

120 MW LM6000 Combined Cycle Power Plant

The LM6000 gas turbine is a simple-cycle, two-shaft, high thermal performance industrial gas turbine and is recognized at the top of its class for any power project. The compact design with half the weight of other large aeroderivative gas turbines at only 17,336 pounds (7,863 kilograms) makes the LM6000 an ideal turbine that will generate more power in less space.

This combined cycle power plant consists of 2 x LM6000 PC Gas Turbines, HRSG, Steam Turbine, cooling equipment, demineralization unit, switch room, transformers and other equipment, 50 HZ, 11.5KV. Complete Plant that has been well maintained since installation.

Turbine Package (1)

Specification:

Manufacture: GE
Model: LM6000PC
Date Manufactured: 2004

Turbine:

Power Capacity: 46.95 kW (ISO),
Compressor Speed: 10200 rpm
Turbine Speed: 3600 rpm,
Comp. Blade Stages: 14 stg HP, 5 stg LP high
Pressure Turbine Stages: 2 stg.
Power Turbine Stages: 5 stg
Total hours of Operation: 37,830 hours
Hours of Operation since Overhaul: 7,658 hours
Year of Overhaul: 2012

Turbine Generator:

Manufacture: Brush
Date Manufactured: 2004
Output Capacity: 63500 KVA/50800 KW

Speed: 3000 rpm
Frequency: 50 HZ
PF: 0.80
Voltage: 11500 V
Current: 3188 A
Exciter Voltage 225 VDC

Turbine Package (2)

Specification:

Manufacture: GE
Model: LM6000PC
Date Manufactured: 2007

Turbine:

Power Capacity: 46.95 kW (ISO),
Compressor Speed: 10200 rpm
Turbine Speed 3600 rpm,
Comp. Blade Stages: 14 stg HP, 5 stg LP high
Pressure Turbine Stages: 2 stg.
Power Turbine Stages: 5 stg
Total hours of Operation: 21,203 hours

Turbine Generator:

Manufacture: Brush
Date Manufactured: 2008
Output Capacity: 63500 KVA/50800 KW
Speed: 3000 rpm
Frequency: 50 HZ
PF: 0.80
Voltage: 11500 V
Current: 3188 A
Exciter Voltage 225 VDC

Steam Turbine Generator

Manufacture: FRAMETOMEANP-JEUMONT

Manufacture Date: 2004

Operating Hours: 44,804

Specification: Capacity: 32658 kVA

Speed: 1500 rpm, Cos Ø0,80

Voltage: 11500 V, current 641A

Frequency: 50 Hz, IP54

Exciting voltage: 181V DC

Exciting voltage: 225 VDC

HRSG

Manufacture: BWG

Model number: Vertical Fin Tube

Manufacture date: 1998-1999

Specification: HP steam flow 37.44 t/h

LP steam flow 5.4 t/h

HP pressure 58 barg

HP temp.447 °C,

LP pressure 2.5 barg

LP temp.207 °C

Feed Water Temp.72 °C

Cooling Water Tower

Manufacture: CENK

Model: 3-KMF-22

Type: Counter Flow Type I3 cells

Manufacture date: 1999

Cooling Water Tower Specification:

Total Water flow rate 1.500 m³/h

Hot Water temp.35 °C

Cold Water temp.19 °C

Cooling range 16 °C

Wet bulb temperature 11 °C

Relative Humidity 60 %

Evaporation loss 1.86 %

Drift Loss 0.02 %

Demi Water Unit

Manufacture: BAYGAN

Capacity: 41.5 m³/h demineralization water
Manufacturing date : 1999

Demi Water Unit Specification

Permeate flow 41.5 t/h
Line Capacity: 996 t/day
Max.operation temp.45 C, Max. Operating pressure 10 barg

Switch Room

2X 34.5 kV FEEDERS connecting to national grid system TM (switchyard), plus 1 generator and 1 step-up transformer and 1 service transformer and their circuit breakers, disconnections and measuring systems.

Main Transformer

Manufacture: ABB
Model number: TSPH-98513/900
Manufacture Year: 1998
Specification: POWER TRANSFORMER (w/Load Tap Changer)
NOMINAL POWER: 60.000 KVA
FREQUENCY: 50 Hz
LV: 11500 KV, NOMINAL CURRENT (A), HV: 1004,1 A LV: 3012.3 A CONNECTION GROUP: YNd5

Aux Transformer

Manufacture: ABB
Manufacture date: 1998
Power: 1600 KVA
Vector group: DYN5
Phase: 3
Primer voltage: 1-36226V
2-35363 V, 3-34500 V, 4-33637 V, 5-32774 V
Second voltage: 400V
Primer current: 26.78 A
Secunder current: 2309.40 A
Serial no: DT-0961-98
Type: TSPH 98033 / 900
Cool. Type: ONAN

Brown Energy Group Inc.