

Vilvoorde, Belgium

380 MW



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Pont Brule / Vilvoorde, Belgium | 380 MW

Repowering of a 125 MW Steam Turbine into A 380 MW Combined Cycle For Electrabel

The 16th HRSG Installed by John Cockerill in Belgium

Project description

The Vilvoorde power station, some 15 km northeast of Brussels began life as a 3 x 125 MW coal-fired steam plant and was completed in 1965. Later it was converted to oil firing. In 1998, the owner, Electrabel decided to repower one of the sets by replacing the boiler with a 250 MW gas turbine and an unfired heat recovery steam generator. The resulting plant is a 380 MW combined cycle.

The original power station continued in operation until March 1999 when it was closed down and demolition of the old boiler house started. The steam turbine was originally supplied by ABB, but Siemens was chosen for the repowering, with their 254 MW Model V94.3A gas turbine. The output of this new plant is such that the original power could be supplied in full after steam turbine retrofit. There is no need to retain any of the original feedwater heaters; the original deaerator is retained, as also is the c-w system and cooling tower.

The Contract

John Cockerill were awarded the contract for the heat recovery boiler in November 1998. All pressure parts have been fabricated at the Seraing works and erected under John Cockerill supervision of John Cockerill advisor.

Plant Operation

Despite the large nuclear base load in Belgium the repowered unit HRSG is designed for semi base load and cycling (two shift duty with daily start-up).

Gas Turbine

- Siemens Model V94.3 A
- ISO rated 245 MW on atural gas
- Site rated 225 MW
- Fuel: Natural Gas

Heat Recovery Steam Generator

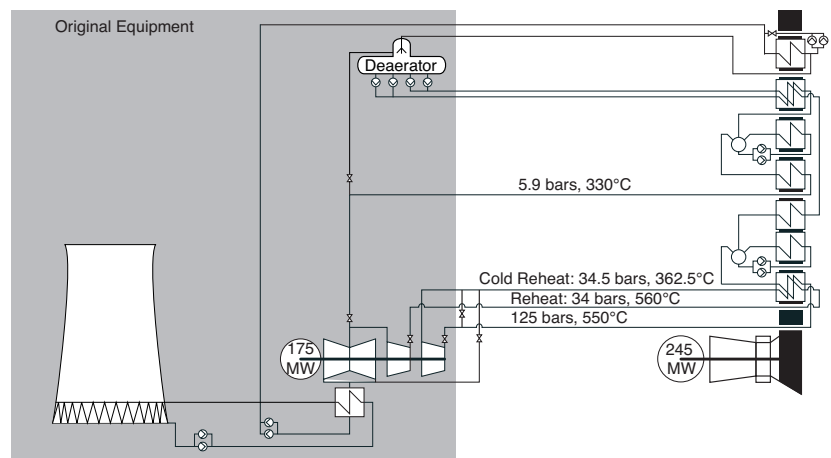
- John Cockerill Vertical, natural circulation design, unfired
- Two output pressures to the steam turbine plus reheater
- All feedwater heating carried out in preheater section
- No bypass stack: full flow steam bypass to condenser
- Indoor HRSG

Performances

GAS	°C		kg/s
Inlet	584		642
Outlet	102		642
STEAM	°C	barA	t/h
HP	550	125	268
LP	330	5.9	76
Reheater	560	34	268

Schedule

- Contract award for boiler November 1998
- Gas turbine start-up July 2000
- First steam to steam turbine August 2000
- Full combined cycle operation August 2000



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