

### MARINE ENVIRONMENT PROTECTION COMMITTEE 82nd session Agenda item 4

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# HARMFUL AQUATIC ORGANISMS IN BALLAST WATER

### Proposal for amendments to the Guidance for Administrations on the type approval process for ballast water management systems (BWM.2/Circ.43/Rev.1)

## Submitted by BEMA

SUMMARY	
Executive summary:	Following on the related submissions and discussions during MEPC 81, and in response to the Committee's request for proposals, this document presents a revised proposal for amendments to the <i>Guidance for Administrations on the type approval process for ballast water management systems</i> (BWM.2/Circ.43/Rev.1) aimed to support approval of modifications to a BWMS with existing type approval.
Strategic direction, if applicable:	1
Output:	1.25
Action to be taken:	Paragraph 8
Related documents:	MEPC 81/4/3, MEPC 81/16; resolution MEPC.300(72) and BWM.2/Circ.43/Rev.1

# Introduction

1 Resolution MEPC.300(72) on the *Code for Approval of Ballast Water Management Systems* (BWMS Code), was adopted by the Marine Environment Protection Committee (the Committee) in April 2018. The BWMS Code sets out the mandatory requirements for type approval of ballast water management systems (BWMS).

As described in document MEPC 81/4/3, the BWMS Code has limited guidance regarding approval of modifications to a BWMS after type approval has been granted. Considering the number of years that ballast water management has now been implemented on board ships and the knowledge that has been gained by all stakeholders during the experience-building phase (EBP), it has become apparent that there is a need for a streamlined and efficient process for a manufacturer to obtain approval for modifications to a type approved BWMS, and for Administrations to review such proposed modifications.



3 This document aims to facilitate continued discussions regarding proposed amendments to the current *Guidance for Administrations on the type approval process for ballast water management systems* (BWM.2/Circ.43/Rev.1) that will support the ability to modify a BWMS with an existing type approval.

### Background

4 Since MEPC 80, several submissions have been made containing information about the various scenarios that may lead to modifications to a BWMS with an existing type approval and the need for development of related guidance (MEPC 80/INF.18 (BEMA), MEPC 81/4/10 (Japan), MEPC 81/4/12 (Republic of Korea), MEPC 81/INF.13 (BEMA)), along with proposed approaches for guidance development (MEPC 80/4/10 (Norway), MEPC 81/4/3 (Germany et al.)).

5 Discussions within the Ballast Water Review Group (BWRG) at MEPC 81 were limited owing to time constraints. Based on the Committee's invitation for further proposals to MEPC 82 (MEPC 81/16, paragraph 4.22), interested Member States and international organizations worked intersessionally to develop this submission containing a revised proposal for amendments to BWM.2/Circ.43/Rev.1.

### Discussion

6 Through the informal intersessional work, perspectives and inputs for suggested revisions to the previous proposal within document MEPC 81/4/3 were gathered through electronic correspondence and virtual meetings across a broad range of stakeholders.

7 The intersessional work highlighted several important aspects, which are incorporated within the revised proposal for amendments to BWM.2/Circ.43.Rev.1, including, inter alia:

- .1 BWMS modifications, whether to major or non-major components, should undergo a review by the approving Administration. A standardized review and approval process will support maintaining the integrity of BWMS technology available to ship owners, as well as a level playing field for BWMS manufacturers;
- .2 reviews of BWMS modifications should consider impacts to biological efficacy (regulation D-2), normal BWMS operation, ship safety and environmental acceptability (Procedure (G9)), when applicable. Evaluations and any additional testing that may be necessary shall verify that these aspects of the BWMS are at least equivalent to the existing type approved BWMS;
- .3 even with the current experience and knowledge about BWMS technology and considering the definition of "major component" provided in the BWMS Code, it is not feasible for the guidance to cover all possible BWMS modifications that may be proposed for an Administration to review, currently or in the future. While the goal is to have a clear and standardized process for approval of all BWMS modifications, Administrations require a degree of flexibility to determine the appropriate evaluations and/or additional testing that may be required to approve a proposed modification when this is not already covered in the guidance. The guidance should therefore be kept under review and amended as additional experience is gained;

- .4 to determine if a BWMS modification is acceptable, additional testing may be required. Considering the ongoing efforts for the development of a package of amendments to the BWM Convention and its instruments, the intersessional work identified that specifying testing requirements for BWMS modifications within the BWMS Code is more appropriate than including them in this proposed amended guidance; and
- .5 shipowners who have previously installed a type approved BWMS should not be required to retroactively upgrade their installed BWMS if a manufacturer obtains approval for a modification to a particular BWMS model. A shipowner has the option to choose to incorporate a modification to their installed BWMS should it be helpful to the ship's operations.

### Action requested of the Committee

8 The Committee is invited to consider the proposed amendments to BWM.2/Circ.43/Rev.1 as provided in the annex.

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### ANNEX

### PROPOSED AMENDMENTS TO THE GUIDANCE FOR ADMINISTRATIONS ON THE TYPE APPROVAL PROCESS FOR BALLAST WATER MANAGEMENT SYSTEMS (BWM.2/CIRC.43/REV.1)

Proposed amendments to the guidance are shown as additions / deletions.

BWM.2/Circ.43/Rev.2 XX October 2024

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

# 2024 Guidance for Administrations on the type approval process for ballast water management systems

- 1 The Marine Environment Protection Committee (MEPC), at its sixty-first session (27 September to 1 October 2010), approved the *Guidance for Administrations on the type approval process for ballast water management systems in accordance with Guidelines (G8)*, developed by the Sub-Committee on Bulk Liquids and Gases (BLG) at its fourteenth session (8 to 12 February 2010), disseminated as BWM.2/Circ.28.
- 2 MEPC 65 (13 to 17 May 2013) approved amendments to the Guidance, developed by BLG 17 (4 to 8 February 2013), disseminated as BWM.2/Circ.43, superseding BWM.2/Circ.28.
- 3 MEPC 72 (9 to 13 April 2018) considered and approved a revision of the Guidance in order to reflect the requirements of the *Code for Approval of Ballast Water Management Systems* (resolution MEPC.300(72)),<sup>1</sup> as set out in the annex.
- <u>3bis</u> MEPC 82 (30 September to 4 October 2024) considered and approved amendments to the Guidance to include harmonized evaluation of modifications to a ballast water management system with existing type approval, as set out in the annex.
- 4 Member Governments and international organizations are invited to bring the annexed Guidance to the attention of all parties concerned.
- 5 This circular supersedes revokes BWM.2/Circ.43/Rev.1.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> As per paragraph 1.13 of the BWMS Code, the revised Guidance is also applicable to ballast water management systems approved taking into account the 2016 Guidelines (G8) (resolution MEPC.279(70)). Reference may be made to BWM.2/Circ.43 for ballast water management systems approved not later than 28 October 2018 under Guidelines (G8) (resolution MEPC.174(58)), taking into account the revised Guidance as appropriate.

## DRAFT 2024 GUIDANCE FOR ADMINISTRATIONS ON THE TYPE APPROVAL PROCESS FOR BALLAST WATER MANAGEMENT SYSTEMS

## 1 PURPOSE

1.1 This document provides guidance for Administrations on the procedure for evaluating an application for type approval of a ballast water management system (BWMS), in accordance with the Code for Approval of Ballast Water Management Systems (BWMS Code), or evaluating modifications to an existing type approved BWMS. The Guidance can act as an aide-memoire for Administrations and is not intended, in any way, to interfere with the authority of an Administration.

1.2 This document provides guidance on interpretation of the BWMS Code and does not replace or supersede the requirements of the Code.

1.3 This document is intended to provide guidance to Administrations on the details of the type approval to be reported to the Committee.

### 2 KEY INSTRUMENTS

In evaluating an application for type approval of a BWMS, <u>or an application for modification to</u> <u>a BWMS with an existing type approval</u>, the latest version of the following instruments should be consulted:

- .1 International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention);
- .2 Guidelines for approval of ballast water management systems (G8) (resolutions MEPC.125(53), MEPC.174(58) and MEPC.279(70));
- .23 Procedure for approval of ballast water management systems that make use of Active Substances (G9) (resolution MEPC.169(57));
- .<u>34</u> Guidelines for ballast water sampling (G2) (resolution (MEPC.173(58));
- .<u>45</u> Code for Approval of Ballast Water Management Systems (resolution MEPC.300(72)), or Guidelines for approval of ballast water management systems (G8) (resolutions MEPC.125(53), MEPC.174(58) and MEPC.279(70)), as may be appropriate;
- .56 Guidance to ensure safe handling and storage of chemicals and preparations used to treat ballast water and the development of safety procedures for risks to the ship's crew resulting from the treatment process (BWM.2/Circ.20);
- .7 Information reporting on type-approved ballast water management systems (resolution MEPC.228(65)175(58));
- .<u>68</u> Methodology for information gathering and conduct of work of the GESAMP-BWWG (BWM.2/Circ.13, as revised); and
- .<u>79</u> other pertinent ballast water management related resolutions, guidance and circulars.

### 3 RECOMMENDATIONS FOR REQUIREMENTS OF MANUFACTURERS OR THEIR AGENTS

3.1 To facilitate the<u>an initial or new</u> type approval of a BWMS, the Administration should ensure that the manufacturers, or their agents have, at a minimum:

- .1 been informed if the Administration delegates to or utilizes the services of a third party quality assurance organization (e.g. recognized organization, nominated body, classification society, surveyors, etc.) in some, or all of the type approval processes;
- .2 understood the steps and requirements of the processes outlined in the instruments listed in section 2 of this Guidance;
- .3 a fully working system built that can be used in the type approval process. It should be noted that the construction procedures and materials for the unit tested need to be the same as for the follow-on production units;
- .4 undertaken preliminary testing to ensure that their BWMS is viable, will meet the D-2 standard of the BWM Convention, will work on board a ship and has been determined not to pose any unacceptable risk to the environment;
- .5 understood the extent of testing that needs to be completed by a recognized testing facility, including toxicity analysis;
- .6 provided a description of the preliminary test to the Administration that should at least include the following:
  - .1 the test set-up, including sampling points;
  - .2 responsible persons/organizations for all or portions of the preliminary testing;
  - .3 possible Quality Management Plan (QMP) of the testing facility;
  - .4 testing laboratories that will be used;
  - .5 Quality Assurance Project Plan (QAPP) for the preliminary test; and
  - .6 provision for survey of the test facility, if required;
- .7 provided a detailed report of the preliminary test results including, at least:
  - .1 toxicity data;
  - .2 Active Substances if relevant; and
  - .3 any Other Chemicals generated during the process;
- .8 an understanding of whether the system under consideration uses an Active Substance as defined in the BWM Convention. If it utilizes an Active Substance, the system will require additional approval under Procedure (G9), whilst the systems not using an Active Substance only need approval under the BWMS Code;

- .9 a contractual agreement to undertake the shipboard testing needed under the BWMS Code with the owner of a suitable ship;
- .10 arranged for a trained person from the land-based testing facility to operate the equipment being type approved and ensure that for the shipboard test the ship's crew is familiar with the equipment and sufficiently trained to operate the equipment;
- .11 consulted with the classification society that the ship undertaking the shipboard testing is being registered, where necessary, and obtained approval for installation of the BWMS;
- .12 demonstrated by using mathematical modelling and/or calculations or by full-scale shipboard testing, that any up or down scaling will not affect the ultimate functioning and effectiveness on board a ship of the type and size for which the equipment will be certified. In doing so, the manufacturers should take into account all relevant guidance developed by the Organization;
- .13 prepared a type approval application in compliance with the BWMS Code, annex, part 1, which includes at least the following:
  - .1 detailed description of the design, construction, operation and functioning of the BWMS;
  - <u>.1*bis* a list of major components, as defined in the BWMS Code, that are included in the BWMS design;</u>
  - .2 preliminary assessment of the corrosion effects of the system proposed, if applicable;
  - .3 preliminary test results;
  - .4 technical manual;
  - .5 BWMS piping and instrumentation diagram (P&ID);
  - .6 link to the provisions required in a ballast water management plan;
  - .7 environmental and public health effects; and
  - .8 specific salinities to be tested;
- .14 provided the following, when submitting the type approval application:
  - .1 sufficient information to verify operation in different salinity ranges (fresh, brackish and marine water) in which the BWMS will operate;
  - .2 sufficient information to verify operation in the different temperature ranges (cold, temperate and tropical) in which the BWMS will operate;
  - .3 sufficient information to verify operation with the different sediment loads under which the BWMS will operate;

- .4 sufficient information to verify operation of the minimum effective treatment flow rate as well as the maximum Treatment Rated Capacity (TRC) including the duration of these tests; and
- .5 suggestions for improvements of the installation related to safety or additional testing R&D;
- .15 made all laboratory-scale and, if appropriate, full-scale land-based test results and documentation, including all unsuccessful, failed and invalid tests, available to the Administration; and
- .16 made all shipboard test results and documents, including all unsuccessful, failed and invalid tests, as well as detailed information of the test set up and flow rate at each test cycle, available to the Administration.

3.2 In accordance with paragraphs 4.17 to 4.22 of the Code for Approval of Ballast Water Management Systems (BWMS Code), Administrations should ensure that type-approved BWMS have a suitable self-monitoring system that will monitor and record sufficient data to verify correct operation of the system. Administrations should make every effort to ensure that newly installed BWMS that have already been granted type approval meet this recommendation within one year following approval of this Guidance. Administrations should issue treatment system particulars, including details of the self-monitoring system (as described in document MEPC 61/INF.19 and BWM.2/Circ.69, as may be revised), for all type approved systems.

3.3 To facilitate an evaluation of modifications to a BWMS with an existing type approval, the Administration should ensure that the manufacturers or their agents have:

- .1 a BWMS with an existing type approval;
- .2 been informed if the Administration delegates to or utilizes the services of a third party quality assurance organization (e.g. recognized organization, nominated body, classification society, surveyors, etc.) in some or all of the type approval processes;
- .3 received all relevant information to understand the steps and requirements of the processes outlined in the instruments listed in section 2 of this Guidance;
- .4 provided a clear description of the BWMS modifications and, if applicable to the proposed modification, include a technical description and the main characteristics of the current BWMS component(s), a comparative evaluation of the appropriateness of the new component(s), and all relevant documentation such as marine certifications and type approval certificates for the new component(s);
- .5 received all relevant information to understand which documents to submit for enabling the Administration to assess if the modification is a change to a major component in accordance with the definition in paragraph 3.9 of the BWMS Code;

- .6 for modifications to major components, received all relevant information to understand the extent of any testing that the Administration may require to be completed by an independent testing facility accepted by the Administration to allow full evaluation of the BWMS modification, including any analysis related to Final Approval in accordance with Procedure (G9); and
- .7 made all reports of any required testing and documentation to support evaluation of the BWMS modification(s) available to the Administration.

## 4 **RECOMMENDATIONS FOR FACILITATING TYPE APPROVAL EVALUATION**

4.1 For those Administrations using third party quality assurance organizations, due care should be taken to ensure all such arrangements are in place prior to initiating the type approval programme.

4.2 The Administration should provide the applicant with a document outlining contact details, the expected amount of time between submission and decision and any other requirements separate from the procedures and requirements outlined in the instruments listed in section 2 of this Guidance.

4.3 The Administration should verify that any recommendations made by MEPC during Basic and Final Approval have been addressed prior to issuing the Type Approval Certificate. In accordance with the BWMS Code (resolution MEPC.300(72)), Part 7. Information reporting on type-approved ballast water management systems (resolution MEPC.175(58)), the Administration should submit the final report of land-based and shipboard tests with the notification of type approval to the Organization. The reports should be available to Member States.

4.4 The Administration may certify a range of the BWMS capacities employing the same principles and technology, but due consideration should be given to limitations on performance which might arise from scaling up or scaling down.

4.5 The Administration should, in particular, review Standard Operating Procedures (SOP) for which an international standard has yet not been established.

## 5 APPROVAL PROCESS

5.1 Under the provisions of the BWM Convention, a BWMS is to be approved in accordance with the BWMS Code and, where appropriate, Procedure (G9).

5.2 The Administration should verify that the following issues have been specifically addressed by the manufacturer and, if the evaluation of the system is carried out by a third party organization, these issues should be relayed to the Administration to enable a decision on:

.1 a comprehensive explanation of the physical and/or biochemical treatment processes used by the BWMS to meet the D-2 Standard in the BWM Convention. This should be undertaken by the manufacturer and any supporting data should be submitted in writing. Any system which makes use of, or generates, Active Substances, Relevant Chemicals, or free radicals during the treatment process to eliminate organisms in order to comply with the Convention should be submitted to the Organization for review under Procedure (G9), (Procedure (G9), paragraph 3.3);

- .2 whether a BWMS makes use of an Active Substance or not remains the prerogative of the responsible Administration. In making that determination, Administrations should take into account relevant GESAMP-BWWG recommendations and MEPC decisions as to whether a system should be subject to approval under Procedure (G9). When an Administration is unsure of whether a BWMS is subject to Procedure (G9), it may choose to submit such system for review under that Procedure (MEPC 59/24, paragraph 2.16);
- .3 the BWMS that the Administration determines are not subject to Procedure (G9), as provided in paragraph 2.4.11 of the annex to the BWMS Code, the toxicity testing procedures in paragraphs 5.2.2 to 5.2.7 of Procedure (G9) should be used when the system could reasonably be expected to result in changes to the treated water such that adverse impacts to receiving waters might occur upon discharge;
- .4 the approval documents that should include a piping and instrumentation diagram (P&ID) with parts list and material specification. Furthermore, wiring diagrams, function description of the control and monitoring equipment and description of regulator circuit of the BWMS;
- .5 information on the preliminary testing (methodology, test water composition, salinities tested, sampling, analysis laboratories, etc.);
- .6 accreditation of the BWMS Code land-based testing facility or body including their quality management plan (QMP) and quality assurance project plan (QAPP) to be used by the manufacturer for land-based testing;
- .7 approval and subsequent verification of the design, construction, operation and functioning of the equipment used for land-based and shipboard testing;
- .8 approval and subsequent verification of the land-based and shipboard test methodology, including the composition of the test water, and specific salinities to be tested which should be in line with the BWMS Code, Procedure (G9) and the Methodology for information gathering and conduct of work of the GESAMP-BWWG, as appropriate (waiver for multiple testing required);
- .9 approval and subsequent verification of the methodology used to take and store samples, the laboratory testing, the frequency of sampling and the analysis procedure for samples from land-based and shipboard testing;
- .10 approval and subsequent verification of the design, construction, operation and functioning of the equipment used for testing;
- .10*bis* the list of major components, as defined in the BWMS Code, that are included in the BWMS design;
- .11 if the system is using an Active Substance, the applications for Final Approval will have to be checked and approved by the Administration prior to making a proposal for approval to the Organization. In addition, the cost-recovery fee for the scientific services provided by the GESAMP-BWWG will have to be submitted;
- .12 a safety assessment of the storage and handling of any chemicals is undertaken and approved in line with the technical guidance developed by the Organization (BWM.2/Circ.20);

- .13 a safety and hazard assessment of the installation, operation and maintenance of the BWMS on the shipboard test is undertaken and approved in line with the technical guidance developed by the Organization (BWM.2/Circ.20), and includes as a minimum:
  - .1 any potential impact on the crew health and safety; and
  - .2 references to the classification society safety and hazard rules and recommendations;
- .14 all electrical equipment used to operate the BWMS should be of a certified safety type required by the applicable national or international standard in respect of the hazardous areas where it is located; and
- .15 results of environmental testing as specified in part 3 of the annex to the BWMS Code.

5.3 For issuance of the Type Approval Certificate, the Administration should set the following requirements and provisions:

- .1 the validity of the approval should be revisited as appropriate;
- .2 in due time before the expiration of the approval, the manufacturer should prepare a report detailing the experiences with the system, including the results of any scientific research relevant to the system, as well as any results of port State controls, if available;
- .3 the occurrence of any unexpected harmful consequences of the operation of the BWMS should be reported by the manufacturer to the Administration immediately;
- .4 in accordance with the BWMS Code, the Type Approval Certificate should include details on all limiting operating conditions, restrictions and/or SDL determined by the Administration for the operation of the BWMS;
- .5 an annex to the Type Approval Certificate should contain the test results of each land-based and shipboard test run. Such test results should include at least the numerical salinity, temperature, flow rates, and where appropriate UV transmittance. In addition, these test results should include all other relevant variables;
- .6 the Type Approval Certificate should specify the components of the BWMS that are type approved, including the manufacturer of each component; their operating ranges, including temperature, specific salinity and specify the possibility to use other similar components (e.g. filters) and the criteria for allowing such use;
- .7 a separate Type Approval Certificate should be provided for each type or model of the BWMS. However, if Administrations wish to do otherwise, it is recommended that the different types and models are clearly stated and the test each type and model has undergone clearly referred to with test results, operating ranges, salinity, TRC, etc.;
- .8 all accidents (e.g. accidental exposure, leakage) related to the BWMS should be reported;

- .9 any indications that the system is not performing to the standards set by the BWM Convention, the BWMS Code and/or any additional provisions set by the Administration should be reported by the manufacturer to the Administration immediately;
- .10 the Administration should have the opportunity to revoke the approval if these requirements are not met; and
- .11 MSC.1/Circ.1221 on Validity of Type Approval Certification for marine products should apply.

## 5bis EVALUATION OF MODIFICATIONS TO BWMS WITH EXISTING TYPE APPROVAL

5*bis.*1 During the lifecycle of a BWMS type approval, it may become necessary due to supply chain issues, obsolescence, lifecycle performance, and/or ability to improve the performance or cost efficiency of a system that modifications to a type approved BWMS are needed. Modifications may include BWMS design and/or operational parameters, treatment processes, or components included within a type approved BWMS need to be upgraded, changed or replaced. When evaluating BWMS modifications, the type of component (major or non-major) being modified can be used to determine the extent of the evaluation necessary to ensure continued effective operation of the BWMS.

5bis.2 Resolution MEPC.300(72) defines "major component" as "...those components that directly affect the ability of the system to meet the ballast water performance standard described in regulation D-2". Examples of major components may include filters, ultraviolet modules, electrochlorination cells, dosing units, etc.

5bis.3 Resolution MEPC.300(72) incorporates the term "non-major component" but does not provide a definition. Based on the definition of "major component" and for the purposes of this guidance, "non-major component" means "those components that do not directly affect the ability of the system to meet the performance standard described in regulation D-2". Examples of non-major components may include pumps, valves, common electrical components (e.g. fuses, circuit breakers), process sensors, and cabinetry. Many non-major components within a BWMS are considered common marine equipment and may have marine type approval certificates and/or testing reports following IACS UR E10, as applicable.

5bis.4 The manufacturer, Administration, and, if applicable, the third-party quality assurance organization (e.g. recognized organization, nominated body, classification society, etc.) are encouraged to use figure 1 as a means to identify whether a component is a major or non-major component.

5bis.5 The extent of evaluation for BWMS modifications should be proportional to the modification (e.g. greater potential impact of the modification on BWMS effectiveness, safety or environmental aspects may have more detailed evaluations and/or testing). For non-major component modifications when there are no direct impacts to the ability of a BWMS to meet the performance standards, no impacts to normal BWMS operation, no compromise to ship safety, or no impacts to Final Approval aspects under Procedure (G9), a streamlined evaluation process that facilitates time efficient type approval amendments should be implemented. Review of proposed modifications to non-major components by the Administration should confirm that normal BWMS operation and/or ship safety will not be compromised. Additional testing and/or evaluation should only be required when functional equivalency has not been demonstrated, or if the review indicates there may be impacts to normal BWMS operation and/or ship safety.

### 5bis.6 When evaluating modifications to a BWMS that employs an Active Substance, Administrations should follow BWM.2/Circ.13/Rev.5, annex, section 12, as may be revised.



5bis.7 Regardless of the type of BWMS modification, the manufacturer should provide to the approving Administration:

- <u>.1</u> a clear description of the BWMS modification and technical information to support an evaluation of the appropriateness of the modification;
- .2 information on the identification of the component as either major or non-major, as applicable;
- <u>.3</u> the specifications of the current component(s) in the existing BWMS type approval, as applicable;
- .4 the specifications of the proposed new component(s), as applicable; and
- .5 a comparative evaluation to demonstrate the suitability of the modification.

5bis.8 If the BWMS modification involves a major component, the Administration should determine the necessary tests for type approval of each modification to BWMS major components, in accordance with the BWMS Code and/or guidance developed by the Organization. This may include land-based and/or shipboard testing of the BWMS (full, reduced or modified scope of BWMS Code testing requirements), environmental testing, disinfection by-product and/or aquatic toxicity testing (as may be applicable to BWMS having Final Approval), operational testing, and/or SDL verification.

5*bis.*9 If the BWMS modification involves a non-major component, the Administration should verify that the following items have been addressed by the manufacturer:

- .1 information on type approvals of the proposed new component(s); and
- .2 description demonstrating that the new component does not interfere with the BWMS' ability to meet the D-2 standard and the overall function of the system in the shipboard environment.

5bis.10 To allow for an efficient documentation and reporting process for BWMS manufacturers with multiple type approvals, the Administration should provide a revised certificate that includes the approved BWMS modifications. Amended certificates should be maintained by the BWMS manufacturer and provided to ships to which the BWMS modifications are applicable for review during port State control and/or flag State inspections.

5bis.11 To eliminate duplication of environmental testing of individual components by multiple BWMS manufacturers, environmental testing carried out by another BWMS manufacturer or the original equipment manufacturer (OEM) of individual components may be submitted as part of the evaluation required under paragraphs 5bis.8 and 5bis.9 provided that testing meets the requirements of Part 3 of the BWMS Code.

5bis.12 Following completion of modifications to an existing type approval by the issuing Administration, other Administrations, classification societies and recognized organizations are encouraged to provide mutual recognition of the modification without excessive review and further testing, provided that the review process in figure 1 and the applicable requirements of the BWMS Code and/or guidance developed by the Organization have been followed and the BWMS modifications have been determined acceptable. This will facilitate time efficient availability of the latest BWMS technology to ship owners. Also refer to paragraph 6.9 of the BWMS Code.

5bis.13 There is no requirement for existing BWMS installations with a valid Type Approval Certificate to be retroactively upgraded should a BWMS with an existing type approval obtain approval of modifications.

5bis.14 A BWMS originally approved taking into account Guidelines (G8) (i.e. resolutions MEPC.125(53), MEPC.174(58) and MEPC.279(70)) and before entry into force of the BWMS Code, can undergo component modifications following this guidance and does not require a BWMS manufacturer to retroactively apply BWMS Code requirements.

5bis.15 This guidance should be kept under review, and modified if necessary, considering the experience gained regarding modifications to BWMS with an existing type approval and, in particular, with respect to the identification of major and non-major components.

## 6 REPORTING OF THE TYPE APPROVAL

6.1 The Administration should forward a report of the type approval process to the Organization, including the relevant documentation as specified in part 7 of the annex to the BWMS Code.

6.2 In particular, where under Procedure (G9) the Final Approval has been granted with recommendations by the GESAMP-BWWG, evidence that these recommendations have been satisfactorily addressed at type approval should be provided to the Organization. The report should specify the findings of the Administration together with any non-confidential information according to Procedure (G9).