"New Ballast Technology Regulations – The U.S. Seaway's Perspective"

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Nationwide/International Regulatory Regime

- **EPA 2013 Vessel General Permit**
  - U.S. Lakers and some Canadian Lakers excluded
  - **Additional rules for Great Lakes entry (BWE/Saltwater Flushing + Treatment)**
  - Phased implementation (2013 – 2016+)
- **USCG Final Rule**
  - U.S. and Canadian lakers exempt
  - Phases out BWE entirely
  - Phased implementation (2013 – 2016+)

Both EPA and USCG adopt the IMO D-2 technology-based numeric standard for discharges.

How we arrived at this Regulatory Regime

- An unusual situation to have shared regulatory authority over such an important activity (ballast water discharge).
- EPA Permit and USCG Final Rule were years in the making and incorporated the latest scientific information and public input.
- Significantly, both are based on enforceable standards that can be measured and verified.
- Extensive testing protocols were collaboratively developed to ensure technology used is safe, effective and measurable.

The importance of measurable and enforceable standards

- Dr. Henry Lee, et al. 2009 (Density Matters) paraphrase: Strong enforcement with a less stringent standard is more effective than a stringent standard that cannot be enforced.

- Said another way:

  "A good plan violently executed now is better than a perfect plan executed next week."

The States came to this understanding as well: 2009

State	Regulation	Existing Oceangoing	New Oceangoing	Existing Laker	New Laker
IL	401 Certification	IMO by 2016	IMO 2012 & after	IMO by 2016	IMO after 2012
IN	401 Certification	IMO by 2016	IMO 2012 & after	None	None
OH	401 Certification	IMO by 2016	IMO 2012 & after	None	IMO 2016 & after
MN	State Permit 401 Certification	IMO by 2016	IMO 2012 & after	IMO by 2016	IMO 2012 & after
MI	State Permit 401 Certification	MI-approved treatment	MI-approved treatment	None	None
PA	401 Certification	IMO by 2016	1000 x IMO in 2012 & after	IMO by 2016	1000 x IMO in 2012 & after
NY	401 Certification	100 x IMO by 2012	1000 x IMO in 2013 & after	100 x IMO by 2012	1000 x IMO in 2013 & after
WI	State Permit	100x IMO by 2014	100x IMO 2012 & after	BMP plan	BMP plan

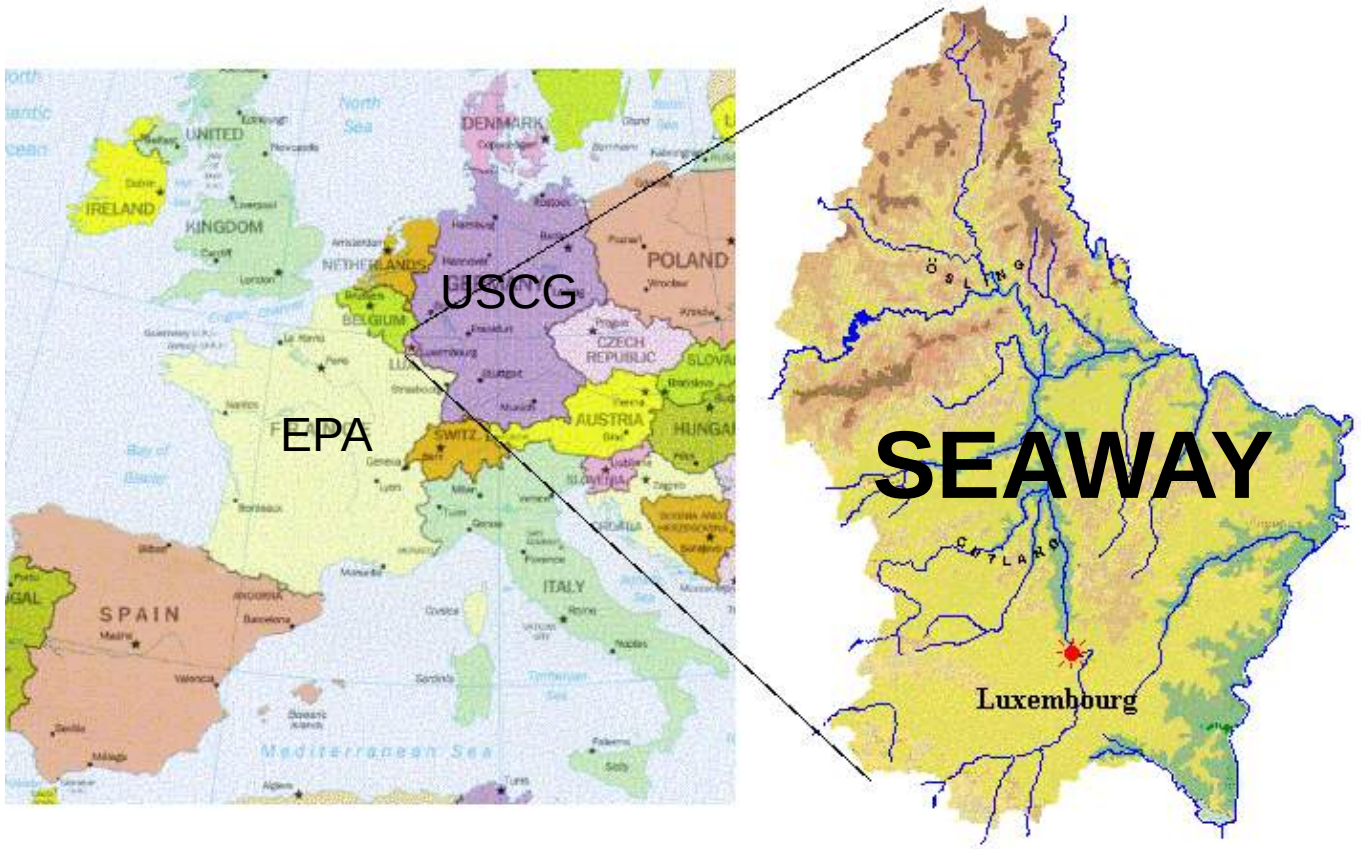
The States came to this understanding as well: 2013

State	Regulation	Existing Oceangoing	New Oceangoing	Existing Laker	New Laker
IL	401 Certification	VGP Requirement	VGP Requirement	VGP Requirement	VGP Requirement
IN	401 Certification	VGP Requirement	VGP Requirement	VGP Requirement	VGP Requirement
OH	401 Certification	VGP Requirement	VGP Requirement	VGP Requirement	VGP Requirement
MN	State Permit 401 Certification	IMO by 1/1/2016	IMO	IMO by 2016 & BMP	IMO 2012 & BMP
MI	State Permit 401 Certification	MI-approved treatment	MI-approved treatment	VGP Requirement	VGP Requirement
PA	401 Certification	VGP Requirement	VGP Requirement	VGP Requirement	VGP Requirement
NY	401 Certification	VGP Requirement	VGP Requirement	BMP	BMP
WI	State Permit 401 Certification	VGP Requirement	VGP Requirement	BMP	BMP

Current Great Lakes St. Lawrence Seaway Regulatory Regime

- **The Seaway Inspection Program is unique:**
  - Vessels entering the lakes are coming from a saltwater environment and entering extremely fresh waters.
  - 100% of ballast tanks are targeted for inspection
- **Effectiveness of program confirmed by scientific analysis.**
  - Gray et al. 2007: *Efficacy of open-ocean ballast water exchange as a means of preventing invertebrate invasions between freshwater ports.*
  - Bailey et al. 2011: *Evaluating Efficacy of an Environmental Policy to Prevent Biological Invasions.*

The Seaway is the "Luxembourg" of Ballast Water Regulation



Seaway = Gatekeeper to the Great Lakes

GREAT LAKES AQUATIC NONINDIGENOUS SPECIES INFORMATION SYSTEM

- **Great Lakes Aquatic Nonindigenous Species Information System**
  - Database of species introduced by a number of pathways including shipping.
- There have been no detections of new invaders introduced via shipping since 2006.
- This is a tentative indication that the current regulatory regime is working to protect the Great Lakes from new aquatic invaders via the shipping vector.

Availability of Technology

- The USCG Type Approval process is proceeding ahead, albeit slowly.
- The importance of establishing (finally) scientifically sound testing protocols and Independent Laboratories.
- Number of systems in the “Alternate Management System “ program: **15**
- Number of USCG Type Approved Systems: **0**
- The availability of USCG Type Approved systems will drive the ultimate adoption of BWTS (this is due to liability issues).

Availability of Technology for the Great Lakes

- Not surprisingly, the Great lakes Seaway System presents special challenges to the adoption of BWTS.
- Given the ecosystem of the Great Lakes (very cold and very fresh), and the limited size of the Great Lakes fleets, **there are simply no treatment systems currently designed or available to operate in the Great Lakes Seaway System.**
- "Hybrid" systems are being researched and tested.
- Research continues to assess the risk of spread by vessels confined to the Great Lakes.

When will BWTS arrive on vessels operating in the Great Lakes?

- Progress is being made, but it is unclear at this point if the newly established deadlines can be met.
- In the meantime, a scientifically based regulatory and inspection regime is in place to ensure that best practices continue to be implemented.

"Take-Home Message"

Effective, well-functioning BWTS are still years away for the Great Lakes, yet current regulations are being rigorously enforced and providing effective protection against the introduction of additional aquatic invasive species via shipping.

Thank You !

Many of the reports and other data sources mentioned in this presentation can be found on the Seaway's website or via Facebook:

www.greatlakes-seaway.com

www.facebook.com/usdotslsdc

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