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CORPORATE

Mundra mega power plant takes off

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What helped Mundra ultra mega power plant start before schedule

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The 4,000-MW ultra mega power project (UMPP) at Mundra in Gujarat, fully commissioned before schedule, has come up as most-advanced power station in the country.

The five units of 800 MW each run by Tata Power uses supercritical technology, and is the most energy-efficient, imported coal-based thermal power plant in the country, the company said.

The last and fifth unit was commissioned on March 22 against the targeted commercial operation date of October 30, said Krishna Kumar Sharma, Executive Director and Chief Economic Officer of Coastal Gujarat Power Ltd (CGPL), the Tata Power company that runs the power station.

In a tour to the power project, the company showcased its supercritical generators and tur-

bines and demonstrated the way it overcame key challenges.

On March 7, 2012, the private power producer commissioned the first 800 MW unit in record 54 months. Compared with similar projects globally, Korea South-East Power's (KOSEP) 870 MW and 600 MW units took 60 months. Similarly, Eskom in South Africa is expected to commission its 800 MW unit in 68 months.

Elaborating the reason behind the fast commissioning of the plant located in the Kutch region of Gujarat, Sharma said that the overall project management and co-ordination was done by CGPL itself.

In other such mega projects, engineering, procurement and construction (EPC) contracts are given to a third party, which delays the commissioning.

Tata Power used in-house ordering and co-ordination to pre-

vent any delay in the Rs 17,000-crore project. Moreover, it moved with a collaborative approach of inducting and training staff to operate the station in sync with the completing of units.

The supercritical status of a power plant depends on the temperature and pressure at which the boilers operate. The efficiency level of Mundra power plants is 42 per cent.

The steam generators are supplied by Korea's Doosan, while the turbine and generators package are supplied by Japan's Toshiba. Synchronous types of turbines and generators are designed to operate on supercritical steam parameters to produce 830 MW at 26 kV at 50 Hz.

To reduce emissions, the power plant has installed electro-static precipitators. All coal ash generated from the plant is collected and stored within the plant premises in silos and ponds.

Dry ash is transported in closed and sealed bulk carriers for utilisation in cement industry. There is no possibility of any ash being exposed to the environment, the company said.

GREEN BELT

Tata Power is developing a green belt of 100 metres along the power plant's boundary. Also, wind barriers of nine metres height have been installed near the coal to control coal-dust fugitive emissions resulting from high wind speed characteristics of the Mundra coast plant.

The plant, located 15 km from the sea in a high quake-prone zone, consumes 12 million tonnes of imported coal a year, supplied from the KPC Arutmin mines in Indonesia.

Tata Power bagged the project in December 2006 through competitive bidding. It said it had faced challenges in hiring the

team which required skills in engineering, procurement, construction and operation. This is because several power projects were coming up in those years.

In addition, there was no precedent in debt financing of coal-based projects for 20 years of this size. The funds for the project consisted of Rs 4,250 crore equity, external commercial borrowings of \$1.7 billion and rupee loans of up to Rs 5,850 crore.

ISLANDING SCHEME

Post the grid-failure accident in July last year, the Mundra UMPP plans to implement an islanding scheme.

The implementation of the islanding scheme would help the power plant get separated from the grid and run on base load.

(This correspondent's visit to Mundra UMPP was sponsored by Tata Power)

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