

200 MW USED DIESEL POWER PLANT

(4x50 MW UNITS) LSHS & LDO

Plant Overview: The plant is a 200-MW LSHS (low sulphur heavy stock) fuel (processed from the residue of indigenous crude). The plant is based on two-stroke diesel engine technology from MAN B&W, Germany. There are 4 Units of 50 MW each and the plant is in running condition with minimum self-breakdown record. The plant was commissioned in the year 1999. The generator which is of ABB make generates electricity at 11KV. The engines and equipment are water cooled. A re-circulation type cooling water system using fresh water with cooling towers is provided. The engines are housed in a building with adequate maintenance facilities like EOT Crane, hoists, etc. The main control room is also located in this building. The engine room is provided with mechanical ventilation system and the control room is air conditioned. The power plant has facilities for unloading, storage and supply of fuel oil to the engines. Separate tanks for HFO and LDO are provided. Water treatment facilities for cooling water system and to produce demineralized water for the waste heat recovery boilers are provided. Suitable Fire protection system to protect the equipment fire hazards is provided

1) Technical Details

Type of Station: Diesel

Station Capacity: 200MW (4x50 MW)

Fuel: LSHS & LDO

Transportation: Ship, Cross Country pipe line

Consumption: 810 Tonnes per day

Cooling Water Source: Sewage Treatment Plant

Water Consumption Requirement: 30 m³/hr Chimney RCC Chimney with Flue height 100 mts

Design Heat Rate: 18601 Kcal/Kwh

2) Main Engine

Manufacturer: M/s Hyundai Heavy Industries Co. Ltd.

Engine Type: HYUNDAI-MAN B&W,2-Stroke,single acting, cross-head, exhaust turbocharged type diesel engine

Model: 12K90MC-S

Number of Cylinder: 12

Cylinder Bore: 900 mm

Stroke: 2300 mm

At Max. continuous rating

Output: 51480 kW

Revolution: 103.4 rpm

Mean effective Pressure: 17 bar

Max.Pressure: 145 bar

Mean piston speed: 145 m/s

Net Weight: 1810 ton

Direction of rotation: Clock wise, looking from aft

Cooling medium: Cylinder Jacket ----- Fresh water

Piston ----- Lubricating oil

Turbocharger ----- Fresh water

Scav.air cooler ----- Raw water

Starting System: Compressed air (Max. pressure 30 bar)

3) Plant Details

Major systems and equipment for mechanical, electrical, instrumentation & control etc.

Fuel oil System
Lube Oil System
Water System
Air System
WHRB
C&I
Electrical
Switchyard
Fire Fighting System
Cranes

The main engines have been presently used only as a peaking power plant and are very well maintained. These engines have balance useful life of at least 20 years with proper maintenance as recommended by OEM.