



Centrifugal separation means oily water discharge compliance

Teekay

Case story



With a fleet of greater than 100 vessels, Teekay is one of the major marine actors in today's energy sector. The company takes no chances with environmental compliance, especially when it comes to oily water treatment. A large number of Teekay's vessels rely on centrifugal separation and oily water treatment systems from Alfa Laval.

Established in 1973, Teekay has developed from a regional shipping company into one of the world's largest marine energy transportation, storage and production companies. Beyond its commitment of bringing energy to customers worldwide, the company is committed to meeting or exceeding environmental requirements.

When it comes to processing oily water on board, dynamic treatment is a key part of Teekay's environmental strategy. Teekay has spent many years working with Alfa Laval centrifugal separators, finding them to be the most reliable and cost-effective means of securing oily water discharge compliance. Not only has much of the Teekay fleet been retrofitted with Alfa Laval oily water treatment systems, Alfa Laval PureBilge is also the company's preference for all newbuild projects.

"In our experience, centrifugal separation is vastly superior to gravity-based oily water treatment solutions," says Allan Muir, Director Digital Supply Chain

at Teekay. "Alfa Laval PureBilge gives us full peace of mind while providing the greatest operating economy."

Gravity is not enough for today's oily water

In fact, many ship owners and operators find that static coalescers and other gravity-based solutions fail to perform at sea. The shortcomings of these systems stem from the complex nature of today's modern oily water mixtures, combined with a type approval procedure that does not reflect real-world conditions.

Though MEPC 107(49) improved the type approval tests for oily water separators, for example by adding fine particles and a surfactant chemical into the testing mix, the tests still last only 2.5 hours – and are performed in stable conditions on land. As a result, nearly any solution can pass with the help of chemicals or adsorption filters.

“A lot of particles, chemicals and detergents make their way into bilge water, which means you end up with difficult emulsions that just don’t settle out,” says Muir. “If your oily water treatment system relies on chemicals or filters, things can get messy and expensive very quickly on a rolling and pitching ship. The filters rapidly become saturated and your ability to comply is suddenly limited.”

Centrifugal separation with Alfa Laval PureBilge

In contrast to static coalescers and other gravity-based solutions, centrifugal separators can treat the most challenging oily water efficiently. Unaffected by pitch and roll, they supply many times the force of gravity, which allows them to break emulsions and perform even in rough seas.

Alfa Laval PureBilge meets the 15 ppm IMO discharge limit without ever resorting to filters or chemicals. Thanks in part to its XLrator disc inlet, which prevents additional emulsions by gently accelerating the process liquid, it provides continuous, high-capacity cleaning in any sea conditions. Though it requires virtually no attention from the crew, PureBilge has no difficulty keeping up with the vessel’s bilge water production.



Independently tested by Teekay

The benefits of centrifugal separators are clear to Teekay, whose fleet includes many installations of PureBilge and its predecessor, Alfa Laval EcoStream. Many of these oily water treatment systems have been operating for over a decade, having been installed after Teekay’s own comprehensive performance testing in 2006.

“Before committing to centrifugal separation, we independently tested the Alfa Laval technology with four different types of oils and three different types of chemicals, as well as mud and rust mixed into seawater and fresh water,” explains Muir. “It was only after we confirmed their strong onboard performance that we decided to retrofit Alfa Laval centrifugal separators.”

Ensuring the right way is the only way

“PureBilge is an important part of Teekay’s fleet strategy, but it also means peace of mind for our individual crews,” Muir concludes. “Because PureBilge operates so reliably and with so little effort, there is never any question of discharging oily water overboard. PureBilge helps us do our part for the environment as a fleet, and it makes it easy for our crews to do the right thing as well.”

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com.