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PREVENTION OF AIR POLLUTION FROM SHIPS

Comments on the interim Guidelines on the method of calculation of EEDI and the interim Guidelines for voluntary verification of EEDI

Submitted by China

SUMMARY

Executive summary:	This document provides comments and proposals on the interim Guidelines on the method of calculation of the energy efficiency design index for new ships by MEPC.1/Circ.681 and the interim Guidelines for voluntary verification of EEDI by MEPC.1/Circ.682
Strategic direction:	7.3
High-level action:	7.3.1
Planned Output:	7.3.1.3
Action to be taken:	Paragraph 9
Related document:	MEPC 59/WP.8

Introduction

1 This document is submitted in accordance with the provisions of paragraph 4.10.5 of the Guidelines on the Organization and method of work of the MSC and MEPC and their subsidiary bodies (MSC-MEPC.1/Circ.2).

2 The Marine Environment Protection Committee, at its fifty-ninth session, agreed to circulate the interim Guidelines on the method of calculation of the energy efficiency design index for new ships by MEPC.1/Circ.681 and the interim Guidelines for voluntary verification of EEDI by MEPC.1/Circ.682 in order to stimulate innovation and technical development of all elements influencing the energy efficiency of a ship from its design stage, and to promote uniform use of the interim Guidelines on the method of calculation of the EEDI. Member Governments and observers were also invited to provide the outcome and experiences in applying the interim Guidelines to future sessions of the Committee for further improvement of the interim Guidelines.

3 The trials and studies on the above two interim Guidelines were actively carried out in Chinese industries, and some issues as discussed below in paragraphs 4 to 7, are found to need to be defined or clarified further.

Comments

4 ***Selection of SFC values***

According to the interim Guidelines for voluntary verification of EEDI, the SFC value is to be taken from the EIAPP Certificate(s) in calculation of the EEDI. In China's understanding, SFC value used in the calculation of the EEDI formula should be the corrected value in accordance with ISO 8217:2005. Currently there are two methods for entry of SFC values in EIAPP certificates. For some EIAPP certificates, they have two SFC values, the actual measured value at a test bed with no correction and the corrected value based on thermal fuel value of 42700 KJ/kg and ISO standard conditions; while for some EIAPP certificates, they have only the uncorrected SFC values. Therefore the selection of SFC values should be clarified further.

5 ***Capacity***

The lightweight of CSR ships usually increases by 8% to 12% compared with non-CSR ships, and consequently the capacity of CSR ships would decrease about 2% to 3% on average. Therefore the capacity for CSR ships should be corrected by a correction coefficient f_{CSR} greater than 1.0 in calculation of the actually attained EEDI value for CSR ships. The method of selection of f_{CSR} for CSR ships needs to be further determined.

6 ***Speed V_{ref}***

The deadweight for container ships defined in the EEDI calculation Guidelines is of 65% capacity. However there is no reference for the method of how to get the speed value at 65% capacity. In order to select this speed value appropriately and uniformly, it is proposed that the condition of 65% capacity should be included during the tank test at the design stage and at sea trial respectively.

7 ***Power curve correction at the trial stage***

Paragraph 4.3.7 in the interim Guidelines for voluntary verification of EEDI mentions that, for the development of the power curves, the shipbuilder should calibrate the measured ship speed by taking into account the effects of wind, tide and waves in accordance with ISO 15016:2002, or the equivalent, at sea trial stage. However the effect of shallow water conditions on the power curve at sea trial is significant and should also be considered in development of the power curve.

Proposals

8 In light of the information provided in paragraphs 4 to 7 above, China provides the following proposals on the EEDI calculation:

.1 the SFC value should depend upon the corrected value in EIAPP certificates. The measured SFC values should be corrected to the corresponding value under ISO 8217 if there is no corrected SFC value available in EIAPP certificates;

.2 while calculating attained EEDI values for CSR ships, the capacity should be corrected by multiplying a corrected coefficient greater than 1.0, f_{CSR}, e.g. 【f_{CSR} = 1.03】;

.3 for ship speed V_{ref} at 65% capacity for container ships, paragraph 4.2.5 should be revised and a new paragraph 4.3.8.3 should be added as below:

"4.2.5 The power curves used for the preliminary verification at the design stage should be based on reliable results of tank tests. A tank test for an individual ship may be omitted based on technical justifications such as availability of the results of tank tests for ships of the same/similar type. For container ships, the tank test should include the test under the condition of 65% capacity."

"4.3.8.3 For container ships, the sea trial conditions should include the condition of 65% capacity."; and

.4 the words "shallow water" should be inserted in paragraph 4.3.7 as follows:

"4.3.7 The shipbuilder should develop power curves based on the measured ship speed and the measured shaft power of the main engine at sea trial. For the development of the power curves, the shipbuilder should calibrate the measured ship speed, if necessary, by taking into account the effects of wind, tide, shallow water and waves, etc., in accordance with ISO 15016:2002 or the equivalent."

Action requested of the Committee

9 The Committee is invited to consider the comments and proposals and take action as appropriate.