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on

"The Impacts of Vessel Discharge Regulations on Our Shipping and Fishing Industries"

Mr. Chairman and Members of the Subcommittee, on behalf of the Congressional Research Service, thank you for the opportunity to appear before you. I am Claudia Copeland, Specialist in Resources and Environmental Policy. The Committee requested that CRS discuss the legislative and regulatory history of vessel discharge, the current regulatory schemes, and issues addressed in recent vessel discharge legislation. In serving the U.S. Congress on a non-partisan and objective basis, CRS takes no position on legislation.

Introduction

As part of their normal activities, vessels may discharge a wide range of wastes and contaminants into U.S. and international waters, including nutrients, pathogens, oil and grease, metals such as copper, toxic chemical compounds, and non-native aquatic nuisance, or invasive, species. The discharges can include shower and laundry facility water, deck washdown and runoff, bilgewater, motor fuel, machinery wastewater, and ballast water, among others. Contaminants in these discharges can have a broad array of effects on aquatic species and human health, many of which can be harmful.

Similarly, the universe of vessels that may release these discharges is diverse and includes commercial fishing vessels, cruise ships, ferries, barges, mobile offshore drilling units, tankers, cargo ships, container ships, research vessels, emergency response vessels such as firefighting and police vessels. Including recreational vessels, the universe of vessels is in the millions.

Ballast water discharges from vessels have been a particular concern, because invasive species entering U.S. waters cause social, recreational, and ecological disturbances and result in significant economic losses. National attention was drawn to the invasive species problem with the arrival of zebra mussels in the Great Lakes in the late 1980s. Since then, virtually all coastal and Great Lakes states have experienced

ecological change and loss from aquatic nuisance species. For example, zebra mussels attach to hard surfaces such as water intake pipes that are used for cooling water and municipal water supply. When this occurs, the infestation can cause significant reduction in pumping capacity and occasionally has caused plant shutdowns.

Ballast water has been identified as a major pathway for introduction of aquatic nuisance species. Ships use large amounts of ballast water to stabilize the vessel during transport. Ballast water is often taken on in the coastal waters in one region after ships discharge wastewater or unload cargo, and then discharged at the next port of call, wherever more cargo is loaded, which reduces the need for compensating ballast. The practice of taking on and discharging ballast water is essential to the proper functioning of ships, because the water that is taken in or discharged compensates for changes in the vessel's weight as cargo is loaded or unloaded, and as fuel and supplies are consumed. However, ballast water discharge typically contains a variety of biological materials, including non-native, nuisance, exotic species. If these species are released into lakes or rivers as part of ballast water discharge, they can alter aquatic ecosystems.

Today there is wide agreement on the need for strong measures to control vessel discharges, especially ballast water discharges, but there are differing views on how to do that. Vessel discharge requirements in the United States are a result of U.S. Coast Guard regulations, U.S. Environmental Protection Agency (EPA) permits, and individual state rules, limitations, and requirements. Vessels also are subject to a number of international agreements, in particular to Conventions adopted by the International Maritime Organization (IMO),[1] which apply to vessels operating under flags of countries that are Parties to the Conventions. It is the combination of regulations and standards that is at issue today.

Coast Guard Regulation: Ballast Water Discharges

Federal authority to address ballast water concerns in the United States is contained in the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA, P.L. 101-646), as amended by the National Invasive Species Act of 1996 (NISA, P.L. 104-332),[2] and is administered by the Coast Guard. Initially this authority required a program to prevent the introduction and spread of invasive species into the Great Lakes by managing vessel ballast water discharge, a program that subsequently was extended to all U.S. ports and waters. Ships that have operated outside the U.S. Exclusive Economic Zone[3] were directed to undertake high seas ballast exchange before entering U.S. waters. However, ballast water exchange is believed to be only partially effective to reduce the spread of aquatic organisms and pathogens and is often not carried out due to safety consideration.[4]

In 2012 the Coast Guard promulgated a rule establishing new requirements for ballast water management.[5] The Coast Guard amended its existing requirements to include numeric standards that

[1] The IMO, a body of the United Nations, sets international maritime vessel safety and marine pollution standards.

[2] 16 U.S.C. §§ 4701-4741.

[3] The Exclusive Economic Zone (EEZ) means the area established by Presidential Proclamation Number 5030, dated March 10, 1983, which extends from the baseline of the territorial sea of the United States seaward 200 miles, and the equivalent zone of Canada.

[4] Ballast water exchange involves replacing water that has been taken on in coastal areas with open-ocean water during a voyage. This process reduces the density of coastal organisms in ballast tanks, replacing them with oceanic organisms with a lower probability of survival in nearshore waters.

[5] Department of Homeland Security, Coast Guard, "Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters," 77 *Federal Register* 17254-17320, March 23, 2012. The regulations are codified at 33 CFR Part 151 and 46 CFR Part 162.

establish allowable concentrations of living organisms in ballast water that is discharged in U.S. waters. The rule specifies that ballast water to be discharged must contain fewer than 10 organisms per cubic meter for organisms larger than 50 micrometers and fewer than 10 organisms per milliliter for smaller organisms, those that are between 10 and 50 micrometers in size. It also establishes numeric limits on indicator microorganisms, such as intestinal pathogens. The rule applies to all U.S. and foreign vessels that are equipped with ballast tanks and are operating in waters of the United States, unless specifically exempt, a number estimated by the Coast Guard to be 3,046 vessels over a 10-year period. Under the rule, the standards would apply to new vessels—meaning those constructed on or after December 1, 2013—on delivery and would apply to vessels constructed before December 1, 2013, according to a phased schedule beginning January 1, 2014, depending on a ship's ballast water capacity.

Under the Coast Guard rule, vessel owners and operators have several compliance options.

- They can eliminate ballast water discharge.
- They can discharge to an onshore facility or to another vessel for the purpose of treatment.
- They can use ballast water that is only drawn from a U.S. public water system.
- Or, they can install a ballast water management system that has been approved by the Coast Guard. For this option—installation of treatment technology—the rule details procedures for land-based and shipboard testing and Coast Guard approval.

The numeric standards in the Coast Guard rule overlap with standards specified in a 2004 Convention of the IMO.[6] Like the Coast Guard rule, the IMO ballast water performance standard identifies organisms of various sizes and also identifies concentrations of indicator microbes in ballast water that management systems are required to achieve prior to discharge. And the numeric standards in the Coast Guard rule and the IMO Convention are the same.

EPA Permit for Vessel Discharges

EPA also has authority to regulate vessel discharges, including ballast water, but for many years the agency mostly chose not to do so. This authority stems from the Clean Water Act, which prohibits the discharge of pollutants from a point source into U.S. waters without a permit.[7] Vessels are defined in the statute as point sources. In 1973, EPA promulgated a regulation that excluded discharges incidental to the normal operation of vessels—including ballast water (but not including vessel sewage discharges, which are regulated)—from Clean Water Act permitting requirements. EPA's position was that, because vessels are mobile and move between jurisdictions, the traditional Clean Water Act mechanism of regulating through state-issued permits is problematic, because state requirements can vary widely.

This long-standing regulation was challenged in federal district court by environmental advocacy groups who wanted EPA to address ballast water as a source of aquatic nuisance species in U.S. waters. The court found that the 1973 regulation contradicted Congress' intention that discharges from vessels be regulated

[6] International Maritime Organization, *International Convention for the Control and Management of Ships' Ballast Water and Sediment*, 2004. Numeric discharge performance standards in the IMO ballast water convention, referred to as the D-2 standards, will enter into force 12 months after ratification by 30 nations representing 35% of the world shipping tonnage. As of January 2015, this convention has been ratified by 43 nations, representing 32.5% of the world merchant shipping tonnage. The United States has not ratified the convention.

[7] Clean Water Act Section 301(a); 33 U.S.C. §1311(a).

under the Clean Water Act, and it vacated, or revoked, the regulatory exclusion. In 2008, this ruling was upheld.[8]

EPA initially estimated that the court's ruling could affect and would require permits for as many as 98,000 commercial fishing, passenger, cargo and other vessels, plus over 13 million recreational boats. Congress responded to that estimate by enacting two bills to restrict the population of vessels subject to regulation. The first, the Clean Boating Act of 2008, provided a permanent exemption for discharges incidental to the normal operation of *recreational vessels of all sizes* from Clean Water Act permitting requirements.[9]

The second measure provided a two-year moratorium on Clean Water permitting for certain discharges from *commercial fishing vessels of all sizes and non-recreational vessels less than 79 feet in length*.[10] This moratorium has been extended three times, most recently through a three-year extension, until December 18, 2017, which was enacted in December 2014 as part of a Coast Guard reauthorization bill.[11]

Following Congress' actions, in 2008 EPA issued a national Clean Water Act permit called the Vessel General Permit (VGP), giving permit coverage to an estimated 72,000 vessels including tankers, freighters, barges, and cruise ships that were not exempted by the two bills. It applied to 26 types of pollutant discharge types or waste streams, including but not limited to ballast water, that result from the normal operation of covered vessels. The ballast water requirements of the 2008 VGP were minimal, largely requiring what was required by then-existing Coast Guard rules—primarily use of ballast water exchange.[12] Like Coast Guard rules that had been in effect since 2004, EPA's permit mandated mid-ocean ballast water exchange for ships traveling outside the 200-nautical-mile exclusive economic zone (EEZ) of the United States.

Some stakeholder groups urged EPA to include numeric ballast water discharge standards in the 2008 VGP, arguing that discharge standards would encourage adoption of technology that is more effective for controlling living organisms than ballast water exchange. But EPA did not do so. Requiring a numeric effluent limit for the discharge of living organisms was not practicable, achievable, or available because adequate treatment technologies were not then commercially available, EPA said. Instead, the VGP specified ballast water best management practices, such as regular cleaning of ballast tanks in mid-ocean to remove sediment, as well as recordkeeping and monitoring requirements.

Because the VGP and other Clean Water Act permits are authorized for five-year periods and then must be renewed, in 2013 EPA re-issued the VGP. It is similar to the 2008 permit in many respects, but departs from the previous permit by specifying ballast water numeric discharge limits. Based on reports from the National Research Council and the agency's own Science Advisory Board since issuance of the 2008 permit, EPA concluded that ballast water treatment technologies are now available to meet numeric limits in the new VGP, and that the requirements are economically practicable and achievable.

The numeric limits in the 2013 VGP are the same as the performance standards in the Coast Guard's 2012 regulation and also the same as the standards in the IMO's ballast water Convention. Likewise, the VGP matches the implementation timeframe in the Coast Guard rule for new and existing vessels.

[8] Northwest Environmental Advocates v. U.S. Environmental Protection Agency, 537 F.3d 1006 (9th Cir. 2008).

[9] P.L. 110-288.

[10] P.L. 110-299.

[11] P.L. 113-181.

[12] Infra note 4.

While they are similar in many respects, the Coast Guard rule and the EPA permit differ in several ways.

- **Number and types of vessels.** The Coast Guard rule applies to about 3,050 vessels that are equipped with ballast tanks, while the EPA permit applies to about 72,000 vessels, including many that do not discharge ballast water. The Coast Guard rule exempts crude oil tankers engaged in coastwise trade (i.e., essentially referring to a voyage that begins at any point within the United States and delivers a type of commercial cargo to any other point within the United States); the EPA permit has no such exemption.
- **Covered discharges**. The Coast Guard rule focuses just on ballast water discharges. The EPA permit authorizes discharges of ballast water and 26 other waste streams incidental to the normal operation of vessels.
- **Ballast water requirements are similar but not identical**. Both adopt the ballast water discharge standards in the IMO ballast water convention, but they include somewhat different monitoring, recordkeeping and reporting requirements. For example, the EPA permit regulates discharges of biocides that vessels may use as part of ballast water management; the Coast Guard rule has no such requirements.
- **Ballast water management technology**. The Coast Guard rule requires use of approved ballast water management technology. The EPA permit requires use of "best available technology," but does not require technology certification.
- **Exemptions.** The Coast Guard has authority to grant temporary exemptions from its ballast water management standards if technology is not available. Because no technological system has yet received Coast Guard approval, the Coast Guard has granted two-year exemptions to nearly 350 vessels. EPA does not have authority to grant exemptions from requirements of the VGP.
- **Enforcement.** Under NISA and the Clean Water Act, respectively, the Coast Guard and EPA have enforcement authority, such as civil and criminal sanctions. Only the Clean Water Act authorizes citizen suits, that is, the ability of citizens to bring a lawsuit to enforce effluent limitations in a permit.

State Regulation of Vessel Discharges

The role of states in regulating vessel discharges is a controversial issue, because, beyond federal requirements, vessel discharges also are subject to regulation by nearly one-half of the states. The states' authority to do so derives in part from provisions of the Clean Water Act. First, Section 510 allows states to adopt standards, discharge limitations, or other requirements no less stringent than federal rules. States often want the flexibility to require standards more stringent than federal, and this general authority in the statute gives states the ability to tailor their implementation of federal water quality programs by adopting requirements under state law to address local conditions and circumstances.

Several states, including Minnesota, Wisconsin, Michigan, and Hawaii, have used their authority to issue state permits independent of the VGP to regulate ballast water discharges.

Second, under Clean Water Act Section 401, an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the United States must provide the federal agency with a certification that the discharge will comply with applicable provisions of the federal law, including state-established water quality standards. Section 401 gives states two distinct powers: one, the power indirectly to deny federal permits or licenses by withholding certification; and two, the power to impose

conditions on federal permits. Where states impose conditions on a federal permit—such as the VGP—the permittee must meet the additional state limitations as conditions of the federal permit.

Twenty-five states and Tribes certified the 2013 re-issued permit with additional permit conditions covering one or more of the 27 effluent streams. Of the 25, 14 states certified the permit with supplementary conditions applicable to ballast water discharges, including specific numeric discharge standards that are more stringent than those in the EPA permit (or the Coast Guard rule), state permit requirements such as Michigan's, or with more general language prohibiting nuisance or other conditions in order to protect state waters. Some states certified with conditions for specific pollutant discharges, such as chlorine, which can harm aquatic life. States that have used their state authority to adopt more stringent ballast water standards include New York, which are 100 times more stringent than EPA's and the Coast Guard's, and California, which has established numeric standards 1,000 times more stringent than those in the Coast Guard rule and the EPA permit. Both New York and California have temporarily deferred their more stringent standards, but expect to implement them when technology to do so is available.

The commercial shipping industry and environmental groups challenged several separate state permits, on differing grounds, but courts have generally upheld the permits. A Minnesota court upheld that state's permit despite challenges from an environmental group over the state's failure to impose numeric limitations on ballast water discharges. Also, Michigan's permitting program and New York's certification of the 2008 EPA permit were upheld after challenges by shipping industry groups.

Issues in the Regulation of Vessel Discharges

The combination of multiple federal requirements, plus state requirements, presents several closely related issues, some of which have been addressed in recent legislation, including S. 2094, which this committee approved in the 113th Congress.[13]

Overlapping Federal Requirements

For some time, the maritime industry has argued for harmonization of what it views as duplicative federal rules for vessel discharges, especially for ballast water discharges, through a single set of requirements. Shipping and other industry groups have long raised concerns that EPA's permit overlaps with mandates in the Coast Guard rule, making implementation costly and confusing for vessel owners. Many in these groups have called for centralizing responsibilities with the Coast Guard, which has long had administrative and regulatory authority over the industry.

[13] S. 2094 would have established a single federal ballast water management standard, specifying the Coast Guard's 2012 numeric standards as the baseline. Under the legislation, these standards would supersede existing state standards or permits and also would supersede EPA's ballast water management requirements under the Clean Water Act. The Coast Guard would be directed to adopt more stringent ballast water standards within eight years, unless a feasibility review determines that the specified more stringent standards are not attainable. The Coast Guard could establish lower or higher revised performance standards with respect to classes of vessels, if appropriate. Following enactment of the bill, manufacturers of ballast water treatment technology could only sell, deliver, or import technology that has been certified by the Coast Guard as meeting criteria in the legislation. Finally, a state could enforce a more stringent ballast water performance standard if the standard is in effect on the date of enactment of the legislation and if the Coast Guard determines that compliance with the state standard is achievable and is consistent with obligations under relevant international treaties or agreements. Also in the 113th Congress, the House passed a bill with similar, but not identical, provisions (H.R. 4005).

Centralizing ballast water management with the Coast Guard might reduce confusion about ballast water, but questions would still remain. One question concerns, how would the more than two dozen non-ballast water waste streams that also are included in EPA's permit be regulated? Options could include eliminating regulation of them entirely, or centralizing everything with the Coast Guard, or having EPA continue to regulate non-ballast water discharges. If EPA were to continue regulating other discharges such as shower and laundry water, bilgewater, and machinery waste, vessels would still be subject to those portions of the VGP, and vessel owners and operators would still be dealing with two agencies. Some interest groups, especially some environmental advocacy groups, would prefer that if ballast water regulation is centralized with one federal agency, they favor EPA. These groups prefer EPA because its sole mission is protecting public health and the environment, while for the Coast Guard, regulating pollutant discharges is one of several of its existing missions and responsibilities. The maritime industry is concerned about any continuing regulation under the Clean Water Act, because of the potential for citizen suit enforcement, which that law allows.

State Role and Federal Preemption

Shipping and other industry groups have also objected to the conditions that states attach to EPA's permit, which they argue create a patchwork of inconsistent requirements that are economically inefficient and cumbersome to implement. A group of commercial shipping operators challenged state certifications under the 2008 VGP, contending that the shipping industry is placed in the difficult regulatory position of being subject to a single federal permit with multiple state requirements. The federal court rejected the challenge, ruling that under the Clean Water Act, EPA does not have the power to amend or reject state certifications under Section 401, which must be attached to and become conditions of the federal permit.[14]

Similar concerns were raised about the Coast Guard's 2012 rule. A number of commenters on the rule requested that the Coast Guard preempt all state ballast water treatment standards and requirements in favor of a uniform, national standard. Some argued that states with conflicting regulations burden interstate commerce and create confusion and would delay eliminating invasions of aquatic nuisance species. In the final rule, the Coast Guard responded that it cannot legally preempt state action to regulate discharges of ballast water within state waters, citing a provision of NANPCA, as amended by NISA, that saves to the states or their political subdivisions their authority to "adopt or enforce control measures for aquatic nuisance species, [and nothing in the Act would] diminish or affect the jurisdiction of any State over species of fish and wildlife."[15]

States that have adopted additional requirements, such as their own permits or more stringent standards, strongly oppose proposals to preempt this authority, arguing that doing so would be contrary to Congress' clear intention in both the Clean Water Act and the National Invasive Species Act.

Ballast Water Discharge Standards

Previous Coast Guard rules and EPA's 2008 VGP did not include numeric standards to control ballast water discharges, largely because effective and economical technology was not available. This changed in the Coast Guard's 2012 rule and EPA's reissued permit in 2013. While the issue of numeric ballast water discharge standards would seem to have been resolved through these more recent actions, that's not necessarily the case. Both the Coast Guard and EPA believe that the standards specified in the IMO

[14] Lake Carriers' Association v. EPA, 652 F.3d 1, 10 (D.C. Cir. 2011).

[15] 16 U.S.C. 4725. See 77 *Federal Register* 17279-17280, March 23, 2012.

ballast water Convention, which their rules endorse, are technically and economically achievable, although some industry groups disagree. At the same time, some states and environmental advocacy groups continue to favor more stringent numeric standards in order to eliminate invasions of aquatic invasive species. For example, while New York agrees that a uniform, national standard is desirable, that state would like such a standard to match what it has adopted. Likewise, California continues to support its standards, which are the most stringent in the country.

The Coast Guard's rule calls for a review of its standard in 2016, and EPA will review its standard before the current VGP expires in 2018. Whether the agencies will see a need to adopt more stringent ballast water standards in the future is unknown for now.

Permit Moratorium for Small Vessels

A final issue is how to resolve the current temporary moratorium that Congress enacted in December on EPA permitting of commercial fishing and small vessels.[16] That moratorium expires in December 2017. Many believe that discharges incidental to the normal operation of these vessels are not a significant source of harm to aquatic life in U.S. waters—compared with discharges from larger vessels—and that it would be appropriate, both administratively and environmentally, to exclude them permanently from Clean Water Act permitting. On the other hand, some may argue that, even if there is small potential risk of environmental harm from discharges from these vessels, it still warrants improved management and regulation.

That concludes my statement. Thank you again for the opportunity to testify. I would be glad to respond to questions at the appropriate time.

[16] Extension of the moratorium was included in The Howard Coble Coast Guard and Maritime Transportation Act of 2014 (P.L. 113-281).