



All respectful ICS surveyors

With gratitude, respectfully,
According to authenticity & delicacy issuance of ICS's Certificates, attached guideline of issuance of International Air Pollution Prevention Certificate (IAPP Cert.) is being sent hereby.

Obviously, preparation manual for all convention certificates can be found in Instruction For Convention Survey.

The document related to the above mentioned subject and also the supplementary attachments are accessible through the following address on ICS Network (ICS-WAN):

<\\server\ICS Organization\Convention and LegislationDepartment\Publication\tech\2013\13>

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کلیه بازرسان محترم ICS

با سلام و احترام

باتوجه به لزوم دقت و صحت گواهینامه های صادره از موسسه رده بندی ایران، به پیوست راهنمای صدور گواهینامه IAPP حضورتان ارسال می گردد.

بدیهی است نسخه اصلی راهنمای صدور کلیه گواهینامه های قانونی در Instruction For Convention Survey قابل دسترسی می باشد.

این بخشنامه به انضمام پیوست های تکمیلی آن در بخش CLD از شبکه داخلی موسسه با آدرس ذیل قابل دسترسی می باشد.

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ع. غلام ابوالفضل
سرپرست واحد کنوانسیون ها و مقررات دریایی
موسسه رده بندی ایران

ترک دعوی: اگرچه در گردآوری کلیه راهنماهای فن ارائه شده توسط موسسه رده بندی ایران، تا حد ممکن تلاش در دقت و صحت محتوا صورت گرفته است، این موسسه متحمل مسئولیتی در قبال هرگونه اشتباهات، خسارت های احتمالی و جرئتی که ممکن است در ارتباط با بکار گیری مفاهیم و مطالب ارائه شده رخ دهد نمی باشد.

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1. GENERAL:

Although air pollution from ships does not have the direct cause and effect associated with, for example, an oil spill incident, it causes a cumulative effect that contributes to the overall air quality problems encountered by populations in many areas, and also affects the natural environment, such as though acid rain.

Annex VI entered into force 19 May 2005 with the objective to reduce air pollution from ships.

Annex VI contains a set of requirements for survey and issuance of International Air Pollution Prevention Certificate (IAPP) and regulations regarding:

- Ozone depleting substances from refrigerating plants and firefighting equipment
- Nitrogen Oxides (NO_x) from diesel engines
- Sulphur Oxides (SO_x) from diesel engines
- Volatile Organic Compound Emissions from cargo tanks of oil tankers
- Shipboard Incineration
- Fuel oil quality

2. HISTORY:

MARPOL Annex VI, first adopted in 1997, limits the main air pollutants contained in ships exhaust gas, including sulphur oxides (SO_x) and nitrous oxides (NO_x), and prohibits deliberate emissions of ozone depleting substances. MARPOL Annex VI also regulates

shipboard incineration, and the emissions of volatile organic compounds from tankers.

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Following entry into force of MARPOL Annex VI on 19 May 2005, Marine Environment Protection Committee (MEPC), at its 53rd session (July 2005), agreed to revise MARPOL Annex VI with the aim of significantly strengthening the emission limits in light of technological improvements and implementation experience. As a result of three years examination, MEPC 58 (October 2008) adopted the revised MARPOL Annex VI and the associated NO_x Technical Code 2008, which entered into force on 1 July 2010.

3. APPLICATION:

3-1) Every ship of 400 gross tonnage or above and every fixed and floating drilling rig and other platform engaged in international voyage.

3-2) Before 18 July 1982 - National Tonnages are applicable during ship's life with remark as follow;"See the Remarks Column of the valid International Tonnage Certificate (1969)."

3-3) On or after 18 July 1982 - ITC tonnages shall be applied for certifying MARPOL requirements

• **Para. 1.1 to 1.3 of the supplement:**
For any changes, amendment should be made a ship's particular.

• **[Para. 1.4 of the supplement] Length(L) :**
This Para. is not applicable for general merchant ship but only for marine diesel engine installed ship with a Length(L), as defined in regulation 1.19 of Annex 1, less than 24 meters when it has been specifically designed, and is used solely, for recreational purposes not applied NO_x Emission Limits in accordance with Tier 3 shall be marked in this paragraph.

• **[Para. 2.1 of the supplement] Ozone depleting substances:**

It shall be confirmed that the list of equipments containing Ozone Depleting Substances (equipments in Para.2.1 of the supplement) and Ozone Depleting Substances Record Book are carried and recorded appropriately on board.

• **Para. 2.1.1 of the supplement:**

Any firefighting equipment or any other equipment containing Halons (ex, 1211, 1301, 2402, etc.) or CFCs (ex, R-11, 12, 13, 113, 114, 115, 500, 501, 502, 503, 505, 506, etc.) are installed before 19 May 2005 shall be inscribed in this Para.

System or equipment	Location on board	Substance
Halon Fire Fighting system	Engine Room	Halon 1301
Refrigeration Plant for Provision	Engine Room	R-11

• **Para. 2.1.2 of the supplement:**

Any equipment containing HCFCs(ex. R-22, 123, 124, 401A, 402A, 403A, 405A, etc.) installed before 1 January 2020 shall be inscribed in this Para.

• **[Para 2.2.1 of the supplement] NOx (Reg.13):**

Each marine diesel engine with a power output of more than 130kw installed on a ship(ex. Main Diesel Engine, Aux. Generator Diesel Engine) and A marine diesel engine with a power output of more than 5,000kw and a per cylinder displacement at or above 90 liters installed on a ship constructed on or after 1 January 1990 but prior to 1 January 2000 shall comply with the emission limits set forth Tier 1(ex, MAN B&W S70MC, Wartsila RTA etc.)

1. The columns for "Manufacturer and Model", "Serial Number", "Power output(kW)", "Rated speed(RPM) shall be inscribed after referring to the information in NOx Technical File.

2. The column for "Use" shall be inscribed according to the related use of

each engine such as "Main Propulsion Engine", "Auxiliary Power Generator Engine" or "Harbor Generator Engine", etc.

3. The column for "Date of Installation" shall be inscribed referring to the date of "Date of Built" on "Particulars of ship" of Class Record. However, The completion date of survey after engine installation shall be inscribed for the newly installed engine.

4. The column for "According to Reg.13.2.2" of "Date of Major Conversion" shall be inscribed for those cases where the replacement of a marine diesel engine with a non-identical marine diesel engine or the installation of an additional marine diesel takes place.(meet the standard of applicable year). Additionally, the column for "Tier II Reg. 1.3.2.2 or 13.5.2" shall be marked for those cases where the replacement of a marine diesel engine takes place on or after 1 January 2016 and the engine meets Tier 2 limits because the engine cannot meet Tier 3 limits.

5. The column for "According to Reg.13.2.3" of "Date of Major Conversion" shall be inscribed for those cases where "Substantial modification" takes place or the maximum continuous rating of the engine is increased by more than 10%. In this case, it shall be confirmed as follows.

- For ships constructed prior to 1 January 2000, the standards set forth in Tier 1 shall apply.

- For ships constructed on or after 1 January 2000, the standards in forth at the time the ship was constructed shall apply.

6. The column for "Exempted by regulation 13.1.1.2" shall be marked when demonstrated to the satisfaction of the Administration that such engine is an identical replacement to the engine which it is replacing and the power output of such an engine is no more than 130kW.

7. The column for "Tier 1(Reg.13.3)" shall be marked for the case where the

engine meets Tier (1) NOx limits after confirming NOx Technical File. Additionally, this column shall also be marked when Tier 1 compliance of the engine is verified by the means of "the approved method from the Administration" like the retroactive application to the existing engine or the ship owner's demonstration of the engine's compliance with Tier 1. as follows:

- 17.0 g/kWh when n is less than 130 rpm.
- $45.0 * n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2000.
- 9.8 g/kWh n is 2000 rpm or more.

8. The column for "Tier 2(Reg.13.4)" shall be marked for the case where the engine meets Tier 2 NOx limits after confirming NOx Technical File.

- 14.4 g/kWh when n is less than 130 rpm.
- $44.0 * n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2000.
- 7.7 g/kWh n is 2000 rpm or more.

9. The column for "Tier 2(Reg.13.2.2 or 13.5.2)" shall be marked for the case where one of three cases stated below is concerned:

- MARPOL Annex VI/Reg.13.2.2 :
On or after 1 January 2016, in the case of replacement engine only, if it is not possible for such a replacement engine to meet the standards set forth in Tier 3, then that replacement engine shall meet the standards set forth in Tier 2.
- MARPOL Annex VI/Reg.13.5.2.1:
Less than 24 meters when it has been specifically designed, and is used solely, for replacement purposes shall meet the standards set forth in Tier 2.

- MARPOL Annex VI/Reg.13.5.2.2 :
A marine diesel engine shall meet the standards set forth in Tier 2 if the engine is installed on a ship with a combined nameplate diesel engine propulsion power of less than 750kw and it is demonstrated, to the satisfaction of the Administration, that the ship cannot comply with the standards set forth in

Tier 3 of this regulation because of design or construction limitations of the ship.

10. The column for "Tier 3(Reg.13.5.1.1)" shall be marked for the case where the engine meets Tier 3 NOx limits after confirming NOx Technical File.

- 3.4 g/kWh when n is less than 130 rpm.
- $9.0 * n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2000.
- 2.0 g/kWh n is 2000 rpm or more.

11. The column for "Approved Method exist" shall be marked as follows:

With regard to the retroactive provision of the NOx Tier 1 standards to existing engines with a power output of more than 5000kw and a per cylinder displacement at or above 90 liters installed on a ship constructed on or after 1 January 1990 but, prior to 1 January 2000, this column and the column for "Approved Method installed" shall be marked together and "IAPP certificate" shall be re-issued no later than the first renewal survey that occurs 12 months or more after deposit of the notification of the Approved Method(ex, MAN B&W S70MC, Wartsila RTA) to IMO with the satisfactory survey according to the onboard Approved Method.

12. The column for "Approved Method not commercially available", shall be marked if a ship owner of a ship on which an approved method is to be installed has demonstrated to the satisfaction of the Administration that the approved method was not commercially available despite best effort to obtain it. In this case, the approved method shall be installed on the ship which falls after the approved method is commercially available. This column is concerned with MARPOL Annex VI / Reg.13.7.2

13. The column for "Approved Method installed" shall be marked if a notified approved method to the IMO has applied to the concerned diesel engine(ex. MAN B&W S70MC, Wartsila RTA engine) according to the onboard Approved Method file under the presence of the

attending surveyor and "IAPP certificate" shall be re-issued. In this regard, this column and the column for "Approved Method Exists" according to Para.(k) shall be marked together and the IAPP Cert. shall be re-issued by the first renewal survey of IAPP on or after 6 October 2011 for the engine series of "MAN B&W S70MC, Wartsila RTA" with ships "1990.1.1 ≤ Ship K/L 2000.1.1" by the first renewal survey of IAPP on or after 6 October 2011 after satisfactory survey.

• **Para.2.3.1.1 of the supplement:**

After confirming "Bunker delivery note" and "Fuel sample" that are suitable for the sulphur limits on fuel oil outside SECA, one of the columns for this Para shall be marked as following applicable years.

- Prior to 1 January 2012 : 4.5% m/m
- On or after 1 January 2012 : 3.5% m/m
- On or after 1 January 2020 : 0.5% m/m

• **Para.2.3.1.2 of the supplement:**

If an approved SOx emission cleaning system(less than 6.0g SOx/k) is installed on board in accordance with MARPOL Annex 6 / Reg.4.1, this Para should be marked accordingly after confirming the type approval certificate by the Administration and technical requirements for the system.

• **Para.2.3.2.1 of the supplement9**

If a ship operates regularly or irregularly within an SOx Emission Control Area, one of columns for this Para shall be marked as following applicable years after confirming the sulphur contents in Bunker delivery note.

- On or after 1 July 2010 : 1.0% m/m
- On or after 1 January 2015 : 0.1% m/m

• In addition, although the ship operates ordinarily in the areas outside SECA, each column for this Para may be marked if the ship complies with (1) below and carries "Bunker delivery note" and "Fuel sample" that are suitable for the sulphur limits on fuel oil outside SECA.

1- "Procedure of Fuel oil change-over" shall be carried on board and fuel Oil

tanks and pipe lines shall be provided for the suitable fuel change-over according to the procedure.

2- If a ship was experienced in operating in SECA, it should be confirmed that the retained bunker delivery note which verifying fact of suitable low sulphur Fuel oil supply and the sample of fuel oil are properly retained.

• **Para.2.3.1.2 of the supplement9**

If an approved SOx emission cleaning system(less than 6.0g SOx/kwh) is installed on board in accordance with MARPOL Annex 6 / Reg.4.1, this Para shall be marked accordingly after confirming type approval certificate by the Administration and technical requirements for the system.

• **Para.2.4.1 of the supplement:**

With regard to standards MSC/Circ.585, this Para. shall be marked if a ship carry a valid VEC statement of compliance and the survey for confirming technical requirements of on board Vapor Emission Control system is satisfied.

• **Para.2.4.2.1 of the supplement:**

For a crude oil tanker, this Para. shall be marked after confirming the approved VOC management plan on board and the compliance with the requirements stipulated in the plan. And it also shall be confirmed that the master and the responsible officer are familiar with the procedures.

• **[Para.2.5 of the supplement]
Shipboard incinerator (Res.16):**

• **Para.2.5.1 of the supplement:**

In case of that incinerator which type approved by the Administration according to performance standards of Res. MEPC. 76(40) installed on board a ship on or after 1 January 2000, it shall be confirmed that a certificate of type approval by Administration and manufacturer's operating manual are carried on board.

• **Para.2.5.2.1 of the supplement:**

In case of that incinerator which type approved by the Administration according to performance standards of

Res. MEPC. 59(33) installed on board a before 1 January 2000, it shall be confirmed that a certificate of type approval by Administration. In addition, personnel responsible for operation of any incinerator shall be trained and capable of implementing the guidance provided in the manufacturer's operating manual.

• **Para.2.5.2.2 of the supplement:**

In case of that incinerator which type approved by the Administration according to performance standards of Res. MEPC. 76(40) installed on board before 1 January 2000, it shall be confirmed that a certificate of type approval by Administration. In addition, personnel responsible for operation of any incinerator shall be trained and capable of implementing the guidance provided in the manufacturer's operating manual.

✘ Any non-approved incinerator (Non-IMO type) that is not included above Para.2.5.6.1 | 2.5.6.3 shall not be marked in this paragraph. Although it shall not be marked on IAPP certificate but shall be marked on survey report, the shipboard incinerator is acceptable if it has a manufacturer's performance specification or other certificates (any certificate of Material & Equipment issued by this society, survey certificate issued by other government, or survey certificate issued by other societies).

• **[Para.2.6 of the supplement] Equivalent (Reg.4):**

The Administration may allow any fitting, material, appliance or apparatus to be fitted in a ship as an alternative to that required if such fitting, material, appliance or apparatus is at least as effective as requirement. To date, no equivalents have been approved by the Administration.