Council of the
European Union

Brussels, 29 June 2022
(OR. en)

10828/22

MAR 138
OMI 71
ENV 703
CLIMA 343

COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	29 June 2022
To:	Secretary-General of the Coumcil of the European Union
No. Cion doc.:	SWD(2022) 181 final
Subject:	COMMISSION STAFF WORKING DOCUMENT Union submission to the 79th session of the International Maritime Organization's Marine Environment Protection Committee suggesting a new output on the biennial agenda of the Pollution Prevention and Response Sub-Committee for the revision of MARPOL Annex II

Delegations will find attached document SWD(2022) 181 final.

Encl.: SWD(2022) 181 final

EUROPEAN
COMMISSION

Brussels, 29.6.2022
SWD(2022) 181 final

COMMISSION STAFF WORKING DOCUMENT

Union submission to the 79th session of the International Maritime Organization's Marine Environment Protection Committee suggesting a new output on the biennial agenda of the Pollution Prevention and Response Sub-Committee for the revision of MARPOL Annex II

Union submission to the 79th session of the International Maritime Organization's Marine Environment Protection Committee suggesting a new output on the biennial agenda of the Pollution Prevention and Response Sub-Committee for the revision of MARPOL Annex II

PURPOSE

This Staff Working Document contains a draft Union submission to the International Maritime Organization's (IMO) 79th Marine Environment Protection Committee (MEPC 79). The IMO has indicatively scheduled MEPC 79 from 12 to 26 December 2022

The draft submission suggests a new output on the biennial agenda of the Pollution Prevention and Response Sub-Committee for the revision of MARPOL Annex II. The aim of this output is to improve the effectiveness of cargo tank stripping, tank washing operations and prewash procedures for products with a high melting point and/or high-viscosity. This submission includes improved stripping procedures as properly stripped tanks reduces the amount of cargo residues and contribute to a more efficient prewash.

The new output will complement and strengthen the implementation of MARPOL Annex II Regulation 12 and 13, and resolution MEPC.315(74).

The amendments adopted in resolution MEPC.315(74) have entered into force as from 1 January 2021. The anticipated amendments to the cargo tank stripping, tank washing operations and prewash procedure in this planned output should lead to an improved effectiveness of MARPOL Annex II and resolution MEPC.315(74), with positive effects on marine life and coastal areas.

This is needed in order to reduce the amount of cargo residues that are discharged to the sea. Ensuring that tanks and associated piping systems are stripped to the required maximum limit is the foundation for the pollution prevention regime of MARPOL Annex II.

The inspections of vessels in Rotterdam and Moerdijk indicate that the standard unloading and stripping procedure on vessels were often not effective. The effectiveness of the stripping procedure is largely dependent on the knowledge or experience of the crew. The inspections carried out by the Netherlands may serve as an indication that more focus needs to be put on the stripping process also for other cargoes, where the consequence of exceeding the stripping requirements is less evident than for paraffin-like substances. Therefore, the level of detail of the stripping procedures must be reviewed and enhanced.

EU COMPETENCE

Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements[1] incorporates international standards for ship-source pollution into EU law and seeks to ensure that persons responsible for illegal discharges are subject to adequate penalties. Polluting substances in the Directive are defined as substances covered by MARPOL Annexes I and II.

In addition, Directive 2019/883 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EC[2] requires Member States to ensure the availability of port reception facilities adequate to meet the needs of ships normally using their ports and requires ships to deliver their waste, including cargo residues, to those facilities before departure, with the ultimate goal of reducing discharges of waste from ships at the sea. The MARPOL Annex II tank washings qualify as cargo residues under this Directive. The PRF Directive also requires ships to pre-notify the next port of any waste and cargo residues it wishes to deliver, and what will be retained on board, as well as the storage capacity available.

[1] OJ L 255, 30.9.2005, p. 11
[2] OJ L 151, 7.6.2019, p. 116

Furthermore, in relation to water quality, Member States have to meet the obligations stemming from existing EU rules. These are laid down in the Water Framework Directive[3], Marine Strategy Framework Directive[4] and Directive 2008/105/EC on environmental quality standards in the field of water policy, especially Article 3[5].

It is also in line with the Union's ambitions as outlined in the European Green Deal[6], notably on Sustainable and Smart Mobility[7] and Zero Pollution.

In light of all of the above, the present draft Union submission falls under EU exclusive competence.[8] This Staff Working Document is presented to establish an EU position on the matter and to transmit the document to the IMO prior to the required deadline of 9 September 2022.[9]

[3] OJ L 327, 22.12.2000, p. 1–73; Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy

[4] OJ L 164, 25.6.2008, p. 19–40; Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy

[5] OJ L 348, 24.12.2008, p. 84–97; as amended by Directive 2013/39/EU.

[6] COM(2019)640

[7] COM(2020) 789 final, SWD(2020) 331 final

[8] An EU position under Article 218(9) TFEU is to be established in due time should the IMO Marine Environment Protection Committee eventually be called upon to adopt an act having legal effects as regards the subject matter of the said draft Union submission. The concept of '*acts having legal effects*' includes acts that have legal effects by virtue of the rules of international law governing the body in question. It also includes instruments that do not have a binding effect under international law, but that are '*capable of decisively influencing the content of the legislation adopted by the EU legislature*' (Case C-399/12 Germany v Council (OIV), ECLI:EU:C:2014:2258, paragraphs 61-64). The present submission, however, does not produce legal effects and thus the procedure for Article 218(9) TFEU is not applied.

[9] The submission of proposals or information papers to the IMO, on issues falling under external exclusive EU competence, are acts of external representation. Such submissions are to be made by an EU actor who can represent the Union externally under the Treaty, which for non-CFSP (Common Foreign and Security Policy) issues is the Commission or the EU Delegation in accordance with Article 17(1) TEU and Article 221 TFEU. IMO internal rules make such an arrangement absolutely possible as regards existing agenda and work programme items. This way of proceeding is in line with the General Arrangements for EU statements in multilateral organisations endorsed by COREPER on 24 October 2011.

MARINE ENVIRONMENT PROTECTION COMMITTEE
79th session
Agenda item xx

MEPC79/xx/xx
15 June 2022
Original: ENGLISH

WORK PROGRAMME OF THE COMMITTEE AND SUBSIDIARY BODIES

Proposal for a new output for the revision of MARPOL Annex II in order to improve the effectiveness of cargo tank stripping, tank washing operations and prewash procedures for products with a high melting point and/or high-viscosity

Submitted by Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the European Commission in the interest of the European Union[10]

SUMMARY

Executive summary:	This document suggests a new output on the biennial agenda of the PPR Sub-Committee for the revision of MARPOL Annex II in order to improve the effectiveness of cargo tank stripping, tank washing operations and prewash procedures for products with a high melting point and/or high-viscosity.
Strategic direction:	6
High-level action:	6.10
Planned output:	Proposal for new output
Action to be taken:	Paragraph 35
Related documents:	MEPC.315(74), MEPC 73/INF.14

Introduction

1 This document is submitted in accordance with the provisions of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.3), taking into account resolution A.1111(30) and A.1149(32) on *Application of the Strategic Plan of the Organization.*

[10] Norway

2 The Committee will recall that MEPC 74 adopted resolution MEPC.315 (74), amending regulations 1, 13, appendix IV and appendix VI to MARPOL Annex II concerning cargo residues and tank washing operations of persistent floating products with a high viscosity and/or high melting point in specific areas. The amendments entered into force on 1 January 2021.

3 In certain geographical areas (e.g. North West European waters), the new regulation 13.7.1.4. of MARPOL Annex II, requires a prewash for substances assigned to Pollution Category Y which are persistent floaters (as defined in regulation 1.23) with a viscosity equal to or greater than 50 mPa.s at 20°C and/or with a melting point ≥0°C. These substances are identified by special requirement '16.2.7' in column 'o' of Chapter 17 of the amended IBC Code (2020 Edition).

4 Paragraph 4.4.5 of Appendix IV of MARPOL Annex II contains information on the operational procedures that should be included in the Procedures and Arrangement Manual on how to deal with tank washings of substances identified by the presence of special requirement '16.2.7'. Section C of Appendix VI of MARPOL Annex II states that for purposes of prewash procedures, persistent floaters to which regulation 13.7.1.4. applies, shall be treated as solidifying or high-viscosity substances.

5 Most paraffin-like substances in Pollution Category Y fall under the new MARPOL Annex II discharge requirements in regulation 13.7.1.4. These substances have been found washed up on beaches worldwide.

Need

6 While discussions were ongoing at the IMO regarding the concerns of discharge of cargo residues with respect to tank washings of persistent floating products, in 2018 the Netherlands decided to apply stricter discharge requirements for paraffin waxes on a national level. The rationale for this initiative was to reduce the volume of paraffin-like substances being discharged to sea and ending up on coastlines and beaches, such as the beaches around the Wadden Sea. Approximately, 10 to 50 m3 of paraffin was removed annually in the Netherlands from beaches with an extreme volume of more than 100 m3 in 2017. In 2018, this volume had reduced to less than 5m³.

7 This initiative included onboard inspection of ships unloading paraffin-like substances in Dutch ports. During the inspections, it was learnt that cargo tanks frequently were not stripped when carrying these products (the reason being that the vessel's crew did not want to risk a clogged stripping line). From our experience, the ships' crew is also not always sufficiently familiar with proper stripping procedures (including solidifying cargoes). The conducted stripping procedures resulted in quantities of residue exceeding the volume required by regulation 12, indicating the need for more detailed Procedures and Arrangements Manuals set out in Appendix IV of Annex II.

8 The outcome of the Dutch initiative was an improved unloading and washing strategy in the concerned Dutch ports. This was considered successful as hardly any paraffin-like substances were found on the Dutch coastline since the initiative came into effect. The improved prewash procedure for paraffin-like substances that is applied in the Netherlands is described in more detail in Annex 1 to this document. This improved prewash procedure would also improve the efficiency of tank washing operations for other cargoes with similar physical properties.

9 In addition to the improved prewash procedures, this submission would also like to draw the attention to the need for improved stripping procedures as properly stripped tanks reduces the amount of cargo residues and contribute to a more efficient prewash. Also, the

pros and cons of involving a surveyor during a Category Y prewash, in a similar manner as required for a Category X prewash according to regulation 13.6, should be considered.

10 In order to reduce the amount of cargo residues that are discharged to the sea, the cosponsors suggest a new output to revise MARPOL Annex II in order to improve cargo tank stripping, tank washing operations and prewash procedures for products with a high melting point and/or high-viscosity.

IMO's objectives

11 The amendments in resolution MEPC.315(74) contribute to the goal of cleaner seas. In the specified areas, residues of persistent floating products shall be delivered to port reception facilities. This prevents current discharges of those cargo residues to sea, where the discharged residues are either ingested by fish, sea mammals and birds or washed to shore.

12 The work on this resolution was done under Strategic Direction 6, Ensure regulatory effectiveness, output number 6.10, Review of MARPOL Annex II requirements that have an impact on cargo residues and tank washing operations of high viscosity, solidifying and persistent floating products and associated definitions, and preparation of amendments, with a target completion year of 2019.

Analysis of the issue

13 Approximately, 10 to 50 m^3 of paraffin-like substances were removed annually in the Netherlands from beaches with an extreme volume of more than 100 m^3 in 2017. On average over € 148.000 per year (2007-2017) was spent by the Dutch national government to clean the beaches from paraffin-like substances and proper disposal of it.

14 Substances with a high melting point and/or a high viscosity, including paraffin-like substances, harden when coming into contact with water and many of these substances float on the water and pollute the marine environment. Marine mammals, sea birds and fish mistake pieces of paraffin for food, while often not being able to digest the product. Besides this, paraffin-like substances are harmful for a bird's plumage, negatively affecting the water repellence and the bird's ability to fly. These birds die slowly, due to exhaustion. Measures that will reduce the amount of residues in a cargo tank and improve the effectiveness of the prewash procedures would therefore contribute to protecting marine life, since this will cause less cargo residues to end up in seas and oceans.

15 As from 1 January 2021, most paraffin-like substances in Pollution Category Y fall under the new regulation 13.7.1.4. of MARPOL Annex II and a prewash is mandatory after the unloading of these cargos in North Western European ports (not all paraffin-like cargoes are covered by the new regulation for mandatory prewashing, see for instance Table 1 below). However, when the regulation 13.7.1.4 was developed, only priority substances were regulated (required to conduct a prewash), consisting mainly of paraffin-like substances and vegetable oils (Annex 9 of PPR 5/3). For the remaining substances in chapter 17 of the IBC Code falling within the scope of 13.7.1.4 (Pollution Category Y that are persistent floaters with a viscosity equal to or greater than 50 mPa.s at 20°C and/or with a melting point ≥0°C) a prewash is not yet required.

Product name	Pollution Category	Prewash required?
Hydrocarbon Wax	X	Yes
Paraffin wax, semi-refined	X	Yes
Paraffin wax, highly-	Y	Yes

refined		
n-Alkanes (C10 – C20)	Y	No

Table 1: Categories of paraffin-like substances

16 Not only ”Paraffin wax, highly-refined”, ”Paraffin wax, semi-refined” and ”Hydrocarbon Wax” substances benefit from a stricter prewash procedure. This would also be the case for other cargoes with similar physical properties with a high melting point and/or high viscosity.

17 In order to effectively wash cargo tanks containing paraffin-like substances, the Netherlands developed and begun to apply a stricter unloading and prewash procedure (Annex 1). Since then, hardly any paraffin wax has been found washed up on Dutch beaches. This procedure is stricter than the prewash procedures prescribed by Appendix VI of MARPOL Annex II and can be used as a starting point for further discussions in IMO.

Dutch Findings

18 After the inspection of several vessels, calling to the ports of Rotterdam and Moerdijk in the Netherlands to unload paraffin-like substances, it was learned that cargo tanks frequently were not stripped. The reason for not stripping was that the vessel’s crew did not want to risk a clogged stripping line. To free the line is difficult and a time consuming process. It was also learned that most crewmembers on these vessels did not know how to correctly perform a stripping procedure for solidifying cargoes. Furthermore, it was discovered that the mandatory prewashes that were carried out on these vessels appeared to be ineffective. The solidified paraffin wax remaining in the cargo tanks could not be removed by using the standard prewash procedure (through cycle(s) or through using the Q-formula regardless the K-factor).

19 In addition, these inspections showed that, even when the unloading involved stripping in accordance with MARPOL Annex II, remaining quantities of paraffin wax exceeded the maximum stripping quantities required by regulation 12. After inspecting several cargo tanks, inspections showed that the “relative” cold ballast water in adjacent tanks promoted the clotting process of the cargo on the tank walls and bottom. This led to the situation where some amounts of solidified paraffin wax, beyond the specified quantities by MARPOL Annex II, remain after the unloading and stripping of the cargo tanks. Large quantities of paraffin wax were also noticed on tank tops, due to “relative” cold temperatures. Quantities of 6 up to 12 cubic meters per tank have been found.

20 Specifically, inspections in the Port of Rotterdam and Moerdijk in 2021 found that 60 out of the 399 (15%) ships unloading persistent floaters, waxes and UCO performed an incorrect prewash. This resulted in too much residual quantities left behind, which costs additional water and time to clean. For the unloading of paraffin waxes in these Ports, the improved prewash procedure is always performed instead of the mandatory prewash. When performing the improved pre-wash procedure for these cargoes, all ships/tanks were checked afterwards by Inspectors and were all found to be “MARPOL clean”. This is seen as an indication that the prewash for paraffin-like waxes could be beneficial to other types of cargoes with the same physical properties.[11]

21 Ensuring that tanks and associated piping systems are stripped to the required maximum limit is the foundation for the pollution prevention regime of MARPOL Annex II. The inspections of vessels in Rotterdam and Moerdijk indicate that the standard unloading and stripping procedure on these vessels were often not effective. The effectiveness of the

[11] Further information on prewash procedures carried out in the Port of Rotterdam and Moerdijk in 2021 are available upon request.

stripping procedure is largely dependent on the knowledge or experience of the crew. Lack of experience can, to a certain degree, be compensated by the stripping procedure, which shall be contained in the Procedures and Arrangements Manual. However, these Manuals are in many cases compiled by the shipyard and a review of typical stripping procedures indicates that they are not very specific. The inspections carried out by the Netherlands may serve as an indication that more focus needs to be put on the stripping process also for other cargoes, where the consequence of exceeding the stripping requirements is less evident than for paraffin-like substances.

22 Adherence to the stripping requirements is not subject to independent verification, with the exception of the five yearly "stripping tests" which we believe deserve more attention in order to ensure that the purpose, importance and the procedures for the test are fully understood. An example being that any water remaining in horizontal surfaces (e.g., for ships with lower stools where cargo is trapped between corrugations) are not included in the stripping result. Accordingly, the remaining quantity verified during testing is not representative for what one may expect in operation. Further to the stripping test, water should be used as the test medium to check the pumping performance. However, water has different physical properties than f.e., paraffin-like cargoes.

23 The co-sponsors are therefore of the opinion that the level of detail of the stripping procedures in the Manual must be reviewed and enhanced. The stripping procedures should also reflect any experience gained during the stripping tests carried out at the newbuilding stage and that the stripping test (Appendix V - Assessment of residue quantities in cargo tanks, pumps and associated piping**)** must be strengthened to ensure that the result reflects what can be expected in operation.

24 The inspections of vessels in Rotterdam and Moerdijk also indicate that the standard prewash procedure proved to be inadequate to remove the solidified residues. The only option for the ship's crew was to manually remove the solidified residues from the tank, followed by a prewash. This procedure is labour intensive and costly as it caused delay of the vessel in the port. This was the starting point to develop an improved unloading and prewash procedure that was low cost and effective. The cosponsors also note that the effectiveness of the prewash for Pollution Category Y substances is not required to be endorsed by a surveyor as it is for a prewash of a Pollution Category X substance.

25 An improved prewash procedure for paraffin-like substances was developed in close cooperation between experienced MARPOL surveyors and a captain of a vessel with knowledge of the transport of such substances and the cleaning of cargo tanks. This resulted in a time driven washing procedure, which was then applied in the Ports of Rotterdam and Moerdijk (see Annex 1 of this document). Essential elements in this improved procedure are heating up the cargo tanks properly and washing the cargo tanks with very hot water for a sufficient amount of time. As normal prewash procedures do not inflict sufficient effect, hot water must be used. After cooling down, the tanks were inspected and found sufficiently cleansed.

26 When the improved prewash is properly prepared and adequately communicated with the crew, the improved prewash procedure will require a similar amount of time as a 'standard' prewash procedure. This prewash procedure will significantly reduce the amount of paraffin wax ending up discharged into the sea regardless of the amount of solidified cargo remaining.

Analysis of implications

27 It is not expected that the proposal will result in any significant costs for the maritime industry or lead to an additional administrative burden. Some traders prescribe similar

alternative prewash procedures on a voluntary basis, without significant costs for the maritime industry. In addition, some ship owners have implemented robust stripping procedures without any additional costs.

28 A completed Checklist for identifying administrative requirements and burdens is set out as annex 2 to this document.

Benefits

29 The proposal will reduce the amount of cargo residues being discharged to sea and ensure that more cargo is being delivered to shore, and thereby reduce the environmental impact of such discharges and prevent that valuable resources are lost.

Industry standards

30 No industry standard exists.

Output

31 The following scope of the output is proposed: *Revision of MARPOL Annex II* in order to improve the effectiveness of cargo tank stripping, tank washing operations and prewash procedures for products with a high melting point and/or high-viscosity. The new output will complement and strengthen the implementation of MARPOL Annex II Regulation 12 and 13, and resolution MEPC.315(74).

Human element

32 A completed Checklist for considering human element issues by IMO bodies (MSC-MECP.7/Circ.1) is set out as annex 2 to this document.

Urgency

33 The amendments adopted in resolution MEPC.315(74) have entered into force as from 1 January 2021. The anticipated amendments to the cargo tank stripping, tank washing operations and prewash procedure in this planned output should lead to an improved effectiveness of MARPOL Annex II and resolution MEPC.315(74), with positive effects on marine life and coastal areas.

34 The suggested output is expected to need one session in order to be finalised, with PPR Sub-Committee as associated organ. The estimated target completion date will therefore be 2024.

Action requested by the Committee

35 The Committee is invited to consider the information provided in this document and agree to the proposal of a new output to revise MARPOL Annex II in order to improve the effectiveness of cargo tank stripping, tank washing operations and prewash procedures for products with a high melting point and/or high-viscosity.

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ANNEX 1

IMPROVED PREWASH PROCEDURE FOR PARAFFIN WAXES BY THE NETHERLANDS

To effectively prewash paraffin waxes of category X and Y, the following procedure shall be carried out:

1 Cargo shall be unloaded at a temperature of at least > 10° C above melting point.
2 As soon as the tank is empty and stripped, hot water shall be entered in the tank until the heating coils are flooded or other measures shall be taken to avoid blockage of the cargo pump
3 The heating coils shall be operated in order to heat up the tanks to melt any cargo residues attached to the tank walls.
4 The tanks and tank walls shall be heated with steam for at least 1 to 2 hours.
5 Subsequently the tanks and tank walls shall be washed with hot water (> 50°C for soft paraffin, >70°C for hard paraffin and for microcrystalline wax more than 80°C) (as normal prewash procedures do not inflict sufficient effect, hot water must be used).
6 During washing the amount of liquid in the tank shall be minimized by pumping out slops continuously and promoting flow to the suction point. If this condition cannot be met, the washing procedure shall be repeated three times with thorough stripping of the tank between washings.
7 A time factor of at least 45 minutes for washing per tank shall be used instead of the regular K-factor.
8 Adjacent ballast water tanks should be kept empty (if possible).
9 After prewashing the tanks and lines shall be thoroughly stripped.
10 Collection tanks, if any shall be heated and effluent shall be discharged to Port Reception Facilities before departure and subsequently prewashed as well in accordance with the above-mentioned procedure [and the washing water discharged to a port reception facility].
11 After unloading the washing water, the tanks should be ventilated to allow for visual inspection, taking into account safety considerations.

ANNEX 2

CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS AND BURDENS

This checklist should be used when preparing the analysis of implications, required for submissions of proposals for inclusion of new outputs. For the purpose of this analysis, the terms "administrative requirements" and "burdens" are as defined in resolution A.1043(27) on *Periodic review of administrative requirements in mandatory IMO instruments*, i.e. administrative requirements are an obligation arising from future IMO mandatory instruments to provide or retain information or data, and administrative burdens are those administrative requirements that are or have become unnecessary, disproportionate or even obsolete.

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 unplanned output does not contain such an activity, answer **NR** (Not required).

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.	**NR**	Yes □ Start-up □ Ongoing
Description: (if the answer is yes)		
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 3

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: Resolution	
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? In consultation with involved captains an alternative procedure has been developed, which proved to get more residues out.	☑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
• Ship owners/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? Port of Rotterdam, workers that are engaged in carrying out the pre wash procedures.	❑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:	