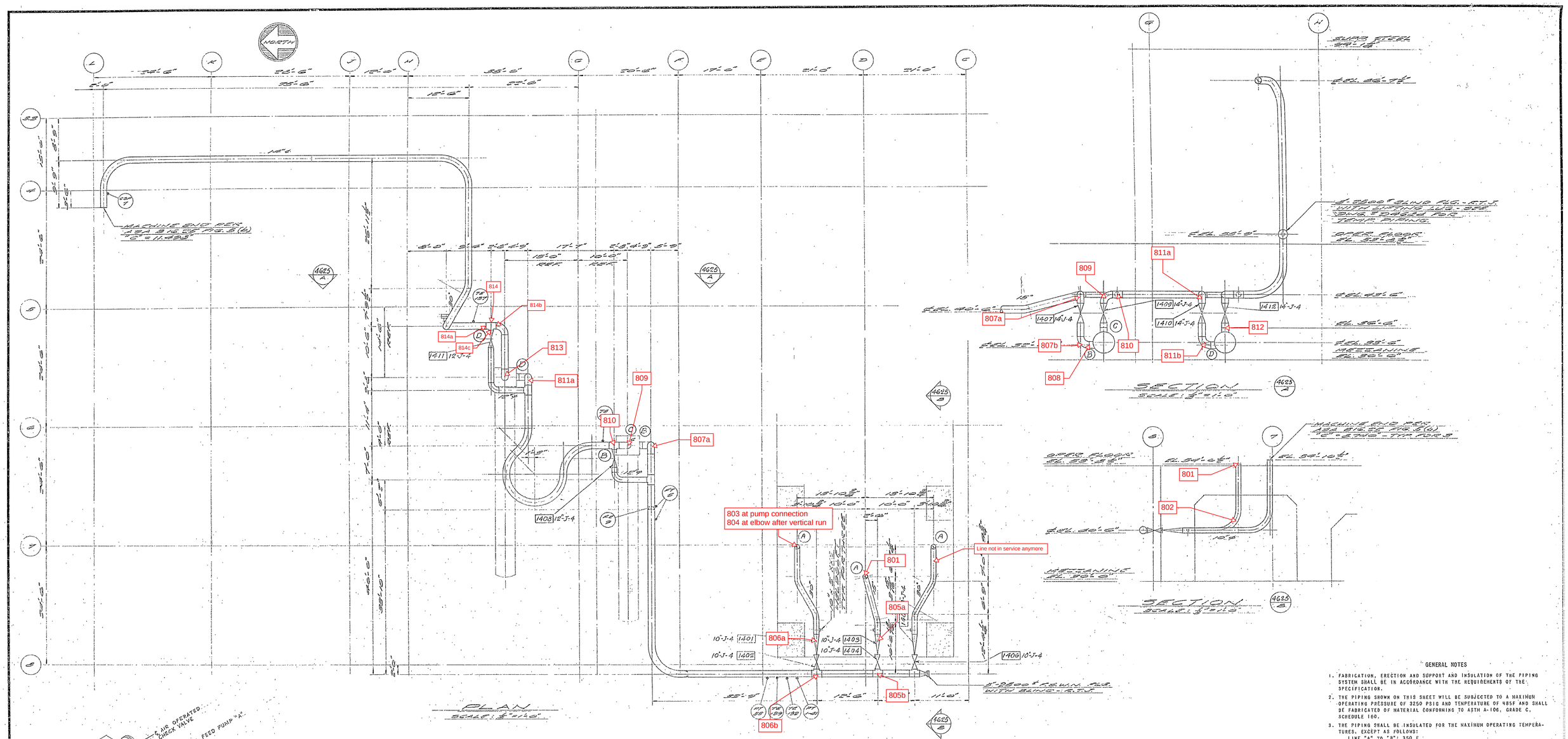
JEA NORTHSIDE UNIT No. 1 & 2 REPOWERING PROJECT
EQUIPMENT No. :
B & V DRAWING #62.2201.05-C5003

COLD REHEAT UNIT #1 BOILER
REPOWERING PROJECT
JEA NORTHSIDE UNIT No. 1
FOSTER WHEELER USA CORPORATION

Designed			
Drawn	CM	10/1/99	
Checked	AI	10/1/99	
Approved	GK	10/1/99	
By		Date	

Project NO.	Format	Scale	Drawing NO.	Sheet	Rev.
J6609		NONE	6609-CR1	1 OF 1	0

116292



GENERAL NOTES

1. FABRICATION, ERECTION AND SUPPORT AND INSULATION OF THE PIPING SYSTEM SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATION.
2. THE PIPING SHOWN ON THIS SHEET WILL BE SUBJECTED TO A MAXIMUM OPERATING PRESSURE OF 3250 PSIG AND TEMPERATURE OF 485F AND SHALL BE FABRICATED OF MATERIAL CONFORMING TO ASTM A-106, GRADE C, SCHEDULE 160.
3. THE PIPING SHALL BE INSULATED FOR THE MAXIMUM OPERATING TEMPERATURES, EXCEPT AS FOLLOWS:
   LINE "A" TO "B": 350 F
   LINE "C" TO "D": 408 F

INSTRUMENT CONNECTIONS

TAG	SIZE	TYPE	REMARKS
CSP 7	1½"	S.W.	AFTER ASS'Y ON PIPE BORE CPLG. PIPE TO 1.5625" DIA.
PT-33	1"	S.W.	
FT 5	1"	S.W.	
TE 134	1"	S.W.	
TE 137	1"	S.W.	
TE 132	1"	S.W.	
TE 139	1"	S.W.	
PTI 41	1"	S.W.	

△ ISOMETRICS - AIR OPERATED CHECK VALVE PIPING

002795

SPEC. NO. 64250-012

REYNOLDS, SMITH AND HILLS
ARCHITECTS & ENGINEERS — JACKSONVILLE, FLORIDA

DRAWN ELLIS
TRACED
CHECKED WALKER
SCALE AS NOTED
DATE 9 AUG 65

DEPARTMENT OF ELECTRIC & WATER UTILITIES
CITY OF JACKSONVILLE, FLORIDA
NORTHSIDE UNIT NO. 1
BOILER FEED PUMP DISCHARGE PLAN & SECTION

APPROVED FOR REYNOLDS, SMITH AND HILLS
W. E. Walker — Homer T. Schuler — J. Rhea Reese

FOR THE CITY OF JACKSONVILLE
DEPARTMENT HEAD — ENGINEERING DEPARTMENT
DEPARTMENT HEAD — ENGINEER MANAGER

DRAWING NO. 64250-D4625
SHEET 26 OF 84

REVISION	DESCRIPTION	DATE	BY	APPROVED
A	REVISED AS PER M.C.D.'S	1 NOV 65	W.H.L.	D.M.M.
B	REVISED PER M.C.D. No 5	5/6/66	R.S.E.	D.M.M.
C	ISSUED FOR BID NUMBER	10 JUNE	JOHN	DMM

BATCH NO. 210
SEQ. NO. 1124
REV. NO.
MICROFILMED AUG 2010

GOLVIC PRESS, INC., BROOKLYN 37, N. Y. REPRODUCIBLE NO. 4064 11/64

6609-HPBP1

LINE NO.	MATERIAL	PIPE # (O.D.) (IN)	WALL THK.	TEMP. (°F)	PRESS. (PSIG)	INSULATION (IN)
8"MS-10210-1-HGAS-HC	A335 P91	8 5/8	SCH.160	DESIGN=1016 OPER.=1006	DESIGN=2630	4 1/2"
10"MS-10281-1-HGAS-HC		10 3/4	SCH.160			5 1/2"
24"CR-10282-1-EEAS-HC	A335 P22	24	SCH.40	DESIGN=670 OPER.=621	DESIGN=710	5"
20"CR-10278-1-EEAS-HC		20				
20"CR-10211-1-DAAS-HC	A106B	20				

NOTES: 1) IF REQUIRED, INSULATION CAN BE TRIMMED IF AN INTERFERENCE EXIST

EXISTING DRIVE OIL PUMP DRAIN & DRIVE OIL FILL LINE MUST BE REROUTED BY FIELD (IF NECESSARY).

NOTES & LEGEND

- FIELD WELD
- SHOP WELD
- SPRING HANGER
- RIGID HANGER
- GUIDE SUPPORT
- AXIAL SUPPORT
- SLIDING SUPPORT
- ELBOW
- RT PLUG
- XXX — SUPPORT NODE No.
- (P) (T) — PRESSURE & TEMP. CONN.

N Y Z X

PLAN
(VALVE LOCATION)

WELD BEVEL DETAIL
FOR VALVE INLET CONNECTION

WELD BEVEL DETAIL
FOR VALVE OUTLET CONNECTION

WELD BEVEL DETAIL
FOR LINE No. 10"MS-10210 -1-HGAS-HC

WELD BEVEL DETAIL
8"MS-10210-1-HGAS-HC

WELD BEVEL DETAIL
FOR LINE No. 24"CR-10278 -1-EEAS-HC

WELD BEVEL DETAIL
FOR LINE No. 20"CR-10278 -1-EEAS-HC & 20"CR-10211-1-DAAS-HC

ACCESS HOLE & PLUG FOR RADIOGRAPHIC INSPECTION

LINE No.	H	T
8"MS-10210-1-HGAS-HC	.766"	7/8"
10"MS-10210-1-HGAS-HC	.904"	1 1/8"

THREADED THERMOWELL DETAIL
TYP. (2) PLCS.

PRESSURE CONNECTION DETAIL

MEZZ FL. EL.30'-0"
SEE FLOOR OPENING DETAIL
DWG. 6609-GA1 SH4

HPBP VALVE

ISSUED FOR ERECTION

NO.	REVISIONS	BY	CH	DATE
D	ISSUED FOR ERECTION	DN	AI	2-09-01
G	REMOVED "HOLD" REVISED TO ACCOMMODATE CCI VALVE	DN	AI	2-09-01
F	PARTIAL ISSUE FOR ERECTION	DN	AI	11-9-00
E	ISSUED FOR DETAILING	DN	AI	7-17-00
D	MODIFIED 25% BYPASS SYSTEM	DN	AI	6-09-00
C	UPDATED ISOMETRIC	DN	AI	2-15-00
B	RE-ROUTED THE SYSTEM	DN	AI	11-23-99
A	FIRST ISSUE	DN	AI	10-14-99

Designed
Drawn CM 10/1/99
Checked AI 10/1/99
Approved GK 10/1/99
By Date
Project NO. J6609 Format

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JEA NORTHSIDE UNIT No. 1 & 2 REPOWERING PROJECT
EQUIPMENT No. :
B & V DRAWING #62.2201.05-C3009

UNIT #1 BOILER
HP BYPASS PIPING
REPOWERING PROJECT

JEA NORTHSIDE UNIT No. 1
FOSTER WHEELER USA CORPORATION

Scale	Drawing NO.	Sheet	Rev.
NONE	6609-HPBP1	1 OF 1	

6609-LPBP1

LINE NO.	MATERIAL	PIPE ø (O.D.) (IN)	WALL THK.	TEMP. (°F)	PRESS. (PSIG)	INSULATION (IN)
30" HR-10283-1-EEAS-HC	A335-P22	30	1.391"WW	DESIGN=1016 OPER.=1006	DESIGN=710	5 1/2"
24" HR-10212-1-EEAS-HC		24	SCH.100			
18" HR-10213-1-EEAS-HC		18				
18" HR-10214-1-EEAS-HC						
30" HR-10279-1-EEAS-HC		30	SCH.STD	DESIGN=400 OPER.=356	DESIGN=250	2 1/2"
30" HR-10220-1-DA2S-HC	A106B					
12" CR-10275-1-DAAS-HC		12 3/4				

NOTES:
1) IF REQUIRED, INSULATION CAN BE TRIMMED IF AN INTERFERENCE EXIST
2) FIELD TO SUPPORT VALVE STEM IN VERTICAL DIRECTION. EXPECTED LOAD ≅ 8000#.

NOTES & LEGEND
- FIELD WELD
- SHOP WELD
- SPRING HANGER
- RIGID HANGER
- GUIDE SUPPORT
- AXIAL SUPPORT
- SLIDING SUPPORT
- ELBOW
- RT PLUG
- XXX SUPPORT NODE No.
- (P)(T) PRESSURE & TEMP. CONN.

WELD BEVEL DETAIL
FOR VALVE OUTLET CONNECTION

WELD BEVEL DETAIL
FOR VALVE INLET CONNECTION

PLAN
(VALVE ORIENTATION)

DETAIL FOR SUPPORT
@ NODE 1080

DETAIL FOR SUPPORT
@ NODE 1130

WELD BEVEL DETAIL
FOR LINE No. 30"HR-10212-1-EEAS-HC

WELD BEVEL DETAIL
FOR LINE No. 18"HR-10213,4-1-EEAS-HC

WELD BEVEL DETAIL
FOR LINE No. 30"HR-10279-1-EEAS-HC
30"HR-10220-1-DA2S-HC

WELD BEVEL DETAIL
FOR LINE No. 24"HR-10212-1-EEAS-HC

WELD BEVEL DETAIL
FOR LINE No. 12"CR-10275-1-DAAS-HC

PRESSURE CONNECTION DETAIL

THREADED THERMOWELL DETAIL

DRIP POT DETAIL

ACCESS HOLE & PLUG FOR RADIOGRAPHIC INSPECTION

ISSUED FOR ERECTION

NO.	REVISIONS	BY	CH	DATE
D	ISSUED FOR ERECTION	DK	M	7-16-01
G	REMOVED "WELD" REVISED TO ACCOMMODATE CCI VALVE AND SUPPORT WELDED ATTACHMENTS	DK	M	12-07-01
F	PARTIAL ISSUE FOR ERECTION	DK	M	11-7-01
E	ISSUED FOR DETAILING	DK	M	7-19-01
D	MODIFIED 25% BYPASS SYSTEM	DK	M	6-05-01
C	UPDATED ISOMETRIC	DK	M	2-16-01
B	RE-ROUTED THE SYSTEM	DK	M	11-23-99
A	FIRST ISSUE	DK	M	10-11-99

J6609

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JEA NORTHSIDE UNIT No. 1 & 2 REPOWERING PROJECT
EQUIPMENT No. :
B & Y DRAWING #02.2201.05-C3010

LP BYPASS UNIT #1 BOILER
REPOWERING PROJECT
JEA NORTHSIDE UNIT No. 1
FOSTER WHEELER USA CORPORATION

Designed		
Drawn	CM	10/1/99
Checked	AI	10/1/99
Approved	GK	10/1/99
By		Date
Project NO.		Format
Scale	Drawing NO.	Sheet	Rev.
NONE	6609-LPBP1	1 OF 1	