Lippendorf

Flue gas desulphurisation

The Lippendorf power plant, with its two 'R' and 'S' units, is located in a lignite surface mining area in Eastern Germany. With a net efficiency of 42.5% it is one of the biggest and most modern lignite-fired power plants in the world.

In compliance with GFAVO (large combustion plant) regulation, both units have a wet lime flue gas desulphurisation system consisting of two scrubbers. Each unit operates in parallel and auxiliary systems include gypsum dewatering and a waste water treatment plant. Economic evaluation led to the use of burnt lime (CaO) instead of limestone ($CaCO_3$).

To provide long-lasting protection against corrosion, the scrubber is manufactured from alloy plated steel. Re-heating of the flue gas is not necessary since the cleaned gas is discharged through the cooling tower.

The plant achieves a high guaranteed reliability of › 96%, without any bypass system.

FEATURES OF PROJECT

Start-up date: 1999

Project type: Flue gas desulphurisation

Customer: Vattenfall Europe Generation AG & Co. KG, E.ON Kraftwerke GmbH and EnBW AG

Programme: Wet lime flue gas desulphurisation system for two units

SCOPE OF PROJECT

Supply of two FGD systems, including scrubbers, and auxiliary systems, including gypsum dewatering and waste water treatment plant

ACHIEVEMENT AND RESULTS

- Long lasting protection against corrosion provided by use of alloy plated steel
- Achievement of › 98% guaranteed plant reliability

DOOSAN

Doosan Power Systems

PROJECT PROFILE
LIPPENDORF, GERMANY

KEY PROJECT DATA

Customers	Vattenfall Europe Generation AG & Co. KG, E.ON Kraftwerke GmbH and EnBW AG
Location of power station	Lippendorf, Germany
Start-up date	1999
Main fuels	Lignite
Nominal gross power generation	2 x 933 MW
DeSOx technology	wet lime FGD
Number of DeSOx Lines	2 x 2
Flue gas flow rate (per absorber, wet)	1,750,000 m³/h (STP)
Reagent	burnt lime
Maximum S content	4%
Maximum SOx inlet concentration	11,600 mg/m³ (STP, dry)
SO3 inlet concentration	50 mg/m³ (STP, dry)
HCl inlet concentration	30 mg/m³ (STP, dry)
HF inlet concentration	30 mg/m³ (STP, dry)
Dust inlet concentration	50 mg/m³ (STP, dry)
Guaranteed emissions (acc to 6% O2, dry) SOx maximum HCl HF Particles Droplets	 400 mg/m³ (STP) 15 mg/m³ (STP) ‹ 2.5 mg/m³ (STP) ‹ 20 mg/m³ (STP)
Reliability	98%
Gypsum quality	Gypsum industry standard

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