

Condor, Dubai - U.A.E

664 MW



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Conversion of the existing block to a 300 MW Combined Cycle and Addition of a Second Block For Dubai Aluminium Company Ltd

First HRSG's Installed by John Cockerill in Dubai Emirate

Project description

There was an Aluminium smelter at Jebel Ali, Dubai since 1978 and a gas turbine power plant to generate the electricity for the pot lines. As the refinery has expanded so has the original power plant which had eight Frame 5 and four early model Frame 9B. All twelve of these original gas turbines exhausted to multi-stage flash distillation units to distill sea water for public supply. Subsequent development of the power plant has been independent of the public supply. The decision in 1996 to install a new potline led to expansion of the power plant both to provide the additional power for the smelter and also retire some of the older units which would be held in reserve. Dubai Aluminium company Ltd. initially bought two PG9171E gas turbines from Alstom Gas Turbines (now parts of GEEPS Europe). When in 1997 they decided to convert these to combined cycle they ordered two more gas turbines of the same type for a second combined cycle block to create a total capacity increase of 450 MW under site conditions.

The Contract

The combined cycle conversion and the construction of the new block were awarded as a turnkey contract to a consortium of Alstom and John Cockerill. The four boilers were fabricated in the Seraing works (Belgium) and erected on site by locally appointed contractors under John Cockerill supervision.

Plant Operation

Base load operation over 7000 hours per year in accordance with requirement for aluminium production.

Gas Turbine

- GE Type PG9171E
- ISO rated 123.4 MW on gas.
- Site rated at 103 MW on gas at 30°C.
- Fuel: Natural Gas

Heat Recovery Steam Generator

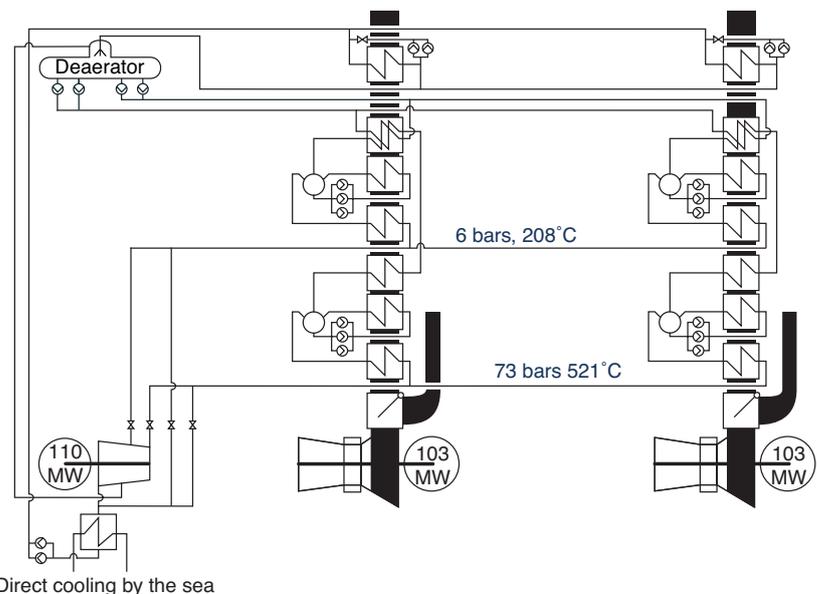
- John Cockerill Vertical, Assisted circulation design, unfired
- Two output pressures to steam turbine
- Bypass stacks (out of John Cockerill scope)
- Full flow bypass to condenser at each pressure level

Performances

GAS	°C	kg/s	
Inlet	561		368.9
Outlet	106.1		368.9
STEAM	°C	barA	t/h
HP	521.3	72.5	180.7
LP	207.6	5.5	35.6

Schedule

- Date of order June 1998
- First boiler of first block at full output October 1999
- Second boiler of first block at full output October 1999
- First boiler of second block at full output December 1999
- Second boiler of second block at full output December 1999
- Full commercial operation January 2000



CMI becomes John Cockerill