# **420 MW Combined Cycle Power Plant**

1 No. - 420 MW SIEMENS ELECTRIC (2009/10), Combined Cycle Complete PowerPlant, having the Following Technical Specifications:

#### **PLANT DETAILS:**

420 MW combined cycle plant the plant is based on Siemens V94.2 gas turbines.

The plant was installed in 2006, natural gas was available only from March 2009. The following are the commissioning dates of various equipment.

- GT # 1A 30 March 2009
- GT #1B 10 March 2009
- Open Cycle declared on 04 June 2009
- STG was commissioned on 22 June 2010
- Combined Cycle declared on 30 June 2010

The plant running hours as following:

GT # 1A = 32,361 EOH GT # 1B = 22,913 EOH STG = 19,460 EOH

#### **STEAM TURBINE:**

The operating hours of the steam turbine is 17900 hours.

#### **GAS TURBINES:**

Dehumidifier is built in feature of V94.2.

#### **TECHNICAL SPECIFICATIONS:**

As follows:

Gas Turbine Generator	Electrosila		2
Steam Turbine	LMZ	K166/107, 158MW	1
Steam Turbine Generator	Electrosila	15.85kv, 200MW	1
Heat Recovery Boiler	L&T	HP 222tph @107bar, MP 38tph @ 22bar and LP 19tph @4.5bar	2
Generator Transformers	Crompton Greaves	400 kv / 15.75 kv	2
Auxiliary Transformers	Crompton Greaves	6.6 kv / 415 v	2
HP / IP/ LP Boiler	Nasosenergomash/	270m <sup>3</sup> /hr	3
Feedwater Pumps	Nasosenergomash/	65m <sup>3</sup> /hr	2 2
_	Kirloskar	$25\text{m}^3/\text{hr}$	2
CEP	Nasosenergomash	245tph	2
DM Plant	Doshi Ion Exchange		1
CW Pumps	Kirloskar		3
CW Pump Motors	WEG		3
Cooling Tower	Paharpur	16 cells	1
Emergency Diesel Generator	Cummins	1250kva	1

## **PHOTOGRAPHS:**

## Gas Turbine GT# 1B





Inlet Filter House of GT # 1A and 1B



**Exhaust Duct** 



**Gas Conditioning Skid** 



**Gas Turbine Generator & Auxiliaries** 



**Steam Turbine & Generator** 



**Steam Turbine Auxiliaries** 

### **BALANCE OF PLANT**



HRSG



Corrosion on structures of HRSG # 1A and 1B



**Condition of HP Boiler Feed Pumps** 



**Condition of IP Boiler Feed Pumps** 

## BFW Pumps Cooling Tower

## Cooling tower is of concrete structure



**Cooling Tower** 



**Cooling Water Pumps** 

# **DM Plant & Dozing System**



**DM Water Plant** 



tanks for DM plant



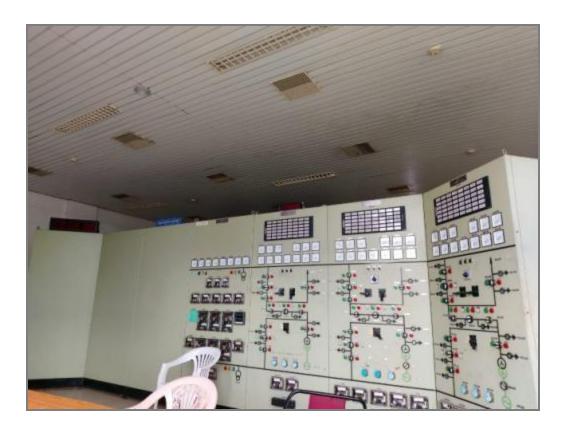
**Dozing Skids** 



Transformer



HT Switchgear



**Switch yard Control** 





**Battery Bank for GTG** 

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Battery



**Top enclosure of DG Set** 

## **CONTROL SYSTEM & DCS PANELS**

### **Control Room**

