

SUB-COMMITTEE ON CARRIAGE OF
CARGOES AND CONTAINERS
5th session
Agenda item 8

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**UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY AND
ENVIRONMENT-RELATED CONVENTIONS**

Unified interpretation of paragraph 4.19.1.6 of the IGC Code

Submitted by IACS

SUMMARY

<i>Executive summary:</i>	The annex to this document provides a copy of IACS UI GC23 on paragraph 4.19.1.6 of the IGC Code to facilitate the consistent and global implementation of this regulation
<i>Strategic direction, if applicable:</i>	6
<i>Output:</i>	6.1
<i>Action to be taken:</i>	Paragraph 8
<i>Related document:</i>	None

Introduction

1 The International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), as amended by resolutions MSC.370(93), provides revised international standards for the design and construction standards of ships carrying liquefied gases in bulk.

2 IACS Members, acting as recognized organizations, have discussed how to implement the requirements of the revised IGC Code, and have found some instances where further clarification is needed to facilitate the global and uniform implementation of these mandatory provisions.

Discussion

3 Paragraph 4.19.1.6 of the IGC Code, as amended by resolution MSC.370(93), specifies the following requirements on heating the structural material for the cargo containment systems:

"4.19.1.6 The means of heating referred to in 4.19.1.5 shall comply with the following requirements:

- .1 the heating system shall be arranged so that, in the event of failure in any part of the system, standby heating can be maintained equal to not less than 100% of the theoretical heat requirement;
- .2 the heating system shall be considered as an essential auxiliary. All electrical components of at least one of the systems provided in accordance with 4.19.1.5.1 shall be supplied from the emergency source of electrical power; and
- .3 the design and construction of the heating system shall be included in the approval of the containment system by the Administration or recognized organization acting on its behalf."

4 IACS has considered the following two scenarios regarding the implementation of paragraph 4.19.1.6 of the IGC Code:

- .1 a blackout of the ship's main electrical system. As the standby electrical supply for the heating medium circulation and control units, etc. are powered from the emergency switchboard, it is envisaged that residual steam available for the glycol heat exchangers will maintain the cofferdam heating via the coils until the main generators are back in service; and
- .2 failure of the single boiler. The mains powered electric heat exchanger will supply the heat input to the glycol circulating pump, which will provide the cofferdam heating via the same coils.

5 When applying paragraph 4.19.1.6.1 of the IGC Code, it is not considered practicable to load the emergency generator with an electrical heating system (estimated to be in the order of hundreds of KW). Rather, a dedicated circuit powered from the main switchboard may be acceptable depending on a risk assessment that will determine whether the electrical supply is capable of being quickly re-energized in the case of loss of main power e.g. shedding all load except the electrical heating system. Pumps and other electrical components will still be subject to the emergency generator requirement to allow the heated fluid to be circulated while the main generator is being restarted.

6 To clarify the above issues, IACS has developed a Unified Interpretation (IACS UI GC23), a copy of which is provided in the annex to this document.

7 The Sub-Committee is invited to note that IACS Members intend to implement UI GC23 on ships constructed on or after 1 July 2019, unless they are provided with written instructions to apply a different interpretation by the Administration on whose behalf they are authorized to act as a recognized organization.

Action requested of the Sub-Committee

8 The Sub-Committee is invited to consider the comments provided in paragraphs 3 to 5 above and the copy of IACS UI GC23 provided at the annex to this document; and to note the implementation provisions explained in paragraph 7 above; and take action, as appropriate.

ANNEX

GC23 Cargo tank structure heating arrangement (July 2018) power supply

The International Code for the Construction and Equipment of Ships Carrying Liquid Gases in Bulk (IGC Code) as amended by Res. MSC.370(93), 4.19.1.6 reads:

4.19.1.6 *The means of heating referred to in 4.19.1.5 shall comply with the following requirements:*

- .1 the heating system shall be arranged so that, in the event of failure in any part of the system, standby heating can be maintained equal to not less than 100% of the theoretical heat requirement;*
- .2 the heating system shall be considered as an essential auxiliary. All electrical components of at least one of the systems provided in accordance with 4.19.1.5.1 shall be supplied from the emergency source of electrical power; and*
- .3 the design and construction of the heating system shall be included in the approval of the containment system by the Administration or recognized organization acting on its behalf.*

Interpretation

1. Heating system referred to on 4.19.1.6.1 is to be such that in case of a single failure of a mechanical or electrical component in any part of the system, heating can be maintained at not less than 100% of the theoretical heat requirement.

2. Where the above requirements are met by duplication of the system components, i.e., heaters, glycol circulation pumps, electrical control panel, auxiliary boilers etc., all electrical components of at least one of the systems are to be supplied from the emergency switch board.

3. Where duplication of the primary source of heat, e.g. oil-fired boiler is not feasible, alternative proposals such as an electric heater capable of providing 100% of the theoretical heat requirement provided and supplied by an individual circuit arranged separately on the emergency switchboard. Other solutions may be considered towards satisfying the requirements of 4.19.1.6.1 provided a suitable risk assessment is conducted to the satisfaction of the Administration. The requirement in paragraph 2 continues to apply to all other electrical components in the system.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships constructed on or after 1 July 2019.

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