**200 MW USED DIESEL POWER PLANT for Sale**

**(4x50 MW UNITS) MAN-ABB Engine Generator Sets  
50Hz. 11kV HFO 103rpm**

**Commissioned 1999**

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**Executive Summary**

**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 recirculation 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.

**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.**

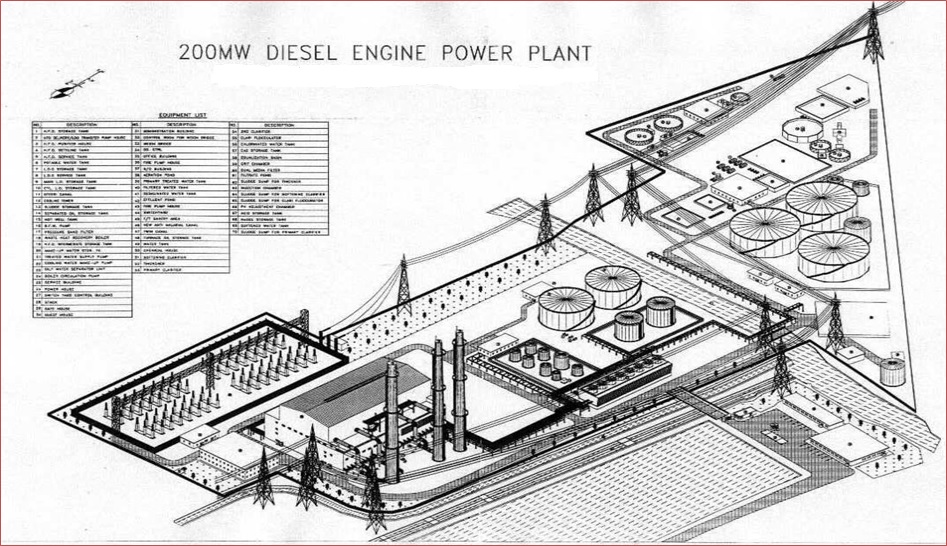


Figure 1: Plant Map

1. **Technical Details**

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| --- | --- |
| 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 meters |
| Design Heat Rate | 7400BTU/kWhr |

1. **Main Engine**

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| --- | --- | --- |
| 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 | |
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| 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) | |

1. **Plant Details**

Major systems and equipment for mechanical, electrical, instrumentation & control and civil works are given below:

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| **Fuel oil System** |
| FO transfer Pump |
| FO Supply Pump |
| FO Circulating Pump |
| FO Purifiers |
| FO Filters |
| FO Heaters |
| FO Sludge Pump |
| FO Drain Pump |
| Oily Water Separater |
| Engine room Pit Pump |
| HFO Treatment room Pit Pump |
| LDO Supply Pump |
| Oily Water Separater |
| HSD Unloding pump |
| HSD Transfer pump |
| **Lube Oil System** |
| CLO Unloading pump |
| CLO transfer pump |
| MLO Unloading pump |
| MLO Pump |
| Main lube oil cooler |
| Used lub oil transfer pump |
| Lube Oil Sludge system |
| Lube Oil Filters |
| Lube Oil Purifiers |
| Cam Shaft Lub oil Pump |
| Piston rod filter |
| **Water System** |
| Make up water pump |
| Cooling water transfer pump |
| Cooling tower |
| Air coolers |
| Jacket cooling water cooler |
| Jacket water pump |
| Jacket water preheater pump |
| Jacket water preheater |
| Potable water pump |
| Soft water pump |
| **Air System** |
| Air Compressor |
| Air tanks |
| Air drier |
| **Ventilation System** |
| Viscous filters |
| Air suction Fans |
| Turbo charger |
| **WHRB** |
| Boilers |
| Condenser |
| Boiler Water feed pump |
| Hot well tank |
| Exhaust System |
| **C&I** |
| Engine Safety Panel |
| Digital Engine Control |
| Distributed Control system |
| UPS |
| Paging System |
| PA System |
| CCTV System |
| Master Clock System |
| Stack Gas Analysers |
| VMON System |
| Oil Mist Detectors |
| Viscosity Meters |
| Alpha Lubricators |
| PMI System |
| Weigh Bridge |
| I&C systems summary |
| **Electrical** |
| Alternators |
| Excitation System |
| Jacking Oil System |
| Generator Cooling system |
| Generator Transformers |
| Unit Auxiliary transformers |
| Station Transformers |
| Service Transformers |
| Lighting Transformers |
| STP Transformer |
| HT Motors |
| Battery Chargers |
| **Switchyard** |
| 110kv SF6 Breakers |
| CVT's |
| CT's |
| Line Isolators |
| Lightening Arestors |
| Wave Trap |
| Post Insulator |
| Tariff Meters |
| RTU & SCADA |
| **Sewage Treatment Plant** |
| Biological Section |
| Chemical Section |
| Reverse Osmosis Section |
| Post Treatment section |
| **Fire Fighting System** |
| Water Hydrant System |
| High Velocity Water spray system |
| Medium Velocity Water Spray system |
| Foam System |
| Carbon dioxide-Total floding system |
| Carbon Dioxde-Spurt System |
| Protable Fire Extinguishers |
| Fire Detection & alarm System |
| **Cranes** |
| Water Hydrant System |

***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.***

1. **Plant Site Pictures**

The pictures shown below are indicative in nature. Customers are advised to inspect the material for better understanding.



Figure 2: Fuel Oil System



Figure 3: Cooling Water System



Figure 4: Switchyard

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Figure 5: Sewage Treatment Plant



Figure 5: Main Engine



Figure 6: Central Control Room



Figure 7: Fuel Oil Storage



Figure 8: Switchyard



Figure 9: Floor View



Figure 10: Transformer Plate