

APPENDIX 2D

Major Equipment List

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2D.1 Introduction

The following equipment descriptions are based on conceptual design and are representative of the proposed scope.

2D.2 Combustion Turbine Generator (CTG)

Quantity	Capacity	Description
2	100%	Advanced technology combustion (gas) turbine generator, suitable for firing natural gas, nominally rated at 170 MW at 62 °F and 84 percent relative humidity (RH) ambient conditions. Dry-low NOx combustion control.
2	100%	Inlet air filter houses.
2	100%	TEWAC or hydrogen cooled generator.
2	100%	Compressor water wash system (on/off-line).
2	100%	Acoustical enclosure.
2	100%	CO ₂ or FM-200 fire protection system.

2D.3 Heat Recovery Steam Generator (HRSG)

Quantity	Capacity	Description
2	100%	HRSG, three-pressure, fired, reheated with horizontal gas flow and vertical fin tubes.
2	100%	Selective catalytic reduction (SCR) system,.
2	100%	12,000 gallon aqueous ammonia storage tanks.
1	100%	Aqueous ammonia truck unloading skid.
1	100%	Aqueous ammonia forwarding skid.
2	100%	Aqueous ammonia vaporizer and injection skid.

Quantity	Capacity	Description
2	100%	CO catalyst system.
2	100%	HRSG inlet/outlet ducts and exhaust stack.

2D.4 Steam Turbine Generator (STG)

Quantity	Capacity	Description
1	100%	<p>Condensing type reheat steam turbine generator nominally rated at 310 MW. The STG has the following accessories:</p> <ul style="list-style-type: none"> Lube oil system. Hydraulic oil system. Steam seal and exhauster system. Turbine control system. Turning gear. TEWAC or hydrogen cooling system. Seal oil system. Steam stop/control valves.

2D.5 Feedwater System

Quantity	Capacity	Description
3	50%	Condensate pump.
1	100%	Condensate storage tank - 100,000 gallons.
4	100%	High pressure boiler (HRSG) feed pumps with interstage bleed.

2D.6 Heat Rejection System

Quantity	Capacity	Description
1	100%	Air-cooled steam condenser with vacuum deaeration.
2	100%	Condenser mechanical vacuum pumps.
2	100%	Steam jet air ejectors.

2D.7 Compressed Air System

Quantity	Capacity	Description
2	100%	Air compressors, air-cooled.
1	100%	Air receiver tank.
2	100%	Air dryer skids, each with two desiccant dryer towers.

2D.8 Water Treatment System

Quantity	Capacity	Description
1	100%	Demineralized water tank - 150,000 gallons.
1	100%	Demineralization/ water treatment plant including chemical storage vessels and chemical injection packages.
2	100%	Demineralized water pumps.
1	100%	Oil/ water separator.
1	100%	Waste water storage tank -300,000 gallons.

2D.9 Fuel System

Quantity	Capacity	Description
2	100%	Metering station.
3	50%	Fuel gas compressor.

2D.10 Auxiliary Boiler

Quantity	Capacity	Description
1	100%	Natural Gas Fired.

2D.11 Electrical Equipment (A)

Quantity	Capacity	Description
1	Lot 100%	High voltage switchyard breakers.
1	100%	CT Generator 101 step-up (GSU) transformers. OA/FA/FA, 138 kV - 18 kV.
1	100%	CT Generator 201 step-up (GSU) transformers. OA/FA/FA, 69 kV - 18 kV.
Quantity	Capacity	Description
1	100%	ST Generator step-up (GSU) transformers. OA/FA/FA, 230 kV - 18 kV.
2	100%	CT GSU transformer circuit breakers, 18 kV.
1	100%	ST GSU transformer circuit breaker, 230 kV.
2.	100%	Unit auxiliary transformers (UAT). OA/FA/FA, 18 kV - 4.16 kV.
1	Lot 100%	Electrical equipment including 4.16 kV switchgear, 480 V load centers and MCCs.

2D.12 Significant Structures and Equipment

Quantity	Description	Dimension (ft)		
		Length	Width	Height
2	Combustion turbine generator with starter package (CT)	100	45	20
2	CT inlet air filter house	35	45	70
1	Steam turbine generator	95	20	19
1	Air-cooled condenser	405	160	94
2	Heat recovery steam generator (HRSG)	135	45	94
2	HRSG stack	--	19.0 dia.	145
2	SCR system	15	30	83

1	Cooling water heat exchanger	125	70	20
1	Demineralized water storage tank	--	30 dia.	30
1	Condensate storage tank	--	30 dia.	21
2	Raw water/fire water storage tank	--	44 dia.	28
1	Waste water storage tank	--	44 dia.	28

2D.13 Buildings

Quantity	Description	Dimension (ft)		
		Length	Width	Height
1	Administration/control room building	75	65	20
1	Steam turbine generation building	155	95	82
1	CT generation building	285	114	40
1	Fuel gas compressor building	95	60	32
1	Maintenance/warehouse building	130	75	32
1	Electrical Equipment Building	60	15	14
1	Power Electrical Electronic Control Center	30	15	14