HOLTEC CONSULTING PRIVATE LIMITED

27.1 MW Waste Heat Recovery Based Power Plant for Najran Cement Company, KSA

Najran Cement Company is operating 2 clinker lines of 6000 tpd and 3000 tpd respectively and are executing 3rd line of 6500 tpd (with potential capacity of 7000 tpd). The total cement plant installed capacity shall be 16000 tpd. NCC has also installed 10 nos. DG sets with total power generation capacity of 75 MW for meeting power requirements of Line 1 and 2 (including standby).

Najran Cement Company (NCC) intends to play a pivotal role in KSA by emerging as a lead cement industry player in reducing CO2 emission and optimizing cement plant operation to improve energy efficiency and set a benchmark for the cement industry in KSA. Accordingly NCC decided to instal waste heat recovery based power plant utilizing the waste heat from Kiln and cooler of Line-I,II, III as well as 10 nos of DG set.

The project is under execution and is envisaged to be commissioned in the last quarter of 2013.

Owner

Najran Cement Company (NCC)

Project Consultant

Holtec Consulting Private Limited, India

EPC Contractor

Sinoma Energy Conservation Limited, China

Scope of Consulting Services

- Basic study for the waste heat recovery system
- Project planning, Monitoring and control.
- Procurement assistance for Plant and Machinery on EPC basis.
- Review engineering Services for the WHR.
- Inspection and supervision of construction, erection and commissioning.
- Performance testing

Key Project Data

Main Equipments

Line -I SP boilers (2 nos)	HP steam 12.10 tph each and LP steam 5.6 tph each
Line –I AQC Boiler	HP steam 16.50 tph
Line -II SP boilers (1 nos)	HP steam 12.50 tph and LP steam 5.70 tph
Line –II AQC Boiler	HP steam 8.40 tph
Line -III SP boilers (1 nos)	HP steam 13.20 tph each and LP steam 6.40 tph each
Line –III AQC Boiler	HP steam 17.40 tph
DG boilers (10 nos)	HP steam 4.5 tph each
Air Cooled Condenser (2 nos)	90 tph each
Dual Pressure steam turbine (2 nos)	15 MW each (Rated)

Salient Features

- Plant comprising 18 number of boilers i.e 5 nos preheater boiler, 3 nos AQC boiler and 10 nos. of DG boiler.
- Two number air cooled condenser (9 modules each) with design temperature 45 Deg.C.
- Two number of dual pressure steam turbine and turbine auxiliary system.
- Two number generator and auxiliary system.
- Chemical Water Treatment plant of capacity 2 X 15 m3/hr.
- One number of auxiliary cooling tower.
- Proven and reliable technology available for the WHR based power plant across the world.

Significant Accomplishments

- Electricity generated from the unused heat from preheater, the clinker cooler and Diesel set exhausts.
- The electricity generated from the WHR system shall meet 34% of energy requirement for the plant as a whole and replaces the equivalent requirement of electricity generation from DG sets.
- Due to the replacement of the DG power by the clean and green power generated from the WHR system, the project leads to reducing the CO2 emission by 145,000 tons per year, from the plant.
- Minimizing the utilization of the DG power and conserving the natural resources like HFO by approx 37,200 tons per year..
- Clean and the green environment.
- **SATISFIED CUSTOMER**