1.0 PERFORMANCE GUARANTEE

1.1 Performance Guarantee Sheet

The Supplier shall design the following Performance Guarantee figures at terminal point specified in this performance guarantee sheets. The performance guarantee sheets shall be provided on the basis of described condition and estimated site condition.

D. Feedwater Pump		
Guarantee Items	Unit	Value
Discharge flow at rated point (HP/IP)	m^3/h	
Total differential head (TDH) at rated point (HP/IP)	m	
Maximum NPSH required at rated point with specified suction temperature and pressure	m	
Overall efficiency at rated point	%	
Electric power consumption at motor terminal	kW	
Noise level at 1m distance from source	dB(A)	Refer to note 2)
Vibration (peak to peak)	μm	

Notes :

1) The combined cycle power plant unit consists of one(1) Gas Turbine & Generator, one(1) Heat Recovery Steam Generator, one(1) Steam Turbine & Generator and their related auxiliaries.

2) The maximum noise level of the equipment shall not exceed 85 dB(A) at a horizontal distance of one(1) meter from all surfaces of equipment, and at a height of one and a half(1.5) meters above the operating floor and the floor on which the equipment or noise reduction enclosure is mounted.

Item		Unit	Guarantee	Remark
In case of safety valve popping	For safety valve and outlet pipe	dB(A)	≤85	For plant start-up & shutdown period including normal safety valve popping
	For related silencer	dB(A)	≤85	
All others excepting above (including all pumps, motors, valves, pipes, transformer, gas vent, etc.)		dB(A)	≤85	
Air pollution control system.(outdoors) - Flue gas recirculation fan - Ammonia feed pump - YPEA supply pump - Cooling air fan		dB(A)	≤75	

3) Combined cycle gross power output and efficiency shall be calculated based on the 399.2 mmH_2O friction loss(at ASME) of the HRSG. But friction loss of the HRSG can be slightly changed after detail and contract of the HRSG.

4) The performance design values are based on the equipment being in a new and clean condition. The degradation curve should be utilized during the performance test after new and clean condition.

5) THC

○ Definition : THC excluding Methane (CH_4) and Ethane (C_2H_6)

○ Performance

- G/T 10% ~ G/T 40% Load : above 90% removal efficiency of THC excluding methane and ethane or above 90% removal efficiency of Formaldehyde

- G/T 40% ~ 100% Load : below 1 ppmvd(15% O_2) as THC excluding methane and ethane

3.7 Auxiliary Power Consumption List

Supplier shall submit the Auxiliary Power Consumption List for base (100%) load respectively under the following different operating conditions.

Items	Mode Ⅰ		Mode Ⅲ	
	-12℃, 60% RH	5℃, 60% RH	15℃, 60% RH	32℃, 70% RH
HP/IP BFP				
Total (kW)				

Items	Mode I	Mode IV
	-12℃, 60% RH SteamExtraction	-12℃, 60%RH
HP/IP BFP		
Total (kW)		

Notes : Auxiliary power consumption shall be included all facilities (equipment, valve, heater, etc.) of supplier's scope