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
Turbin 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 V DC

**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 V DC
Steam Turbine Generator

Manufacture: FRAMETOMEANP-JEUMONT
Manufacture Date: 2004
Operating Hours: 44,804
Specification: Capacity: 32658 kVA
Speed: 1500 rpm, Cos Ø 0,80
Voltage: 11500 V, current 641A
Frequency: 50 Hz, IP54
Exciting voltage: 181V DC
Exciting voltage: 225 V DC

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/3 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
2x34.5 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: 1-36226 V
2-35363 V, 3-34500 V, 4-33637 V, 5-32774 V
Second voltage: 400 V
Primer current: 26.78 A
Seconder current: 2309.40 A
Serial no: DT-0961-98
Type: TSPH 98033 /900
Cool.Type: ONAN