



Application	Désulfuration in power plants
Nom du projet :	DESULFURATION EDF CORDEMAIS, FRANCE
Date :	2016
Order numbers :	52481 / 52816 / 53080

Introduction

The EDF power plant at CORDEMAIS is a coal-fired power plant. The fuel (COAL) is burned in a boiler, the heat released converts the water into steam (565 ° C to 160 bar), this steam drives a turbine coupled to an alternator that generates electricity. The steam is then condensed to make a new cycle to the boiler.

The combustion of coal generates sulfur dioxide (SO2), a smoke treatment device allows to reduce by 90% the emissions of sulfur dioxide which in contact with air is converted into sulfuric acid (H2SO4).

Before the desulfurization, the fumes undergo a dust removal and denitrification treatment, they are already washed dust and 80% of nitrogen oxides.

The desulphurisation plant consists of an absorber in which the fumes are put in contact with a limestone milk. By chemical reaction, this solution composed of limestone powder and water traps the sulfur dioxide contained in the fumes. This mixture is then centrifuged to extract the gypsum.

The desulphurized fumes are thus evacuated by the chimney.

The effluents resulting from this treatment contain mercury this is mainly due to the quality of the coal. EDF is aware that in recent years the quality of coal has dropped and mercury levels tend to rise. For this reason, EDF decided to make modifications to improve their effluent treatment. The initial installation was done in 1997.

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Our installation is located at mark 27 (red tank on the right of the plan)

Application and SAFI solution

In order to decrease mercury levels they use different chemicals:

- Polysulfide
- Ferric chloride: FeCL3 41%
- Hydrochloric acid: HCL 33%



SAFI valves are already installed on the 2 unloading units (ferric and hydrochloric). they were never replaced and function correctly since the commissioning of the installation. (1997)

Reference SAFI ball valve type 2014 and butterfly valve type 3700

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The injection and washing part of the effluents when it will be completely redone:

Initial Installation is done in part with SAFI and GF + materials:

GF + equipment will be replaced by SAFI PPFV and PVDF manual RTS and **KINETROL** automatic:



PART in GF+ :

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Part in SAFI :





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A view on the new installation :







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SAFI Material installed :

3700-07WWV butterfly valve in PPH 2014-00FFE Ball valve with locking device and Kinetrol actuator 2014-02FFE Ball valve with locking device 2014-05FFE Ball valve with locking device 2029-00FFZ Ball valve with locking device and Kinetrol actuator 2029-02FFZ Ball valve with locking device

References

SAFI has a strong presence in EDF applications at both thermal power plants and nuclear power plants.

Conclusion

SAFI equipment perfectly meets the requirements of this demanding customer in terms of quality performance and longevity.

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