

Marmara Ereglesi, Turkey

480 MW



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Combined Cycle for Unimar

John Cockerill First Reference for HRSG's With Mechanical B.O.P.

Project description

The liberalization of a rapidly growing electricity supply system in Turkey led the Government to invite plans for independent power projects. Marmara Ereglesi is such a scheme comprising a 480 MW combined cycle that is built near to a LNG terminal, west of Istanbul, on the European coast of the Sea of Marmara. The plant is designed to burn both gasified LNG and pipeline gas. The developers are UNIMAR, a partnership of Unit International Belgium who made the initial proposal and negotiated the gas contract and power sales agreement with the Turkish Government, Marubeni Japan and International Power UK who are responsible for the operation and maintenance of the complete power station. The plant comprises a single 480 MW block with two ABB Type GT13E2 gas turbines and one steam turbine.

The Contract

A turnkey contract was awarded to ABB and the Turkish company Entes who are responsible for civil works and erection. ABB awarded a contract to John Cockerill for two heat recovery boilers and mechanical balance of plant including a dual-fuel auxiliary boiler, back pressure turbine, generator and sea water desalination and demineralisation plant.

Plant Operation

Base load, 7000 h/year, with all of the output going to the high voltage system serving Istanbul and the European province.

Gas Turbine

- ISO base load rated at 166.5 MW on natural gas
- Site rated 160 MW at 20°C
- Fuels: Natural Gas or gasified LNG.

Heat Recovery Steam Generator

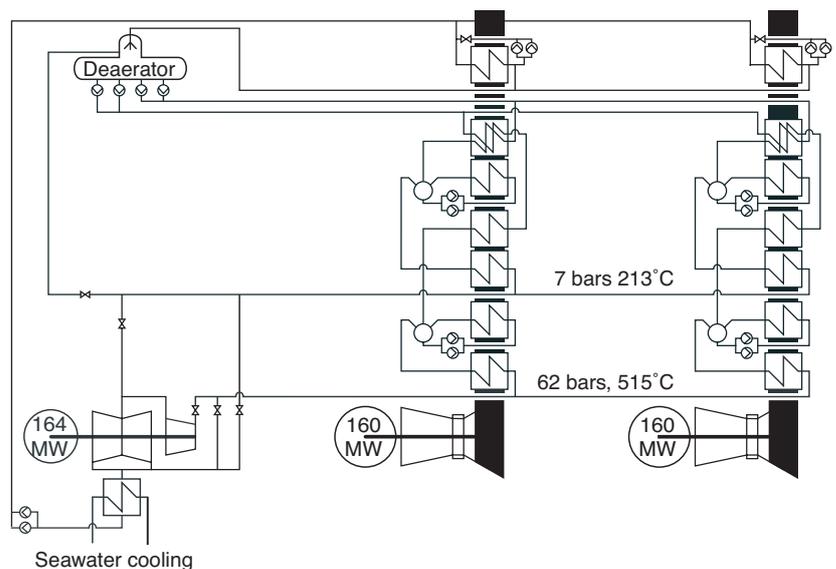
- John Cockerill Vertical, Assisted circulation type, unfired
- Indoor HRSG's
- Dual pressure output to steam turbine.
- No by-pass stack but full flow steam by-pass to condenser at each pressure level
- Boilers can accept hot gas turbine exhaust from cold.

Performances

GAS	°C		kg/s
Inlet	530		527
Outlet	120		527
STEAM	°C	barA	t/h
HP	515	62	224
LP	213	7	49

Schedule

- Contract award September 1996
- First gas turbine synchronisation July 1998
- First steam to steam turbine September 1998
- Full combined cycle output October 1998
- Commercial operation December 1998



CMI becomes John Cockerill