

# GE 6B 2 Units x Alstom STG 1 Unit - 110 MW CCPP

## Location

Site Location :

➤ **Thailand**

Area :

➤ **55,125 m<sup>2</sup> (34.45 ไร่)**

## Project Schedule

Commercial Operation Date (COD)

➤ **28 January 2003**

Power Purchasing Agreement (PPA)

➤ **21 Years**

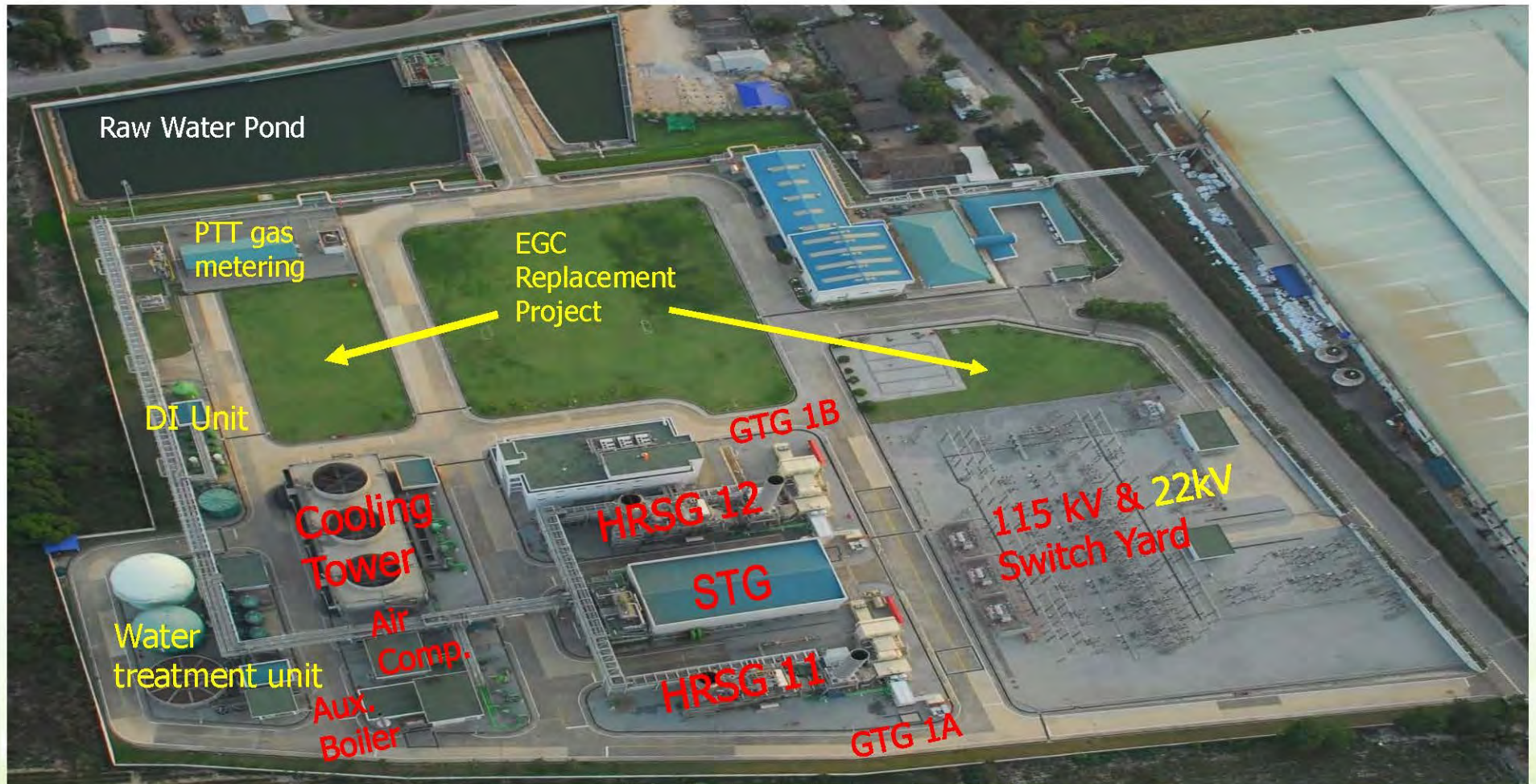
PPA Expiration Date :

➤ **28 January 2024**

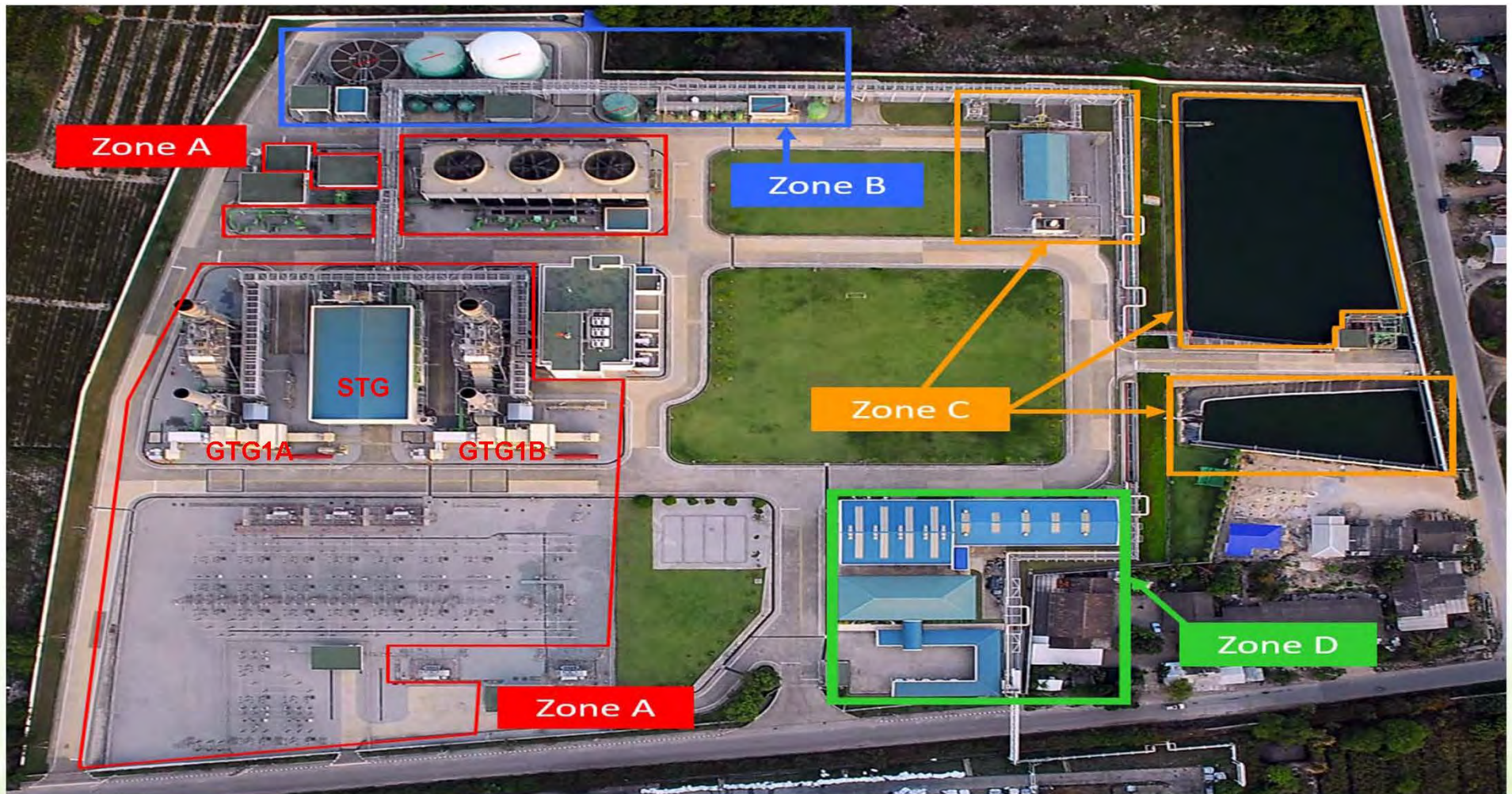


Hydrogen H<sub>2</sub>

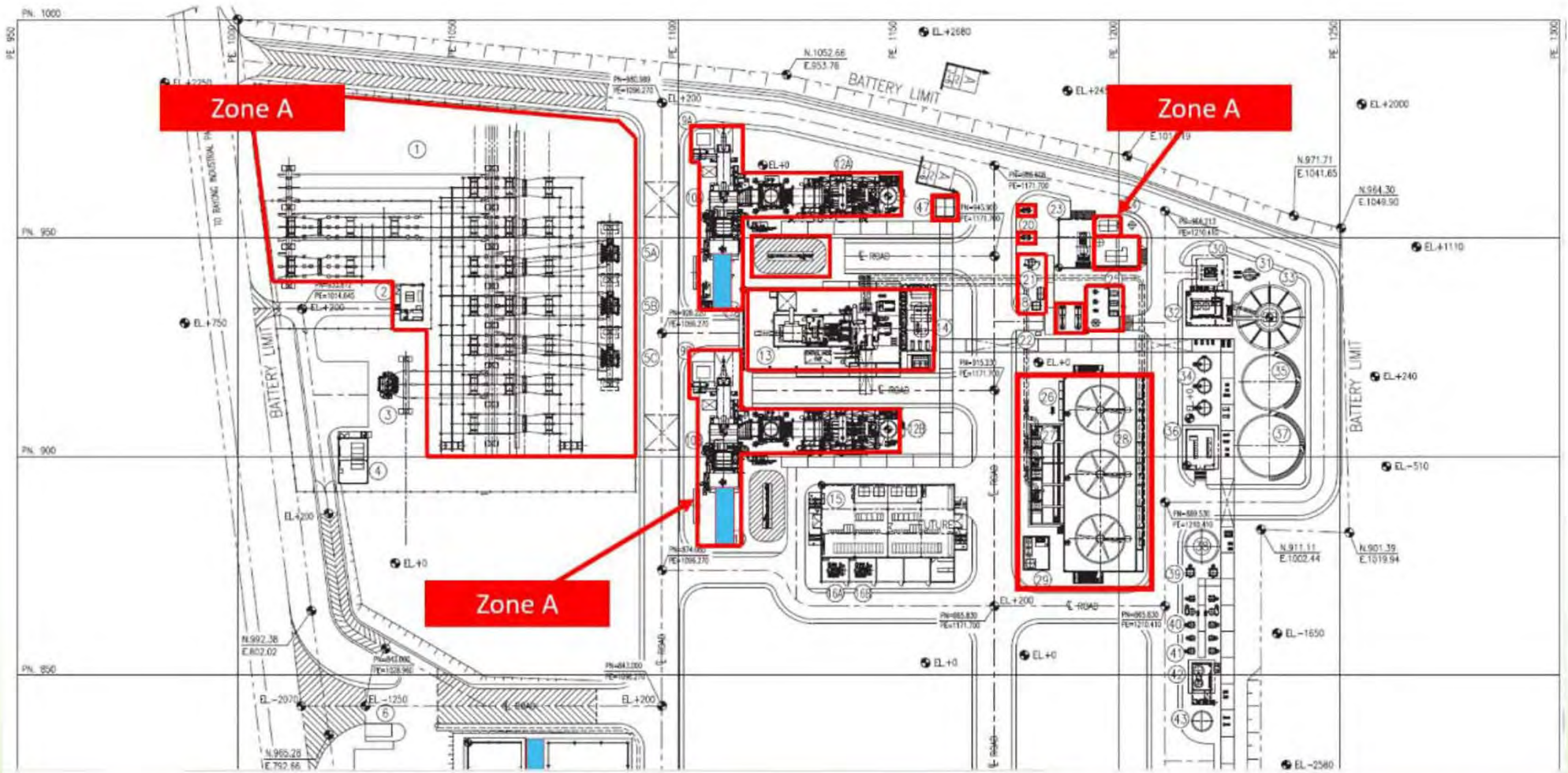
# Project Layout Plan



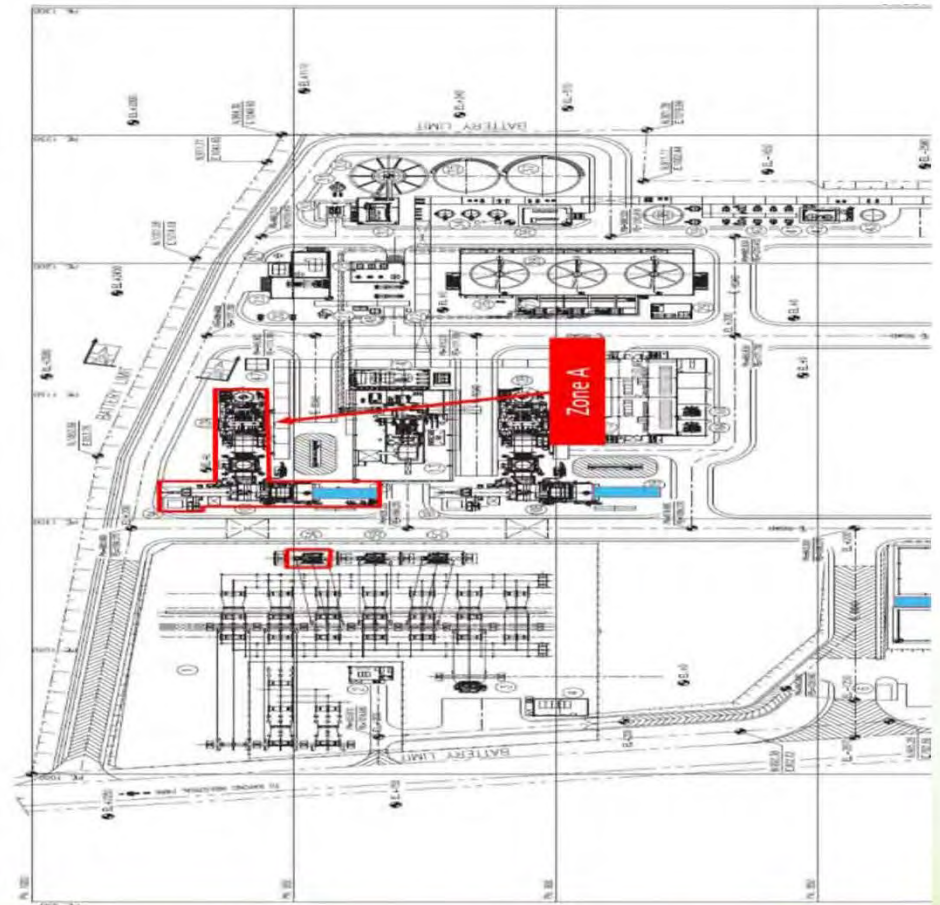
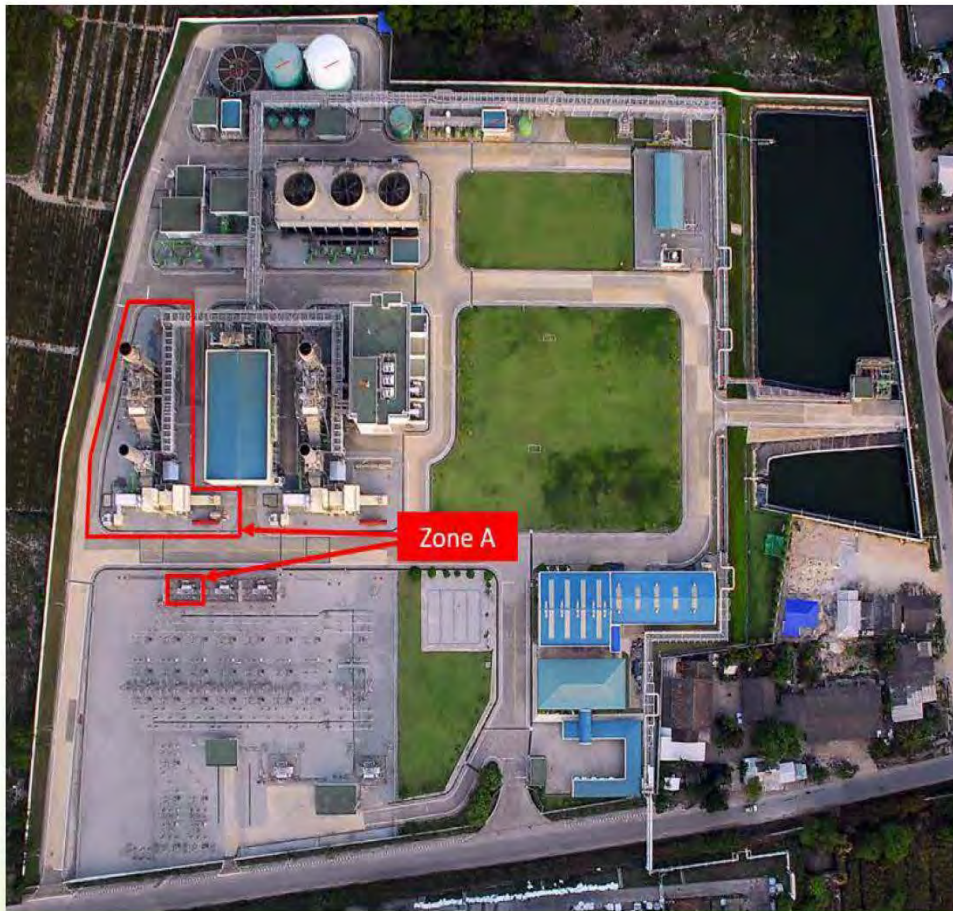
# Decommissioning Zone



# Decommissioning Zone



# GTG1A



# Power Block GTG1A



Gas Turbine Frame 6		
Design Data		
Model series	PG 6581 B	
Shaft speed	5,163 rpm (50 Hz)	Single shaft
Turbine exhaust temp.	554 C	
Fuel	Fuel gas	
Rating (base load)	39.1 MW	site 38.8 MW
Control system	SPEEDTRONIC MARK V	
Nox control	Steam injection	
Starting system	Starting E-motor	
Compressor Section		
Number of stage	17	
Compressor type	Axial flow	
Turbine Section		
Number of stages	3 - single shaft	
Nozzles	Fixed area three-stage	
Combustion Section		
Type	10 multiple combustors	
Arrangement	Concentrically located around the compressor	
Fuel nozzles	Single fuel nozzle 1 per combustion chamber	
Spark plugs	2 electrode type, spring-injected self retracting	
Flame detector	4 ultra-violet type	#2, #3, #7, #8

# **(GTG1A) Unit 1**

Gas Turbine GE- Model PG 6581B,  
Frame 6, Heavy Duty, 38.5 MW)



# GT1A - Unit 1

GTG Generator



Gas Turbine Control Unit



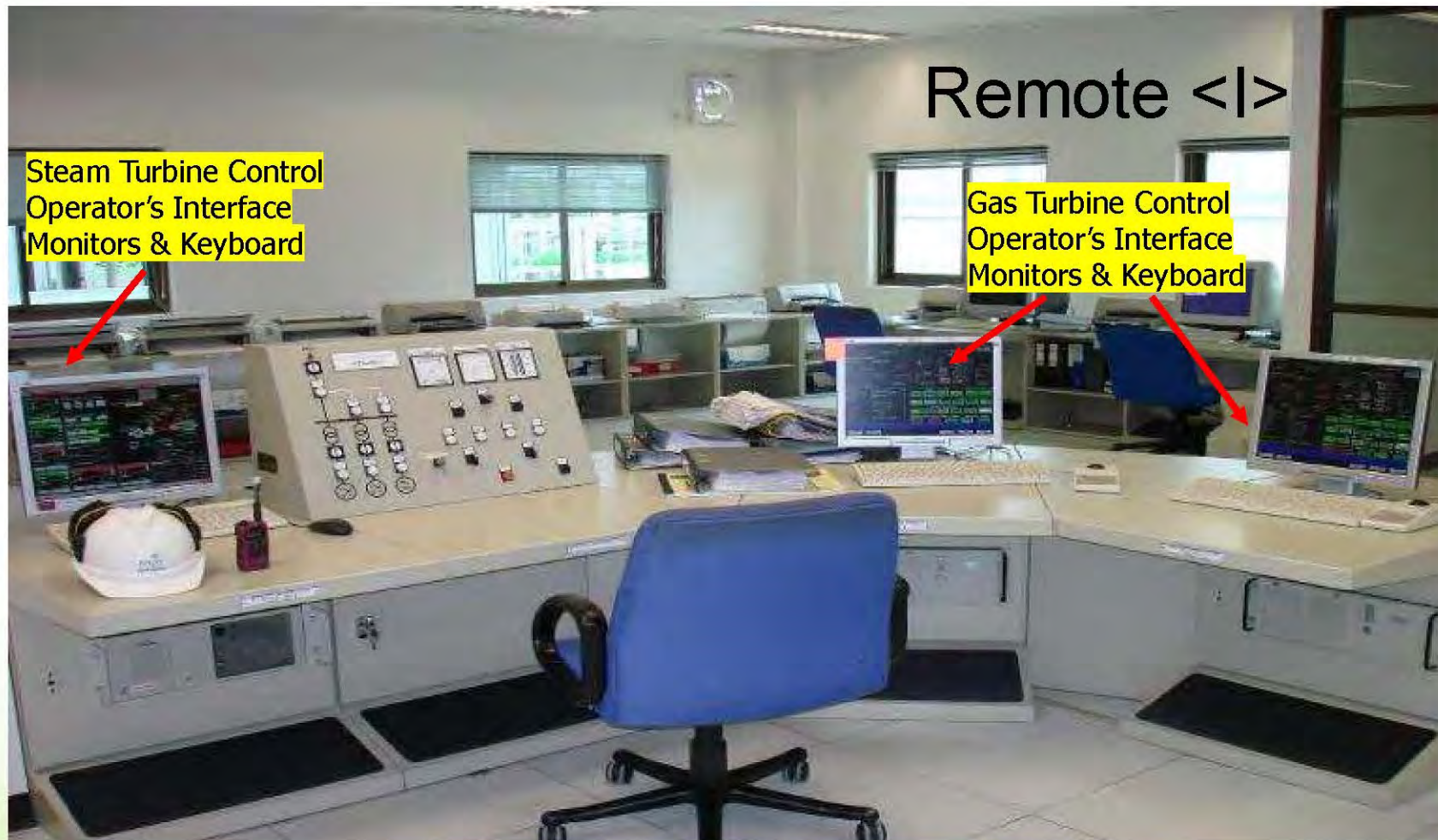
## Speedtronic Mark V Control Modules



Local <|>



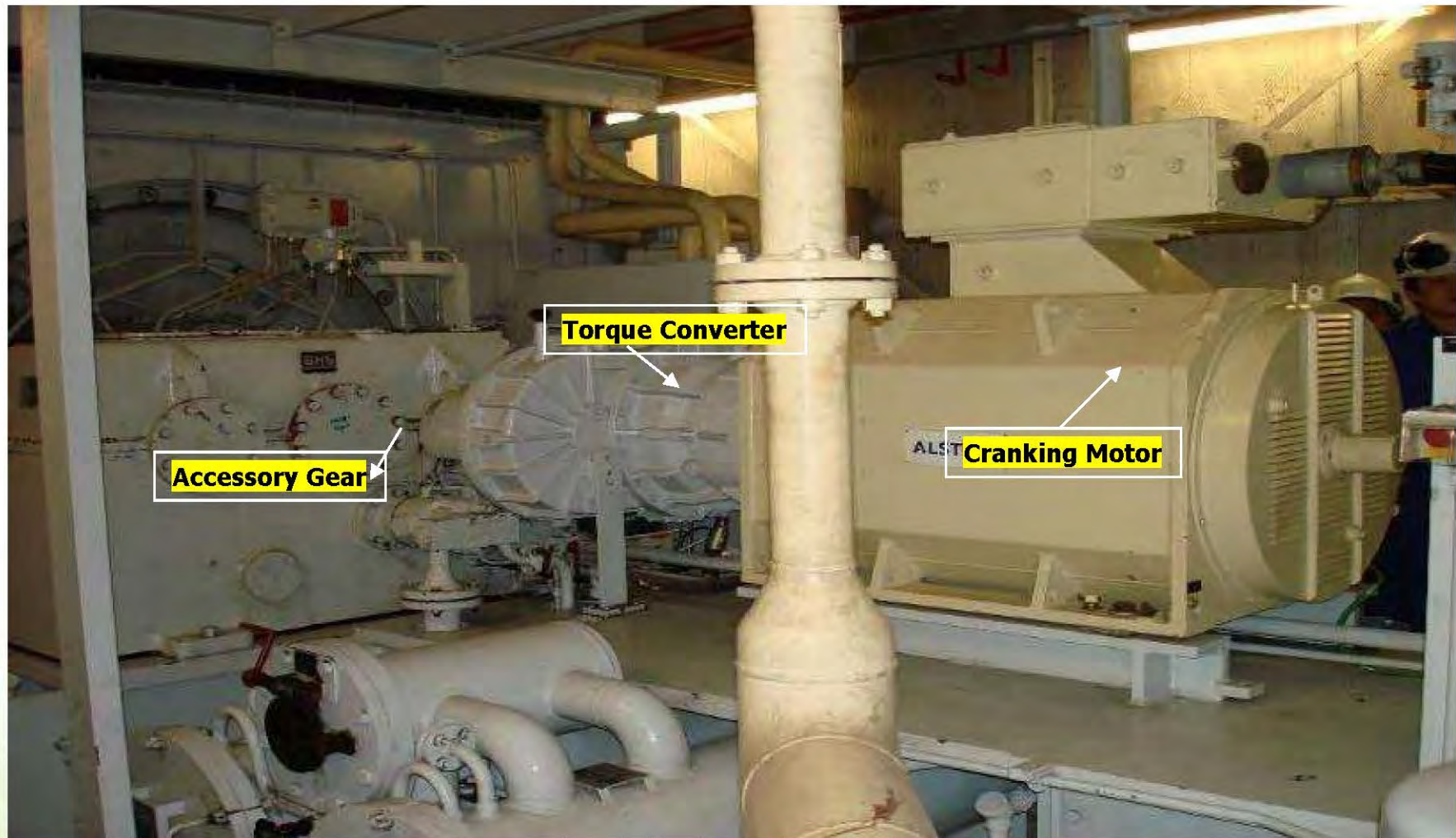
## Control Room Layout



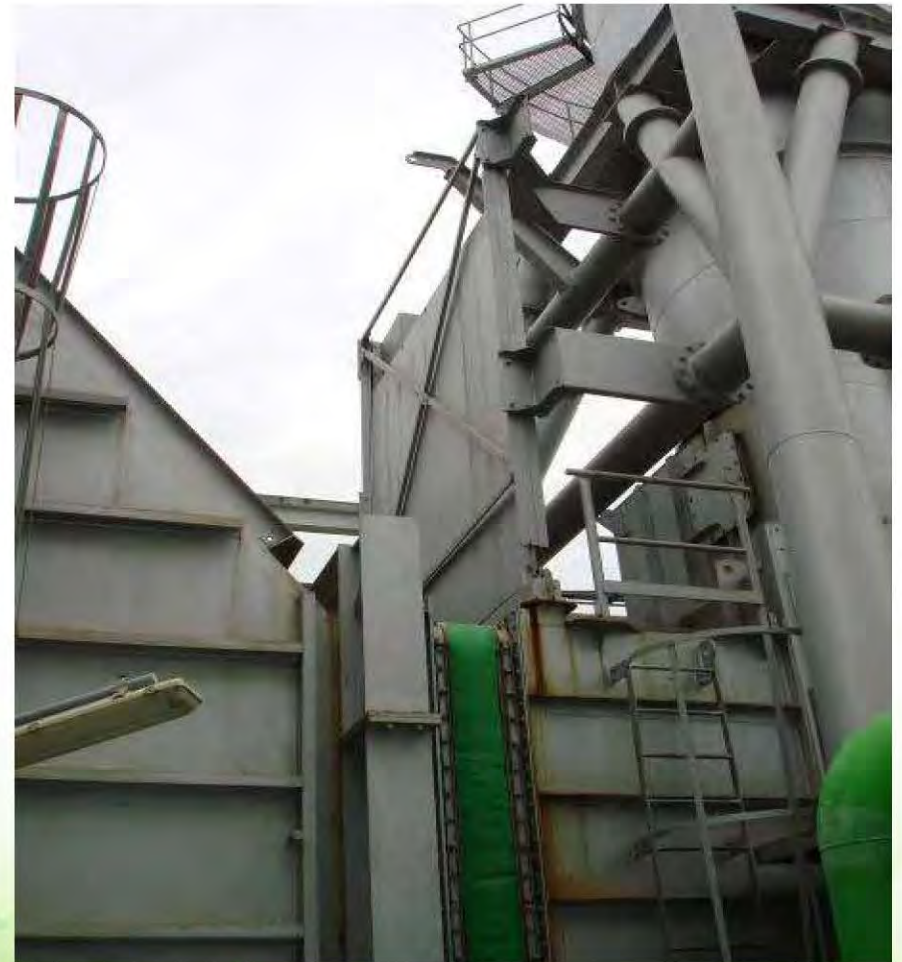
## Gas Turbine LV Supply Motor Control Center ( MCC )



## GAS TURBINE STARTING SYSTEM



## Gas Turbine Exhaust Gas to HRSG with Bypass Stack



## UNIT AUXILIARY TRANSFORMER 1 (1APC-XF-3) 11kV/400V, 400kVA



# GT Steam Ejector (DENOx)



# N2 Fire Protection



# Power Block GTG1B



## GTG1B - Unit 2



# Unit 2 (GTG1B)

GTG Generator Room



Gas Turbine Control Unit



## UNIT AUXILIARY TRANSFORMER 2 (1APC-XF-4) 11kv/400V, 400 kVA



## GT Steam Ejector (DeNO<sub>x</sub>)



# N2 Fire Protection



# Power Block

## STG



# Steam Turbine (STG) ALSTOM, 42MW



<b>Steam Turbine Design Data</b>	
Control	TURLOOP
Output	42MW
HP steam press/ temp	85 bar a/ 518 C
HP steam flow	130 t/h
LP steam press/ temp	8.4 bar a / 228 C
HP steam flow	27 t/h
<b>Steam Turbine Generator</b>	
Output	49.2 MVA
Rated power factor	0.85
Rated frequency	50 Hz
<b>Condenser</b>	
Steam flow	40.556 kg/s
Steam enthalpy	2,297 kJ/kg
Pressure in condensor	0.095 bar a
Temperature	44.9 C
Cooling water flow	2,560 kg/s
temp - in	32 C
temp - out	40 C

## Steam Turbine, ALSTOM Power - Czech, 42 MW



# STG GENERATOR TRANSFORMER STG (1GTB-XF-1)

11/115 kV , 52 MVA



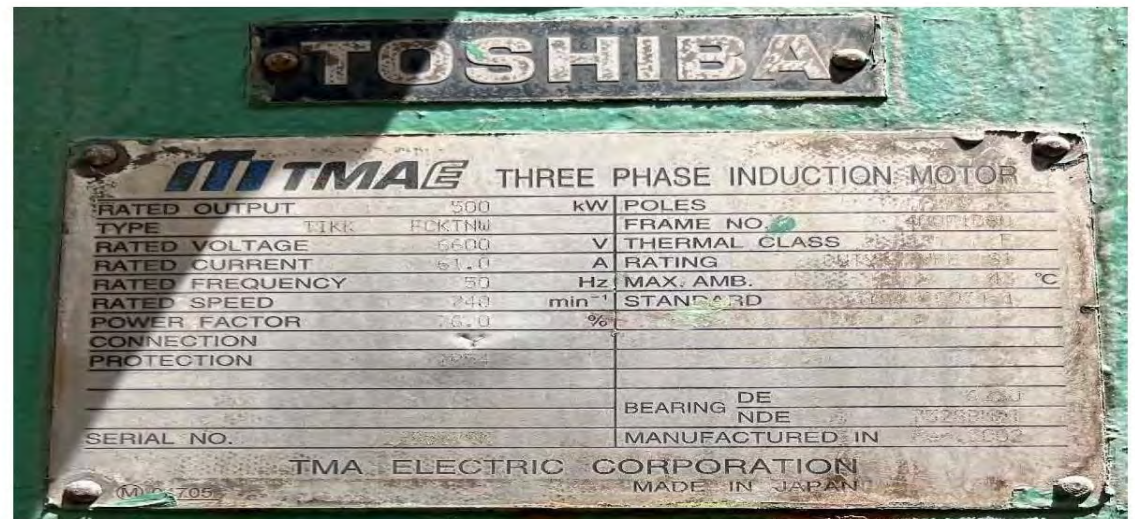
# Balance Of Plant (BOP)



# Cooling Tower



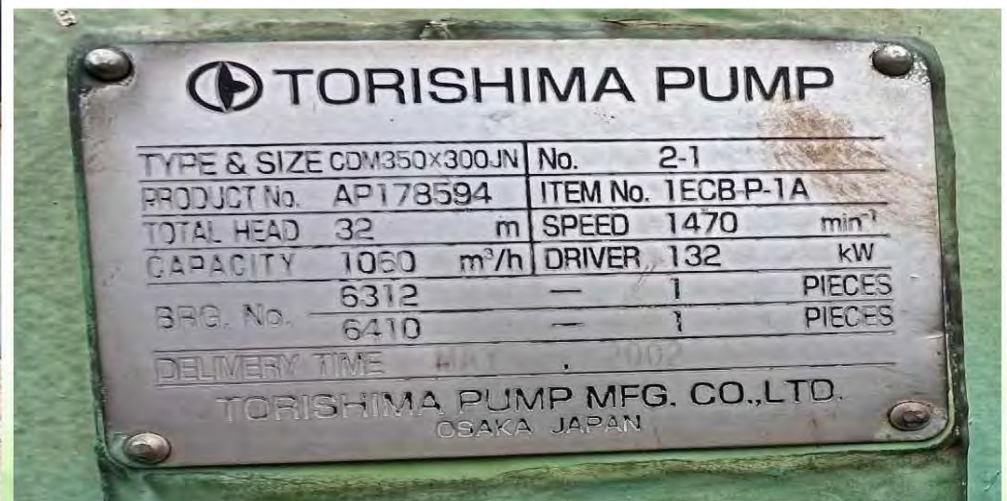
# Cooling water pump (3 Unit)



# Close Cooling Water System



# Close Cooling Water Pump ( 2 Unit)



# Expansion Vessel



# Plate Heat Exchanger (2 Unit)



# Boiler Feed Water System

Deaerator



Chemical Feed



## HP Boiler Feed Water Pump (3 Unit)



**74 m<sup>3</sup>/h, 400kW**



## LP Boiler Feed Water (3 Unit)



# LP Boiler Feed Water Pump



# Condensate System



# Condenser



# Condensate Water Pump (2 Unit)



75 kW



# Vacuum Pump (2 Unit)



37 kW



# Ball Tube Cleaning (1 Unit)



# Air System

## Air Compressor (3 Unit)



## Air Dryer (2 Unit)



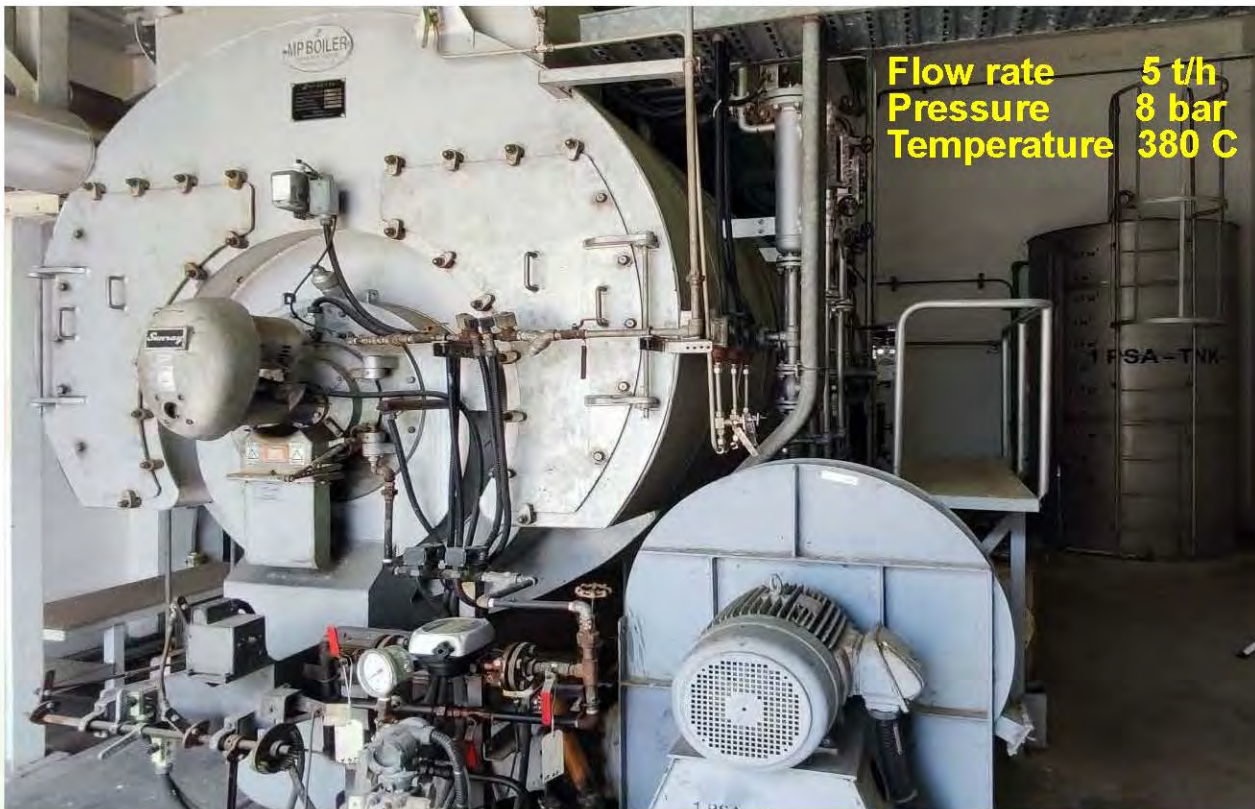
**Service Air Tank (2 Unit)**



**Control Air Tank (1 Unit)**



## Auxiliary Boiler (1 Unit)



# Switchyard

