

Agenda Item 2 – Compliance with NO_x Tier III standards

Part 2 – Implementation and enforcement

Malta, 7-8 October 2026

Regional Expert Meeting on the Possible Designation of the Mediterranean, as a whole, as a NO_x ECA



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Agenda item 2

Compliance with NO_x Tier III standards

Part 2 – Implementation and enforcement

- **Survey regime:**
 - Administrations and delegation of duties to RO
 - HSSC Guidelines
- **NO_x Technical Code and documentary requirements**
 - Certificates, records, files
- **Transposition of MARPOL Annex VI**
 - List of obligations for Flag States, in relation to Regulation 13
- **Enforcement**
 - Port State Control regime, inspection items
- **Q&A; Conclusion**



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REMPEC Consultant
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Role of Recognized Organizations

Delegation of duties to Recognized organizations RO

A maritime administration may not have the **resources** to perform **ALL** of its obligations under the international conventions:

- **delegation of duties** is permissible for the **surveys** and issuance of IMO certificates

but it **does not relieve an Administration** of its responsibilities

- ✓ **RO's are assessed and authorized by a flag State**
 - ✓ *in compliance with the IMO Code for ROs*
- ✓ An **Agreement** is signed between the Administration and the RO
- ✓ Details are published on **GISIS**

Who are the RO's ? Survey and classification – similar but distinct activities

2 distinct survey regimes: Ship Classification and issuance of IMO statutory Certificates

If **Statutory surveys** and **classification surveys** bear similarities in how they are performed, they are defined by very different frameworks:

- ❑ Compliance to a **society's class rules** leads to the issuance of a **class certificate and class notations** for the ship, its design or its equipment.
- ❑ Class rules cover very different areas of **ship construction**, with the objective to assess and ensure the reliable condition of the hull, machinery and equipment.
- ❑ Ships (on international voyages) shall be designed in compliance with class rules, as required by SOLAS regulation II-1/3-1.

Class surveyors/Class Societies are “naturally” skilled to perform statutory surveys on behalf of Flag States, for the issuance of international mandatory certificates. And take on the role of RO for a Flag State.



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IACS represents 12 major Class societies. But 190 different Class societies are registered on GISIS.

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Delegation of duties to ROs

Supported by two Codes:

The **Code for Recognized Organizations** (resolutions MEPC.237(65) and MSC.349(92)):

- for the assessment, **authorization** and oversight of ROs.
 - provides the minimum criteria to assess RO for **recognition and authorization**.
 - contains a **model of the Agreement** to delegate authority to ROs.

The **IMO Instruments Implementation Code** (III Code, resolution A.1070(28)):

- lists key obligations, such as the need to establish an oversight programme with adequate resources for monitoring RO; or the communication system with RO

Delegation of duties to ROs

Scope of delegation

MARPOL permits the following arrangements:

- “**surveyors nominated**” – individual persons who may or may not be members of an organization; and
- “**recognized organizations**” – classification societies.

Communication of information

The Administration shall provide IMO with a list of nominated surveyors/ROs and shall notify the **specific responsibilities and conditions of the authority delegated**, for circulation to other Parties.

⇒ Done through a public GISIS module “Recognized Organizations”

⇒ information on RO authorization, including the list of delegated functions (surveys, certificate issuance, based on ship types...) and a description of agreements between Administrations and ROs.



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2. Functions delegated by the Administration

	Survey	Issue of Certificate
1. Passenger ship safety:	no	no
Cargo ship safety construction:	yes	yes
Cargo ship safety equipment:	yes	yes
Radio:	yes	yes
ISM Code:	no	no
ISM Code - DOC:	yes	yes
ISM Code - SMC:	yes	yes
2. Load line:	yes	yes
3. MARPOL Annex I:	yes	yes
MARPOL Annex II:	yes	yes
MARPOL Annex III:	yes	yes
MARPOL Annex IV:	yes	yes
MARPOL Annex V:	yes	yes
MARPOL Annex VI:	yes	yes
4. Tonnage measurement:	yes	yes
5. Article 7(2) of the Bunkers Convention:		
6. Article 4bis(2)(a) of the 2002 Athens Convention:		
7. Article 12(3)(a) of the 2007 Nairobi Wreck Removal Convention:		
8. AFS Convention:	yes	yes

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Survey regime – HSSC Guidelines

Overview of the HSSC regime

Ships must be **surveyed** by officers of the Administrations/ROs (“surveyors”).

Statutory certificates are issued to establish that ships are designed, constructed, maintained and managed **in compliance** with the requirements of IMO Conventions, Codes and other instruments.

The **Harmonized System of Survey and Certification** introduced by the 1988 SOLAS Protocol, is the **backbone** of the survey regime.

The **HSSC Guidelines** (an [Assembly resolution](#)) provide practical guidance on **items to be checked during each type of survey**.

The HSSC Guidelines are regularly updated to follow amendments to IMO instruments (**not ALL IMO** instruments are integrated into the HSSC regime).

The **III Sub-committee** oversees the review of the Guidelines.

Instruments

SOLAS (and its mandatory Codes)

LOAD LINES

MARPOL

BWM

IGC, BCH and IBC Codes (tankers)

Polar Code

Industrial Personnel Code (IP Code)



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Overview of the HSSC regime

The main objective of the HSSC is to **harmonize the survey dates and intervals**, for certificates required under different IMO regulations.

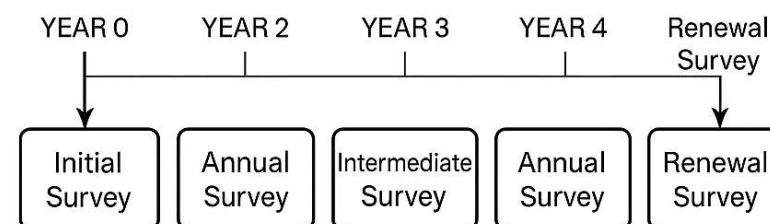
It helps shipowners in the coordination of surveys, by combining different surveys to avoid multiple separate surveys and associated fees.

Surveys may be performed in a 3-month “**survey window**” before or after the anniversary date of a certificate.

Harmonized System of Survey and Certification (HSSC)

(IMO Res. A.1156(32), as amended)

HSSC 5-Year Cycle



Survey Type	Purpose
Initial Survey	Before certificate issue
Annual Survey	General inspection
Intermediate Survey	More detailed inspection
Renewal Survey	For certificate renewal
Additional Survey	After repairs, modifications, or deficiencies

Survey items

HSSC Guidelines, 2025

Survey work rely on **visual inspections**, **sampling techniques**, **documentation** review, or questions to crewmembers to assess awareness.

In principle:

- a **document review** confirms the presence on board of required **documents**, such as type-approval certificates, user manuals, logbooks
- a **verification** requires a **check** in situ and possibly a **test**.

(A) 4

GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE AND THE NO_x TECHNICAL CODE

(AI) 4.1

Initial surveys – see part "General", section 4.1

(AI) 4.1.2.2.1.4

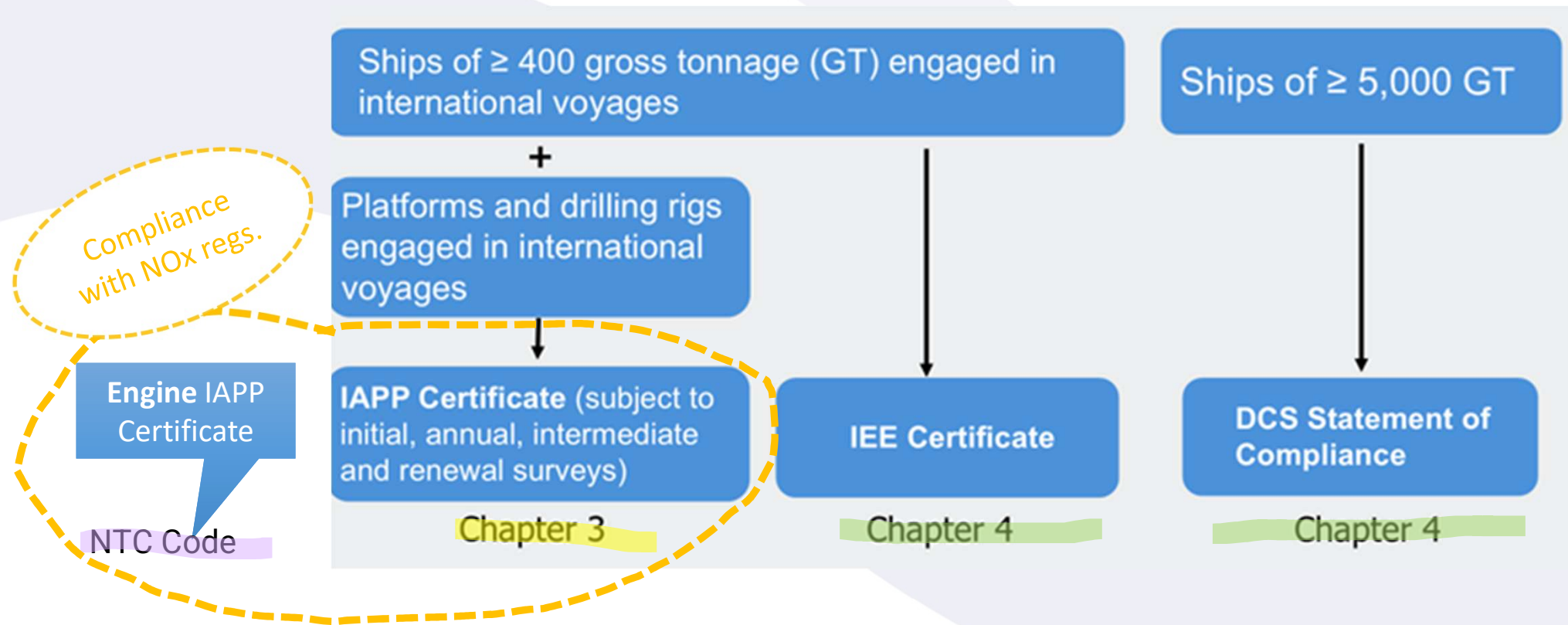
For marine diesel engines with an output of more than 5,000 kW and a per cylinder displacement at or above 90 litres/cylinder installed on ships constructed between 1 January 1990 and 31 December 1999, check (MARPOL Annex VI reg.13.7.3):

- .1 whether an approved method exists but is not applicable;
- .2 whether an approved method is not commercially available at this survey; or
- .3 that an approved method is installed and, where this is the case, that there is an approved method file, and apply the verification procedures as given in the approved method file; or
- .4 that the engine has been certified, confirming that it operates within the limits set forth for Tier I, Tier II or Tier III;

The HSSC Guidelines may seem scary 😊... mostly because of the numbering system.

It is a key document. Any party involved in surveys shall be aware of its content and shall update regularly its survey instructions based on the updated Assembly resolution.

Certificates required under MARPOL Annex VI



Survey items

The Guidelines list the items for:

- **IAPP Certificate**
 - **initial** survey
 - **annual or intermediate** surveys (endorsement)
 - **renewal** survey at 5 years

NB!!

The procedures for testing, survey and certification of **marine diesel engines** for the issuance of the **EIAPP Certificate**, **before engine installation onboard**, are in the **NTC 2008** – NOT the HSSC Guidelines.

IAPP Certificate - annual survey

(AA)	4.2.2.4	Nitrogen oxide emissions from each diesel marine diesel engine;
(AA)	4.2.2.4.1	confirming that each marine diesel engine has been operated as required in accordance with its applicable NO _x emission limit(s);
(AA)	4.2.2.4.2	confirming that no marine diesel engine has been subject to major conversion in the intervening period;
(AA)	4.2.2.4.3	if the engine parameter check method is used:
(AA)	4.2.2.4.3.1	reviewing engine documentation contained in the technical file and the record book or an electronic record book ⁵⁷ of engine parameters to check, as far as practicable, engine rating, duty and limitation/restrictions as given in the technical file;
(AA)	4.2.2.4.3.2	confirming that the engine has not undergone any modifications or adjustments outside the options and ranges permitted in the technical file since the last survey;
(AA)	4.2.2.4.3.3	conducting survey as detailed in the technical file;

Survey items

IAPP Certificate - renewal survey

- Same scope as the annual survey: *“the provisions of (AA) 4.2.2”*
- With supplementary survey items

(AR) 4.4

Renewal surveys – see "General", section 4.5

(AR) 4.4.1

For air pollution prevention the examination of current certificates and other records should consist of:

(AR) 4.4.1.1

the provisions of (AA) 4.2.1 except the validity of the International Air Pollution Prevention Certificate.

(AR) 4.4.2

For air pollution prevention the renewal survey should consist of:

(AR) 4.4.2.1

the provisions of (AA) 4.2.2;

(AR) 4.4.2.2

for each incinerator the renewal survey should consist of:

(AR) 4.4.2.2.1

confirming, if necessary by simulated test or equivalent, the satisfactory operation of the alarms and safety devices.

(AR) 4.4.3

For air pollution prevention the completion of the renewal survey should consist of:

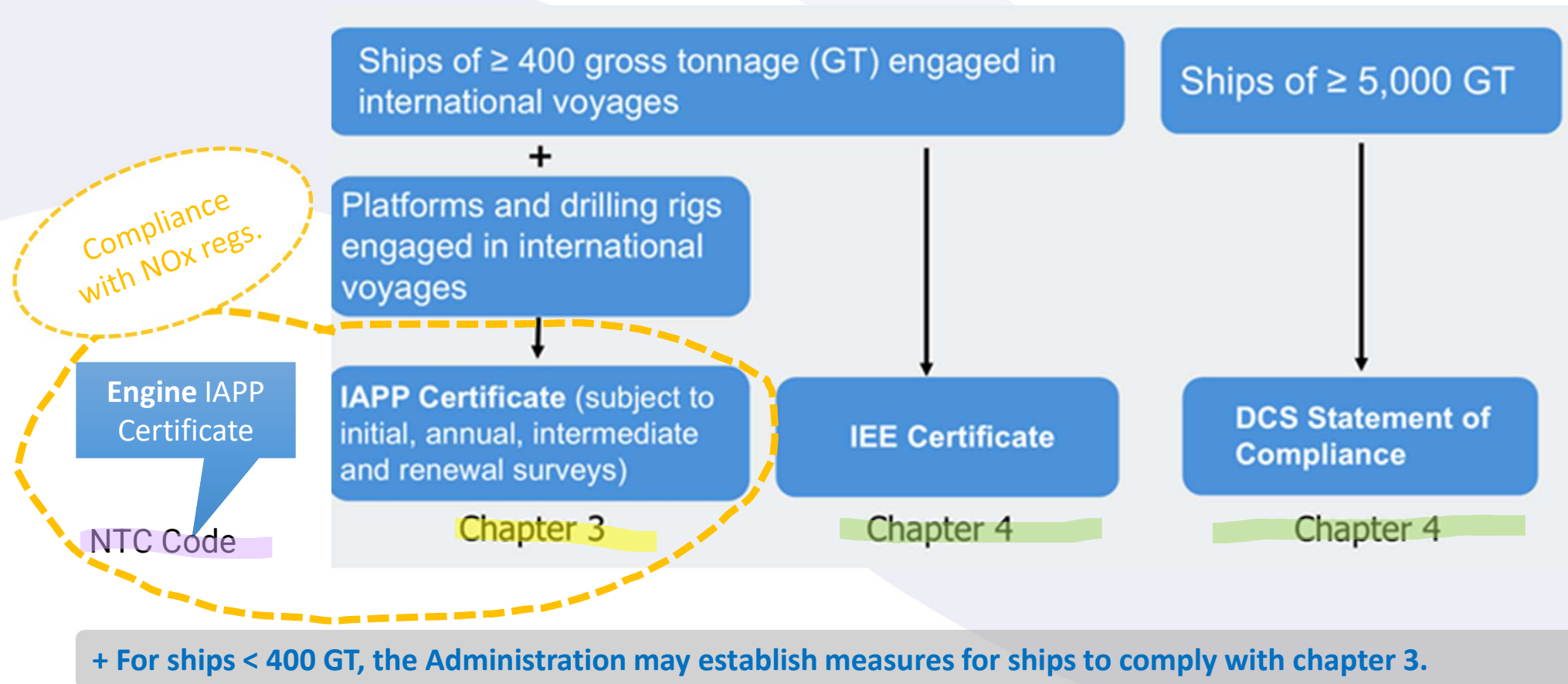
(AR) 4.4.3.1

after a satisfactory survey the International Air Pollution Prevention Certificate should be issued.



IAPP Certificate

Certificates required under MARPOL Annex VI



Chapter 2 of MARPOL Annex VI covers those topics

Chapter 2 - Survey, Certification and Means of Control

Surveys

Reg.5

Issue or endorsement of certificates

Reg.6

Issue of a certificate by another Party

Reg.7

Form of certificates

Reg.8

Duration and validity of certificates

Reg.9

Port state control and operational requirements

Reg.10

Detection of violations and enforcement

Reg.11

Chapter 2, Regulations 5 and 6 – Surveys and Certification

Regulations 5 and 6 details the **survey regime** and the **certificates** to ensure compliance with MARPOL Annex VI as a whole:

- International Air Pollution Prevention (**IAPP**) Certificate
- International Energy Efficiency (**IEE**) Certificate
- **Surveys for the IAPP Certificate:**
 - **initial**, **intermediate** and **annual** surveys + **renewal** survey at 5 year

Regulations 8 – Form of Certificates

Model forms for the **IAPP** Certificate and its Supplement are provided in Appendixes. Administration and their ROs may add their ensigns, symbols, etc., however the certificates and statements **shall correspond to the models** given in Appendixes.

NB: the model for the EIAPP Certificate is given in the NTC, 2008

2.2 Nitrogen oxides (NO_x) (regulation 13)

2.2.1 The following marine diesel engines installed on this ship are in accordance with the requirements of regulation 13, as indicated:

Applicable regulation of MARPOL Annex VI (NTC = NO _x Technical Code 2008) (AM = approved method)		Engine #1	Engine #2	Engine #3	Engine #4	Engine #5
1	Manufacturer and model					
2	Serial number					
3	Use (applicable application cycle(s) – NTC 3.2)					
4	Rated power (kW) (NTC 1.3.11)					
5	Rated speed (rpm) (NTC 1.3.12)					
6	Identical engine installed ≥ 1/1/2000 exempted by 13.1.1.2	☐	☐	☐	☐	☐
7	Identical engine installation date (dd/mm/yyyy) as per 13.1.1.2					
8a	13.2.1.1 & 13.2.2					
8b	Major conversion 13.2.1.2 & 13.2.3 (dd/mm/yyyy)					
8c	13.2.1.3 & 13.2.3					
9a	13.3	☐	☐	☐	☐	☐
9b	13.2.2	☐	☐	☐	☐	☐
9c	13.2.3.1	☐	☐	☐	☐	☐
9d	13.2.3.2	☐	☐	☐	☐	☐
9e	13.7.1.2	☐	☐	☐	☐	☐
9f	Tier I NTC 8 (Multiple Engine Operational Profiles)	☐	☐	☐	☐	☐
10a	13.4	☐	☐	☐	☐	☐
10b	13.2.2	☐	☐	☐	☐	☐
10c	13.2.2 (Tier III not possible)	☐	☐	☐	☐	☐
10d	13.2.3.2	☐	☐	☐	☐	☐
10e	13.5.2 (Exemptions)	☐	☐	☐	☐	☐
10f	13.7.1.2	☐	☐	☐	☐	☐
10g	Tier II NTC 8 (Multiple Engine Operational Profiles)	☐	☐	☐	☐	☐

Focus on IAPP Certificate, for Regulation 13 NO_x

SUPPLEMENT TO
INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE (IAPP CERTIFICATE)

RECORD OF CONSTRUCTION AND EQUIPMENT

Applicable regulation of MARPOL Annex VI (NTC = NO _x Technical Code 2008) (AM = approved method)		Engine #1	Engine #2	Engine #3	Engine #4	Engine #5
11a	NO _x Tier III Emission Control Areas	13.5.1.1	☐	☐	☐	☐
11b		13.2.2	☐	☐	☐	☐
11c		13.2.3.2	☐	☐	☐	☐
11d		13.7.1.2	☐	☐	☐	☐
11e	Tier III	NTC 8 (Multiple Engine Operational Profiles)	☐	☐	☐	☐
12	AM ^s	installed	☐	☐	☐	☐
13		not commercially available at this survey	☐	☐	☐	☐
14		not applicable	☐	☐	☐	☐



NO_x Technical Code and Engine IAPP

NO_x Technical Code – A quick recap'

Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines (NTC, 2008)

- Requirements for the **testing, survey and certification of engines** to ensure compliance with the different NO_x Tiers.
 - Inspired from the series of standards **ISO 8178** on Reciprocating internal combustion engines – exhaust emission measurement.
- **Application is mandatory**
- Largely **revised in 2008** and amended afterwards
 - **MEPC 83** - Use of **multiple engine operational profiles** for a marine diesel engine,
 - **MEPC 84** in May 2026 - amendments in relation to **non-carbon containing fuels**

NTC – Key Concepts

Pre-certification

- Before their installation onboard, engines are subject to a **survey for pre-certification**, a process which is managed by **manufacturers**.
- Emissions are measured **on a test bed: test cycles** as described in the Code + MARPOL Annex VI.

Test Cycles

- **Standardized power settings**, known as **E2, E3, D2 cycles** etc, are applied to engines to measure emissions: **different % of the “rated power”**, corresponding to regimes from idle to full speed.

Different pre-certification pathways

- **Each individual** engine is submitted to factory tests, or
- **Engine Family** or **Engine Group** concepts. **Parent engine** is submitted to test-bed:
 - **Engine family**: series-produced engines with identical design characteristics and similar NOx emissions. **Only the parent engine is tested.**
 - **Engine group**: series of engines produced for similar applications, but one given engine may be adjusted and modified when installed on board. **The engine may be re-tested in case of modification.**

NTC – Documentation

Each engine has its own **NO_x Technical File**:

- information on components, settings, operating values
- **approved** by the Administration

Engine International Air Pollution Prevention (EIAPP) Certificate:

- issued **prior** to the engine installation onboard
- valid for the **entire life** of the engine
 - *unless the engine undergoes a major conversion or a substantial modification*

After installation onboard, the engine emission values are verified during **initial survey**.

The ship **IAPP Certificate** is then issued.

Its **Supplement** provides details on each engine.

Pre-certification
survey at
manufacturer
facility

- **Engine NO_x Technical File** approved
- Issuance of **EIAPP** Certificate

**Initial
survey
onboard**

- Issuance of **IAPP** Certificate
- Supplement filled

**Renewal,
annual,
intermediate
surveys**

- As **IAPP** surveys

After installation onboard

Demonstrating compliance with NO_x limits on board = Measurement methods used during surveys

After installation of a pre-certificated engine on board a ship, there are 2 types of onboard **surveys**:

- **Initial survey** (before the ship is placed into service), for the issuance for the **IAPP Certificate**: a verification survey, as referred in the HSSC Guidelines and described in sections of the NTC.
- **surveys during the ship's life**: as part for the renewal, annual/intermediate survey of the **IAPP Certificate**. As described in sections of the HSSC Guidelines.

Method used demonstrate compliance with NO_x limits onboard:

There are 3 measurements methods described in the NTC, but only 1 is used in practice:

- **Engine parameter check**, focused on the review of the engine NO_x Technical File:
 - to verify that engine's components, settings and operating values **have not deviated** from the specifications in the File. It is mostly a **documentary** check.
 - ✓ **This is the only method used in practice.**

2 other measurement methods described in the NTC are deemed too complex or expensive

- Direct measurement and monitoring – or –Simplified measurement method
 - Requires analysers, engine performance sensors, ambient condition measurement equipment...



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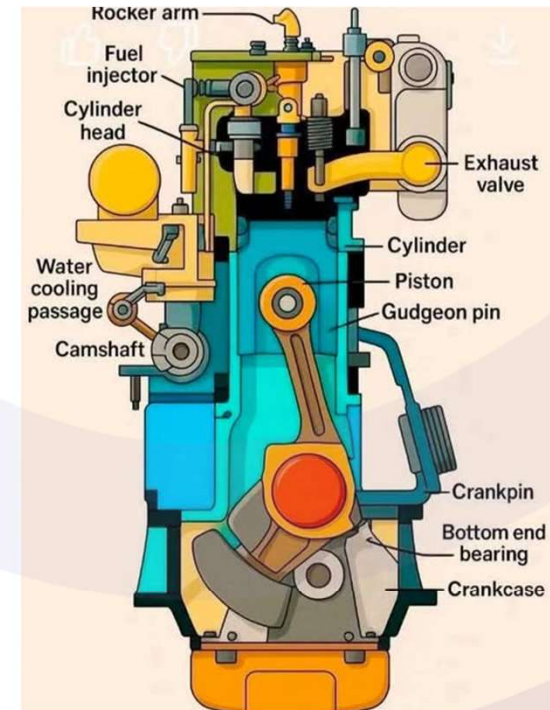
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Engine Technical File

Each engine has its **NO_x Technical File** approved by the Administration.

- ❑ Information on **components, settings, operating values & adjustments** to maintain NO_x emissions within allowable limits
- ❑ **Method** chosen for **verification of compliance** (in practice, the **Engine parameter check**)
- ❑ **Critical components** are identified (*injection nozzle, injection pump, camshaft, cylinder head, piston, connecting rod, charge air cooler and turbocharger*) – with an “**IMO Reference number**”
 - ✓ **Marked components can be easily identified** during surveys onboard the ship, when applying the Engine parameter check method



Other Documents

Record Book of Engine Parameters

Supporting data used with the Engine parameter check method.

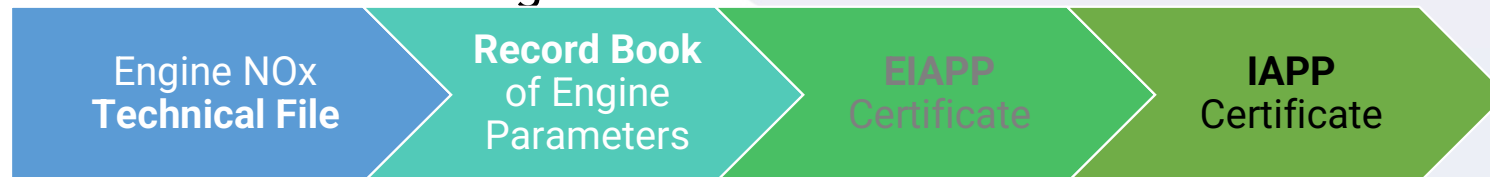
To record **all changes**, including like-for-like replacements of parts, and **adjustments** within the approved ranges made to the engine's components and settings.

EIAPP

Engine IAPP **Certificate**. Valid for the entire life of the engine (unless engine transformation...)

Ship IAPP Certificate and its Supplement

Issued after engine installation. Engine emission values are verified, and the **Supplement** is filled to provide details on each engine.



SUPPLEMENT TO
ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE
(EIAPP CERTIFICATE)

RECORD OF CONSTRUCTION, TECHNICAL FILE
AND MEANS OF VERIFICATION

Notes:

- 1 This Record and its attachments shall be permanently attached to the EIAPP Certificate. The EIAPP Certificate shall accompany the engine throughout its life and shall be available on board the ship at all times.
- 2 The Record shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.
- 3 Unless otherwise stated, regulations mentioned in this Record refer to regulations of Annex VI of the Convention and the requirements for an engine's technical file and means of verifications refer to mandatory requirements from the revised NO_x Technical Code 2008.

1 Particulars of the engine

- 1.1 Name and address of manufacturer
- 1.2 Place of engine build
- 1.3 Date of engine build
- 1.4 Place of pre-certification survey
- 1.5 Date of pre-certification survey
- 1.6 Engine type and model number
- 1.7 Engine serial number
- 1.8 If applicable, the engine is a parent engine ☐ or a member engine ☐ of the following engine family ☐ or engine group ☐
- 1.9 Individual engine or engine family/engine group details:
 - 1.9.1 Approval reference
 - 1.9.2 Rated power (kW) and rated speed (rpm) values or ranges
 - 1.9.3 Test cycle(s)
 - 1.9.4 Parent engine(s) test fuel oil specification
 - 1.9.5 Applicable NO_x emission limit (g/kWh), regulation 13.3, 13.4, or 13.5.1 (delete as appropriate)
 - 1.9.6 Parent engine(s) emission value (g/kWh)

2 Particulars of the technical file

The technical file, as required by chapter 2 of the NO_x Technical Code 2008, is an essential part of the EIAPP Certificate and must always accompany an engine throughout its life and always be available on board a ship.

- 2.1 Technical file identification/approval number
- 2.2 Technical file approval date

3 Specifications for the onboard NO_x verification procedures

The specifications for the onboard NO_x verification procedures, as required by chapter 6 of the NO_x Technical Code 2008, are an essential part of the EIAPP Certificate and must always accompany an engine through its life and always be available on board a ship.

3.1 Engine parameter check method:

- 3.1.1 Identification/approval number
- 3.1.2 Approval date

EIAPP (NTC 2008)



IAPP (MARPOL Annex VI)



Form of International Air Pollution Prevention (IAPP) Certificate

2.2 Nitrogen oxides (NO_x) (regulation 13)

2.2.1 The following marine diesel engines installed on this ship are in accordance with the requirements of regulation 13, as indicated:

Applicable regulation of MARPOL Annex VI (NTC = NO _x Technical Code 2008) (AM = approved method)		Engine #1	Engine #2	Engine #3	Engine #4	Engine #5	Engine #6
1	Manufacturer and model						
2	Serial number						
3	Use (applicable application cycle(s) – NTC 3.2)						
4	Rated power (kW) (NTC 1.3.11)						
5	Rated speed (rpm) (NTC 1.3.12)						
6	Identical engine installed ≥ 1/1/2000 exempted by 13.1.1.2	☐	☐	☐	☐	☐	☐
7	Identical engine installation date (dd/mm/yyyy) as per 13.1.1.2						
8a	Major conversion (dd/mm/yyyy)	13.2.1.1 & 13.2.2					
8b		13.2.1.2 & 13.2.3					
8c		13.2.1.3 & 13.2.3					
9a	Tier I	13.3	☐	☐	☐	☐	☐
9b		13.2.2	☐	☐	☐	☐	☐
9c		13.2.3.1	☐	☐	☐	☐	☐
9d		13.2.3.2	☐	☐	☐	☐	☐
9e		13.7.1.2	☐	☐	☐	☐	☐
10a	Tier II	13.4	☐	☐	☐	☐	☐
10b		13.2.2	☐	☐	☐	☐	☐
10c		13.2.2 (Tier III not possible)	☐	☐	☐	☐	☐
10d		13.2.3.2	☐	☐	☐	☐	☐
10e		13.5.2 (Exemptions)	☐	☐	☐	☐	☐
10f		13.7.1.2	☐	☐	☐	☐	☐

NTC – NO_x reducing devices

Pre-certification of engine systems fitted with NO_x-reducing devices

Exhaust gas recirculation EGR

An engine equipped with EGR will be pre-certified **as a single unit**; no specific regulations for EGR. Its components are recorded in the Engine Technical file.

Selective Catalytic Reduction SCR

A SCR system is typically manufactured and supplied **separately** from the engine. Specific procedures for pre-certification of engines fitted with SCR are given in MEPC Guidelines, with **2 options** available:

- **Scheme A:** **combined** engine and SCR system, as one unit, is subject to pre-certification test-bed
- **Scheme B:** SCR **cannot be tested with engine** on test-bed. **Onboard confirmation tests** done as part of initial survey

Engine Technical File and PSC

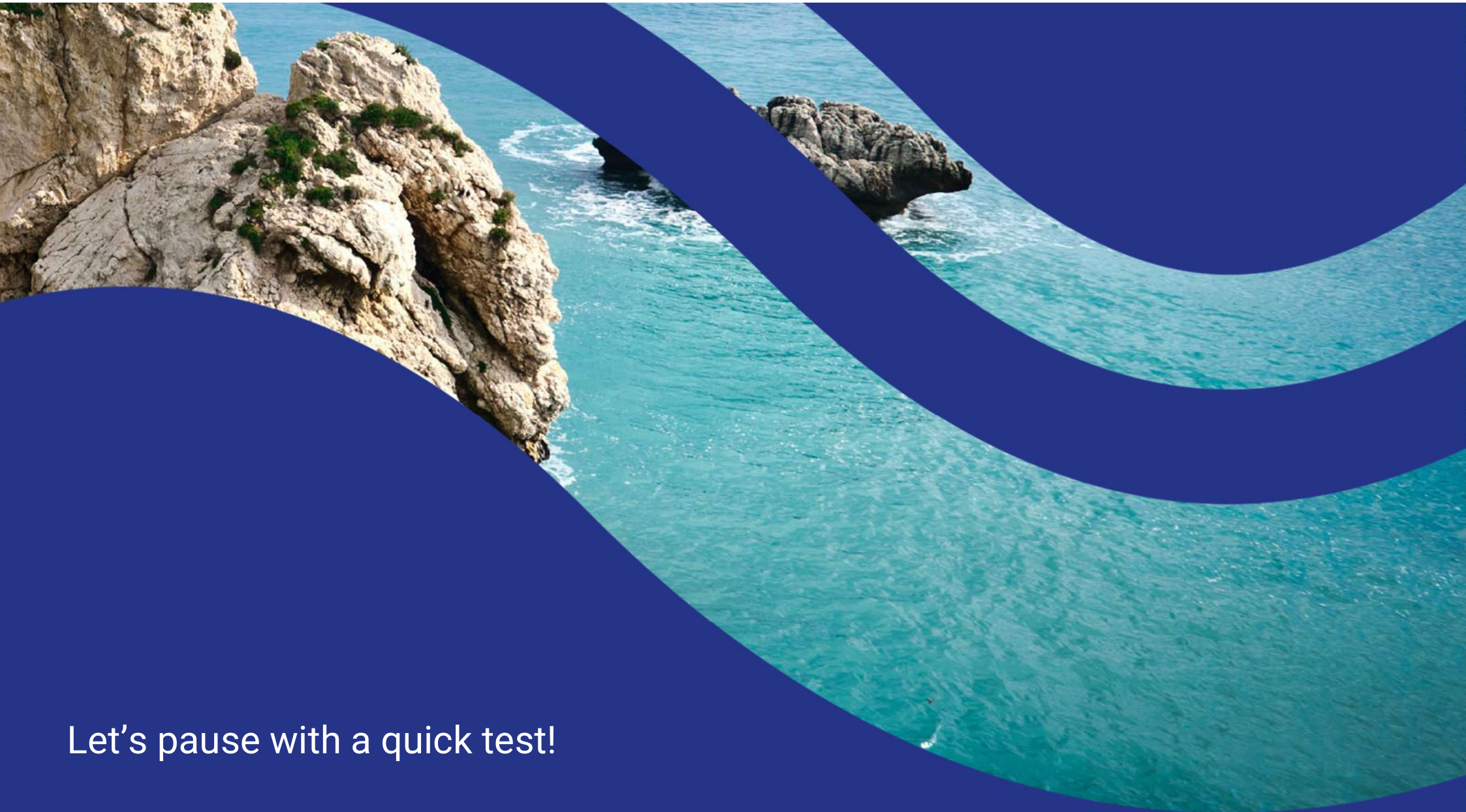
Importance of the Engine NO_x Technical file (and the Record Book of Engine parameters)

It provides the **basis for verification of compliance**, in particular during PSC inspections.
NTC recalls the general principle of **undue delay**

*As a general principle, onboard NO_x verification procedures shall enable a surveyor to **easily determine** if an engine has remained in compliance with reg.13. (...) It shall **not be so burdensome** as to **unduly delay the ship** or to **require in-depth knowledge of the characteristics** of a particular engine or specialist measuring devices not available on board.*

- The **NO_x Technical File** for **main engine and generators** shall always be available onboard ships.
- The **Record Book of Engine Parameters** shall be properly filled in
 - information on maintenance and replacement of components (used with the engine parameter check method).
- Engine parts shall bear an **IMO identification number** as per the engine Technical File.

NB: The NO_x Technical File is also a **cornerstone of the framework on “Energy efficiency and carbon intensity of ships”**, i.e. Chapter 4 of MARPOL Annex VI (as it lists and details all parameters impacting exhaust gases).



Let's pause with a quick test!

True or False?

1- A Surveyor employed by a Classification Society may be onboard a ship on Monday to perform a Class survey, in relation to the ship Class notation, and come back on Tuesday to perform a Statutory survey for the issuance of a MARPOL Certificate.

- **YES TRUE**
- If the following is met: the Flag has delegated duties to the said Class society – then acting as the RO.

2- When an Administration delegates the authority to a RO to perform all surveys related to the IAPP Certificates (initial, intermediate, renewal surveys), the RO is automatically responsible for the issuance of the said Certificate.

- **NO FALSE**
- The Administration can choose the **specific responsibilities and conditions of the authority delegated**. Performing the survey may be delegated, while issuance of the certificate remains a duty of the Administration. Similarly, surveys may be delegated for specific ship types only.

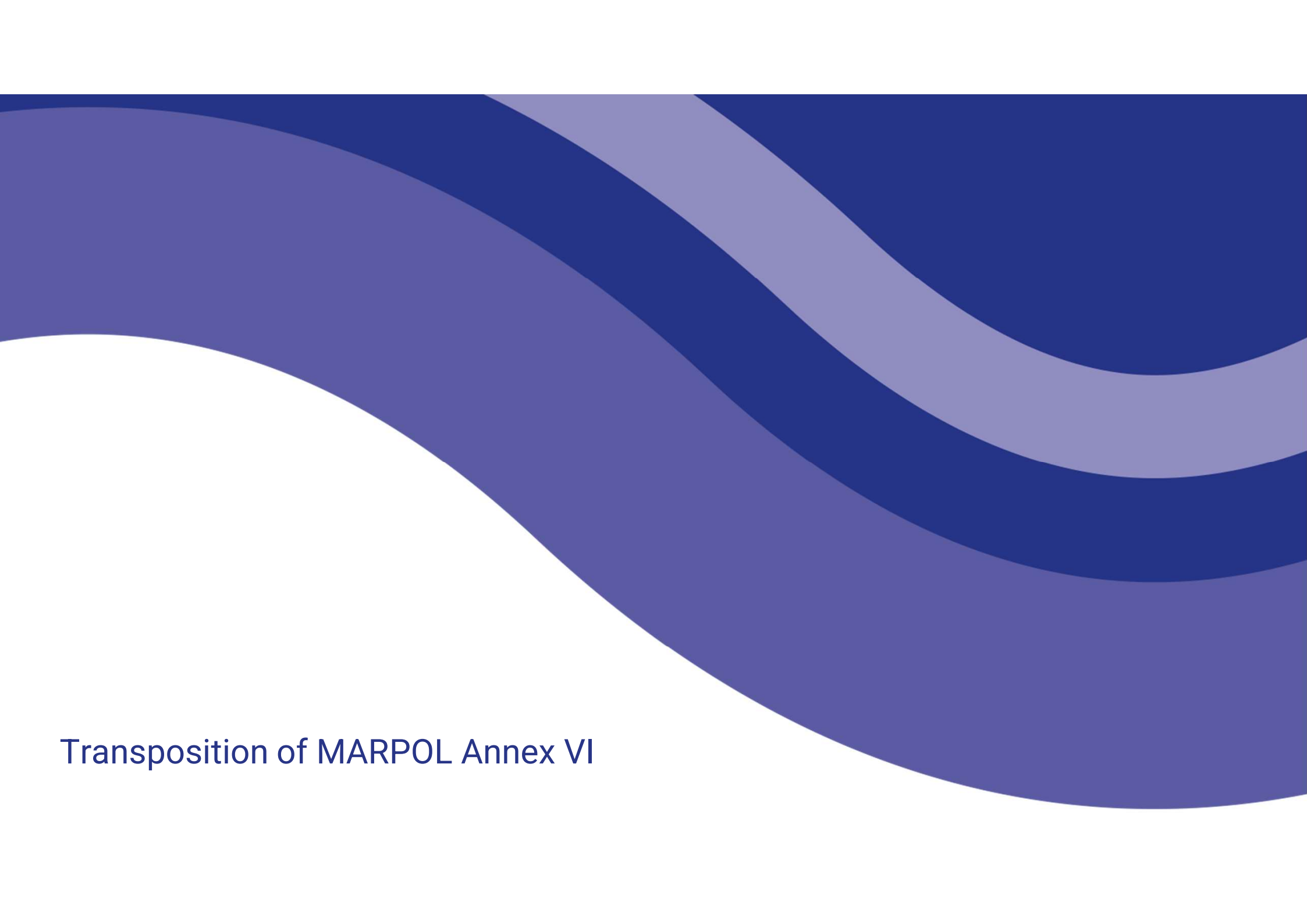
True or False?

3- An engine equipped with Exhaust Gas Recirculation EGR will require 2 different certifications: one for the EGR unit, and one for the engine itself.

- **NO FALSE.**
- An engine fitted with EGR is pre-certified as a single unit; Components recorded in Engine Technical file.

4- The NOx Technical File is a maintenance manual provided by the engine manufacturer, for each individual marine diesel engine.

- **NO FALSE.**
- It contains information on components, settings, operating values & adjustments to maintain NOx emissions within allowable limits. It as approved by the Administration.



Transposition of MARPOL Annex VI

Implementation vs Enforcement

Implementation ⇒ the process of putting law into effect

Enforcement ⇒ controlling that the law is being followed

Implementing Annex VI requires to **implement** the “**overarching**” articles from **MARPOL**, which contain **high-level obligations for State Parties**. And some articles cover specifically **enforcement** (art. 6 on Detection of violations and enforcement).

A State has **enforcement jurisdiction** over ships, in its capacity as **flag, coastal** or **port** State.

Pursuant to UNCLOS, Parties are required to **enforce** laws and regulations for

- **ships flying their flag**
- **but also for foreign ships** operating within their jurisdiction

Effective enforcement shall be supported by a framework of **sanctions** against **violations** by ships under the **State flag** or ships **within the jurisdiction of the State**.

“**Port State Control**” is a specific **enforcement mechanism** for the inspection of **foreign ships in national ports**.

Accession

- by the **State**, to become a **Party** (State level action)

Transposition

(integration into national legislation)

- by the relevant **State bodies** (State level action)

Implementation

- by the relevant **Administrations** (flag, coastal and port States actions)
- Compliance by **ships/industry**

Enforcement

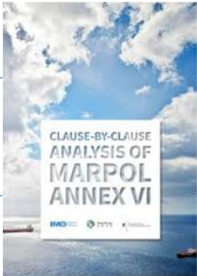
(control)

- by the **flag State or port State**, coastal State in some cases

Transposition

Toolbox for States and Maritime Administrations

Detailed guidance on the transposition of MARPOL Annex VI into national law is available in various IMO publications. We'll discuss further during Part 3 – Interactive session.

ToolBox	
Incorporation of MARPOL Annex VI into national law, 2018 (free access here)	
Clause-by-clause analysis of MARPOL Annex VI, 2020 (free access here)	
MARPOL How to do it, 2013 <i>(Not up to date!)</i>	





Focus on Flag State obligations

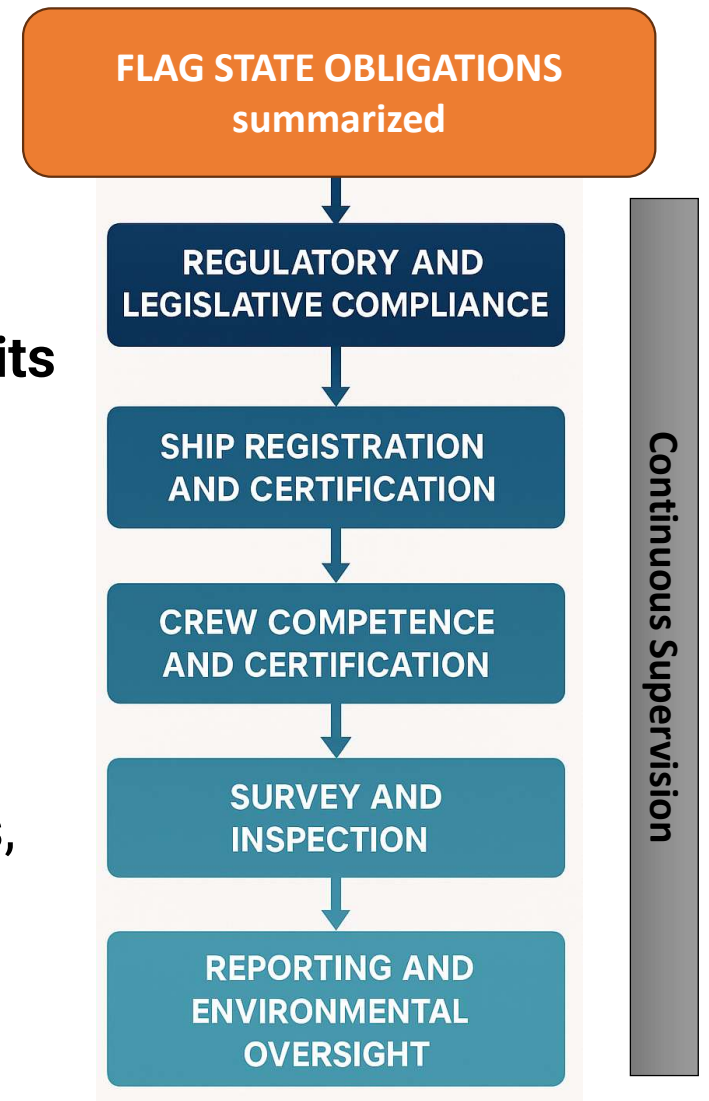
Flag State obligations – in general

A flag State assumes jurisdiction over ships under its flag.

The 'Administration' exercises **regulatory control over its fleet**.

An Administration should have a **Compliance and enforcement strategy**:

- A framework to **transpose IMO conventions** into appropriate measures
- **Control measures** through approvals and surveys, for ships and their equipment. This role may be delegated to Recognised Organisations.



Compliance with Tier III
Part 2
October 2026

Flag State Obligations

The III Code

The Code for the Implementation of Mandatory IMO Instruments ([III Code](#)) provides guidance and assistance to governments for the **implementation** and **enforcement** of IMO mandatory instruments. Also the basis for the IMO Audit.

IMO also publishes a **Non-exhaustive list of obligations under instruments relevant to the III Code** (Assembly resolution [A.1208\(34\)](#)).

- This document provides helpful guidance: it **compiles all the obligations and responsibilities** spread across the different IMO mandatory instruments
- For Governments, flag, coastal and port States.

Flag State Obligations

IMO List of obligations

Extracts related to the NTC 2008

All items listed should be covered in the national Framework.

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	CO
NO_x Technical Code 2008		
Chapter 1	Assumption of full responsibility for the approval of documentation as required by the Code together with the acceptance of procedures and alternatives as permitted by the Code	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	
Chapter 2	Issue of the Engine International Air Pollution Prevention Certificate, arrangements for the parent engine test and pre-certification of engines, usage of the engine family/engine group concepts and approval of the technical file and any subsequent amendments	
Chapter 2, Para. 2.2.5.1	Approval and pre-certification of the combined engine/NO _x -reducing device	
Chapter 3	Acceptance of modification of engine speed at E2 test cycle 25% power mode point	
Chapter 4	Assignment of engine family/engine group status, as applicable, and selection of associated parent engine; acceptance of conformity of production arrangements; adjustment of parent engine relative to engine group reference values	
Chapter 5	Ensuring that the parent engine test and subsequent calculations are undertaken in accordance with Code requirements and that, where alternatives are applied, these meet the Code's equivalency requirements and any deviations are within the permitted margins; filing of parent engine test report	

Extracts of A 33/Res.1187

**Compliance with Tier III
Part 2**
October 2026



Port State obligations

Port State obligations

3 types of obligations

- Inspection of foreign ships in ports – **PSC**
- Investigation and prosecution of alleged violation
- Regulation of local suppliers of fuel oil and providers of reception facilities

Port States must have in place measures **to perform PSC inspections**, including the power to detain ships if necessary.

PORT STATE OBLIGATIONS UNDER MARPOL ANNEX VI

Under MARPOL Annex VI, Port State obligations involve mainly:



the inspection of foreign ships for compliance with MARPOL Annex VI (PSC)



investigation and prosecution of alleged violation (discharges or emissions)



the regulation of local suppliers of fuel oil



the regulation of providers of reception facilities

Port State obligations in relation to Reception facilities – regulation 17

There are 2 types of MARPOL Annex VI-related wastes:

- ☐ **ozone-depleting substances**
- ☐ **exhaust gas cleaning residues** (scrubber but **also EGR or SCR wastes**)

MARPOL does not set prescriptive standards for port reception facilities, other than requiring that they are “**adequate**”.

Ports are encouraged to develop **Port Waste Management Plans**.



Available guidance:

- *Consolidated guidance for port reception facilities providers and users* (MEPC.1/Circ.834/rev.1)
- *Guidelines for reception facilities under MARPOL Annex VI* (MEPC.199(62))
- ***Regional arrangements for port reception facilities under MARPOL Annex VI*** (MEPC.217(63))





Port State Control regime

An Enforcement mechanism

Port State Control

NMFT principle

Under the principle of “**no more favourable treatment**” as set in MARPOL article 5: port States shall **impose the provisions** of MARPOL Annex VI to **ships flying the flag of non-Parties**. This is obtained through the **Port State Control** mechanism, which guarantees a uniform regulatory treatment for all vessels.

Port State control is a system of **harmonized inspection procedures** originally designed to target **sub-standards ships**.

Inspections of **foreign ships** take place in **national ports to verify** that:

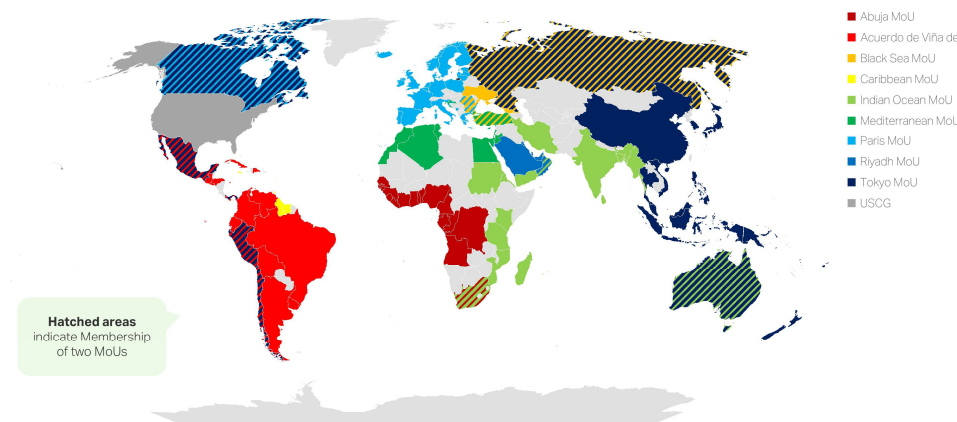
- the **conditions of the ship + equipment comply with international regulations**
- the ship is **manned** and operated in compliance with these rules.



Port State Control

- The **PSC regime** is structured by an IMO Assembly resolution:
 - **Procedures of Port State Control, 2025** (A.1206(34))
 - Updated every 2 years (responsibility of the III Sub-committee)
- **Regional agreements for PSC:**
 - A **regional coordinated** inspection regime can help focusing on **substandard ships** and avoids **multiple inspections**.
 - IMO resolution A.682(17) on *Regional co-operation in the control of ships and discharges promoting the conclusion of regional agreements* (1991)

Memorandums of Understanding (MoUs) on Port State Control



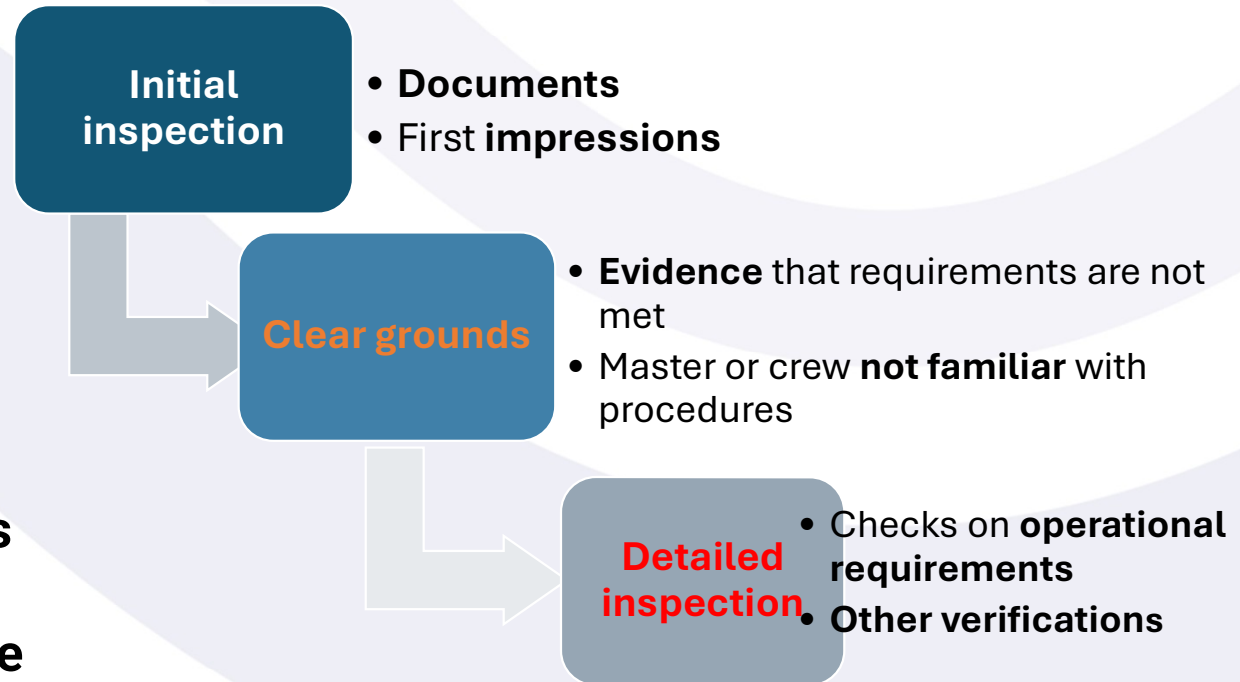
Port State control – General principle

The IMO **PSC Procedures** are essential to:

- understand the **conduct** of inspections
- recognize the **deficiencies** of a ship, its equipment, or its crew, and
- apply **control** procedures.

PSC are carried out only by authorized and **qualified port State control officers** (PSCO).

A PSC inspection follows the **sequence** outlined here ->



PSC Procedures,
detailed in
resolution
A.1206(34)

2 important parts:

➤ **Appendix 2**
Guidelines for
the detention
of ships

➤ **Appendix 18**
Guidelines for
PSC under
Annex VI

	Outline of the PSC Procedures (Assembly resolution)
	Key principles and application
	▪ Ships of non-Parties should be given no more favourable treatment ▪ For ships below convention size, specific procedures are recommended ▪ When exercising PSC, Parties should only apply provisions of the conventions which are in force and accepted ▪ Where the provisions of the relevant conventions are not specific, the PSCO should in principle accept the design arrangement approved by the flag State and when appropriate consult with the flag Administration.
	Initial inspection
	Documentary checks: MARPOL Annex VI certificates and documents required to be onboard; Walk around and first impressions: attention is paid to the overall condition of the ship and its MARPOL Annex VI equipment
	Clear grounds to conduct a more detailed inspection
	▪ If, from general impression or observations, the PSCO has clear grounds for believing that the ship, its equipment or its crew does not substantially meet the requirements; or for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of air pollution from ships ▪ Examples of "clear grounds": malfunctioning of equipment specified in the certificates, inconsistency between information in the BDN and the IAPP certificate, evidence that the quantity of fuel used onboard does not comply with the ship's voyage plan, report from remote sensing surveillance of SOx emissions indicating that the ship appears to use non-compliant fuel while in operation/under way, etc.
	More detailed inspection
	Inspection related to operational requirements: the PSCO should physically examine the equipment, such as engines or incinerators, and confirm that the master or crew are familiar with the operation and maintenance procedures for all equipment covered by MARPOL Annex VI
	Actions
	Deficiencies of such a serious nature that they warrant the detention of the ship : deficiencies shall be corrected for the ship to sail; // as opposed to Deficiencies which may be addressed in a timely manner .

2025 PSC Procedures, in resolution A.1206(34)

APPENDIX 18 - GUIDELINES FOR PSC UNDER MARPOL ANNEX VI

Chapter 2 – INSPECTIONS OF SHIPS REQUIRED TO CARRY THE IAPP CERTIFICATE AND/OR THE IEE CERTIFICATE

2.1 Initial inspections

2.2 Initial inspection on ships equipped with equivalent means of SOx compliance

2.3 Initial inspection within an Emission Control Area (ECA)

2.4 Initial inspection outside an ECA or at the first port after transiting an ECA

2.5 Outcome of initial inspection

2.6 More detailed inspections

2.7 Detainable deficiencies

2025 PSC Procedures

APPENDIX 18 GUIDELINES FOR PORT STATE CONTROL UNDER MARPOL ANNEX VI

2.3 Initial inspection within an ECA

2.3.2 When a ship to which regulation VI/13.5.1 applies for a particular NO_x Tier III emission control area is inspected in a port in that area, the PSCO should look at:

- .1 the records in respect of the tier and on/off status, together with any changes to that status while within that NO_x Tier III emission control area, which are to be logged as required by regulation VI/13.5.3 in respect of an installed marine diesel engine certified to both Tier II and Tier III or which is certified to Tier II only;²¹ and
- .2 the status of an installed marine diesel engine which is certified to both Tier II and Tier III showing that that engine was operating in its Tier III condition on entry into that NO_x Tier III emission control area and that status was maintained at all times while that marine diesel engine was in operation within that area; or
- .3 the records related to the conditions associated with an exemption granted under regulation VI/13.5.4, checking they have been logged as required by that exemption and that the terms and duration of that exemption have been complied with as required.

- The PSCO inspection should first be limited to verifying that there are on board valid certificates and other relevant documentation.
- The PSCO **may have "clear grounds"** to believe that the condition of the ship or its equipment does not correspond substantially with the particulars of the certificates.
- **IF** the PSCO identifies such clear grounds and believes that the ship or its equipment does not comply with applicable regulations or that the master or crew is not familiar with essential shipboard procedures, **THEN** a **more detailed inspection** should be carried out.

2025 PSC Procedures

APPENDIX 18 GUIDELINES FOR PORT STATE CONTROL UNDER MARPOL ANNEX VI

Outcome of initial inspection: 2.5.3 "Clear grounds" to conduct a more detailed inspection include:

- .3 the absence or malfunctioning of equipment or arrangements specified in the certificates or documents;
 - .4 the presence of equipment or arrangements not specified in the certificates or documents;
 - .5 evidence from the PSCO's general impressions or observations that serious deficiencies exist in the equipment or arrangements specified in the certificates or documents;
 - .6 information or evidence that the master or crew are not familiar with essential shipboard operations relating to the prevention of air pollution, or that such operations have not been carried out;
-
- .11 evidence that the tier and/or on/off status of applicable installed marine diesel engines has not been maintained correctly or as required;
 - .12 receipt of a report or complaint containing information that one or more of the installed marine diesel engines has not been operated in accordance with the provisions of the respective Technical File or the requirements relevant to a particular NO_x Tier III emission control area;
 - .13 receipt of a report or complaint containing information that the conditions attached to an exemption granted under regulation VI/13.5.4 have not been complied with;

2.6 More detailed inspections

2.6.2 In order to verify that each installed marine diesel engine with a power output of more than 130 kW is approved by the Administration in accordance with the NO_x Technical Code and maintained appropriately, the PSCO should pay particular attention to the following:

- .1 examine such marine diesel engines to be consistent with the EIAPP Certificate and its Supplement, Technical File and, if applicable, Record Book of Engine Parameters or Onboard Monitoring Manual and related data;
- .2 examine marine diesel engines specified in the Technical Files to verify that no unapproved modifications which may affect NO_x emission have been made to the marine diesel engines;
- .3 in the case of an installed marine diesel engine certified to Tier III, check that the required records, if applicable, in accordance with regulation VI/13.5.1 or in the Technical File, including those required by 2.3.6 of the NO_x Technical Code, have been maintained as necessary and that the marine diesel engine, including any NO_x control device and associated ancillary systems and equipment, including, where fitted, bypass arrangements, is maintained in accordance with the associated Technical File and is in good order;
- .4 if applicable, examine whether the conditions attached to an exemption granted under regulation VI/13.5.4 have been complied with as required;
- .5 examine marine diesel engines with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 litres installed on a ship constructed on or after 1 January 1990 but prior to 1 January 2000 to verify that they are certified, if so required, in accordance with regulation VI/13.7;
- .6 in the case of ships constructed before 1 January 2000, verify that any marine diesel engine which has been subject to a major conversion, as defined in regulation VI/13, has been approved by the Administration; and emergency marine diesel engines intended to be used solely in case of emergency are still in use for this purpose.

2025 PSC Procedures

APPENDIX 18 GUIDELINES FOR PORT STATE CONTROL UNDER MARPOL ANNEX VI

2.6.14 If there are clear grounds as defined in 2.5.3, the PSCO may examine operational or reporting procedures by confirming that:

- .2 the master or crew are familiar with the proper operation and maintenance of marine diesel engines, in accordance with their Technical Files or Approved Method file, as applicable, and with due regard for emission control areas for NO_x control;

2.7 Detainable deficiencies

A PSCO should refer to appendix 2 on ship detention guidelines when determining whether a deficiency, or deficiencies, may warrant detention.

PSC Procedures in 2025

APPENDIX 2 - GUIDELINES FOR THE DETENTION OF SHIPS

Section 5 Detainable deficiencies

To assist the PSCO in the use of these Guidelines, there follows a list of deficiencies, which are considered to be of such a serious nature that they may warrant the detention of the ship involved. This list is not considered exhaustive, but is intended to give examples of relevant items

Areas under MARPOL Annex VI

- 1 **Absence of** valid International Air Pollution Prevention Certificate (IAPP Certificate), Engine International Air Pollution Prevention Certificates (EIAPP Certificates) or Technical Files if applicable.
- 4 A marine diesel engine with a power output of more than 130 kW which is installed on board a ship constructed on or after 1 January 2000, or a marine diesel engine having undergone a major conversion on or after 1 January 2000 which does not **conform to its Technical File**, or where the required records have not been maintained as necessary, or where it has not met the applicable requirements of the particular NO_x Tier III emission control area in which it is operating.
- 5 A marine diesel engine, with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 litres, which is installed on board a ship constructed on or after 1 January 1990 but prior to 1 January 2000, and **an approved method** for that engine has been certified by an Administration and was commercially available, for which an approved method is not installed after the first renewal survey specified in regulation VI/13.7.2.

Areas under MARPOL Annex VI

- 10 items in total
- but ONLY 3 RELATED TO NO_x / Reg. 13



Mediterranean
Action Plan
Barcelona
Convention





Conclusion

**Any question or
clarification,
please ask!**

End of

**Compliance with NOx Tier III
standards**

**Part 2 – Implementation and
enforcement**

And now

Part 3 – Interactive session



**Compliance with Tier III
Part 2**
October 2026