

US Ballast Water Management Requirements

Ballast water management in the United States is administered by both the US Coast Guard (USCG) and the US Environmental Protection Agency (EPA). Worldwide owners/operators, naval architects, marine engineers and regulatory bodies have requested clarification of the applicable ballast water management (BWM) regulations for vessels operating in US waters. During the last few years, ABS has participated with other industry representatives, including the USCG, in numerous conferences and seminars to help explain the regulations. ABS is publishing this Performance Update to clarify the evolving requirements and provide answers to remaining questions.

National Invasive Species Act – USCG

In response to the ecological and economic impacts of the zebra mussel invasion into the North American Great Lakes, the US Congress enacted the “Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990” (NANPCA). NANPCA established the USCG’s regulatory jurisdiction over BWM. The enactment of the “National Invasive Species Act of 1996” (NISA) reauthorized and amended NANPCA and emphasized the significant role of ballast water in the spread of aquatic nuisance species. Specifically, NISA mandated the continuation of the Great Lakes BWM program, charged the USCG with establishing a voluntary BWM program for all other US ports (i.e. those outside of the Great Lakes) and required vessels to submit BWM reports.

Since the late 1990s discussions, studies and regulatory proposals continued and on 23 March 2012 the USCG issued its final rule amending its regulations on BWM. The requirements of this rule are discussed in this document.

Control of Nonindigenous Species – USCG

The USCG final rule issued on 23 March 2012, entitled “Standards for Living Organisms in Ships’ Ballast Water Discharged in US Waters,” is aimed at preventing the introduction and spread of aquatic nuisance species into US waters through the ballast water of vessels.

Overview

The USCG final rule became effective on 21 June 2012 and applies to all vessels, US flag, and non-US flag, equipped with ballast tanks operating in US navigable waters (defined in 33 CFR 2.38) unless specifically exempt (crude oil tankers engaged in coastwise service and vessels that operate exclusively within one Captain of the Port (COTP) zone).

US navigable waters include the territorial sea as extended to 12 nautical miles from the US baseline. While some specific types of vessels are exempt from certain BWM requirements, all vessels with ballast tanks must meet the reporting and recordkeeping requirements. Per these regulations, the owner/operator of a vessel equipped with ballast tanks operating in US waters must employ one of the following management methods:

- Install and operate a ballast water management system (BWMS) that has been approved by the USCG under 46 CFR 162.060
- Use only water from a US public water system
- Perform complete ballast water exchange in an area 200 nautical miles from any shore prior to discharging ballast water, unless the vessel is required to employ an approved BWMS per the implementation schedule shown in Table 1
- No ballast water is discharged
- Discharge to a facility onshore or to another vessel for the purpose of treatment

As of 22 April 2013, there are no USCG type approved BWMS.



Table 1. USCG Approved BWMS Implementation Schedule

	Ballast Water Capacity	Construction Date	Compliance Date
New Vessels	All	On or after 1 December 2013	On Delivery
Existing Vessels	< 1,500 m ³	Before 1 December 2013	1st Scheduled Drydocking after 1 January 2016
	1,500 – 5,000 m ³	Before 1 December 2013	1st Scheduled Drydocking after 1 January 2014
	> 5,000 m ³	Before 1 December 2013	1st Scheduled Drydocking after 1 January 2016

USCG regulations do not effect or supersede any requirements or prohibition pertaining to the discharge of ballast water into the waters of the US under the Clean Water Act which is discussed later in this document. Additional information regarding the USCG requirements can be found at <http://www.uscg.mil/hq/cg5/cg522/cg5224/bwm.asp>

Alternate Management Systems (AMS)

As a bridging strategy between the time between the publication of the final rule and the availability of a US type approved BWMS, the USCG added a provision to allow for a temporary acceptance of a foreign Administration's approval of a BWMS if it can be shown that the foreign-approved BWMS is at least as effective as ballast water exchange. This temporary acceptance, known as AMS, will be granted for five years from the date when the vessel on which the installed BWMS is required to comply with the USCG regulations.

In order to make an AMS acceptance determination, the USCG examines an application package submitted by the manufacturer that includes the foreign Administration's type approval report, the testing protocols and the testing results. Additionally the USCG evaluates the systems to determine compliance with the National Environmental Policy Act, the Endangered Species Act and other applicable environmental laws.

Once BWMS are type approved by the USCG and available for a given class, type of vessel or specific vessels, additional vessels in that group or category will no longer be able to install AMS in lieu of USCG type approved systems.

The USCG announced the acceptance of nine BWMS as AMS on 15 April 2013 and one additional AMS acceptance on 29 April 2013. The USCG will continue to review applications for AMS and will announce further determinations as awarded. A list of the accepted AMS BWMS is provided in Table 2. The USCG AMS acceptance is limited to these specific models.

Ballast Water Discharge Standard (BWDS)

The USCG rule specifies a discharge standard which is equivalent to the IMO D-2 discharge standard. The discharge standard takes into account the best scientific information available, as well as the views of many that there are no BWMS that have demonstrated the capability to meet a more stringent standard. The USGC will assess and, as appropriate, revise the ballast water regulations at least every three years.

The USCG regulations also contain operational measures aimed at reducing the uptake and discharge of nonindigenous species. These measures call for minimizing or avoiding uptake of ballast water in areas or under conditions where marine organisms are likely to be abundant. These measures are similar to the guidance contained in Part A of the IMO G4 Guidelines. Each vessel must have a BWM plan that includes detailed fouling maintenance procedures. These procedures may be documented in a standalone document or integrated into the vessel's operational procedures and referenced in the BWM plan.

The USCG regulations contain specific requirements for reporting BWM activities. These activities are to be recorded on the Ballast Water Reporting form and submitted in accordance with the specified instructions. The form and instructions are available on the National Ballast Information Clearinghouse website at <http://invasions.si.edu/nbic/submit.html>. The signed reporting form is to be retained on board the vessel for two years.

Type Approval of BWMS (46 CFR 162.060)

The USCG regulations for engineering equipment establish an approved process for a BWMS which is based in part on the Final Generic Protocol for the Verification of Ballast Water Treatment Technology (ETV Protocol). The USCG regulations also allow for manufacturers to use testing supporting a foreign Administration's type approval. Where the USCG determines the testing to be equivalent to what it requires, the data from that testing can satisfy the US type approval testing and application requirements. Many foreign-approved BWMS will require testing in addition to analysis required under applicable US environmental laws. The process to secure US approval should be shorter if the manufacturer submits previous test results rather than repeating the tests for US type approval.

The Clean Water Act – EPA

Section 301(a) of the Clean Water Act (CWA) provides that "the discharge of any pollutant by any person shall be unlawful" unless the discharge is in compliance with certain other sections of the Act. Effective 19 December 2008, discharges incidental to the normal operation of vessels are prohibited, unless covered under a National Pollutant Discharge Elimination System (NPDES) permit.

Table 2. BWMS Models Accepted as USCG AMS

BWMS	Model	USCG Acceptance Date	Treatment Method	IMO Type Approval
BalClor™ Manufactured by SunRui Marine Environment Engineering Company	BC-300 and BC-1000	15 April 2013	Filtration, Electrolytic Disinfection and Thiosulfate Neutralization	China January 2011 Norway August 2012
BALPURE® Manufactured by Severn Trent De Nora, LLC	Models BP -500, -675, -1000, -2000, -2650, -3000, -4000 and 5000	15 April 2013	Filtration, Electrolytic Disinfection and Sodium Bisulfate Neutralization	Germany July 2011
CleanBallast® Manufactured by RWO GmbH – Marine Water Technology, Veolia Water Solutions and Technologies	CleanBallast® -150, -200, -250, -300, -350, -400, -450, -500, -500-1, -750, -1000, -1250, -1500, -1750, -2000, -2250, -2500, -2750, -3000, -3250, -3500 and -3750	15 April 2013	Filtration, Electrochemical Oxidation and Sodium Thiosulfate Neutralization	Germany December 2010
Ecochlor® Manufactured by Ecochlor, Inc.	Series 75, 100, 150, 200, 250 and 300	15 April 2013	Filtration and Chlorine Dioxide (ClO ₂) Treatment	Germany November and December 2010
GloEn-Patrol™ Manufactured by PANASIA Co., Ltd.	P-50, -150, -250, -300, -350, -500, -700, -750, -800, -900, -1000, -1200, -1500, -2000, -2500, -3000, -3500, -4000, -4500, -5000 and -6000	29 April 2013	Filtration and Ultraviolet (UV) Treatment	Korea December 2009
Hyde GUARDIAN™ Manufactured by Hyde Marine Inc.	HG-60, -100, -150, -200, -250, -300, -400, -450, -500, -600, -700, -800, -900, -1000, -1250, -1350, -1400, -1488, -1600, -2000, -2500, -2975, -4000, -5000 and -6000	15 April 2013	Filtration and Ultraviolet (UV) Treatment	United Kingdom April 2009
NK-O3 BlueBallast® Manufactured by NK Company, Ltd.	NK-O3-010, -015, -030, -040, -050, -075, -100, -150, -200, -250, -300 and 400	15 April 2013	Ozone Treatment (or Ozone Injection) and Sodium Thiosulphate Neutralization	Korea November 2009
OceanGuard™ Manufactured by Qingdao Headway Technology Co., Ltd.	OceanGuard™	15 April 2013	Filtration, Electrocatalysis enhanced by Ultrasonic Technology and Sodium Thiosulfate Neutralization	Norway November 2011
PureBallast Manufactured by Alfa Laval Tumba AB	Models 250 to 2500	15 April 2013	Filtration, Advanced Oxidation Technology (AOT) (Ultraviolet Treatment in combination with TiO ₂ catalyst)	Norway June 2008
PureBallast Manufactured by Alfa Laval Tumba AB	Models 2.0 and 2.0Ex	15 April 2013	Filtration, Advanced Oxidation Technology (AOT) (Ultraviolet Treatment in combination with TiO ₂ combination)	Norway March 2011

An NPDES permit authorizes the discharge of a specified amount of a pollutant or pollutants into receiving waters under certain conditions. There are two basic types of NPDES permits – individual and general. When an activity is required to be covered under a general permit, those seeking coverage are required to submit a notice of intent (NOI) to be covered.

2013 Vessel General Permit (VGP) – EPA

The 2008 VGP expires on 19 December 2013. On 28 March 2013 the EPA issued the 2013 VGP. This permit is applicable to discharges incidental to the normal operation of a vessel, including the discharge of ballast water into US waters, as defined in 40 CFR 122.2 and extending to the outer reach of the three mile territorial sea. Owners/operators are required to submit a signed and certified NOI no later than 12 December 2013 or seven days prior to a discharge into waters subject to the permit.

In addition to the BWM requirements summarized below, the EPA requires as a condition to the VGP that all discharges of ballast water be in compliance with the applicable USCG regulations found in 33 CFR Part 151.

The 2013 VGP requires that vessels have a BWM plan that outlines how the crew will meet the mandatory BWM practices specified in the permit. The 2013 VGP clearly prohibits the discharge of sediments from cleaning of ballast tanks into the waters subject to the permit as well as other measures to reduce sediment intake.

Vessels utilizing a BWMS must use a system which has been shown to be effective. Systems are considered effective if they have been type approved or received AMS acceptance by the USCG. The VGP contains specific interim requirements that are to be complied with prior to the installation of a BWMS.

The implementation schedule for the BWMS is consistent with the USCG's implementation schedule.

The 2013 VGP requires ballast water discharges and the monitoring be divided into the following components:

- Functionality monitoring
- Monitoring for prescribed indicator organisms
- Monitoring the ballast water discharge for biocides and residuals

All applicable sensors and other equipment must be calibrated annually or as frequently as required by the sensor or other equipment manufacturer, or by the BWMS manufacturer, when warranted based on a device drift from a standard or calibrated setting.

Detailed self-inspection and reporting requirements are specified in the VGP. More information regarding VGP 2013 is available at <http://cfpub.epa.gov/npdes/vessels/vgpermit.cfm>.



State-specific Requirements

To date 16 states in the US have specific BWM requirements. The states imposed these requirements either through state regulations or through the CWA (Section 401 Certification). California and New York are considered to have the most stringent requirements.

The California State Lands Commission Marine Invasive Species Program has developed a two prong approach to preventing and minimizing the introduction of nonindigenous species in California waters via requirements for BWM as well as hull fouling. At present, vessels discharging ballast water in California waters are required to conduct ballast water exchange; however, more stringent discharge performance has been established. California has proposed modifications to existing regulations to establish requirements for sampling ports and collection, analysis and handling of ballast water samples to ensure compliance with the performance standards.

New York initially established discharge standards similar to California but revised their requirements to align with USCG and EPA VGP requirements for the current period of the VGP. New York has deferred more stringent water quality-based effluent limitations until the next VGP. However, New York included language to continue the requirements for ballast water exchange regardless of whether the vessel is equipped with a BWMS. In addition to the VGP biological indicator compliance monitoring, all vessels covered under the VGP and operating in New York waters, after a BWMS is installed, must sample and analyze for live organisms in the ballast water discharge at least once a year utilizing acceptable sampling and testing protocol. The monitoring results are to be submitted to the EPA and the New York State Department of Environment Conservation on an annual basis.

For more information, visit the ABS website at www.eagle.org. Select the Services tab on the homepage and navigate to the Environmental section.