Ballast water treatment

EXECUTIVE SUMMARY

A mechanical process (based on hydrodynamic cavitation) which can be used to kill micro-organisms and purify ballast water released from ships. Also could be used to produce drinking water from a contaminated source.

BACKGROUND

Ships when leaving the port empty, take sea-water into ballast tanks for stability and to adjust buoyancy. When the ballast water is emptied at a different location, it releases micro-organisms into the location, causing environmental pollution and ecological imbalance

TECHNOLOGY DESCRIPTION

NCL scientists have developed an apparatus which can filtrate and disinfect sea water/ ship's ballast water. It is based on a mechanical process that kills micro-organisms to the required levels, using hydrodynamic cavitation and rupture of cavities to kill micro-organisms. They can also be used in making potable drinking water from a contaminated source.

MARKET POTENTIAL

- Annual market for Ballast Water Treatment is estimated to be between $700 million to $1 billion (in the short term, while all the current vessels are being fitted with this technology)
- More than 17,000 vessels (both new and retrofit) can be fitted with this technology
- Long term market projected to be between $200 to $300 million (which will be mostly on newly built vessels)

* All data derived from Haskoning Report, 2001

VALUE/ADVANTAGES

- Eco-friendly as using hydrodynamic cavitations without using any chemicals, UV or ultrasound
- No harmful by-products
- Efficient disinfection technology
- One of the best alternatives to current technology
- Economical
- Easily installed on the vessel- minimum area for installation as filtration and disinfection happen in a single equipment

APPLICATIONS

- Sea water treatment
- Ship's ballast water treatment
- Making potable drinking water from a contaminated source

TECHNOLOGY STATUS

- Demonstrated at the lab scale
- Ready to be licensed
- Patent granted: US #- 7815810, 7585416

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