ANNEX 8

RESOLUTION MEPC.224(64)

Adopted on 5 October 2012

AMENDMENTS TO THE 2012 GUIDELINES ON THE METHOD OF CALCULATION OF THE ATTAINED ENERGY EFFICIENCY DESIGN INDEX (EEDI) FOR NEW SHIPS

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee (the Committee) conferred upon it by international conventions for the prevention and control of marine pollution,

RECALLING ALSO that, at its sixty-second session, the Committee adopted, by resolution MEPC.203(62), amendments to the annex of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (inclusion of regulations on energy efficiency for ships in MARPOL Annex VI),

NOTING the amendments to MARPOL Annex VI adopted at its sixty-second session by inclusion of a new chapter 4 for regulations on energy efficiency for ships, will enter into force on 1 January 2013,

NOTING ALSO that regulation 20 (Attained EEDI) of MARPOL Annex VI, as amended, requires that the Energy efficiency Design Index shall be calculated taking into account the guidelines developed by the Organization,

NOTING FURTHER that the 2012 Guidelines on the method of calculation of the attained Energy efficiency Design Index (EEDI) for new ships were adopted at its sixty-third session,

RECOGNIZING that the amendments to MARPOL Annex VI requires the adoption of relevant guidelines for smooth and uniform implementation of the regulations and to provide sufficient lead time for industry to prepare,

HAVING CONSIDERED, at its sixty-fourth session, amendments to the 2012 Guidelines on the method of calculation of the attained Energy efficiency Design Index (EEDI) for new ships,

1.   ADOPTS the amendments to the 2012 Guidelines on the method of calculation of the attained Energy efficiency Design Index (EEDI) for new ships, as set out at annex to the present resolution;

2.   INVITES Administrations to take the annexed Guidelines into account when developing and enacting national laws which give force to and implement provisions set forth in regulation 20 of MARPOL Annex VI, as amended;

3.   REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines related to the Energy efficiency Design Index (EEDI) to the attention of shipowners, ship operators, shipbuilders, ship designers and any other interested groups; and

4.   AGREES to keep these Guidelines under review in light of the experience gained.

ANNEX

**AMENDMENTS TO 2012 GUIDELINES ON THE METHOD OF CALCULATION OF THE
ATTAINED ENERGY EFFICIENCY DESIGN INDEX (EEDI) FOR NEW SHIPS**

1   Paragraphs 2.5.2 and 2.5.3 are replaced by the following:

".2   **Shaft Generator**

In case where shaft generator(s) are installed, $P_{PTO(i)}$ is 75 per cent of the rated electrical output power of each shaft generator.

For calculation of the effect of shaft generators two options are available:

Option 1:

.1   The maximum allowable deduction for the calculation of $\Sigma P_{ME(i)}$ is to be no more than P_{AE} as defined in paragraph 2.5.6. For this case, $\Sigma P_{ME(i)}$ is calculated as:

$$\sum_{i=1}^{nME} P_{ME(i)} = 0.75 \times \left(\sum MCR_{ME(i)} - \sum P_{PTO(i)} \right) \quad with \ \ 0.75 \times \sum P_{PTO(i)} \leq P_{AE}$$

or

Option 2:

.2   Where an engine is installed with a higher rated power output than that which the propulsion system is limited to by verified technical means, then the value of $\Sigma P_{ME(i)}$ is 75 per cent of that limited power for determining the reference speed, v_{ref} and for EEDI calculation.

The following figure gives guidance for determination of $\Sigma P_{ME(i)}$:
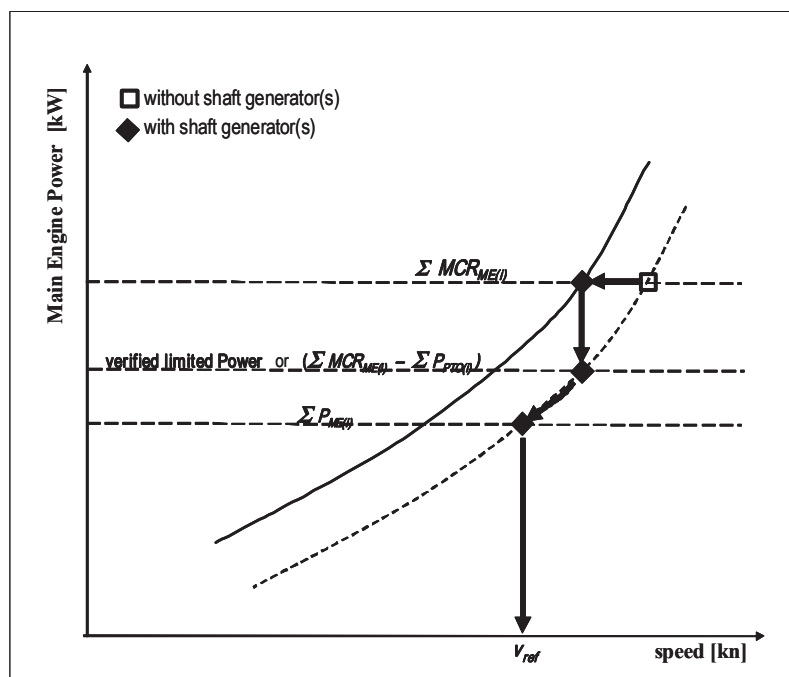
.3   **Shaft motor**

In case where shaft motor(s) are installed, $P_{PTI(i)}$ is 75 per cent of the rated power consumption of each shaft motor divided by the weighted average efficiency of the generator(s), as follows:

$$\sum P_{PTI(i)} = \frac{\sum\left(0.75 \cdot P_{SM,\max(i)}\right)}{\eta_{\overline{Gen}}}$$

Where:

$P_{SM,\max(i)}$ is the rated power consumption of each shaft motor

$\eta_{\overline{Gen}}$ is the weighted average efficiency of the generator(s)

The propulsion power at which v_{ref} is measured, is:

$$\sum P_{ME(i)} + \sum P_{PTI(i),Shaft}$$

Where:

$$\sum P_{PTI(i),Shaft} = \sum\left(0.75 \cdot P_{SM,\max(i)} \cdot \eta_{PTI(i)}\right)$$

$\eta_{PTI(i)}$ is the efficiency of each shaft motor installed

Where the total propulsion power as defined above is higher than 75 per cent of the power the propulsion system is limited to by verified technical means, then 75 per cent of the limited power is to be used as the total propulsion power for determining the reference speed, v_{ref} and for EEDI calculation.

In case of combined PTI/PTO, the normal operational mode at sea will determine which of these to be used in the calculation.

Note: The shaft motor's chain efficiency may be taken into consideration to account for the energy losses in the equipment from the switchboard to the shaft motor, if the chain efficiency of the shaft motor is given in a verified document."

2   Paragraphs 2.5.6.1 and 2.5.6.2 are replaced by the following:

".1   For ships with a total propulsion power ($\Sigma\ MCR_{ME(i)} + \frac{\Sigma P_{PTI(i)}}{0.75}$) of 10,000 kW or above, P_{AE} is defined as:

$$P_{AE\ \left(\Sigma MCR_{ME(i)}\ \geq 10,000\,kW\right)} = \left(0.025 \times \left(\sum_{i=1}^{nME} MCR_{ME(i)} + \frac{\sum_{i=1}^{nPTI} P_{PTI(i)}}{0.75}\right)\right) + 250$$

.2   For ships with a total propulsion power ($\Sigma\ MCR_{ME(i)} + \frac{\Sigma P_{PTI(i)}}{0.75}$) below 10,000 kW, P_{AE} is defined as:

$$P_{AE\ \left(\Sigma MCR_{ME(i)} < 10,000\,kW\right)} = \left(0.05 \times \left(\sum_{i=1}^{nME} MCR_{ME(i)} + \frac{\sum_{i=1}^{nPTI} P_{PTI(i)}}{0.75}\right)\right)$$

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