



REVIEW OF GAS CARRIER STRUCTURAL FIRE PROTECTION

Procedure Number: C1-31

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A handwritten signature in blue ink that reads "E.J. Newton".

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Purpose

This Plan Review Guideline (PRG) explains the requirements for seeking plan approval for Structural Fire Protection from the Marine Safety Center (MSC) for Gas Carriers regulated under 46 CFR Subchapters D, I, O, S, and/or SOLAS, 1974, and its Protocol of 1978, as amended.

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 C1-31.

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1. Applicability

This Plan Review Guideline (PRG) is applicable to vessels carrying liquefied gas cargoes.

2. References

- a. 46 CFR Subchapter D
- b. 46 CFR Subchapter I
- c. 46 CFR Subchapter O
- d. 46 CFR Subchapter S
- e. [NVIC 9-97](#), Guide to Structural Fire Protection
- f. [ABS rules for Building and Classing Vessels Intended to Carry Liquefied Gases and Chemical Cargoes in Bulk](#)
- g. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk
- h. MSC Guidelines for the Review of Tankship Structural Fire Protection ([C1-23](#))

3. Definitions

- a. **International Voyage:** A voyage from a country to which the present Convention applies to a port outside such country, or conversely. (See SOLAS Chapter I, Part A, Regulation 2(d)).

4. Content

Using applicable portions of references (a) through (h), the submitter shall provide sufficient documentation and plans to indicate compliance with the applicable requirements. The submission shall be made electronically to the above email address or, if paper, in triplicate to the MSC's address found of the above website. To facilitate plan review and project management, all plans and information specified in these guidelines should be submitted as one complete package through a single point of contact for the project.

Before proceeding to submission requirements, check these items first:

- a. If the vessel is new and not a sister vessel, has the Application for Inspection been submitted? In general, plan review may not occur until a copy of the Application is received.
- b. Is it clearly stated what is desired from the MSC? Are all hardcopy plans requiring Coast Guard review and/or approval submitted in triplicate? Are there any special or unusual requests involved?
- c. The majority of gas carrier reviews involve unmanned tank barges and independent pressure vessel barges regulated under a dual Subchapter O/D certification for vessels

not on an international voyage. Determine applicability of regulations per 46 CFR 151.01-10, as follows:

- (1) For **unmanned** barges only, if cargo is listed in 46 CFR Table 151.05 and **has** flammability or combustibility characteristics as indicated by a fire protection requirement in the table, then Subchapters O and D apply.
 - (2) For **unmanned** barges only, if cargo is listed in 46 CFR Table 151.05 and **does not have** flammability or combustibility characteristics as indicated by a fire protection requirement in the table, then Subchapters O and D or O and I apply. The option for applying D or I, in addition to O, should be indicated by the owner on the Application for Inspection.
 - (3) Per 46 CFR 151.01-10(e), **manned** barges which carry a cargo listed in Table 151.05 will be considered individually by Commandant for applicable regulations and design requirements. Many of the SFP requirements of 46 CFR, Subchapters D and I involve protection of accommodation areas and other service spaces for manned tank vessels, not listed in the following review procedure.
- d. If the vessel is an existing tank barge, consult 46 CFR 151.01-25(c) for applicable requirements.
- e. If the vessel is a self-propelled tankship, consult 46 CFR, Subchapter O, Part 154. Also consult with COMDT (CG-ENG-5) and COMDT (CG-5431) for other potential compliance and plan review issues. Ensure compliance with references (f), (g), and (h), as applicable for international voyages. (See reference (i) for details of SOLAS SFP requirements.) Per 46 CFR 32.56-1(b), SOLAS structural fire protection regulations are considered equivalent requirements for tankships certificated under Subchapter O/D.
- f. Ensure steel construction per 46 CFR 32.57-10(a) and 46 CFR 32.60-1(a). Aluminum is not acceptable for hatch covers and ullage openings.
- g. Ensure subdivision of cargo space into tight compartments, per 46 CFR 32.60-5
- h. Check for segregation of cargo, per 46 CFR 32.60-10 & 153.233:
- (1) General cargo spaces, and enclosed spaces where sources of vapor ignition normally present, by cofferdams or other specified spaces. Note that 46 CFR 38.05-1(d) does not allow the void between the primary and secondary barriers to function as the cofferdam
 - (2) Cargo tank spaces extend to the main deck, with hatches and vents located on the weather deck
 - (3) Enclosed spaces
 - (i) Cargo and vent piping continuous
 - (ii) No openings to cargo tank
 - (4) Ensure adequate ventilation of enclosed spaces used as stowage spaces.
 - (5) Openings:
 - (i) No manholes or other openings from cargo tanks to any other enclosed spaces (with some exceptions for access to inner bottoms)

- (ii) Vents, sounding tubes, and similar piping passing through tanks run in a trunk, or minimum wall thickness as specified.
- (6) Ensure separation of tanks from machinery, service, and other spaces per 46 CFR 153.233
 - i. Independent tanks per 46 CFR 32.60-30:
 - (1) Independent tanks may be located in hold spaces or other cargo tanks provided a minimum 15 inch clearance
 - (2) When independent cargo tanks are located in an enclosed space other than a cargo tank, such enclosed spaces shall be considered as equivalent to a pumproom and safeguarded in accordance with 46 CFR 32.60-20.
 - j. Maximum service temperature per 46 CFR 38.05-2
 - k. Tank insulation in accordance with 46 CFR 38.05-20
 - l. Tankship ventilation in accordance with 38.20-10

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

