

A. EQUIPMENT DESCRIPTION

3.0 Process Air Preheater

3.1 Process Air Preheater (overall unit)

Mfg: Catalytic Products International

Model: Quadrant SR-18000

Shell & Tube Heat Exchanger mounted atop Natural Gas Combustion Chamber equipped with combustion gas recirculation

Design Process Conditions:

Heat 18,000 scfm air from 0 degC (32 degF) to 550 degC (1022 degF)

3.2 Heat Exchanger Unit

Shell: 4 Pass – Combustion gas enters at DR end

Tubes: 1-1/4" dia x 20' 0" long, 309 SS, 1034 tubes

Tubes are welded to DR tubesheet, float through UR tubesheet

Tubesheets: Combustion Gas Inlet (DR) : 309 SS

Combustion Gas Exit (UR) : 304 SS

Baffles : First baffle from DR end: 309 SS

Other baffles: 304L SS

3.3 Combustion Chamber

Burner: Maxon 30M Megafire

Capacity: Installed: 30 MM BTU/hr; Minimum: 2 MM BTU/hr

Maxon Smartlink MRV air/fuel positioning

2 FireEye UV Scanners (FireEye 45UV-1005UV)

3.4 Process Air Fan

Buffalo Forge Model 11-25 (backward blade type)

P.O. #LOAB 71363 EA

Capacity: 18,000 SCFM

Head: 18.5" H₂O

Inlet Damper: Variable Inlet Vanes

Motor: 100 HP, 1800 RPM

Variable Speed Drive: Allen Bradley Powerflex 700

3.5 Combustion Air Fan

Twin City 1310S7TBA

Capacity: 6,000 scfm

Motor: 50 hp, 3560 rpm

A. EQUIPMENT DESCRIPTION (Continued)

3.0 Process Air Preheater (Continued)

3.6 Recirculation Air Fan

Twin City 330 BCS Centrifugal Fan

Motor: 75 hp, VFD rated

VFD: Allen Bradley Powerflex 700

Design: 14,000 scfm at 450 degF

Bearings cooled by circulating oil system with ½ hp, 480v motor

3.7 Exhaust Stack

Dimensions: 24" dia x 40' high

Live section of stack: 10 ga 304L SS

Stack Base: C/S w/ 2-3 mils DFT of inorganic zinc

3.8 Process Air Flow Meter (Inlet Stack)

Fluidic Venturi Meter

Model: V-100

Style: ASME Short Form

Line Size: 29 ¼" ID

Bore Size: 17.799"

Max Flow: 20,000 scfm

3.9 Combustion Air Flow Meter

Fluid Components Intl.

Model ST50-4-A-3-2-B-0-0

3.10 Natural Gas Flow Meter

Fluid Components Intl.

Model GF-90 – AB – 3 F00 B B A B A 0088 D – A3 – A1

A. EQUIPMENT DESCRIPTION (Continued)

4.0 Combustion Furnace

4.1 Combustion Furnace FA-7366-6008-01

Two section furnace with 13-1/2" thick firebrick and fire clay lining, vertical section 20' diameter x 31' high, horizontal section 15' diameter x 33' long.

BPF 177970, 178612, 187220, 189574

Burners: John Zinc Co; 19 MM BTU/Hr (each)

BPF 177969

4.2 Combustion Furnace Spray Nozzles - FA-7366-7008-06

Bayonet: 1" SCH. 40 Zirconium pipe, 304 SS Flg.

No.: 12

1/2" G32 (Brass) Spraying Systems Co.

BPF 178311, 178817, 178511, 186264, 187337, 187294

4.3 Combustion Furnace Spray Nozzles – "Rashmi" Nozzles

Bet Fog Nozzle, Inc (www.bete.com)

1/2" Model MP218M in brass

4.4 Polymer Spray Nozzles

1/2" BD WhirlJet (Brass) Spraying Systems Co.

Sizes 5, 8, and 10

4.5 Sulfur Spray Nozzles

3/4" BD WhirlJet (316 SS) Spraying Systems Co.

Sizes 5, 8 and 10

A. EQUIPMENT DESCRIPTION (Continued)

5.0 **Boiler System**

5.1 No. 1 Waste Heat Boiler FA-7366-7009-20

Fire Tube Type

Two pass boiler, 28' long x 12" diameter

Steam drum: 14' long x 4' diameter

Material: C/S

Tubes: 600 - 3" C/S 0.24" thick

Area = 4650 ft²

BPF 260018

5.2 Boiler Feed Water Pumps FA-7366-7009-03,04,16

Ingersoll Rand Type 1-1/2 CNTA-8 Stg.

Capacity: 125 GPM

TDH: 1460'

Material: Impeller – CI

Coupling: Woods #10

Packing: J. C. 805 MBF 2-1/16 x 2-7/8

Upriver and Down-river pumps are electric-motor driven (100 hp) center pump is steam-turbine

BPF 177961, 187963

5.3 SURGE TANK FA-7366-7009-5

Riveted Carbon Steel Tank

6' ID x 25'5" Length

5300 gal capacity

Fabricated in 1937

Drawing: D40813 G375

Eq. Pc. SAR0057

A. EQUIPMENT DESCRIPTION (Continued)

6.0 **Startup Fan 7366-7008-04**

Clarage Fan Model 126 XL
Capacity: 15,000 ACFM @ 550°F
Suction: 6" H₂O
Material: Steel
Coupling: Woods #10
BPF 177955