



U.S. House of Representatives
Committee on Transportation and Infrastructure

Washington, DC 20515

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July 8, 2011

MEMORANDUM

TO: Members, Subcommittee on Coast Guard and Maritime Transportation and Subcommittee Water Resources and Environment

FROM: Staff, Subcommittee on Coast Guard and Maritime Transportation and Subcommittee Water Resources and Environment

RE: Hearing on "Reducing Regulatory Burdens, Ensuring the Flow of Commerce, and Protecting Jobs: A Common Sense Approach to Ballast Water Regulation"

PURPOSE

On July 13, 2011, at 10:00 a.m., in room 2167 of the Rayburn House Office Building, the Subcommittee on Coast Guard and Maritime Transportation and the Subcommittee on Water Resources and Environment will meet to receive testimony from two scientific bodies regarding the feasibility of regulating ballast water discharges, as well as to review current regulations governing the ballast water and other incidental discharges, and to explore options to improve these regulations to ensure the free flow of commerce, grow maritime jobs, and protect the environment.

BACKGROUND

Current Regulations

In order to maintain stability during transit, most ocean going vessels fill internal tanks with ballast water during the loading of cargo and then release it during unloading. Ballast water has long been recognized as one of several pathways by which invasive species are transported globally and introduced into coastal waters where they did not live before. Many aquatic nuisance species have been introduced into U.S. waters via ballast water discharges. One of the most well known is the zebra mussel in the Great Lakes.

Coast Guard Regulations:

Under the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 and the National Invasive Species Act of 1996, the Coast Guard has implemented regulations to minimize the introduction of these organisms into U.S. waters. Under current regulations promulgated by the Coast Guard in July 2004 (69 *Fed. Reg.* 44952-44961), all vessels that are engaged on an international voyage and bound for a U.S. port are required to conduct ballast water exchange before the vessel enters the U.S. Exclusive Economic Zone (EEZ) which extends roughly 200 miles from the U.S. coast. The intent of ballast water exchange is to discharge or kill any near coastal organisms that inhabit ballast water, and prevent the discharge of those alien organisms into U.S. waters. It is not clear how effective ballast water exchange is in preventing introductions of invasive species because it does not remove all organisms from ballast tanks or sediments that settle to the bottom of the ballast tanks. In addition, no significant monitoring program currently exists to establish a pre- or post-exchange baseline for the introduction of aquatic invasive species in U.S. waters.

EPA Regulations:

The Federal Water Pollution Control Act of 1972, popularly known as the Clean Water Act (CWA), regulates the discharge of pollutants into U.S. waters. Unless the discharge is otherwise exempt from permitting, individuals, companies, municipalities, and others who discharge pollutants from point sources must do so in compliance with a permit issued by the Environmental Protection Agency (EPA) under the National Pollution Discharge Elimination System (NPDES) permit program (established under section 402 of the CWA, 33 USC 1342) or by one of the 45 states that issue permits in lieu of the EPA.

On May 22, 1973, EPA first promulgated a regulation excluding, from the requirement to obtain an NPDES permit, certain discharges from vessels, including the discharge of sewage from vessels; effluent from properly functioning marine engines; laundry, shower, and galley sink wastes (collectively known as graywater); as well as "any other discharge incidental to the normal operation of a vessel," which includes ballast water (40 C.F.R. 122.3(a)).

In December 2003, the long-standing exclusion of discharges incidental to the normal operation of vessels from the NPDES program became the subject of a lawsuit in the U.S. District Court for the Northern District of California. The lawsuit arose from a January 13, 1999, rulemaking petition submitted to EPA by a number of parties concerned about the environmental effects of ballast water discharges. The petition asked EPA to repeal its regulation that excludes certain discharges incidental to the normal operation of vessels from the requirement to obtain an NPDES permit. The petition asserted that vessels are "point sources" requiring NPDES permits for discharges to U.S. waters; that EPA lacks authority to exclude point source discharges from vessels from the NPDES program; and that ballast water must be regulated under the NPDES program because it contains invasive plant and animal species, as well as other materials of concern. In March 2005, the Court ruled the

regulatory exemption for discharges incidental to the normal operation of vessels exceeded the EPA's authority under the CWA (*Northwest Envtl. Advocates et al. v. United States EPA*, 2005 U.S. Dist. (N.D. Cal., 2005)). EPA appealed the ruling, but the Ninth Circuit Court of Appeals upheld the District Court decision in July 2008.

Pursuant to the Court order, in December 2008, EPA promulgated final regulations establishing a Vessel General Permit (VGP) under the NPDES program to govern ballast water and other discharges incidental to the normal operation of vessels. The VGP requires vessel operators to be in compliance with best management practices covering 26 types of discharges incidental to normal vessel operations, including deck runoff, air conditioner condensate, bilge water, graywater, and cooling system discharge. With respect to ballast water, the VGP incorporates the Coast Guard's mandatory ballast water management and exchange standards. Vessel operators must maintain records with EPA indicating they are in compliance with training, inspection, monitoring, and reporting protocols, as well as implement any corrective actions upon identification of violations. Vessel operators are required to file a notice of intent (NOI) indicating they intend to be covered by the VGP. Approximately 45,000 vessels currently operate under an NOI with the EPA.

Vessel operators that do not file an NOI, or are not in compliance with the VGP or an individual permit governing these discharges can be found to be in violation of the CWA. In addition to criminal penalties, violations of the CWA can carry civil penalties totaling up to \$32,500 per day per violation. Under a memorandum of understanding with EPA, the Coast Guard began a VGP enforcement and compliance monitoring program in March 2011. Under 14 U.S.C. 2, the Coast Guard has the authority to enforce all federal laws on, under, or over the high seas and in U.S. waters.

To supplement federal and state enforcement of the CWA, section 505 of the law (33 U.S.C. 1365) empowers private citizens to bring suit against alleged violators. A citizen, after notifying the alleged violator of their intent to file suit, may sue for injunctive relief (court orders prohibiting the pollution from continuing), civil penalties, and the prevailing party may be reimbursed for legal costs and attorneys' fees. However, since the 1987 Supreme Court decision in *Gwaltney vs. Chesapeake Bay Foundation*, citizens have been prohibited from suing for wholly past violations and must be able to demonstrate that future violations are likely to occur. Also a citizen suit may be stayed by EPA or state action.

State, Territory, and Tribal Regulations:

Under section 401 of the CWA (33 U.S.C. 1341), those seeking federal license or permit to conduct activities that may result in a discharge into U.S. waters must first receive a water quality certification from the state, territory, or Indian tribe in which the activity may occur that the permitted discharge will comply with state water quality requirements. These 401 certifications may require those seeking a federal permit to comply with additional water quality regulatory requirements when conducting activities.

With respect to the VGP, 26 states, 2 Indian tribes, and 1 territory have filed 401 certifications requiring vessel operators to be in compliance with local water quality regulatory requirements. As a result, to transit U.S. waters, vessel operators must ensure they are in compliance with Coast Guard and EPA regulations, as well as over two dozen state, territory, or tribal regulations governing 26 discharges.

Ensuring a vessel is in compliance with federal as augmented by state 401 certifications under the VGP can be difficult, as some of the state certifications are contradictory in nature. For instance, New York will be requiring vessels to install ballast water treatment systems to eliminate organisms at a rate 100 times greater than the international standard proposed by the International Maritime Organization (IMO) (see discussion below). Meanwhile, Great Lakes states such as Ohio are only requiring vessels to install treatment systems that meet IMO standards. In addition, some states permit ballast water treatment systems which use chlorine as a biocide, while other prohibit them. Finally, standards governing the discharge of bilge water, graywater, and other incidental discharges also can vary from state to state.

Under current law, any recreational vessel that are not subject to Coast Guard inspection and carrying paying passengers or engaged in commercial use are permanently exempt from the VGP and related permits regulating discharges incidental to the normal operation of a vessel (33 U.S.C. 1342(r)). Congress has also enacted a temporary moratorium of the VGP for commercial fishing vessels regardless of size, as well as commercial vessels less than 79 feet in length (Public Law 111-215). The moratorium expires on December 18, 2013. The EPA estimates there are approximately 140,000 vessels currently subject to the moratorium.

Future Regulations

International:

On February 13, 2004, the IMO agreed to the International Convention for the Control and Management of Ships' Ballast Water & Sediments (Convention). The Convention, if ratified by a sufficient number of nations and entered into force, will be the first time international law has attempted to minimize the spread of nonindigenous aquatic organisms by requiring vessels to manage their ballast water using ballast water treatment systems and procedures. The Convention also would establish performance standards applicable to ballast water treatment which would prohibit the release of ballast water containing more than 10 organisms that are greater than 10 micrometers in size per cubic meter of ballast water or certain concentrations of smaller size classes of organisms (the IMO D-2 standard).

The Convention will enter into force only after it has been ratified by at least 30 IMO member nations representing more than 35 percent of global merchant shipping tonnage. As of October 2010, 28 nations have ratified the Convention, representing

25.43% of world merchant shipping tonnage. The United States currently is not a party to the Convention.

Coast Guard:

The Coast Guard released a Notice of Proposed Rulemaking (NPRM) in 2009 to amend its regulations on ballast water management (74 FR 44632). The NPRM, which is currently at Department of Homeland Security for final review and approval, establishes a standard for the allowable concentration of living organisms in vessel ballast water discharged in U.S. waters and creates a two-phase implementation plan. It would require all vessels operating in U.S. waters or bound for ports in the U.S. to install and operate a Coast Guard approved ballast water management system (BWMS) before discharging ballast water into U.S. waters.

The proposed rule includes a phase-in schedule for complying with both the phase 1 and phase 2 proposed ballast water discharge standard based on the vessel's ballast capacity and build date. All vessels would be required to manage their ballast water through a Coast Guard approved BWMS and meet either the proposed phase 1 or phase 2 discharge standard, as applicable, or retain their ballast water onboard. The phase 1 standard is the same as the standard adopted by the IMO. The proposed phase 2 standard is 1,000 times more stringent than the phase 1 standard. The Coast Guard notes that reliable technology to achieve the phase 2 standard and a testing protocol to ensure compliance with the standard does not yet exist. As a result, the Coast Guard proposes a practicability review to ensure a verifiable system is available to meet the phase 2 standard before mandating the installation of such system.

EPA:

In December 2013, EPA's current VGP expires. EPA is planning to propose a new draft VGP by November 30, 2011, and take final action on the new VGP by November 30, 2012. The new VGP would become effective when the current VGP expires. Pursuant to a March 2011 Court settlement with several environmental groups and the State of Michigan (*Natural Resources Defense Council v. EPA*, Case No. 09-1089), EPA agreed to replace the current requirement for ballast water exchange with new numeric concentration-based limits on the discharge of organisms in ballast water in the draft VGP. The draft VGP will also include monitoring standards for ballast water treatment systems.

Scientific Studies

EPA and the Coast Guard jointly tasked the National Research Council (NRC) of the National Academies of Sciences and the EPA Office of Water tasked the EPA Science Advisory Board's Ecological Processes and Effects Committee (SAB) to report back on several aspects of regulating the discharge of ballast water.

National Research Council:

EPA and the Coast Guard asked the NRC to:

1. Evaluate the state of the science of various approaches that assess the risk of establishment of aquatic nonindigenous species given certain concentrations of living organisms in ballast water discharges.
2. Recommend how these approaches can be used by regulatory agencies to best inform risk management decisions on the allowable concentrations of living organisms in discharged ballast water in order to safeguard against the establishment of new aquatic invasive species, and protect indigenous populations and other beneficial uses.
3. Evaluate the risk of successful establishment of new aquatic nonindigenous species associated with a variety of ballast water discharge limits that have been used or suggested by the international community and/or domestic regulatory agencies.

The NRC completed its report (*Assessing the Relationship Between Propagule Pressure and Invasion Risk in Ballast Water*) in June 2011 and recently released its findings. The NRC found the following:

- An assumption in the development of a numeric standard for live organisms per unit volume ballast water discharged is that there is a direct and quantifiable relationship between the density of individuals released in a ballast discharge and the probability of their eventual establishment. While a relationship between density and establishment probability may exist, many other factors also affect establishment success in aquatic systems. Additionally, ballast water is just one of several pathways for the introduction of nonindigenous species or pathogens. It is abundantly clear that reducing populations will reduce the probability of invasions when controlling for other variables. Thus, any method that attempts to predict invasion outcomes based upon only one factor without controlling for the others is likely to suffer a high level of uncertainty.
- Available methods for determining a numeric standard for ballast water discharge are limited by a profound lack of data to develop and validate models determining risk of invasion.
- However, a discharge standard, for example the Coast Guard phase 1 or IMO D-2 standard, should be established. This will reduce the likelihood of invasion in coastal ecosystems beyond what we presently experience and will serve as a benchmark to use in future studies.
- Steps should be taken to develop sampling protocols, standardize methods and analytical processes, and create the framework necessary to produce high-quality data specifically needed to populate risk-release models. Once data can be collected, experiments and studies can commence to determine the efficacy of numeric limits on reducing the risk of invasion from nonindigenous species or pathogens.

The NRC's complete report is available on EPA's NPDES Website:
<http://cfpub.epa.gov/npdes/vessels/programdevelopment.cfm>

Science Advisory Board Report:

The EPA Office of Water requested the SAB to review and provide advice regarding whether existing shipboard treatment technologies can reach specified concentrations of organisms in vessel ballast water, how these technologies might be improved in the future, and how to overcome limitations in existing data. On June 16, 2011, the SAB voted on the final changes to their report (*Efficacy of Ballast Water Treatment Systems*), which is expected to be released soon.

The SAB found the following:

- Five categories of existing BWMS are currently able to comply with the least stringent standard proposed by the USCG (i.e., the Coast Guard phase 1 standard, which is equivalent to the IMO D-2 standard). However, no current BWMS can meet a 100x or 1000x standard (i.e., the Coast Guard phase 2 standard) or the complete removal of all living organisms.
- The IMO D-2/Coast Guard phase 1 performance standards for discharge quality are currently measurable. However, currently available methods prevent testing of BWMS to any standard more stringent than the IMO D-2/Coast Guard phase 1 standard and make it impracticable for verifying a standard 1000x more stringent. Verification of standards that set very low organism concentrations (those more stringent than the Coast Guard phase 1/IMO D-2 standard) may require water samples that are too large to be logistically feasible. Furthermore, a zero detectable discharge standard is not statistically verifiable.
- The primary impediments to the ability of shipboard systems to meet stringent discharge standards beyond existing technologies is that treatment processing plants will likely need to be large, heavy, and energy intensive. Many existing vessels may be unable to overcome these barriers through retrofitting. More stringent standards may require a fundamental shift in how ballast water is managed. The SAB recommends that one or more pilot projects be commissioned to explore new approaches to ballast water treatment, including tests of ballast water transfer and treatment at a reception facility.
- Any ballast water management strategy to decrease the rate of successful invasions by nonindigenous species or introduction of pathogens should be part of an overall risk-based management plan that includes methods to reduce invasion events, process and environmental monitoring, containment, and eradication. Emphasis only on one aspect, the initial introduction of organisms, is not likely to reduce the risk of invasions as efficiently or as cost effectively as a risk assessment approach that considers all the stages of the invasion process including survival after introduction.

The SAB's draft report is available on EPA's NPDES Website:
<http://cfpub.epa.gov/npdes/vessels/programdevelopment.cfm>

WITNESSES

Panel 1

Vice Admiral Brian Salerno
Deputy Commandant for Operations
United States Coast Guard

Mr. James Hanlon
Director
Office of Wastewater Management
Environmental Protection Agency

Dr. Deborah Swackhamer
Chair
EPA Science Advisory Board

Dr. James Carlton
Chair
Committee on Numeric Limits for Living Organisms in Ballast Water
National Research Council

Panel 2

Mr. Thomas Allegretti
President
The American Waterways Operators
On behalf of
Shipping Industry Ballast Water Coalition

Mr. Michael Jewell
President
Marine Engineers' Beneficial Association