



## REVIEW OF OCEANGOING TANK VESSEL CARGO AUTHORITY

Procedure Number: C1-42

Revision Date: October 29, 2021

A handwritten signature in blue ink, appearing to read "E. J. Newton".

E. J. NEWTON, CDR, Chief, Tank Vessel and Offshore Division

### **Purpose**

This Plan Review Guideline (PRG) is to provide guidance and information regarding the submission of the Tank Group Characteristics Loading Form for Oceangoing Tank Vessels to request the generation of a Cargo Authority Attachment (CAA).

### **Contact Information**

If you have any questions or comments concerning this document, please contact the Marine Safety Center (MSC) by e-mail or phone. Please refer to Procedure Number C1-42.

E-mail: [msc@uscg.mil](mailto:msc@uscg.mil)

Phone: 202-795-6731

Website: [www.dco.uscg.mil/msc](http://www.dco.uscg.mil/msc)

## Table of Contents

|  |   |
|--|---|
| 1. Applicability .....                     | 3 |
| 2. References .....                        | 3 |
| 3. Background .....                        | 3 |
| 4. Cargo Authority Review Procedures ..... | 4 |
| 5. Disclaimer .....                        | 5 |

## **1. Applicability**

This Plan Review Guideline (PRG) is applicable to tank vessels on Oceans routes, which carry cargoes regulated by references (a) through (e), listed below.

## **2. References**

- a. International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), as amended
- b. International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), as amended
- c. [Guidance on Implementation of Revisions to MARPOL Annex II and the IBC Code, NVIC 03-06, dated November 28, 2006](#)
- d. [46 CFR Subchapter D](#)
- e. [46 CFR Subchapter O, Part 153](#)

## **3. Background**

Reference (a) is split into six Annexes, of which the first two concern the carriage of liquids in bulk. Annex I pertains strictly to vessels carrying oil, while Annex II concerns the carriage of products considered to be Noxious Liquid Substances (NLS). Reference (b), also known as the IBC Code, was created to provide the specific construction requirements for vessels carrying NLS under Annex II of MARPOL. The IBC Code categorizes chemicals into Category X, Y, and Z NLS, and Other Substances (OS), with Category X being the most hazardous. The requirements for the construction of chemical carriers are based upon the category of the substances to be carried as well as specific safety requirements pertaining to certain cargoes.

The Coast Guard published reference (c), which states that all oceangoing vessels carrying NLS and built after January 1, 2007 must comply with the IBC Code and U.S. Regulations. Vessels carrying NLS and built before January 1, 2007 must meet the IBC Code if they wish to continue trading internationally, however they may continue trading domestically under the requirements of reference (e) if they surrender all international certificates and do not pass through the waters of a foreign administration.

Oil Tank Vessels may carry those oils listed in Appendix I of MARPOL Annex I and assigned the Category "I" in 46 CFR Table 30.25-1. Some of these vessels were built and certificated for international service prior to the implementation of NVIC 03-06. Prior to NVIC 03-06, these vessels were allowed to carry all of the cargoes listed in 46 CFR 30.25-1, including Toluene, Xylenes, and Fatty Acid Methyl Ester (FAME). This was based on Regulation 14 of MARPOL Annex II 73/78 (pre-2006) as implemented by 33 CFR Part 151. Once MARPOL Annex II and the IBC Code changed and NVIC 03-06 took effect, cargoes previously considered "oil-likes" became regulated as NLS and are no longer authorized for carriage on Subchapter D/Annex I vessels. Therefore, some Annex I Oil Tank Vessels may have active cargo exemptions from COMDT (CG-ENG-5) to continue to carry certain oil-like cargoes that are now considered NLS.

Otherwise, Annex I Oil Tank Vessels are limited to carrying the cargoes listed in MARPOL Annex I, Appendix I.

#### **4. Cargo Authority Review Procedures**

An Oceangoing Tank Vessel Cargo Authority Attachment package shall be submitted 30 days prior to the anticipated vessel voyage to ensure proper processing of the request. The package shall include:

- a. A formal email or letter with details such as vessel name, vessel identification number, and vessel route.
  - (1) If the vessel's route is rivers, lakes, bays, and sounds (US waters only), this instruction does not apply. Refer to [Plan Review Guide C1-40 for Inland Tank Barge Cargo Authorities](#).
- b. The appropriate Tank Group Characteristics Loading Form (TGCLF) for oceans routes. If the vessel is an Annex I Oil Tank Vessel, then no TGCLF is necessary. Ensure your formal email or letter specifies that your vessel is an Annex I Oil Tank Vessel if you are not submitting a TGCLF.
  - (1) For clarification on which regulations apply to different vessels and routes, please refer to the Tank Vessel Bulk Liquid Cargo Authority Attachment Flow Chart on the [TVO page of the MSC's website](#) for more information on CAA applicability.
  - (2) An oceangoing tank vessel which intends to hold international certificates must submit the MARPOL Annex II (IBC Code) TGCLF. This form may be downloaded on the [TVO page of the MSC's website](#).
  - (3) The 46 CFR 153 TGCLF is strictly intended for oceangoing vessels considered to be "existing vessels" by NVIC 03-06 which operate from one U.S. port to another U.S. port while remaining exclusively within waters over which the U.S. has jurisdiction. U.S. vessels operating under this section may need to have their Certificate of Inspection (COI) amended to accurately reflect the routes and conditions under which they will be operating.
  - (4) The TGCLF denotes applicable Code of Federal Regulations sections for the submitter to reference for each cargo tank group characteristic. Refer to <https://www.ecfr.gov> to view the most current regulations free of charge. For specific guidance on how to complete each part of the TGCLF, refer to enclosure (1) to this guide.
  - (5) **Note:** To carry any NLS cargoes internationally, the vessel will also need a vessel specific Procedures and Arrangements Manual. If the Procedures and Arrangements Manual will be submitted to the MSC, please refer to PRG C1-44.

- c. If the vessel is reviewed and certificated to carry NLS and classed by ABS, you must provide the ABS stability letter.
- d. The MSC will, upon request of the owner, remove cargoes that require shortened inspection intervals. The owner/operator is required to request an update to a vessel's CAA from the MSC when there is a physical change to the vessel or erroneous information previously provided that would change the cargoes it can carry.

## **5. Disclaimer**

This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is not intended to nor does it impose legally-binding requirements on any party. It represents the Coast Guard's current thinking on this topic and may assist industry, mariners, the general public, and the Coast Guard, as well as other federal and state regulators, in applying statutory and regulatory requirements. You can use an alternative approach for complying with these requirements if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative, you may contact MSC, the unit responsible for implementing this guidance.

## **Guidance to Completing the MARPOL Annex II TGCLF**

NOTE: If any values or special requirements that are selected on the TGCLF differ from those listed on the vessel's previous CAA, then the vessel representative must provide plan review approval letters or plans that confirm these changes. If no approval has yet been issued for these changes, then additional MSC plan review may be required before the MSC Cargo Authority review can be initiated. It is the submitter's responsibility to consult the relevant sections in the CFR & IBC Code to confirm that the vessel's design meets each item indicated on the TGCLF. MSC plan reviews will be returned for revision if inaccurate information is provided on the TGCLF. Operational requirements that cannot be verified through plan review will be forwarded to the OCMI for verification.

### **Section 1 – Vessel Information**

- The information in this section should match the information listed on the vessel's Certificate of Inspection or international certificate

### **Section 2 – Bulk Liquid Cargo Authority Summary**

- **Maximum Cargo Density:** The Maximum Cargo Density will be listed on the CAA and should be the Maximum Slack Load Cargo Density, which is the heaviest cargo that can be carried in a partial loading condition.
  - i) If this value differs from that shown on the previous CAA, then the vessel representative must provide the vessel's most recently issued stability approval for verification.
- **NLS Category Authorized:** Ships built after January 1, 2007 likely may carry X, Y, and Z cargoes since the stripping and construction requirements are the same for all categories of cargo. Only the tank washing and pre-wash requirements vary between the cargoes. For vessels built prior to January 1, 2007, the stripping and construction requirements vary depending on the categories of NLS being carried.
- **Approved P&A Manual:** This indicates that a P&A Manual has been submitted **and** approved by the MSC or an accepted third party, refer to PRG C1-44 on the MSC website.
- **Compliant with MARPOL Annex I:** Does the vessel meet MARPOL Annex I?
- **Flammability Grade (A, B, C, D, E):** Only one grade should be selected and includes all lower grades. For example, a vessel authorized to carry Grade A cargoes can carry grades A through E, whereas a vessel authorized to carry Grade D cargoes can carry only Grades D and E cargoes.

### **Section 3– Cargo Tank Group Characteristics**

- The Notes Section should include references to any specific requirements that are met by the vessel's design and are required for carriage of specific cargoes, but are not provided options on the TGCLF

#### Section 4 – Cargo Tank Group Characteristics

- Tank group designation: This may be any single character label to identify a set of tanks with identical characteristics. Commonly, the designation “A” is used for tank vessels with only one tank group. Additional groups (“B,” “C,” etc) may be included as needed and would require additional copies of the TGCLF to be submitted. For example, a vessel’s centerline cargo tanks may comprise Tank Group “A,” and the wing cargo tanks may comprise tank group “B.”
- Tanks in group: All cargo and slop tanks should be accounted for. Tanks should be listed individually. For example, enter “#1P/S, #2P/S, #3P/S” vice “All Tanks.”
- Ship Type: Only one type should be selected for each regulatory source (46 CFR 153, IBC Code) and it will include all lower types. For example, a Type II vessel can carry cargoes requiring a Type II or Type III hull, but not those cargoes requiring a Type I hull.
- Tank Type: The most common type is “Integral Gravity;” include the type verified by vessel plans. Select one item from 1 or 2, and G or P as applicable.
- Cargo Tank Venting: If the vessel has a vapor control system, PV venting is required.
- Does the vessel have High Velocity Vents: This may be selected if the vessel has venting valves installed that meet IBC Code Section 8.3.5 and 46 CFR 153.353
- Cargo Venting System: 46 CFR 153.350-153.353 lists the special requirements for P/V vent heights. 46 CFR 153 Table 1 specifies that the vessel must have a vent height that equals either the breadth of the ship divided by three (B/3), 4 meters, or “NR,” meaning “No Requirement,” depending on the cargoes carried. In turn, the IBC Code requires a height of 6 meters. Both 153 and the IBC Code allow you to substitute a 3 meter high velocity P/V valve in lieu of a B/3 or 6 meter P/V valve. If the vessel has a VCS, they must either have a B/3 low velocity P/V valve, a 6 meter low velocity P/V valve, or a 3 meter high velocity P/V valve. If they have none of these, they will only be able to carry the cargoes with “NR” listed in column “e” of 46 CFR 153 Table 1, and the open venting cargoes from the IBC Code.
- Tank Environmental Control: The selected items shall meet the requirements of the IBC Code sections shown in parentheses next to each option, in addition to any special requirements from 46 CFR 153
- Is there any electrical equipment located within the hazardous location: Select “no” if hazardous area plan review has confirmed that no electrical equipment is located inside a hazardous area. If there is electrical equipment located inside a hazardous area, select yes and follow the additional guidance below:
  - i) CFR electrical hazard group: If the hazardous area contains equipment that has been assigned a hazard group, and the hazard group has been verified by the MSC electrical branch, input the appropriate hazard group in this field (I-A, I-B, I-C, I-D, or NA). “NA” means that the hazardous area contains a piece of electrical equipment with no assigned hazard group. If this criterion is selected, the vessel will only be

authorized to carry those cargoes with an “NA” listed in column (j) of 46 CFR 153 Table 1. Intrinsically safe equipment is treated as not existing in the hazardous area. If no electrical hazard exists in the hazardous area, enter “NR.” Refer to details of the hazardous area plan review. If no hazardous area plan has been submitted, select “NA” or the request may be held in abeyance pending submittal of the hazardous area plan.

- ii) IBC temperature classification (IBC 21.4.9.1): T1 through T6, N/A
  - iii) IBC Apparatus Group (IBC 21.4.9.2): IIA, IIB, IIC, or N/A
  - iv) IBC Flashpoint (IBC 21.4.9.3): Select “no” if the vessel has been approved through plan review to carry cargoes with flashpoints below 60°C, “yes” if the vessel is approved to carry cargoes with flashpoints above 60°C, or “NF” if the vessel is only approved to carry non-flammable products
- Cargo Tank Gauging: If the vessel has a vapor control system, closed gauging is required.
  - Vapor Detection (F/T): Installed equipment must meet the requirements of IBC Code Section 13.2, or have an active exemption from the Administration. Note: Domestic carriage may also require compliance with the requirements of 46 CFR 153.465 or 153.526.
  - Fire Protection: For a vessel with a firefighting system verified through plan review as meeting 46 CFR 153.460 and IBC Chapter 10, as applicable, the appropriate firefighting medium(s) (A, B, C, or D) should be selected. These categories are defined in the footnotes to 46 CFR 153 Table 1 and IBC 21.4.12.
  - Emergency Equipment: Select “yes” if the vessel has onboard the safety equipment required by IBC 14.3.1

Special 46 CFR 153 Material Requirements: Select those rules which the vessel meets.

- 153.236 Special Material Requirements: Any materials identified as prohibited shall not be used in components that contact the cargo or its vapor during routine operation. Refer to the bill of materials for the cargo piping systems.
- 153.238 Required Materials of Construction: Select those rules referring to materials which are used in the construction of the cargo containment system or other components that contact the cargo or its vapor during routine operation. Note that to receive credit for a tank lining, the submitter must provide the manufacturer’s specification indicating the cargoes compatible with the lining. If no specification is provided, do not indicate that a lining is installed.

Special 46 CFR Part 153 and IBC Code Requirements. Select those rules which the vessel meets. In addition to the selected items which are summarized below, the submitter must verify the requirements for every item which they have selected on the TGCLF.

- 153.252 Independent Cargo Tank: Select this if the cargo tank is independent from the hull structure.



- 153.266 Tank Linings: Tank linings are a requirement for most acids and similarly corrosive cargoes. However, many tanks have a lining that prevents corrosion, but that does not meet the requirements to carry an acid or highly corrosive cargo. The submitter must provide the manufacturer's specifications for the lining stating what cargoes the lining will protect against. Since most vessels are built without the intention of carrying acids, it is optional for the submitter to provide this information. The submitter should only be required to provide it if they have specifically requested to carry a cargo that lists this special requirement.
- 153.316/IBC 15.17 Pump Room Ventilation: If the tank vessel does not have cargo handling rooms, it should be credited for this section.
- 153.336/IBC 15.18 Pump Room Requirement: Vessels without a cargo pump room should be credited for this special requirement.
- 153.355 PV Venting System: This section requires that any tank vessel carrying cargoes that require PV venting must have a PV valve located between each cargo tank and the main vapor header.
- 153.370-.372/IBC 15.14 High Vapor Pressure Requirement: Both the CFR and the IBC code require that for high vapor pressure cargoes carried at ambient temperatures, the PV valve setting must be equal to or greater than the vapor pressure of the cargo at 45°C. This restriction is relaxed if the cargo tanks are refrigerated.
- 153.408/ IBC 15.19 Overflow Control: Gauging submission must demonstrate compliance with this section. Vessels with VCS installed must meet this section in accordance with 46 CFR 39.2009.
- 153.409/IBC 15.19.6 High Level Alarms: Gauging submission must demonstrate compliance with this section. Vessels with VCS installed must meet this section in accordance with 46 CFR 39.2003.
- 153.440 Temperature Sensors: There are two parts to this section; a heated cargo tank must have a sensor at the bottom of the tank, and a refrigerated tank must have a sensor at both the top and bottom of the tank. Note: only cargoes requiring refrigeration will need both sensors.
- 153.465 Flammable Vapor Detection: To be verified by the OCMI.
- 153.488 High Melting Point NLS: This requires a heating system and double sides/bottoms.
- 153.500 Inert Gas System: IG system must meet these requirements.
- 153.501 Dry Inert Gas: IG must contain no more than 100 ppm water.
- 153.515 Flammable Cargoes: This requires that the cargo tank relief valve be set at no less than 3 PSIG and that the void spaces be capable of being inerted.

- 153.525/IBC 15.12 Toxic Cargoes: These sections contain several requirements, the most important of which may be that the P/V valve setting be not less than 21 kPa gauge (153.525) or 0.2 bar gauge (15.12). The cargo pumps should be operable from the weather deck and any heat transfer systems must be external from the cargo system. Also verify that fuel tanks and cargo tanks are not adjacent to each other.
- 153.526 Toxic Vapor Detectors: If selected, the OCMI must verify that the required vapor detectors are on board.
- 153.527 Toxic Vapor Protection: If selected, the OCMI must verify that the required protection is kept and maintained on board.
- 153.602 Cargoes Reactive with Water: This requires that the P/V valve be at least 6.6 ft. from the deck. Since the vent height requirement for a high velocity P/V valve is 3 meters, most tank vessels should meet this.