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Agenda item 10

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POLLUTION PREVENTION AND RESPONSE

Comments on paragraph 3.21 of document MEPC 82/10

Submitted by IACS

SUMMARY

Executive summary: This document comments on the draft amendments to the NO_x Technical Code 2008 on certification of an engine subject to substantial modification, as set out in annex 14 to document PPR 11/18/Add.1, and proposes further modifications thereto.

Strategic direction, if applicable: 2

Output: Not applicable

Action to be taken: Paragraph 19

Related documents: MEPC 82/10; PPR 11/WP.4, PPR 11/17; PPR 11/18 and PPR 11/18/Add.1

Introduction

1 This document is submitted in accordance with the provisions of paragraph 6.12.5 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.5) and comments on the request in paragraph 3.21 of document MEPC 82/10 in respect of the draft amendments to the NO_x Technical Code (the Code) contained in annex 14 to document PPR 11/18/Add.1.

2 At PPR 11, document PPR 11/17 (Denmark and Germany) was considered. During the discussion in the Working Group on Prevention of Air Pollution from Ships, IACS expressed the need and urgency to introduce a procedure to support the NO_x certification of the modified engine (retrofitted engine), as applicable (PPR 11/WP.4, paragraph 38).

3 Following consideration, PPR 11 finalized the draft amendments to the Code regarding certification of an engine subject to substantial modification as set out in annex 14 to document PPR 11/18/Add.1, for submission to MEPC 82 for approval and subsequent adoption.

4 Whilst the Sub-Committee agreed to the above-mentioned draft amendments, paragraph 39 of document PPR 11/WP.4 notes that comments can be raised after conducting a thorough review of the draft amendments by interested delegations and submitted to MEPC 82.

Discussion

Paragraph 7.2 of the draft revised NO_x Technical Code (annex 14 to document PPR 11/18/Add.1)

5 IACS notes that the proposed section 7.1 and the renumbered sub-paragraphs 7.1.1 to 7.1.6 are for pre-2000 existing engines subject to an Approval Method, and the proposed new section 7.2 and new sub-paragraphs 7.2.1 to 7.2.11 are for post-2000 existing engines which were certified to relevant Tier(s) in regulation 13 of MARPOL Annex VI.

6 Paragraph 2.1 of regulation 13 of MARPOL Annex VI defines the *major conversion* of the engine as follows:

- .1 the engine is replaced by a marine diesel engine or an additional marine diesel engine is installed, or
- .2 any substantial modification, as defined in the revised NO_x Technical Code 2008, is made to the engine, or
- .3 the maximum continuous rating of the engine is increased by more than 10% compared to the maximum continuous rating of the original certification of the engine."

7 The engine modification could trigger the above item(s); however, the given title (Certification of an engine subject to substantial modification) only covers engines subject to substantial modification which appears in regulation 13.2.1.2 of MARPOL Annex VI.

8 IACS notes from the table in the annex of MEPC.1/Circ.849 that the "substantial modification" and "MCR increase >10%" are located in the same column under "Major Conversion".

9 IACS believes that regulation 13.2.1.3 of MARPOL Annex VI should be covered as well, considering that regulation 13.2.1.1 of MARPOL Annex VI is already clear.

10 IACS suggests adding a new paragraph 7.3 to address the scenario in regulation 13.2.1.3 of the increase of MCR of the engine by more than 10%.

Paragraph 7.2.1 of the draft revised NO_x Technical Code (annex 14 to document PPR 11/18/Add.1)

11 From the definition of "Substantial modification of a marine diesel engine" given in paragraph 1.3.2 and its sub-paragraph 1.3.2.1 of chapter 1 of the Code, for engines installed on ships constructed on or after 1 January 2000, the "substantial modification" means "any modification to an engine that could potentially cause the engine to exceed the applicable emission limit set out in regulation 13".

12 IACS considers that the first necessary step for the engine modification is to verify that the planned engine modification will not potentially exceed the applicable emission limit as per regulation 13 of MARPOL Annex VI. Paragraph 2.3.9 of the Code states:

"If any adjustment or modification is made which is outside the approved limits documented in the technical file, the IAPP Certificate may be issued only if the overall NO_x emission performance is verified to be within the required limits by: onboard simplified measurement in accordance with 6.3; or, reference to the test-bed testing for the relevant engine group approval showing that the adjustments or modifications do not exceed the applicable NO_x emission limit."

13 Through the above-mentioned method, it should be proven that the "substantial modification" of the modified engine will not potentially cause the engine to exceed the applicable emission limit set out in regulation 13 of MARPOL Annex VI when the engine modifications have been done in any case. Otherwise, the modified engine proposal cannot progress to the next step to be re-certified following the given requirements of paragraph 2.3.9 of the Code.

14 As the engine modifications are getting more and more complicated, IACS suggests adding the onboard simplified measurement in accordance with paragraph 6.3 of the Code to verify the modified engine as the first step, before moving to re-certification.

Paragraph 7.2.4 of the draft revised NO_x Technical Code (annex 14 to document PPR 11/18/Add.1)

15 As per paragraphs 2.1.2 and 2.1.3 of regulation 13 of MARPOL Annex VI, the substantial modification of the engine may not lead to the change of engine rated power or rated speed. Hence, IACS suggest deleting "as a result of the substantial modification," from paragraph 7.2.4 of the draft revised Code.

16 As the definitions of "rated power" in paragraph 1.3.11 of the Code and "rated speed" in paragraph 1.3.12 of the Code refer to the engine nameplate, IACS supports replacing the existing nameplate to reflect the new rated power and rated speed indicated in the new issued Engine International Air Pollution Prevention (EIAPP) Certificate, as applicable.

Paragraphs 7.2.5 and 7.2.10 of the draft revised NO_x Technical Code (annex 14 to document PPR 11/18/Add.1)

17 With reference to section 1.9 (Individual Engine or Engine Family/Engine Group details:) of the Supplement to the EIAPP Certificate, IACS understands that the individual engine or the testing parent engine within engine group could be applied for re-certification. Hence, IACS suggests adding the text of "individual engine or" before "Parent Engine test plan" for sub-paragraphs 7.2.5 and 7.2.10 of the draft revised Code.

Proposal

18 To address the above points, IACS prepared relevant changes to the draft amendments contained in annex 14 to document PPR 11/18/Add.1. Those changes are presented in the annex to this document for consideration by the Committee.

Action requested of the Committee

19 The Committee is invited to consider the foregoing, the proposal in paragraph 18 and the modifications to the draft amendments to the Code contained in the annex to this document, and take action, as appropriate.

ANNEX

PROPOSALS TO MODIFY THE DRAFT AMENDMENTS OF THE NO_x TECHNICAL CODE 2008

(Certification of an engine subject to substantial modification)

The following modifications are offered: *

"7.2.1 Further to 2.1.1.4, 2.1.2.2 and 4.4.4, the procedures as given in this section shall be followed where an installed marine diesel engine has been subject to substantial modification and hence requires re-certification in accordance with this Code. An onboard simplified measurement in accordance with 6.3 could be applied to verify the engine modification has not caused the engine to exceed the applicable emission limit set out in regulation 13."

"7.2.4 Where, ~~as a result of the substantial modification,~~ the rated power and /or the rated speed of the engine is altered from the original condition, the engine nameplate shall be replaced based on the newly issued EIAPPC accordingly."

"7.2.5 In setting the load points of the test cycle to be followed the provisions of 6.4.6.7 shall apply. In the case of the 100% load point this shall, subject to the Individual engine or Parent Engine test plan, be allowed to be no lower than 85% of rated power. If that value cannot be achieved, then the test shall be deferred to such time that at least that power level can be achieved. The test cycle 100% power weighting factor under 3.2 shall be applied irrespective of actual power developed at that load point."

"7.2.10 The Individual engine or Parent Engine test plan as prepared by the applicant shall be agreed with the Administration before scheduling that test."

"7.3 For the re-certification of an engine for which its maximum continuous rating (MCR) was increased by more than 10%, the relevant provisions of the section 7.2 shall apply."

* Tracked changes to the draft text in annex 14 to document PPR 11/18/Add.1 are indicated using "strikeout" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text.