MARITIME AND PORT AUTHORITY OF SINGAPORE
SHIPPING CIRCULAR
NO. 09 OF 2019

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Applicable to: Shipowners, ship managers, operators, Masters of Singapore-registered ships, Recognised Organisations (ROs), ballast water management equipment manufacturers, testing labs and shipyards

COMMISSIONING TESTING OF BALLAST WATER MANAGEMENT SYSTEMS

1. This circular is to inform the industry on the application of BWM.2/Circ.70 on "**Guidance for the commissioning testing of ballast water management systems**" for Singapore-registered ships (SRS).

2. The Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO) approved the proposed amendments to regulation E-1.1 and E-1.5 of the Ballast Water Management Convention (BWM Convention) which are expected to enter into force at a later date[1]. The amendments require the installed ballast water management system (BWMS) to undergo a commissioning test during the initial or additional ballast water management survey.

3. The purpose of the commissioning test is to verify that the mechanical, physical, chemical and biological processes of the installed BWMS are working properly, taking into account guidelines developed by the IMO (i.e. the BWM.2/Circ.70, as may be amended). The commissioning test is not intended to validate the type approval of the BWMS.

4. The commissioning test shall be carried out for BWMS that is installed on board applicable SRS[2] of 400GT and above after **8 September 2019**. Applicable SRS of less than 400GT may undergo the commission test voluntarily.

5. The commissioning test shall be carried out to the satisfaction of the attending RO surveyor after a complete installation of the BWMS, and after all ballasting equipment (e.g. pumps and piping) has been fully tested as appropriate.

[1] Amendments to the Prevention of Pollution of the Sea (Ballast Water Management) Regulations shall be made accordingly.
[2] Ships that are required to meet the D2 performance standards as per Ballast Water Management Convention Regulation B3, as amended.

6. The representative ballast water samples collected for the commissioning test should be analysed using at least an appropriate indicative analysis method[3]. The commissioning test is considered to be successful if the analysis indicates that the sample does not exceed the D2 standard and the self-monitoring equipment of the BWMS indicates correct operation of all sensors and related equipment.

7. A written report including methods and detailed results of the commissioning testing should be provided to the attending RO surveyor for verification before an International Ballast Water Management Certificate (IBWMC) can be issued.

8. The arrangement for conducting the test and any commercial dealings pertaining to the commissioning test shall be between the shipowners / manager / shipyard / contractor and the manufacturer. The Administration of Singapore MPA does not carry out approval of any specific testing facility. The testing facility engaged to conduct the commissioning test shall be independent of the manufacturer of the BWMS and accepted by the RO which issues the IBWMC.

9. If the commissioning test cannot be successfully carried out due to the equipment's system design limitation, a short term IBWMC may be issued for a period of not more than three (3) months. This is to allow time for the commissioning test to be carried out to the satisfaction of the attending RO surveyor. No authorisation from MPA is required for such cases provided that the attending RO surveyor ensures the following:

- reasons for the commissioning test not being completed successfully are recorded in the ballast water record book;
- the attending RO surveyor is provided with arrangements for the commission test (e.g. date, time, location);
- the ship's ballast water management plan (BWMP) has incorporated appropriate contingency measures in line with the "Amendments to the Guidelines for ballast water management and development of ballast water management plans (G4)" (*Resolution MEPC.306(73)*);
- the ship's Master and the designated ballast water management officer are aware of the "Guidance on contingency measures under the BWM Convention", BWM.2/Circ.62, as may be amended, in particular on the communication between the ship and the port State; and
- the ship's Master and the designated ballast water management officer are aware of the reporting requirements to the competent port Authority as per regulation E1.7 of the BWM Convention when the vessel is calling a foreign port and shall comply with any additional requirements that the port State may impose.

10. If the commissioning test is not completed within the three (3) months of the short term IBWMC, MPA's approval for an extension is to be sought.

11. Any queries to this circular should be directed to Mr Ranabir Chakravarty at 63756210 or email: shipping@mpa.gov.sg

[3] List of indicative analysis methods are listed in table 3 of BWM.2/Circ.42/Rev.1, as may be amended

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DIRECTOR OF MARINE
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Encl:

a) BWM.2/Circ.70 - Guidance for the commissioning testing of ballast water management systems
b) Resolution MEPC.306(73) - Amendments to the Guidelines for ballast water management and development of ballast water management plans (G4)
c) BWM.2/Circ.62 - Guidance on contingency measures under the BWM Convention
d) Proposed amendments to regulation E-1.1 and E-1.5 of the BWM Convention

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BWM.2/Circ.70
1 November 2018

INTERNATIONAL CONVENTION FOR THE CONTROL AND MANAGEMENT OF SHIPS' BALLAST WATER AND SEDIMENTS, 2004

Guidance for the commissioning testing of ballast water management systems

1 The Marine Environment Protection Committee (MEPC), at its seventy-third session (22 to 26 October 2018), approved *Guidance for the commissioning testing of ballast water management systems*, as set out in the annex.

2 Member Governments and international organizations are invited to bring the annexed Guidance to the attention of all parties concerned.

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ANNEX

GUIDANCE FOR THE COMMISSIONING TESTING OF BALLAST WATER MANAGEMENT SYSTEMS

Context

1 The purpose of commissioning testing is to validate the installation of a ballast water management system (BWMS) by demonstrating that its mechanical, physical, chemical and biological processes are working properly. Commissioning testing is not intended to validate the design of type-approved BWMS that are approved by the Administration.

2 The following Guidance for the commissioning testing of BWMS has been developed for use by persons fitting and verifying the installation of BWMS in accordance with:

.1 regulation E-1.1.1 of the Convention, which requires, inter alia, that an initial survey verify that any structure, equipment, systems, fitting, arrangements, material or processes comply fully with the requirements of the Convention;

.2 regulation E-1.1.5 of the Convention which requires, inter alia, that an additional survey be made after a change, replacement, or significant repair of the structure, equipment, systems, fittings, arrangements and material necessary to achieve full compliance with the Convention;

.3 paragraph 8.2.5 of the BWMS Code, which requires that the Administration issuing the International Ballast Water Management Certificate verify that installation commissioning procedures are on board the ship in a suitable format;

.4 paragraph 8.3.6 of the BWMS Code, which requires that the installation commissioning procedures have been completed;

.5 paragraph 1.18 of resolution MEPC.174(58), which provides that, when a type-approved ballast water management system is installed on board, an installation survey according to section 8 should be carried out; and

.6 paragraph 1.1.2.19 of annex 4 of the HSSC Guidelines (resolution A.1120(30)), which includes, "verifying that an operational test of the ballast water management system was carried out based on the installation commissioning procedures and that documented evidence is provided which shows compliance of the treated discharge ballast water during the above mentioned test with regulation D-2 through sampling and analysis based on applicable guidelines developed by the Organization."

3 For the purposes of this Guidance, commissioning testing refers to an operational test of the ballast water management system carried out based on the installation commissioning procedures referred to in paragraph 2.6.

Validating compliance

4 The following steps should be undertaken following installation of the BWMS on board the ship, and after all ballasting equipment (e.g. pumps and piping) has been fully installed and tested as appropriate:

.1 a sample should be collected during a ballast water uptake to characterize the ambient water, by any means practical (e.g. in-line sample port or direct harbour sample). The ambient water should be accepted for testing regardless of the level of challenge it poses to the BWMS;

.2 a sample should be collected during the corresponding ballast water discharge after the full treatment has been applied. Samples should be taken in accordance with the *Guidelines on ballast water sampling* (G2);

.3 the representative samples should be analysed for all size classes included in the D-2 standard using indicative analysis methods listed in table 3 of BWM.2/Circ.42/Rev.1; and

.4 the applicable self-monitoring parameters (e.g. flow rate, pressure, TRO, UV intensity, etc.) of the BWMS should also be assessed, taking into account the System Design Limitations of the BWMS, and the correct operation of all sensors and related equipment should be confirmed.

5 The validation is successful if the analysis indicates that the discharge sample does not exceed the D-2 standard and the self-monitoring equipment indicates correct operation.

6 In the case that the ambient water is not appropriate for the operational testing during the commissioning of the BWMS (e.g. salinity of ambient water is outside the SDL of the BWMS), testing should be evaluated to the satisfaction of the Administration.

Documentation

7 A written report including methods and detailed results of the commissioning testing should be provided to the Administration.

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RESOLUTION MEPC.306(73)
(adopted on 26 October 2018)

AMENDMENTS TO THE GUIDELINES FOR BALLAST WATER MANAGEMENT AND DEVELOPMENT OF BALLAST WATER MANAGEMENT PLANS (G4)
(RESOLUTION MEPC.127(53))

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO that the International Conference on Ballast Water Management for Ships held in February 2004 adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the Ballast Water Management Convention) together with four Conference resolutions,

NOTING that regulation A-2 of the Ballast Water Management Convention requires that discharge of ballast water shall only be conducted through ballast water management in accordance with the provisions of the Annex to the Convention,

NOTING FURTHER that regulation B-1 of the Annex to the Ballast Water Management Convention provides that each ship shall have on board and implement a ballast water management plan approved by the Administration, taking into account Guidelines developed by the Organization,

NOTING FURTHER that, at its fifty-third session, the Committee adopted, by resolution MEPC.127(53), the *Guidelines for ballast water management and development of ballast water management plans* (G4),

HAVING CONSIDERED, at its seventy-third session, proposed amendments to the Guidelines (G4),

1 ADOPTS amendments to the *Guidelines for ballast water management and development of ballast water management plans*, as set out in the annex to the present resolution;

2 INVITES Governments to apply the Guidelines, as amended, as soon as possible;

3 AGREES to keep the Guidelines, as amended, under review.

ANNEX

AMENDMENTS TO THE GUIDELINES FOR BALLAST WATER MANAGEMENT AND DEVELOPMENT OF BALLAST WATER MANAGEMENT PLANS (G4)

1 Paragraph 4.3 is added in part B:

"4.3 The ballast water management plan may include contingency measures developed taking into account guidelines developed by the Organization*."

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* Refer to the *Guidance on contingency measures under the BWM Convention* (BWM.2/Circ.62, as may be amended).

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BWM.2/Circ.62
26 July 2017

INTERNATIONAL CONVENTION FOR THE CONTROL AND MANAGEMENT OF SHIPS' BALLAST WATER AND SEDIMENTS, 2004

Guidance on contingency measures under the BWM Convention

1 The Marine Environment Protection Committee, at its seventy-first session (3 to 7 July 2017), approved *Guidance on contingency measures under the BWM Convention* to support ships and port States to apply sound and practical measures in situations where a ship is unable to manage its ballast water as required, as set out in the annex.

2 Member Governments are invited to bring this Guidance to the attention of all parties concerned.

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ANNEX

GUIDANCE ON CONTINGENCY MEASURES UNDER THE BWM CONVENTION

Definition

1 *Contingency measure* means a process undertaken on a case-by-case basis after a determination that ballast water to be discharged from a ship is not compliant, in order to allow ballast water to be managed such that it does not pose any unacceptable risks to the environment, human health, property and resources.

Purpose

2 The goal of this Guidance is to support ships and port States to apply sound and practical measures in the case of a ship unable to manage ballast water in accordance with its approved Ballast Water Management plan to meet the D-1 or D-2 standard, with a view to ensuring the protection of the marine environment and ship, safety and minimizing any impacts on the continuity of port and ship operations.

Implementation of contingency measures

3 In the case of non-compliant ballast water, communication between the ship and the port State should occur. The ship and the port State should consider the following as possible contingency measures:

.1 actions predetermined in the Ballast Water Management plan of the ship;

.2 discharging ballast water to another ship or to an appropriate shipboard or land-based reception facility, if available;

.3 managing the ballast water or a portion of it in accordance with a method acceptable to the port State;

.4 ballast water exchange carried out to an approved plan in accordance with regulation B-4 to meet the standard in regulation D-1. The ship and the port State should consider the potential disruption to the cargo handling operation plan of the ship and the potential impact to relating parties including port operators and cargo owners; or

.5 operational actions, such as modifying sailing or ballast water discharge schedules, internal transfer of ballast water or the retention of ballast water on board the ship. The port State and the ship should consider any safety issues and avoid possible undue delays.

4 Having considered all of the options in paragraph 3 above, the ballast water may be discharged in the port or any suitable area, as acceptable to the port State. Port State consideration may include environmental, safety, operational and logistical implications of allowing or disallowing the discharge. The discharge of ballast water is subject to any conditions of the port State.

5 The port State should report information on the use of contingency measures in accordance with the experience-building phase (EBP) associated with the BWM Convention (resolution MEPC.290(71)).

6 In any case, the ship is required to do its best to correct malfunction of the Ballast Water Management system as soon as possible and submit its repair plan to the port State control authorities and the flag State.

7 The port State, the flag State and the ship should work together to agree on the most appropriate solution to allow for the discharge of ballast water found to be non-compliant.

8 The ship and the port State should take appropriate measures, bearing in mind that ballast water sampling is still under development, as noted in the *Guidance on ballast water sampling and analysis for trial use in accordance with the BWM Convention and Guidelines (G2)* (BWM.2/Circ.42/Rev.1) and the agreement on non-penalization during the EBP (MEPC.290(71)).

Review

9 The guidance on contingency measures should be kept under review in the light of experience gained through the EBP.

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DRAFT AMENDMENTS TO REGULATION E-1 OF THE BWM CONVENTION

Survey and certification requirements for ballast water management

(Proposed amendments are shown in additions/~~deletions~~.)

Regulation E-1
Surveys

1 Ships of 400 gross tonnage and above to which this Convention applies, excluding floating platforms, FSUs and FPSOs, shall be subject to surveys specified below:

.1 An initial survey before the ship is put in service or before the Certificate required under regulation E-2 or E-3 is issued for the first time. This survey shall verify that the ballast water management plan required by regulation B-1 and any associated structure, equipment, systems, fitting, arrangements and material or processes comply fully with the requirements of this Convention. This survey shall confirm that a commissioning test has been conducted to validate the installation of any ballast water management system to demonstrate that its mechanical, physical, chemical and biological processes are working properly, taking into account guidelines developed by the Organization.*

.5 An additional survey, either general or partial, according to the circumstances, shall be made after a change, replacement, or significant repair of the structure, equipment, systems, fittings, arrangements and material necessary to achieve full compliance with this Convention. The survey shall be such as to ensure that any such change, replacement or significant repair has been effectively made, so that the ship complies with the requirements of this Convention. When an additional survey is undertaken for the installation of any ballast water management system, this survey shall confirm that a commissioning test has been conducted to validate the installation of the system to demonstrate that its mechanical, physical, chemical and biological processes are working properly, taking into account guidelines developed by the Organization.*

* Refer to the *Guidance for the commissioning testing of ballast water management systems* (BWM.2/Circ.70), as may be amended by the Organization.