INTERNATIONAL MARITIME ORGANIZATION

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WORK PROGRAMME OF THE COMMITTEE AND SUBSIDIARY BODIES

Expanding the scope of the existing output 1.26 to include a revision of MARPOL Annex IV

Submitted by Norway

SUMMARY

Executive summary:	This document proposes an expansion of the scope of the existing output on "Amendments to the *2012 Guidelines on implementation of effluent standards and performance tests for sewage treatment plants* (resolution MEPC.227(64), as amended by resolution MEPC.284(70)) to reduce inconsistencies in their application" to include revisions of MARPOL Annex IV and associated guidelines
Strategic directions, if applicable:	1 and 6
Output:	Not applicable
Action to be taken:	Paragraph 27
Related documents:	Resolutions MEPC.2(VI); MEPC.159(55); MEPC.227(64); MEPC.284(70); MEPC 71/14/2, MEPC 71/INF.22 and PPR 6/14

Introduction

1 During MEPC 71, the Committee considered document MEPC 71/14/2 (Norway), proposing a new output to amend the *2012 Guidelines on implementation of effluent standards and performance tests for sewage treatment plants* (resolution MEPC.227(64), as amended by resolution MEPC.284(70)) (hereafter 2012 Guidelines) to reduce inconsistencies in the application of the Guidelines.

2 The Committee agreed to include a new output on "Amendments to the *2012 Guidelines on implementation of effluent standards and performance tests for sewage treatment plants* (resolution MEPC.227(64)) to address inconsistencies in their application", assigning the PPR Sub-Committee as the associated organ, with two sessions needed to complete the work.

3 Since the approval of this output, Norway has been working together with relevant stakeholders to revise the 2012 Guidelines in order to make them more robust, and a document was developed and submitted to PPR 6 (PPR 6/14).

4 During Norway's deliberations on how to improve the 2012 Guidelines and strengthen the implementation of MARPOL Annex IV, it became clear that the revision of the Guidelines alone is not sufficient to ensure that the environmental objectives of MARPOL Annex IV are met. Amending the Guidelines can make the type approval process more robust, but it needs to be supplemented by a way to monitor and control the performance of the sewage treatment plants (STPs) during their operation on board ships in order to ensure that the performance of the systems is satisfactory throughout their lifetime.

5 Norway believes that if MARPOL Annex IV is revised in parallel with the 2012 Guidelines, the overall framework of MARPOL Annex IV can be considered so as to better ensure that the performance of the STP remains satisfactory throughout the lifetime of the system. This is necessary in order to prevent harmful discharge of sewage, especially in areas where such discharge can interfere with coastal amenities or create hazards to human health. Therefore, Norway proposes that the scope of the existing output be amended to also include a revision of MARPOL Annex IV.

IMO's objectives

6 Expanding the scope of the existing output will, in addition to addressing inconsistencies in the application of the 2012 Guidelines, improve the implementation of MARPOL Annex IV in order to ensure that the environmental objectives of MARPOL Annex IV are met. This work will support IMO's mission to promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation.

7 The work will also contribute to Strategic Direction (SD) 1 (Improve implementation), especially paragraph 14 in resolution A.1110(30) which focuses on a level playing field and effective enforcement: "The crucial role played by IMO in creating a level playing field for its Members can only be achieved through effective and uniform implementation of IMO instruments, their enforcement by the States parties to them, and full compliance by the States concerned and the shipping industry". Revision of MARPOL Annex IV is also aligned with SD 6 (Ensure regulatory effectiveness).

Need

8 Several documents have been presented to the Committee, providing information about the results of analytical tests of the effluent of STPs. Unfortunately, the results suggest that the environmental objectives of MARPOL Annex IV are not met.

9 In document MEPC 67/8/1, the Netherlands informed the Committee about a survey conducted in order to collect information on the status of compliance with the applicable performance standards of the sewage treatment plants. The result showed that the vast majority of the systems did not meet the applicable performance standard. In document MEPC 71/INF.22, the Netherlands presented updated information on such analysis, and the result showed that the majority of the ships are discharging virtually untreated raw sewage from type approved sewage treatment plants. A total of 127 effluents were analysed and only four effluents/samples met the requirements in the performance standard, meaning that 97% were not in compliance.

10 Ships that have in operation an approved STP can discharge the effluent without any restrictions when it comes to distance from land, speed, *en route* or discharge rate. So it is crucial that the STPs are actually meeting the performance standard throughout the lifetime of the ship.

Analysis of the issue

11 There seem to be various reasons why STPs are not performing according to the treatment standard and they relate to implementation, maintenance and enforcement.

12 When it comes to **implementation**, inconsistencies in the application of the 2012 Guidelines are one element, and a revision of the Guidelines could improve this situation. Today, the performance of an STP is only tested ashore, and there is no requirement for an onboard test in order to demonstrate compliance. Paragraph 3 of the 2012 Guidelines also recognizes that the performance of an STP may vary considerably when the system is tested ashore compared to actual operating conditions on board a ship. In Norway's view, revision of the Guidelines for performance tests and a requirement for an onboard test during commissioning in order to validate the compliance of an individual STP with the performance standard will support an improved implementation of MARPOL Annex IV.

13 A proper **maintenance** of the STP is crucial in order to ensure a well-functioning plant. STPs require handling of sewage sludge, regular manual operations and internal cleaning. These regular manual services are not always sufficiently performed and as a result, the systems do not work properly. Furthermore the bacterial population in STPs may be damaged if toilets on board are cleaned by using chlorine or the bacterial population may not function properly if the system is switched on just before entering the 12 mile zone. As the quality of the effluent from the STP is not monitored, the ship's crew will not get any indication of whether the STP is performing correctly or not. Requirements to fit effluent flow meters, turbidity sensors and recording devices will help the crew to evaluate the performance of the system and initiate action if the system is not performing as it should.

14 In practice, the **enforcement** of MARPOL Annex IV is very limited. A port State control officer (PSCO) may determine whether all operational requirements of MARPOL Annex IV have been met, whether the sewage treatment system has been used, and note any alleged inadequacy of the system. However, there is no requirement to record the use of the STP, the discharge of sewage in general, or to fit instruments that indicate the performance of the system. The PSCO does not have much information to support his work in that respect. In practice, the PSCO will only check if there is a valid certificate on board and if the appropriate crew is familiar with the discharge requirements and applicable procedures.

15 The International Sewage Pollution Prevention Certificate (ISPPC) is issued during the initial survey and is thereafter valid for a period of five years. During the renewal survey, the performance of the STP is not checked and no samples are taken from the system's effluent, so it is basically just a paper exercise. In Norway's view, the regulations should support validation of the operational performance of the STP during port State control and be part of the renewal survey of the ISPPC.

16 Possible amendments to MARPOL Annex IV could therefore include:

.1 A new regulation for sewage record-keeping. All other Annexes to MARPOL that allow discharges to sea have requirements to record such operations and it seems appropriate to introduce similar requirements under MARPOL Annex IV as well.

.2 A new regulation for a sewage management plan. Inappropriate handling of sewage sludge is probably one of the reasons many STPs have a poor performance. A plan could ensure that excess sludge is removed from the system and handled properly, either by discharge outside 12 nautical miles, delivered to a reception facility or burned in a shipboard incinerator.

.3 A new regulation for an onboard test during commissioning in order to validate the compliance of individual STP with the performance standard. This would be in line with the approach taken for ballast water management systems and would ensure that systems will also perform once installed on board the ship.

.4 Amend existing regulations or introduce a new regulation that will require ships to install e.g. effluent flow meters, turbidity sensors and recording devices in order to help the crew and inspectors to evaluate the performance of the system.

.5 Measures that will support validation of the operational performance of the STP during port State Control and be part of the renewal survey of the ISPPC.

17 In developing the amendments to MARPOL Annex IV, one needs to make sure that ships that have installed, maintained and operated correctly an STP that has been approved in accordance with the applicable Guidelines are not unduly penalized due to occasional lack of efficacy for reasons beyond the control of the shipowner and the ship's crew. At the same time, one should consider measures to limit the discharge of hazardous substances to the environment from ships that have STPs that discharge more or less untreated sewage. There is also a need to consider if any of the new regulations should apply only to new ships.

Analysis of implications

18 Norway cannot see that the proposal will result in any significant costs for the maritime industry or lead to an additional administrative burden. There will be a requirement for record-keeping of sewage discharges and a requirement to develop a sewage sludge management plan, but these requirements are not regarded as an administrative burden.

19 A completed checklist for identifying administrative requirements and burdens is set out as annex 1.

Benefits

20 The proposal will help support the proper implementation of MARPOL Annex IV and thereby limit the hazards that sewage is liable to pose to human health, the environment and amenities, and limit the interference with legitimate use of coastal amenities. It will also support a level playing field among manufacturers of STPs.

Industry standards

21 No industry standard exists.

Output

22 The following revised scope of the output is proposed:

"Revision of MARPOL Annex IV and associated guidelines to introduce provisions for record-keeping and measures to confirm the lifetime performance of sewage treatment plants."

23 Norway's understanding is that the proposed revised output will also cover the revision of relevant guidelines such as the 2012 Guidelines and the *Procedures for port State control* (resolution A.1119(30)).

Human element

24 A completed checklist for considering human element issues by IMO bodies is set out in annex 2.

Urgency

25 This is a proposal for expanding the scope of ongoing work that has already been assigned to the PPR Sub-Committee.

26 The proposed output is expected to need at least two sessions in order to be completed. The target completion date will therefore be 2021.

Action requested of the Committee

27 The Committee is invited to consider this proposal and to take action as appropriate.

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ANNEX 1

CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS

This checklist should be used when preparing the analysis of implications required in submissions of proposals for inclusion of outputs. For the purpose of this analysis, the term "administrative requirement" is defined, in accordance with resolution A.1043(27), as an obligation, arising from a mandatory IMO instrument, to provide or retain information or data.

Instructions:

(A) If the answer to any of the questions below is YES, the Member State proposing an unplanned output should provide supporting details on whether the burdens are likely to involve start-up and/or ongoing cost. The Member State should also give a brief description of the requirement and, if possible, provide recommendations for further work (e.g. would it be possible to combine the activity with an existing requirement?).

(B) If the proposal for the output does not contain such an activity, answer NR (Not required).

(C) For any administrative requirement, full consideration should be given to electronic means of fulfilling the requirement in order to alleviate administrative burdens.

1 Notification and reporting? Reporting certain events before or after the event has taken place, e.g. notification of voyage, statistical reporting for IMO Members, etc.	NR	Yes □ Start-up □ Ongoing
Description: (if the answer is yes)		
2 Record-keeping? Keeping statutory documents up to date, e.g. records of accidents, records of cargo, records of inspections, records of education, etc.	Yes	Yes □ Start-up □ Ongoing
Description: An amendment to MARPOL Annex IV might lead to a requirement to record sewage discharges in a record book and the development of a sewage management plan		
3 Publication and documentation? Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing, etc.	NR	Yes □ Start-up □ Ongoing
Description: (if the answer is yes)		
4 Permits or applications? Applying for and maintaining permission to operate, e.g. certificates, classification society costs, etc.	NR	Yes □ Start-up □ Ongoing
Description: (if the answer is yes)		
5 Other identified burdens?	NR	Yes □ Start-up □ Ongoing
Description: (if the answer is yes)		

ANNEX 2

CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES

Instructions: If the answer to any of the questions below is: (A) **YES**, the preparing body should provide supporting details and/or recommendation for further work. (B) **NO**, the preparing body should make proper justification as to why human element issues were not considered. (C) **NA** (Not Applicable) – the preparing body should make proper justification as to why human element issues were not considered applicable.	
Subject being assessed: MARPOL Annex IV and resolution MEPC.227(64), as amended by resolution MEPC.284(70))	
Responsible body: Sub-Committee on Pollution Prevention and Response (PPR)	
1. Was the human element considered during development or amendment process related to this subject?	❑Yes ❑No ☑ NA
2. Has input from seafarers or their proxies been solicited?	❑Yes ❑No ☑ NA
3. Are the solutions proposed for the subject in agreement with existing instruments? (Identify instruments considered in comments section)	☑ Yes ❑No ❑NA
4. Have human element solutions been made as an alternative and/or in conjunction with technical solutions?	❑Yes ❑No ☑ NA
5. Has human element guidance on the application and/or implementation of the proposed solution been provided for the following:	
• Administrations?	❑Yes ❑No ☑ NA
• Shipowners/managers?	❑Yes ❑No ☑ NA
• Seafarers?	❑Yes ❑No ☑ NA
• Surveyors?	❑Yes ❑No ☑ NA
6. At some point, before final adoption, has the solution been reviewed or considered by a relevant IMO body with relevant human element expertise?	❑Yes ❑No ☑ NA
7. Does the solution address safeguards to avoid single person errors?	❑Yes ❑No ☑ NA
8. Does the solution address safeguards to avoid organizational errors?	❑Yes ❑No ☑ NA
9. If the proposal is to be directed at seafarers, is the information in a form that can be presented to and is easily understood by the seafarer?	❑Yes ❑No ☑ NA
10. Have human element experts been consulted in development of the solution?	❑Yes ❑No ☑ NA
11. **HUMAN ELEMENT**: **Has the proposal been assessed against each of the factors below?**	
❑ CREWING. The number of qualified personnel required and available to safely operate, maintain, support and provide training for system.	❑Yes ❑No ☑ NA
❑ PERSONNEL. The necessary knowledge, skills, abilities and experience levels that are needed to properly perform job tasks.	❑Yes ❑No ☑ NA
❑ TRAINING. The process and tools by which personnel acquire or improve the necessary knowledge, skills and abilities to achieve desired job/task performance.	❑Yes ❑No ☑ NA

❑ OCCUPATIONAL HEALTH AND SAFETY. The management systems, programmes, procedures, policies, training, documentation, equipment, etc. to properly manage risks.	❑Yes ❑No ☑ NA
❑ WORKING ENVIRONMENT. Conditions that are necessary to sustain the safety, health and comfort of those on working on board, such as noise, vibration, lighting, climate and other factors that affect crew endurance, fatigue, alertness and morale.	❑Yes ❑No ☑ NA
❑ HUMAN SURVIVABILITY. System features that reduce the risk of illness, injury or death in a catastrophic event such as fire, explosion, spill, collision, flooding or intentional attack. The assessment should consider desired human performance in emergency situations for detection, response, evacuation, survival and rescue, and the interface with emergency procedures, systems, facilities and equipment.	❑Yes ❑No ☑ NA
❑ HUMAN FACTORS ENGINEERING. Human-system interface to be consistent with the physical, cognitive and sensory abilities of the user population.	❑Yes ❑No ☑ NA
Comments: The legal instruments are MARPOL Annex IV, resolution MEPC.227(64) and any other relevant guidelines.	