

## **GWF Fluidized Bed Petroleum Coke Plant.**

GWF Power Systems LP has five (5) facilities in Contra Costa County, California. These facilities each consist of a single fluidized bed boiler providing steam to a single steam turbine generator. Facility names and location

### **Site 1 – 2.5 acre facility located at 895 E. 3<sup>rd</sup> St. Pittsburg, CA**

The facilities include:

- 245 mmBTU/hr Fines circulating fluidized bed boiler, manufactured by Combustion Power Company
  - Distributed Control System
    - HMI - Conductor NT 5.0.9
    - Bailey infi90
  - NOx abatement via a SNCR system using ammonia injection
    - 11,000 gallon tank
  - SO2 abatement via limestone injection
    - 262 ton silo
  - Particulate abatement via a four module Cantech pulse jet baghouse
  - Forced circulation Steam Drum circulation loop
    - 3 Boiler Circulating water pumps
      - Union Pump, model 6x8x15 HTS
      - 125 hp
      - 2200 gpm @ 62 psid
  - Fuel feed system
    - 900 ton silo
    - Dual Fuel trains each train consists of 1 metering screw, 1 transfer screw, 1 bucket elevator and 1 vibrating screen
    - 15 ton surge bin
    - McCawbre lock vessel injection feeders
  - One Forced Draft Fan, Howden Fans
    - 1500 HP
    - 53000 acfm
  - One Induced Draft fan, Chicago Blower
    - 500 hp (site 1 400 hp)
    - 82846 acfm
  - One 70 mmBTU/Hr Air preheat burner used for start-up
    - No.2 Diesel
    - Natural Gas
  - One diesel storage tank – 40,000 gallons

- One ABB VAX steam turbine with steam bypass
  - Steam turbine operates at a nominal 1494 psia, 996°F, 180 klb/hr
- Steam Turbine Auxiliaries
  - Lube oil system
  - Hydraulic Oil system
  - Controls
  - Extraction Steam
- One ABB 24.1MVA generator w/ PMG
- One GSU transformer
  - Site 1 – Magnetek 24.6 MVA, 63/13.8kv
- 4.16kv Station transformer
  - Cooper
- 480 v station transformer
  - Gould ITE
- One Holtec condenser – titanium tubes
- One wet 3 cell cooling tower, Marley
  - 1 two speed fan per cell
    - 40 hp / 10 hp
  - 3 circulating water pumps, Goulds
    - Two in operation, one in standby
    - 100 Hp
    - 5993 gpm @ 38.1 ft
  - Water
    - Site 1
      - Supply – Contra Costa Water District via USS Posco
      - Supply – City of Pittsburg
      - Discharge – New York Slough
    - Each site contains a Reverse Osmosis Unit and a 16,000 gallon de-mineralized water tank.
- 2 Boiler feed water pumps ( one operational / one stand-by)
  - Sulzer Bingham, 3x6x9 MSD, 14 stage
  - 600 hp
  - 363 gpm / 4495 TDH
- One 750 hp Emergency Diesel Generator
- Additional Storage
  - Silo -1280 cubic feet capacity
  - Silo - 1600 cubic feet capacity
  - Silo – 11000 cubic feet capacity
  - Warehouse/Maintenance building

