Power and Gas

Siemens Steam Turbine SST-800

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Siemens SST-800 Introduction

The SST-800 is a single casing steam turbine with center steam admission and reverse steam flow inner casing, designed for a direct coupled generator or mechanical drive. Power output with dual casing solution is up to 250 MW. The highly customized turbine provides for an outstanding efficiency, fast start-up times and high reliability and availability. It supports all requirements for economical installation and operation in combination with highest flexibility for complex industrial processes. A double or even multi-casing solution can also be provided.

Steam Turbine Overview

The SST-800 steam turbine can be used for both condensing and back-pressure applications. It is built up from predesigned modules combined to a single unit for optimum matching of the required parameters. Turbine auxiliary systems are also pre-designed into modules covering the complete range of turbine sizes.

The SST-800 turbine is equipped with impulse control stage and reaction blading fixed in blade carriers. Furthermore the turbine is offered with throttle controlled inlets. The turbine can be arranged on a foundation or as a package (including oil system and on a base frame). The SST-800 steam turbine design is in accordance with DIN or API standards.

Features such as a horizontal casing split or the independently accessible bearings ensure easy and rapid maintenance. Additionally, the guide blade carriers enable easy maintainability or further modifications of the steam path. Stop valves and steam strainers as well as control valves are accommodated in the steam chest and can be removed without dismantling the piping.

Customer Benefits

- Outstanding efficiency
- Fast start-up times
- Highest reliability
- Economic installation and operation
- Flexibility for complex, industrial processes
Siemens SST-800: Technical Overview

- **Power output up to 250 MW, 50 or 60 Hz**
- **Speed 3,000 or 3,600 rpm**
- **Up to 7 uncontrolled extractions at various pressure levels**
- **Exhaust steam conditions:**
  - Back-pressure up to 72 bar / 1,044 psi or condensing
  - Up to 2 controlled extractions - pressure up to 72 bar / 1,044 psi
- **Life steam conditions:**
  - Pressure up to 165 bar / 2,395 psi
  - Temperature up to 565 °C / 1,049 °F

**Typical Applications for SST-800**

- Combined cycle power plants (CCPP)
- Combined heat and power plants (CHP)
- Oil & Gas industries
- Industrial power plants (e.g. captive power plants in chemical and petrochemical industries, manufacturing industries, paper mills, mines, metal and cement plants, waste heat recovery)
- District heating plants
- Biomass plants and waste-to-energy plants (WtE)
- Concentrated solar power plants (CSP)
Siemens SST-800: Reference Examples

[1] Mymensingh, Bangladesh
[2] Chorzow, Poland
[3] Wisafors, Finland
[4] Södertälje, Sweden
[5] Hannover, Germany
[6] Jiang Lin, China
[7] Riga, Latvia

Power output: 88 MW
Inlet steam temperature: 519 °C / 966 °F
Inlet steam pressure: 80.2 bar / 1163.2 psi
Exhaust steam pressure: 0.2 bar / 2.9 psi

SST-800 steam turbine with 88 MW power output is running in the combined cycle power station since 2007.