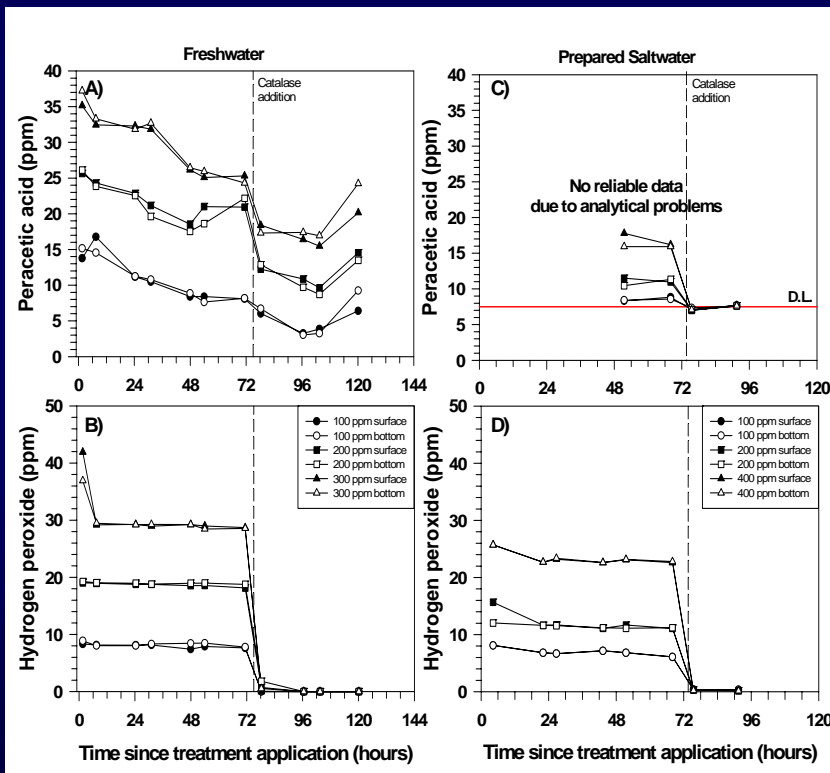


Fresh / Cold water – Forgotten in the Ballast Water Technology approval process?



ICAIS
San Diego
2010

Chris Wiley

Chair Ballast Water
WG IMO

BW Convention likely to come into force by 2012



- Canada chairs IMO Ballast Water Review Group – MEPC 61
- Are there sufficient technologies for next application date 2012?
- Last review indicated technology available for <5000 in 2009/10
- Focus of concern on potentially not meeting next application date – large ships VLCC's etc

Current Example – Great Lakes



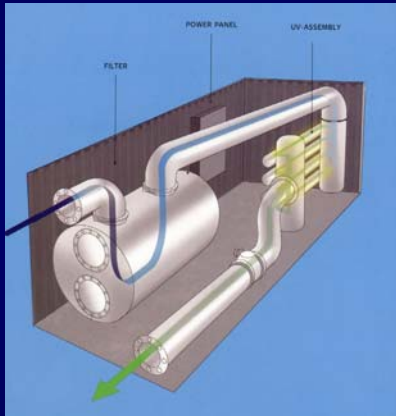
- Number of ships with different ballast water technology fitted entering system.
- Significant good faith investment by ship owners
- Vessels type approved – but not tested for fresh (or cold) water
- Experimental tests done by DFO on ships arriving in Great Lakes or during voyages
- Environment Canada tests in Cold / Fresh Water - Periclean
- Celebrations of success premature
- Still time prior to entry into force of BW Convention

IMO Requirements for Land Based Testing for approval G8

Salinity		
Saline	Brackish	Fresh
>32psu	3-32psu	<3psu

- Salinity range to be chosen from Table
- Two sets of test cycles required
- Tests under adjacent salinity ranges separated by 10 psu
- Market for vendors - Salt or brackish waters
- Definition of Fresh water high for some areas of world
- Great Lakes – zero psu

Possible Solutions



- **Allow only BW systems tested and type approved for Fresh Water Conditions to discharge**
- **Alternate ways of using systems not type approved for fresh water**
- **Dealing with the issue under Port State Control**
- **Changes to IMO Guidance**
- **Real world research into use of BW Technologies in Cold / Arctic Conditions**

Systems tested under Fresh Water Conditions



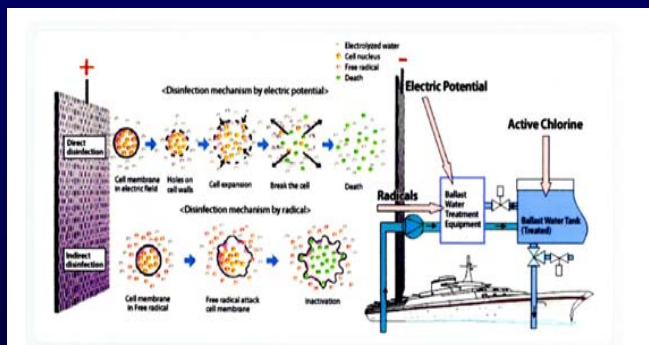
- Periclean Ocean tested by Environment Canada under Fresh Water Conditions
- RWO tested in Fresh Water and received Final Approval from MEPC
- Awaiting Type Approval
- A number of other BWT systems have undertaken fresh water testing - Great Ships Initiative
- Retest currently Type approved systems

Alternate Compliance for BWT systems not approved in Fresh Water



- Exchange fresh water with salt or brackish then use treatment as approved.
- DFO Research plan (MOU with Germany)
- Save ship owners investment
- Ensure fresh water environment protected
- Potential exponential decrease in risk to environment over D-2 standard

Exchange plus Treatment for Fresh water



- Understand safety issues & methodology of BW exchange in risk reduction
- Removal of high risk FW organisms
- Osmotic shock
- Flushing
- Once exchanged / flushed use of BWTS system on already low risk water
- Equivalent research for saline water

Port State Control



- Type Approval Guidance
- MEPC 61
- Type Approval Certificate to specify
Salinity
Temperature
- Port State Control Officers
- Examine type test certificate to ensure appropriate for discharge environment

IMO Guidance

- **G8 Guidelines to be kept under review in the light of experience gained**
- **Guidance for Administrations on the Type Approval Process**
- **Guidelines for Port State Control Inspections for Compliance With the International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004**

Low Temperature Testing



- Exposed Equipment – on deck or enclosed space not environmentally controlled
- Two hours @ -25 C
- Environmentally controlled space – engine room
- Two Hours @ 0 C
- Mesocosm testing of Periclean Ocean in Quebec under “cold” conditions
- Recommendation to examine active substances in cold conditions
- Real world shipboard tests in cold conditions and icing conditions

Way Ahead

- **R&D on Exchange plus Treatment - partners**
- **Incorporate Type Test requirements indicating condition of test into Port State Control documentation and process**
- **Real world testing for “cold” conditions and report back to IMO if required**
- **Encourage Ship Owners to ensure systems they buy and install on ships are appropriate for the environmental conditions of the discharge ports**