RULES FOR BALLAST WATER MANAGEMENT INSTALLATIONS

GUIDANCE FOR BALLAST WATER MANAGEMENT INSTALLATIONS

Rules for Ballast Water Management Installations
2018 AMENDMENT NO.2
Guidance for Ballast Water Management Installations
2018 AMENDMENT NO.1

Rule No.102 / Notice No.55 29 June 2018
Resolved by Technical Committee on 31 January 2018

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An asterisk (*) after the title of a requirement indicates that there is also relevant information in the corresponding Guidance.

RULES FOR BALLAST WATER MANAGEMENT INSTALLATIONS

RULES

2018 AMENDMENT NO.2

Rule No.102 29 June 2018

Resolved by Technical Committee on 31 January 2018

An asterisk (*) after the title of a requirement indicates that there is also relevant information in the corresponding Guidance.

Rule No.102 29 June 2018
AMENDMENT TO THE RULES FOR BALLAST WATER MANAGEMENT INSTALLATIONS

"Rules for ballast water management installations" has been partly amended as follows:

Part 1 GENERAL

Chapter 2 TERMINOLOGY AND ABBREVIATIONS

2.1 General

Paragraph 2.1.1 has been amended as follows.

2.1.1 Terminology (*Article* 1 of *BWM Convention* and *Regulation* A-1 of *Annex*)

For the purpose of the Rules, the following definitions apply unless otherwise stated in each Part:

1 The following **(1)** to **(22)** definitions apply for approved *BWMS* based on *IMO Res. MEPC.*174(58) "*Guidelines for Approval of Ballast Water Management Systems (G8)*".

((1) to (21) are omitted.)

(22) "Ballast water management plan" means the document referred to in **Chapter 4, Part 3 of the Rules** describing the ballast water management process and procedures implemented on board individual ships.

2 In addition to **(1)** to **(12)** and **(18)** to **(22)** of **1** above, the following **(1)** to **(3)** definitions apply for approved *BWMS* based on *IMO Res. MEPC.*279(70) "*2016 Guidelines for Approval of Ballast Water Management Systems (G8)*", as amended.

(1) "Ballast water management system" (*BWMS*) means any system which processes ballast water such that it meets or exceeds the ballast water performance standards given in **3.2, Part 3 of the Rules**. The *BWMS* includes ballast water treatment equipment, all associated control equipment, piping arrangements as specified by the manufacturer, control and monitoring equipment and sampling facilities. Also, *BWMS* does not include the ship's ballast water fittings, which may include piping, valves, pumps, etc., that would be required if the *BWMS* was not fitted.

(2) "Control and monitoring equipment" means the equipment installed for the effective operation and control of the *BWMS* and the assessment of its effective operation.

(3) "Sampling facilities" means provided for sampling treated or untreated ballast water.

Part 2 SURVEYS

Chapter 2 REGISTRATION SURVEYS

2.1 Registration Surveys during Construction

2.1.2 Submission of Plans and Documents for Approval*

Sub-paragraphs -1 and -2 have been amended as follows.

1 For any ship intending to undergo a Registration Survey, three copies of each of the following plans and documents specified in **(1)** and **(2)** are to be submitted to the Society for approval. The document specified in **(3)** is to be submitted to the Society for approval before delivery of the ship:

(1) (Omitted)

(2) For ships conducting the ballast water management specified in **Chapter 3, Part 3 of the Rules**, the following plans and document specified in **(a)** to **(~~g~~f)**:

~~(a) Plans showing ballast water management systems;~~

(~~b~~a) Arrangements of ballast water management systems;

(~~c~~b) Arrangements of ballast tanks;

(~~d~~c) Capacities of ballast pumps;

(~~e~~d) Arrangement of ballast piping;

(~~f~~e) Plans and documents specified in **1.1.6(1)(e), (1)(f), (2)(b), (2)(d) and (2)(e), Part H of the Rules for the Survey and Construction of Steel Ships**; and

(~~g~~f) Other plans and documents deemed necessary by the Society

(3) Ballast water management plan

2 The following documents are to be submitted to the Society for reference, in addition to the approval plans and documents specified in the preceding **-1**. The document specified in **(2)** is to be submitted before onboard testing.

(1) A copy of the certificate for type approval of ballast water management system ~~issued by the Society or the Administration, in accordance with *IMO Res. MEPC.*174(58) *"Guidelines for Approval of Ballast Water Management Systems (G8)"*, as amended~~

(2) Onboard test procedures

(3) Plans showing ballast water management systems

2.1.3 Inspections of Equipment

Sub-paragraph -2 has been amended as follows.

2 For ships conducting the ballast water management specified in **Chapter 3, Part 3 of the Rules**, the following inspections are to be carried out:

((1) to (5) are omitted.)

(6) Confirmation that the recording devices for control ~~equipment~~ and monitoring equipment are operable and that sufficient supply of any consumables necessary for the recording devices is provided on board;

((7) and (8) are omitted.)

Paragraph 2.1.5 has been amended as follows.

2.1.5 Documents to be Maintained On Board

Upon completion of a Registration Survey, the Surveyor confirms that the following documents, etc., are maintained on board:

((1) and (2) are omitted.)

(3) For ships conducting the ballast water management specified in **Chapter 3, Part 3 of the Rules** by approved *BWMS* based on *IMO Res. MEPC.*174(58) "*Guidelines for Approval of Ballast Water Management Systems (G8)*", the following **(a)** to **(h)** documents:
((a) to (h) are omitted.)

(4) For ships conducting the ballast water management specified in **Chapter 3, Part 3 of the Rules** by approved *BWMS* based on *IMO Res. MEPC.*279(70) "*2016 Guidelines for Approval of Ballast Water Management Systems (G8)*", as amended, the following **(a)** to **(e)** documents:
(a) A copy of the certificate for type approval specified in **2.1.2-2(1)**;
(b) An operations and technical manual for the ballast water management system, containing a technical description of the ballast water management system, operational and maintenance procedures, and backup procedures in case of equipment malfunction;
(c) Installation specifications for the ballast water management system;
(d) Installation and test operation procedures for the ballast water management system; and
(e) Dosage and storage instructions for active substances or preparation of the ballast water management system.

Chapter 3 REGISTRATION MAINTENANCE SURVEYS

3.2 Intermediate Surveys

Paragraph 3.2.2 has been amended as follows.

3.2.2 Inspections of Equipment

In addition to inspections specified in **3.1.2**, it is to be confirmed that there are no defects, such as corrosion, wastage and damage, in the *BWMS*, ballast pump and ballast piping, and the *BWMS* is in good working order for ships conducting the ballast water management specified in **Chapter 3, Part 3 of the Rules**.

3.3 Special Surveys

Paragraphs 3.3.2 and 3.3.3 have been amended as follows.

3.3.2 Inspections of Equipment

~~In addition to i~~Inspections specified in **3.2.2**~~, it is~~ are to be ~~confirmed that the *BWMS* is in good working order~~ carried out.

3.3.3 Documents to be Maintained On Board

In addition to inspections specified in **3.1.3**, the Surveyor is to confirm the calibration certificates, which certifies the date of the most recent calibration inspection by the manufacturer or persons authorized by the manufacturer, for any measuring systems which are part of the *BWMS*.

Part 3 EQUIPMENT FOR THE BALLAST WATER MANAGEMENT

Chapter 2 BALLAST WATER EXCHANGE

Section 2.2 has been amended as follows.

2.2 Ballast Water Exchange (*Regulation* B-4 of *Annex*)*

1 Whenever possible, ballast water exchange is to be conducted at least 200 nautical miles from the nearest land and in water at least 200 metres in depth, taking into account *IMO Res.MEPC*~~124~~288(~~53~~71) "*Guidelines for Ballast Water Exchange (G6)*", as amended.

2 In cases where a ship is unable to conduct ballast water exchange in accordance with **-1**, ballast water exchange is to be conducted taking into account *IMO Res.MEPC*~~124~~288(~~53~~71) "*Guidelines for Ballast Water Exchange (G6)*", as amended. In all such cases, the exchange is to be conducted at least 50 nautical miles from the nearest land and in water at least 200 metres in depth.

Chapter 3 BALLAST WATER MANAGEMENT

3.3 Ballast Water Management Systems (*Regulation* D-3 of *Annex*)*

Sub-paragraphs -1 and -2 have been amended as follows.

BWMS used to comply with **3.2** above is to satisfy the following requirements:

1 General requirements

(1) The *BWMS* is to be approved by the Administration or the Society in accordance with *IMO Res.MEPC.*174(58) "*Guidelines for Approval of Ballast Water Management Systems (G8)*"~~, as amended~~.

(2) The *BWMS* which is installed on or after 28 October 2020 is to be approved by the Administration or the Society in accordance with *IMO Res.MEPC.*279(70) "*2016 Guidelines for Approval of Ballast Water Management Systems (G8)*", as amended.

(~~2~~3) (Omitted)

(~~3~~4) (Omitted)

2 Construction and performance requirements

(1) The *BWMS* which is approved based on *IMO Res. MEPC.*174(58) "*Guidelines for Approval of Ballast Water Management Systems (G8)*" is to comply with the following **(a)** to **(o)** requirements.

(~~1~~a) (Omitted)

(~~2~~b) (Omitted)

(~~3~~c) (Omitted)

(~~4~~d) (Omitted)

(~~5~~e) (Omitted)

(~~6~~f) (Omitted)

(~~7~~g) (Omitted)

(~~8~~h) (Omitted)
(~~9~~i) (Omitted)
(~~10~~j) (Omitted)
(~~11~~k) (Omitted)
(~~12~~l) (Omitted)
(~~13~~m) (Omitted)
(~~14~~n) (Omitted)
(~~15~~o) (Omitted)

(2) In addition to **(a)**, **(b)** and **(d)** of **1** above, the *BWMS* which is approved based on *IMO Res.MEPC.*279(70) "*2016 Guidelines for Approval of Ballast Water Management Systems (G8)*", as amended is to comply with the following **(a)** to **(i)** requirements.

(a) All working parts of the *BWMS* that are liable to wear or to be damaged are to be easily accessible for maintenance.

(b) The *BWMS* is to be so constructed that a visual indication is always activated whenever the *BWMS* is in operation for purposes of cleaning, calibration, or repair, and these events are to be recorded by the control and monitoring equipment.

(c) The *BWMS* is to be provided with the necessary connections to ensure that any bypass of the *BWMS* will activate an alarm, and that the bypass event is to be recorded by the control and monitoring equipment.

(d) The *BWMS* is to incorporate control equipment that automatically monitors and adjusts necessary treatment dosages or intensities or other aspects of the BWMS of the ship, which while not directly affecting treatment, are nonetheless required for proper administration of the necessary treatment.

(e) The control and monitoring equipment is to record the operation condition automatically, and the proper functioning or failure of the *BWMS*. Where practical, system design limitation parameters are to be monitored and recorded by the *BWMS* to ensure proper operation.

(f) The *BWMS* is to be able to produce (e.g. display, print or export) a report of the applicable self-monitoring parameters for official inspections or maintenance, as required.

(g) The control and monitoring equipment are to be able to store data for at least 24 months. In the event the control and monitoring equipment is replaced, means are to be provided to ensure the data recorded prior to replacement remains available on board for 24 months.

(h) Suitable bypasses or overrides to protect the safety of the ship and personnel are to be installed and used in the event of an emergency and these are to be connected to the *BWMS* so that any bypass of the *BWMS* should activate an alarm. The bypass event is to be recorded by the control and monitoring equipment and within the ballast water record book.

(i) The requirement of **(h)** above is not to apply to internal transfer of ballast water within the ship (e.g. anti-heeling operations). However, internal transfer which affect ballast water performance standard specified **3.2, Part 3 of the Rules** may be applied the requirement of **(h)** above.

3.4 Prototype Ballast Water Treatment Technologies (*Regulation* D-4 of *Annex*)

Sub-paragraph -2 has been amended as follows.

2 For any ship that, after the date on which the standard specified in **3.2** has become effective for it, participates in a programme approved by the Administration, taking into account Guidelines specified in **3.3-1(1), (2)** and **(~~2~~3)**, to test and evaluate promising ballast water technologies with the potential to result in treatment technologies achieving a standard higher than that specified in **3.2**, the standard specified in **3.2** is to cease to apply to that ship for five years from the date of installation of such technology.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 29 June 2018.

GUIDANCE FOR BALLAST WATER MANAGEMENT INSTALLATIONS

GUIDANCE

2018 AMENDMENT NO.1

Notice No.55 29 June 2018

Resolved by Technical Committee on 31 January 2018

Notice No.55 29 June 2018
AMENDMENT TO THE GUIDANCE FOR BALLAST WATER MANAGEMENT INSTALLATIONS

"Guidance for ballast water management installations" has been partly amended as follows:

Part 3 EQUIPMENT FOR THE BALLAST WATER MANAGEMENT

Chapter 3 BALLAST WATER MANAGEMENT

Section 3.3 has been amended as follows.

3.3 Ballast Water Management System (*Regulation* D-3 of *Annex*)

1 The requirements of this section from ~~**-2**~~**3** to ~~**-6**~~**7** apply to **(1)** or **(2)** below:

(1) *BWMS* of which an application for approval for the plans is made on or after 1 January 2017; or

(2) *BWMS* which is installed in ships contracted for construction on or after 1 January 2017.

2 The wording "installed" in **3.3-1(2), Part 3 of the Rules** refers to either the following **(1)** or **(2)**.

(1) The contractual date of delivery of the *BWMS* to the ship

(2) In the absence of the date of **(a)** above, the actual date of delivery of the *BWMS* to the ship

~~**2**~~**3** Where the system uses chemical substances indicating possible unacceptable adverse effects to human health and the equipment in "*BWMS* using active substances or preparations" specified in **3.3-1(~~2~~3), Part 3 of the Rules**, the following requirements **(1)** to **(9)** are to be satisfied. The following requirements may be appropriately relaxed depending of the chemical substances.

((1) to (5) are omitted.)

(6) High water level alarms are to be provided in chemical storage tanks, audible and visual alarm signals are to be given at near chemical storage tanks, in addition to the spaces mentioned in **3.3-2(~~2~~1)(b), Part 3 of the Rules**.

((7) to (9) are omitted.)

~~**3**~~**4** Where the system generates dangerous gas in "*BWMS* using active substances or preparations" specified in **3.3-1(~~2~~3), Part 3 of the Rules**, the following requirements **(1)** to **(9)** are to be satisfied.

(1) (Omitted)

(2) Gas detection equipment is to be fitted in the spaces where dangerous gas could be present. The gas detection equipment is to be designed and tested in accordance with *IEC* 60079-29-1 or recognized standards acceptable to the Society. In the event of leakage, an audible and visual alarm is to be activated at the following spaces:

(a) *BWMS* control station; and

(b) The local manual control of the ~~system~~*BWMS*.

((3) to (9) are omitted.)

~~**4**~~**5** (Omitted)

~~**5**~~**6** In applying **3.3-2(~~6~~1)(f)** and **(2)(h), Part 3 of the Rules**, the valves in the by-pass line which trigger the by-pass operation are to be remote-controllable by control equipment or fitted with open/close indicator for automatic detection of the by-pass event.

~~**6**~~**7** In applying **3.3-3, Part 3 of the Rules**, design and installation of *BWMS* are to comply with followings in addition to the relevant requirements of the **Rules for the Survey and Construction**

of Steel Ships.

(1) Related piping of *BWMS* is to comply with followings.

(a) Piping is to be designed in accordance with approval conditions for *BWMS* in **3.3-1(1), (2)** and **(~~2~~3) in Part 3 of the Rules**.

((b) to (g) are omitted.)

(2) For ships fitted with dangerous ballast tanks, where the ballast water is passed through a system for measuring total residual oxidants (*TRO*) or total residual chlorine (*TRC*) before discharge, the requirements for the system in non-hazardous area such as engine room are as given below.

(a) The sampling facility (for *BWMS* monitoring/control) is to be located within a gas tight enclosure (hereinafter, referred to as a cabinet), and the following **i)** to **iii)** are to be complied with.

i) In the cabinet, a stop valve is to be installed in each sample pipe.

ii) Gas detection equipment is to be installed in the cabinet and the valves specified in **i)** above are to be automatically closed upon activation of the gas detection equipment.

iii) Audible and visual alarm signals are to be activated at the spaces specified in **3.3-~~3~~4(2)(a)** and **(b)** when the concentration of explosive gases reaches a pre-set value, which should not be higher than 30% of the lower flammable limit (LFL) of the concerned product.

((b) to (k) are omitted.)

(3) (Omitted)

(4) (Omitted)

(5) For tankers carrying flammable liquids having a flashpoint not exceeding 60 ^{o}C, products listed in the *IBC* Code having a flashpoint not exceeding 60 ^{o}C or cargoes heated to temperature above their flashpoint and cargoes heated to temperature within 15 ^{o}C of their flashpoint, in general, two independent *BWMS* may be required - i.e. one for ballast tanks in hazardous areas and the other for ballast tanks in non-hazardous areas. However, one *BWMS* may be required provided that the following **(a)** and **(b)** are satisfied:

(a) (Omitted)

(b) Ballast water originating from a hazardous area is not to discharge into a non-hazardous area, except as given by **3.3-~~6~~7(2)**. Examples of appropriate isolation arrangements are shown in **Fig.3.3-2(1)** and **(2)**. Isolation arrangements specified in **(a)i)** to **iii)** are to be fitted on the exposed deck in the hazardous area.

Fig.3.3-1 Means of appropriate isolation
(i) to iii) are omitted.)

((6) to (8) are omitted.)

~~7~~8 "*BWMS* is to be approved by the Society" specified in **3.3-1(1)** and **(2), Part 3 of the Rules** means the systems which are approved in accordance with **Chapter 11, Part 2 of the Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use**.

Fig.3.3-2(1) ~~Ballast water treatment system~~*BWMS* which does not require after-treatment
(Omitted)

Fig.3.3-2(2) ~~Ballast water treatment system~~*BWMS* which require after-treatment (Injection type)
(Omitted)

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 29 June 2018.