ABB has successfully delivered and commissioned a complete electrical balance of plant (EBoP) solution and grid connectivity for the 102 MW Orion heavy-fuel oil (HFO) power plant in Bangladesh.

Located in Gognagar, Narayanganj Dhaka, Bangladesh, the plant is owned and operated by Orion Group. It is providing electricity to Bangladesh Power Development Board (BPDB) under Build, Own and Operate (BOO) basis using Heavy Fuel Oil (HFO). The generated electricity will be sold to BPDB for the next 15 years to boost the power generation capacity in order to meet the growing power demand in Bangladesh.

ABB is responsible for the complete design, engineering, supply, installation, commissioning and testing of the plant’s electrical systems, including the power and auxiliary transformers, low- and medium- voltage switchgears, non-segregated bus duct, direct current (DC) system, earthing and lightning protection, plant lighting, diesel generator and cable systems with a total length of over 100 kilometres. This provides a common platform for electrical equipment integration which reduces the risk and increases the stability and reliability of the plant.

As part of the contract, ABB supplied 4 bays of 132 kV air-insulated substation to feed power from the plant to the national transmission grid. ABB also provided fibre-optic synchronous digital hierarchy (SDH) communication network integrated with line protection, allowing quicker data communication from the plant to the national grid.

Project name: Orion 102 MW HFO power plant
Location: Gognagar, Bangladesh
Customer: Digital Power & Associates Ltd
End user: Orion Group
Completion: June 2014

ABB solution
- Supply of complete designed and engineered electrical package solution, inclusive power and auxiliary transformers, LV and MV switchgears, non segregated bus duct, DC system, earthing and lightning protection, cables and cable trays, plant lighting and diesel generator.
- Supply of complete 132 kV high voltage air-insulated substation package (5 bays)

System benefits
- One single reliable supplier contact point for overall electrical balance of plant for increased security and efficiency and reduced maintenance cost
- Common platform for electrical equipment integration, thus reducing risk and increase stability and reliability
The project management team from ABB Singapore brings deep knowledge of local requirements in support of the HFO generator and cooling system design with third party vendor. Overall management of electrical equipment supply and site supervision of installation and commissioning was well managed for a timely completion, within budget, to the correct specifications and in compliance with health, safety and environment regulations.

This HFO power plant is the first to begin commercial operation in June this year, among six other private power projects that are awarded in July 2012.

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