The water treatment solution from LiqTech secures compliance with environmental requirements and reduces handling costs of scrubber sludge

The Case
Ships trading in designated emission control areas will have to either use fuel oil with a sulphur content of less than 0.10% (MGO) or to comply with the SOx requirements by using an exhaust gas cleaning system - “scrubber”. There is a significant cost difference between low sulphur fuel and the cheaper conventional fuel (heavy fuel). By installation of scrubber systems, vessel owners can comply with the new IMO requirements and at the same time benefit from the economic advantages of using conventional heavy fuel.

LiqTech has delivered numerous scrubber waste water treatment systems to be integrated with scrubber towers. The combined scrubber and waste water treatment solution reduces sulphur emissions in the exhaust gas and turbidity together with poly aromatic hydrocarbons (PAH) in the discharged waste water.
Marine scrubber waste water treatment

Yara Marine Technologies AS has selected LiqTech as supplier of scrubber waste water treatment systems.

More information can be found here: http://bit.ly/2c7dbJF

SYSTEM DESIGN

The advantages of a LiqTech waste water treatment solution

The scrubber wastewater is treated by mechanical separation - size exclusion, which results in an improved and consistent quality compared to gravity separation based on density differences. In addition to improved quality of the discharge water, the combination of membrane technology with filter press dewatering, greatly reduces the volume of scrubber sludge compared to gravity based separation solutions.

The waste water treatment package

LiqTech offers complete waste water treatment solutions consisting of 1) coarse pre-filtration, 2) fully automated SiC membrane system and 3) module for dewatering of membrane reject. Waste water from the scrubber process tank is pumped to the membrane system, which removes soot particles, heavy metals and unburned fuel residues. The treated water is discharged while monitoring selected parameters. The concentrate of particles from the membrane system is dewatered by a filter press in order to reduce the final volume of scrubber sludge. The solution is monitored and controlled by PLC.

Materials and Components

The SiC ceramic membranes from LiqTech have proven to be extremely robust and offering a high capacity with a very small footprint. Further the membranes are chemical inert and very temperature resistant. Membrane housings are made of glassfiber reinforced plastics (GRP) and polypropylene piping. The modular design and material selection is based on marine requirements and standards.

LiqTech installed

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Figure 1:
LiqTech SiC membrane system for 8 m³/h – 35GPM scrubber waste water