



Treating ballast water



BW Gas is playing its part to prevent the transfer of harmful marine organisms.

BW Gas is installing a new system to treat ballast water on one of its vessels, despite such treatment not being required until 2016 when new regulation comes into effect. The Unitor Ballast Water Treatment (UBWT) system, which will be operational on the VLGC Berge Danuta from January 2009, kills all organisms in the ballast water when it is pumped onboard.

The system, which is supplied by Wilhelmsen Ships Equipment, is one of many on offer and although BW Gas has chosen to test it, the decision on which system to implement across the whole fleet has not been taken. UBWT has so far acquired two of the three necessary approvals and is also being tested on a Wilhelmsen vessel. The treated ballast water on Berge Danuta will be checked by experts from the supplier as a part of the process to get final approval, which is scheduled for July next year.

"After considering a number of technical solutions, we recognised that the UBWT system's small size, low energy requirement and low pressure drop made it ideal for retrofit installation," says fleet manager Ola Petter Dahlen.

SIGNIFICANT PROBLEM

IMO has stated that "invasive aquatic species are one of the four greatest threats to the world's oceans." Organisms are transported in ballast water across the world and can damage native biodiversity and/or ecological

processes in areas where they are released, and disrupt fisheries and other commercial activities (estimated to cost USD 138 billion per year in the US Great Lakes region alone); and toxic organisms, diseases and pathogens can be introduced through ballast water and cause illness and even death. The Oslo Fjord, for example, is struggling with a small type of jellyfish that was brought in ballast water from the Black Sea.

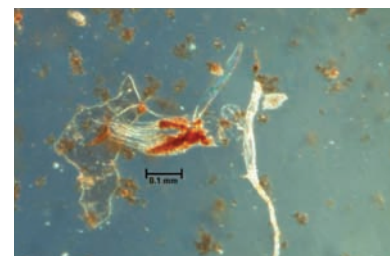
The UBWT system is predominately based on a process called ultrasonic cavitation, which crushes the organisms, supported by electrochlorination and ozonation – all well-established water treatment techniques. The combination of methods provides a system that is not only non-polluting and efficient in saltwater and freshwater, but is also able to handle diverse water conditions such as high turbidity and polluted water.

OPERATION AND INSTALLATION

Currently, when vessels discharge cargo they open the valves to flood the double bottom tanks until equilibrium is achieved. But with a treatment system all ballast water must be pumped in so that it passes through the system. Vessels have two ballast pumps but Berge Danuta will only have a single system in the test period. When a system is eventually chosen for the whole fleet, it will be installed on both pumps but with an option to bypass

the treatment system if it breaks down. The UBWT system can be scaled for any vessel size and Berge Danuta's system will have a capacity of 800 cbm an hour.

The key components in the system are the reactor and the self cleaning filter. Unlike competing systems, UBWT has the reactor on the suction side of the pump and thus requires considerably less power. Another important benefit of this system is that it can be installed during operations. The Wilhelmsen vessel had it installed during a drydocking, which will make Berge Danuta the first vessel to have it installed during operations. Berge Danuta was chosen as she often trades in northern Europe, which makes it easier to get personnel and equipment onboard. ●



BEFORE AND AFTER The treatment destroys the hitch-hiking organism.