MODERNIZATION/CONVERSION PROJECT

Existing Plant of Kalyanpur Cements Limited at Banjari, Bihar, India

Modernization/ conversion from a wet process plant to a dry process plant was necessitated due to the rising operating and maintenance costs, besides growing competition in the market place. In order to promote such conversion projects, The World Bank (WB) agreed to offer loans as part of a second line of credit of the US$ 200 mio extended to the Indian Cement Industry in 1986. One of the projects partially financed by the WB credit was the Kalyanpur Cements Limited (KCL) plant at Banjari, Bihar, which received a loan of US$ 27 mio.

The plant was formerly a 3 kiln wet process plant with a total installed capacity of 0.40 mio tons per annum.

Owner
Kalyanpur Cements Limited (KCL)

Consultants
Holtec Consulting Private Limited, India
Holderbank Management & Consulting Limited, Switzerland

Supply of Main New Equipment
KHD Germany, Loesche Germany, CIMMCO India and Larsen & Toubro India

Objective of Consulting Services
To reduce fuel and power costs, reduce maintenance costs, enhance plant life, minimize production loss and increase the total plant capacity.

Scope of Consulting Services
- Detailed Engineering & Inspection
- Project Implementation & Management
- Supervision of Construction, Erection, Trial Runs and Commissioning

Project Concept Adopted
- Replacement of the existing, three wet process kilns with a single, large 1650 tons per day, dry process kiln with a preheater and a precalciner
- Upgrading the plant to manufacture 0.98 mio tons per annum of portland blast furnace slag cement (PSC)
- Modernizing the plant with new technology by adopting the following systems
  - Installation of high pressure grinding rolls for all three of the major grinding departments, viz. Raw material, slag and clinker
  - Installation of a PC based high level control system for interface integration
  - Separate finish grinding of slag and raw material using high pressure grinding rolls with high efficiency separators in closed circuit
  - Production of final product by separately intermixing ground slag and clinker

Achievements
- Minimum disturbance to the existing production line leading to minimal production losses
- Specific power consumption of 86 Kwh/t of cement
- Specific energy consumption of 730 Kcal/ Kg of clinker
- Reduced operation and maintenance cost