

Used Coal Fired Power Plant

Consist of:

Of-site facilities

VE asset

Year of construction 1962 - 2009

Mfc: RWT GmbH

Two roads Performance: 20 m³ /h each street

Plant feed-in

Two piece 110 kV Siemens SF6 power switches vintage 2006

Two piece oil transformer 110/20 kV Siemens each with 80 MVA vintage 2006

20 kV control unit SF6 with 13 outgoing units, double bus bar with cross coupling there by arbitrary load distribution during operation vintage 2006

Protection equipment of all fields Siemens Siprotec coupled to the DP-Bus and visualized on its own control system

Redundant battery-backed 110V DC power supply for protection equipment and control

Turbine 5

Year of construction Retrofit 2009

Back pressure turbine

Manufacturer: Siemens (original BBC)

Fresh stream parameters: 149 bar, 530°C

Exhaust steam: 72 bar

Performance: 5 MW

Turbine 6

Year of construction IBN 2009

Extraction condensing turbine

Manufacturer: TGM Kanis

Tapping 6 bar and 18 bar

Controlled removal: 2.5 bar

Fresh stream parameters: 72 bar, 525°C

Performance: 31 MW

Condenser is equipped with river water for full condensation with a Taprogge ball cleaning system

Turbine 3

Year of construction 1962

Extraction condensing turbine

Manufacturer: BBC

Fresh stream parameters normal: 70 bar, 515°C

Fresh stream parameters max.: 79 bar, 520°C Rotation speed: 8000/3000 U/min

Performance: 14.3 MW

Gear: Type DSF36x

NDU

Emergency power supply via Rode- diesel aggregate 250 KVA in connection with two USV manufacturer JOVY ATLAS each with 160 KVA

Supply through two times 25 MVA dry transformers 10.5/20 kV manufacturer Siemens

Control unit 10.5 kV consisting of, 2 x LS transformers and measured field tower

Boiler 1

Year of construction 2000

Reserve boiler

VKK packaged boiler

Large space-water boiler

HEL combustion

27 MW rated thermal input, 40 t steam generator

Fresh steam parameters: 18 bar, 350°C with superheater

HEL bearing with 300.000 l storage capacity

Boiler 5

Year of construction 1970

Reserve boiler

Mfc.: Steinmüller

HS – heavy fuel oil boiler

74 MW rated thermal input, 90 t steam generator

Fresh steam parameters: 72 bar, 525°C

Operating permit runs out at the end of 2012

Boiler 6

Year of construction 1982

Sulzer entering boiler

Pulverized coal with grate

100 MW rated thermal input, 120 t steam generator

Fresh steam parameters: 149 bar, 530°C with intermediate superheating

Refurbishment

-2006: installation of Low NOx distillers, Steinmüller Engineering

-2007: automatisisation of the boiler control into PCS7, INP/Kriko

-2007: new inducted draft Balacke Dürr

-2009: new HZÜ conducting

-2009: new 6 bar, 18 bar and 72 bar distributor with new controls and instruments and pressure reducing stations

-2011: new feed-water pump, electrically with FU (ABB 6KV)

Flue gas cleaning Boiler 6

- Electric filter: Year of construction 1982

- Fabric filter dust year of construction 2007

Manufacturer: ESC

4 small rooms, 3 are sufficient for continuous operation

-Special execution: lime injection for reduction SO₂

Current emission levels:

-NO_x 400 mg/Nm³

-Dust 2 mg/Nm³

-SO₂ 800 mg/Nm³

Structure of the power plant control system

Integrated control systems in the entire power plant on the basis PCS7 and WinCC (S7/S5)

Systems and terminal bus with LWL performed in the ring

Monitoring of the ring redundancy with Hirschmann network management system
Control system fully buffered with USV- facilities
Higher ranking control technology Pöyry concept