

January 19, 2016

VIA REGULAR MAIL

Commandant
Admiral Paul F. Zukunft
U.S. Coast Guard Stop 7430
2703 Martin Luther King Jr. Ave. SE
Washington, DC 20593-7430

Re: U.S. Coast Guard 46 C.F.R. § 162.060-10(b)(1) request and type approval of ballast water management systems

Dear Sir:

On or about December 14, 2015, the United States Coast Guard (“USCG”) issued preliminary decisions that would prevent international and United States based shipping companies from utilizing the most environmentally friendly Ballast Water Management System (“BWMS”) developed to-date. Specifically, the USCG has preliminarily rejected the Most Probable Number (“MPN”) method for testing the efficacy of BWMSs that utilize ultraviolet (“UV”) technology to render organisms unable to reproduce. This action, if affirmed by senior USCG officials, could have significant adverse environmental impacts throughout the world. We request that the USCG approve the 46 C.F.R. § 162.060-10(b)(1) requests and type approval applications for BWMSs that use UV technology to render organisms unable to reproduce, as measured by the MPN method.

The Nonindigenous Aquatic Nuisance Prevention and Control Act (“NANPCA”), as amended by the National Invasive Species Act (collectively referred to as “NISA”) requires the USCG to establish and enforce regulations that prevent and control infestations of aquatic nuisance species. 16 U.S.C. § 4711(c)(2)(D)(iii); 77 FR 17255. To fulfill this mandate, on March 23, 2012, the USCG issued a final rule establishing an approval process for BWMSs (“BWMS Final Rule”). 77 FR 17254. The regulations require commercial vessels, by January 1, 2016, to use a U.S. type-approved BWMS or temporarily use a foreign type-approved BWMS that has been accepted by the USCG as an alternate management system (“AMS”). 33 CFR §§ 151.2026, 151.2035.

In the four years since the USCG implemented the 2012 BWMS Final Rule, the agency has not granted *any* type approvals for BWMSs. Instead, the USCG has merely authorized AMSs and granted ship owners extensions to the ballast water regulation compliance schedule. A BWMS is accepted as an AMS based solely upon the system’s type approval by a foreign administration rather than any evaluation of the system’s effectiveness under the USCG regulations. Additionally, because the AMS approval is temporary, many ship owners are not willing to risk installing a BWMS that may not receive full USCG type approval. These owners have instead chosen not to treat their ballast water at all while awaiting the USCG’s type approval of a BWMS. The USCG has accommodated this approach, and the resulting continued

environmental risk of aquatic nuisance species, by granting extensions to the compliance schedule. 33 CFR § 151.2036.

The first three applications for type approval were submitted in March 2015 for BWMSs that utilize UV technology as a disinfection process. It is widely acknowledged that UV-based BWMSs that render organisms non-reproductive are dependable, effective, and environmentally friendly. Thus, the USCG's preliminary denial of type approval for these systems is an unnecessary setback to implementation of reliable, long-term BWMSs that control and prevent the infestation of aquatic nuisance species.

UV technology, as measured by the MPN method, fully satisfies the requirements and intent of NISA to prevent and control *infestations* of nonindigenous aquatic species. 16 U.S.C. § 4701(b). UV technology damages the DNA and RNA structures of organisms to interrupt their ability to reproduce, form colonies, and invade water bodies. Organisms that have no ability to propagate and colonize cannot cause an infestation. Accordingly, BWMSs that use UV radiation to render organisms non-reproductive prevent and control infestations of aquatic nuisance species as required by NISA. These types of BWMSs have already been type-approved through the International Maritime Organization ("IMO").

Despite satisfaction of the requirements of and environmental purposes behind NISA, the USCG preliminarily denied type approval of UV technology-based BWMSs that render organisms non-reproductive because the agency rejected the MPN method. However, the MPN method is widely recognized, even within the U.S., as well-suited for detecting the efficacy of UV treatment to render organisms non-reproductive. Consistent with the rest of the world, the USCG uses the MPN method, along with other reproductive measurement methods, to ascertain whether BWMSs meet the discharge standards for organisms that are less than 10 microns in size. Now, the USCG inexplicably preliminarily refuses to use this method to measure the efficacy of BWMSs in regards to organisms that are 10 to 50 microns in size. We are not aware of any justification for treating organisms that are 10 to 50 microns in size differently from organisms that are less than 10 microns in size. If the MPN method is valid for testing the smaller organisms, then it is also valid for testing the larger organisms.

It is widely acknowledged in the worldwide scientific community that the MPN method is accurate and scientifically defensible. As recently stated by the USCG approved independent lab DNV GL,

The MPN method is the most relevant method and is a reliable way of evaluating the performance of UV technologies. That method has been validated to a greater extent than most of the methods described in the Environmental Technology Verification (ETV) Protocol (prescriptive guidance incorporated by reference to

US regulation), and UV technologies are commonly accepted in other water treatment industries.¹

Over the last two years, the USCG gave every indication to the environmental community and the international shipping industry that U.S. type approval of UV BWMSs was forthcoming. Several top USCG officials, including the Commandant, led the international community to believe that type approval would be granted. For example, in August 2015 the Commandant stated, “We’re working with four independent labs right now to validate (technology) submittals. There are three submittals right now in the final stage. Eight others are in the initial stage of review. I’m pretty optimistic we will have Coast Guard approved ballast water standards by the IMO conference in November.”² Based on these and earlier assurances that approval is not impossible for UV BWMSs that incorporate UV as a disinfection process,³ many companies took the proactive, environmentally protective action of installing BWMSs that utilize UV technology. The USCG’s December 14, 2015 preliminary denial is a step backward in protecting the aquatic systems within the waters of the U.S. and the world. Because the USCG has not approved any treatment systems, the agency is granting exemptions and extensions to vessels entering U.S. waters placing the environment at undue and unnecessary risk.

UV treatment systems have an established history for safe, reliable, and effective water treatment. Today, UV-based water treatment is used in drinking and wastewater systems in the U.S. and throughout the world to protect people from the harmful effects of invasive organisms. From New York City to Paris to Beijing, UV technology, using the MPN method as the measure of efficacy, disinfects water in major cities, small municipalities, and individual homes through large- and small-scale systems globally. It is one of the world’s most well-established treatment technologies.

UV technology that damages the reproductive capabilities of organisms offers environmental benefits compared to systems that use more energy or chemical disinfection. It is preferable to chlorine-based BWMSs, which have the potential to discharge harmful residual oxidants and disinfection byproducts into the world’s water bodies. The risk of disinfection byproduct discharge is especially concerning in fresh water bodies that may be used as a source for drinking water facilities, such as the Great Lakes. The production of hydrogen gas associated with chlorine-based BWMSs also poses safety risks, such as potentially corroding vessel hulls and explosions. Such risks are not present with the use of UV technology.

¹ DNV GL Technical and Regulatory News No. 28/2015 – Statutory, December 22, 2015,

<https://www.dnvgl.com/news/uscg-makes-decision-on-use-of-mpn-method-for-ballast-water-management-systems-52160>.

² <http://magazines.marinelink.com/Magazines/MaritimeReporter/201508/content/ballast-treatment-modular-496801>, last visited 1/9/2016)

³ Dec. 2013 CLARIFICATION REGARDING COAST GUARD TYPE APPROVAL OF BALLAST WATER MANAGEMENT SYSTEMS USING ULTRAVIOLET RADIATION (No longer available on the USCG website) (“Recently the Coast Guard has been responding to rumors that type approval of ballast water management systems (BWMS) that incorporate ultraviolet radiation (UV) as a disinfection process will not be possible under Coast Guard type approval requirements. These rumors are not true.”)

Moreover, NISA specifically encourages the use of nonchemical methods, *e.g.*, non-chlorine methods, within BWMSs. USCG regulations must compel vessels to “use *environmentally sound* alternative ballast water management methods.” 16 USC § 4711(b)(2)(B)(iii) (emphasis added). The Act defines “‘environmentally sound’ methods, efforts, actions or programs” as, among other things, methods to prevent introductions or control infestations of aquatic nuisance species that emphasize “nonchemical measures.” 16 USC § 4702(6). Thus, to be consistent with the authorizing statute, the USCG is obliged to consider the environmental impacts of BWMSs and give special consideration to the nonchemical measures utilized by UV-based systems.

The USCG’s preliminary denial of type approval for BWMSs that use UV radiation to render organisms non-reproductive constitutes unnecessary regulation without demonstrable corresponding environmental benefit, suppresses innovative and proven technology, and prevents the implementation of systems that would prevent and control infestations of aquatic species today. This preliminary decision is at odds with the environmentally protective type approvals of other nations and poses an unfortunate obstacle to international shipping companies that wish to install environmentally friendly BWMSs.

For all of the above reasons, senior USCG officials should approve the 46 C.F.R. § 162.060-10(b)(1) requests and type approval applications for BWMSs that use UV technology to render organisms unable to reproduce, as measured by the MPN method.

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