

NEWS RELEASE

ROYAL DAHLMAN WINS CONTRACT FOR THE DESIGN AND SUPPLY OF A FULL FLOW FCC FLUE GAS FILTER

MAASSLUIS, The Netherlands, March 26, 2013 - Royal Dahlman proudly announces that it has been awarded a contract for the design and supply of a Full Flow FCC Flue Gas Filter by one of the world's leading Refiners. This new high-end filtration package replaces a malfunctioning Electrostatic Precipitator, installed downstream the Waste Heat Boiler. With the special developed filtration technology, catalyst emissions will be reduced to far below 10 mg/Nm³. Next to this pioneering low emission level for a FCCU, also the safety level will be significantly increased. The contract is being executed from Royal Dahlman's Head Offices in Maassluis, The Netherlands.

Stack emission reduction of FCC catalyst fines has always been an important issue in refineries. Not only to protect downstream equipment, but in particular to meet local environmental and governmental legislations. Refiners worldwide need to revamp their FCCU regenerator off-gas systems and grassroots refineries need to implement the latest filtration technology due to the required reduction of stack emissions. In many cases, conventional separation technology is not sufficient anymore to meet these stricter emission guidelines.

Often, Electrostatic Precipitators (ESP) are installed to limit catalyst fines emissions from FCCU's to an acceptable level. However, safety and reliability also remain of the highest priority. ESP's make use of high voltage, which means that there always is an increased risk on explosions with all possible consequences. Furthermore, the emission reduction of an ESP is highly sensitive to solid load fluctuations. Since an ESP is a separator, it has a consistent efficiency of X %; with increased dust loads, also the emission level will increase. The performance of Royal Dahlman's FCC Flue Gas Filtration technology is not influenced by sudden solid load changes and it's operational risk is limited when compared to ESP's.

After the delivery of six Fourth Stage Separator Packages (FSS), Royal Dahlman has gained very specific know-how and field experience on FCC Flue Gas Filtration. These advanced sintered porous metal FSS filters, part of a Third Stage Separator (TSS) Package, are typically installed upstream of the Waste Heat Boiler (WHB), and as such, are subjected to high solid loads and high temperatures.

Even though process conditions downstream the WHB are less severe, the design of the Full Flow FCC Flue Gas Filtration system incorporates many of the field-proven features that have been developed for Royal Dahlman's Fourth Stage Separators; high-end filter media with low pressure drop, internal gas distribution technology, and controlled operation temperature assure the highest reliability of this groundbreaking development on FCC Flue Gas Cleaning.

Royal Dahlman's Full Flow FCC Flue Gas Filter will be started up early 2014.

Royal Dahlman B.V.

Founded in 1886, Royal Dahlman has grown to be a major supplier of engineered solutions to the Oil & Gas, Power and Renewable Energy industries. Royal Dahlman combines transparent business values with high-tech solutions, realized in her own modern production facilities. An important aspect of Royal Dahlman's business is the dedication in selecting the best technology for her customers and not pushing a particular product range. This gives Royal Dahlman a unique edge in the marketplace. As a long established company it is Royal Dahlman's aim to build-up long term relationships with her clients, based on trust and reputation for delivering quality and value for money.

High-end Filtration Technology for the Oil & Gas Industry

Royal Dahlman's tailor-made filtration packages add value to the most critical refining and petrochemical processes, such as:

<i>Applications</i>	<i>Royal Dahlman's solutions</i>
Coking/Delayed Coking	Filtration of Heavy Coker Gas Oil
Fluidized Catalytic Cracking	Reduction of FCC Flue Gas Emission
	Filtration of FCC Slurry Oil
	Filtration of Catalyst Storage Hopper Vent Gas
Gas Treating Units	Filtration of Amines
On/Offshore Oil Production	Filtration of Well Injection Water/ Produced Water
Cooling Water Systems	Removal of Contamination from Cooling Water (Side Stream)

Customers operate Royal Dahlman's filtration systems since all technologies have in common that they are focused on low operational risk, high reliability and reduced operational costs. Having all facilities in-house to design and produce fully dressed filtration packages Royal Dahlman offers the most cost-effective design to her customers. ROI's of less than 1 year have been achieved.

Royal Dahlman can look back on a serious track record. The dedicated filtration technologies are recognized and approved over the last decades by leading licensors, and are installed at refineries worldwide.

For more information, feel free to contact our specialists:

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