

Dioxin removal by ADIOX[®] in wet and dry operation

Kehrichtheizkraftwerk ENTSORGUNG ST. GALLEN



In May 2010 Entsorgung St. Gallen awarded Götaverken Miljö the contract on upgrading the existing flue gas treatment system of line 1 and 2 with a dry ADIOX[®] absorber for dioxin removal. This is the first installation in Switzerland where ADIOX[®] is used for dioxin removal.

The plant was taken into operation in September 2010.



General description

ADIOX® has been verified to be an excellent dioxin removal technology in wet, semi-wet and dry applications.

ADIOX® is easy to install and has a long service life. No additional chemicals need to be added for dioxin absorption. In order to reach maximum performance, the operation modes can be combined. In wet operation, ADIOX® can easily be integrated in existing scrubbers by replacing the internals, such as tower packings and demisters of plastic material, with ADIOX®-material. Moreover, ADIOX® has proven to be more efficient in dry processes than in wet or semi-wet applications.



Purpose of installing ADIOX®

KHK St. Gallen needed to reduce the emissions of dioxins to below 0.1 ng/Nm³ (1-TEQ) from incineration lines 1 and 2. Each line has a separate flue gas treatment system consisting of an electrofilter and a packed bed scrubber system. After the scrubber system, the flue gases from lines 1 and 2 are united into one duct and reheated before entering a common SCR system for NO_x reduction.

Technical description

By replacing the tower packings in the existing scrubber system, the memory effect is minimized. However, this is not enough to reach the required dioxin removal rate. Therefore an additional dry ADIOX® absorber has been installed.

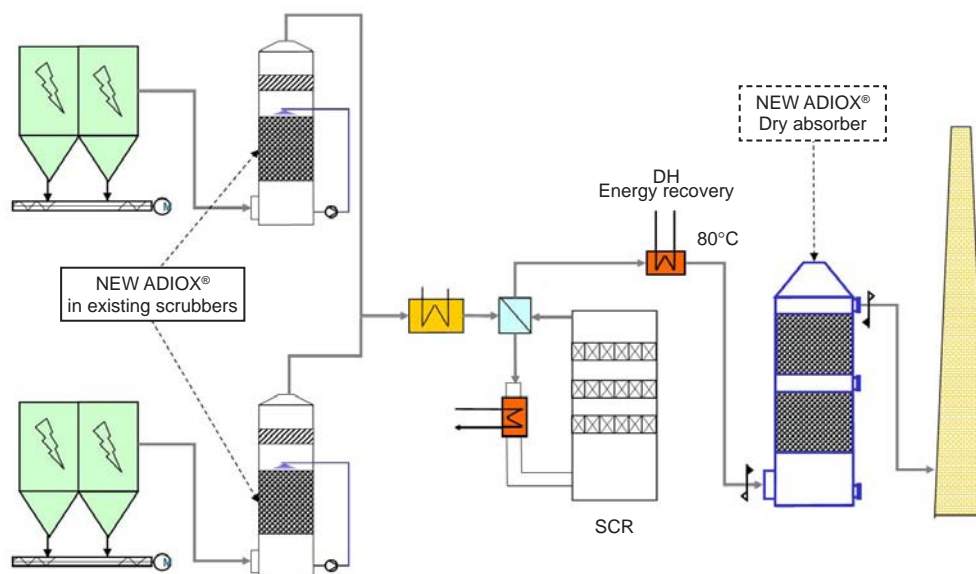
Before the gas enters the ADIOX® absorber, it is cooled down to 80°C in a heat exchanger. District heating water is being used for cooling, enabling the energy to be recovered as well. The dry ADIOX® installation is a comple-



Process design data:

- Flue gas flow to absorber: 70 000 Nm³/h, wet gas
- Temperature (after cooling): 80°C
- Dioxin inlet (design): 1 ng/Nm³ dg@11%O₂
- Dioxin outlet (design): < 0,1 ng/Nm³ dg@11% O₂

tely static system without any water circulation systems and thereby very compact. The absorption tower is fabricated in corrosion resistant, fibre reinforced plastics and is equipped with two separate packing sections. The instrumentation system is limited to temperature and pressure measurements at the absorber inlet and outlet.



GÖTAVERKEN MILJÖ AB

Visiting address: Anders Carlssons gata 14

Postal address: Box 8876, SE-402 72 Göteborg, Sweden

Tel: +46(0)31-50 19 60 Fax: +46(0)31-22 98 67

www.gmab.se

- a Babcock & Wilcox Vølund company

