

PROVISIONAL LOCAL VESSELS ADVISORY COMMITTEE

Supplementary Paper on Implementation of NO_x Requirements under MARPOL Annex VI on Local Vessels

1. This paper serves to provide further clarification on the proposal in the PLVAC Paper No. 4/06 on the implementation of MARPOL Annex VI (the Annex) discussed at the PLVAC meeting held on 3 August 2006. The clarification is particularly relevant to the application of NO_x requirements to local vessels.

Backgrounds

2. Regulation 13(1)(b)(ii) of the Annex stated that the NO_x emission requirement is not applicable to engines installed on ships solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly, provided that such engines are subject to an alternative NO_x control measure established by the Administration.
3. Regulation 13(1)(c) of the Annex allows Administrations to exclude ships from the application of NO_x requirements to any diesel engine which is installed on a ship constructed, or on a ship which undergoes a major conversion, before the date of entry into force of Annex VI (i.e. 19 May 2005), provided that the ship is solely engaged in voyages within the State the flag of which the ship is entitled to fly.
4. In view of the industry's concerns on the practical difficulties of application and according to paragraph 3 above, diesel engines of more than 130 kW, installed on board local vessels before 19 May 2005 **will not** be subject to the provisions of Regulation 13. However, the Department will monitor NO_x emission regularly, and may review the requirements if further efforts are considered necessary to improve air quality in Hong Kong.

Application of NOx emission requirements to Local Vessels

5. Subsequent to 19 May 2005, all diesel engines of more than 130 kW power output installed on board a local vessel constructed/licensed, or a vessel has carried out a major conversion as defined under Regulation 13(2) (a) of the Annex after 19 May 2005, must be subject to NOx emission control. Shipowners and operators should ensure that these engines can meet the relevant requirements.
6. The requirements relating to the control of Nitrogen Oxide (NOx) emission from diesel engines fitted onboard vessels are prescribed under Reg. 13 of the Annex, of which the NOx emission limits are summarised below:-

	Rated Engine Speed (rpm) (n)	Maximum allowable NOx-emissions (g/kWh)
a.	$n < 130$	17
b.	$130 \leq n < 2000$	$45n^{-0.2}$
c.	$n \geq 2000$	9.8

NOx Emission Compliance

- 7.(a) A diesel engine of more than 130 kW power output installed on board a local vessel of 400 gross tonnage and above is required to be certified for full compliance with the provisions of Regulation 13 and the NOx Technical Code by an Engine International Air Pollution Prevention Certificate (EIAPP) together with a Technical File containing record of information as stipulated in para. 2.4 of the Technical Code.
- (b) A diesel engine of more than 130 kW power output installed on board a local vessel of less than 400 gross tonnage, should be certified by an EIAPP certificate or a certificate (with similar format) issued by the engine maker or authorized surveyor or recognized organization showing that it is in compliance with Regulation 13 and the NOx Technical Code, or of a similar standard acceptable to the Director.

8. When the local legislation comes into force, engines mentioned in paragraph 5 will be required to be inspected to confirm their compliance with the NO_x requirements of the Annex. All engines are expected to be certified either by the engine manufacturers, authorized surveyors or recognized organizations, as appropriate, for compliance with the relevant NO_x requirements.

Periodic Inspection of Engines

9. The NO_x Technical Code has allowed for different on-board verification procedures. Owners may hence adopt one of the following procedures for periodic inspection:-
 - (a) engine parameter check method as given in Code procedure 6.2 – on board inspections, including the verification of the engine parameters, critical components, settings and operating data against the engine certificate and Technical File; or
 - (b) simplified measurement method – actual trial run and test run like the engine parent test in the test bed but in a simplified manner as described in the Code procedure 6.3, by verifying against the information in the engine certificate and Technical File, or by similar procedures approved or accepted by the Director; or
 - (c) direct measurement and monitoring method in accordance with para. 2.3.4, 2.3.5, 2.3.7, 2.3.8, 2.3.11, 2.4.4, and 5.5 of the Code.
10. All diesel engines of more than 130 kW power output will be periodically inspected during the safety certification survey of the local vessel, to ensure that they are in compliance with the relevant NO_x emission criteria.

Certification

11. Provided the other applicable requirements of the Annex are complied with and upon the satisfactory completion of NO_x emission inspection,
 - (a) for self-propelled vessels of 400 gross tonnage and above, the Hong Kong Air Pollution Prevention (HKAPP) Certificate will be endorsed or renewed as appropriate,

- (b) for self-propelled vessels of less than 400 gross tonnage, the Certificate of Survey or Certificate of Inspection issued (with inspection records) for the local vessel will indicate its compliance with MARPOL Annex VI.
- (c) Arrangement for Non-self-propelled Vessels
 - (i) In view of the peculiar characteristics of non-self-propelled vessels. Hong Kong Air Pollution Prevention (HKAPP) Certificate **will not** be required for these vessels, irrespective of their tonnage.
 - (ii) Diesel engines of more than 130 kW power output will be inspected to verify their compliance with the NOx emission criteria under the Annex as mentioned in above paragraphs 5 to 10. On satisfactory completion of the inspection, the Certificate of Survey or Certificate of Inspection issued (with inspection records) for the vessel will indicate its compliance with the Annex.

Newly licensed Vessels since 19 May 2005

- 12. From the Department's record, about 33 local vessels have been newly licensed since 19 May 2005. The MARPOL Annex VI requirements promulgated in the Marine Department Notice No. 71/2005 and the draft codes of practice issued in 2005 have already provided the necessary guidance for local vessel operators to follow to ensure compliance with the new requirements.

Action Requested

- 13. Members are invited to comment and endorse the proposal for the implementation of the NOx requirements on local vessels.

*Multi-lateral Policy Division
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