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

**Follow up to discussions at CCC 5 regarding unified interpretations in relation to the
IGC Code**

Submitted by IACS

SUMMARY

Executive summary: This document provides draft IACS unified interpretations of paragraphs 11.2 and 11.3.4 of the IGC Code and a draft revised version of IACS UI GC22 (relevant to paragraphs 11.3.1, 11.3.3 and 11.3.4 of the IGC Code). These have been developed in light of the discussions at CCC 5 of documents CCC 5/8/2 (IACS) and CCC 5/8/6 (IACS).

Strategic direction, if applicable: 6

Output: 6.1

Action to be taken: Paragraph 14

Related documents: CCC 5/8/2, CCC 5/8/6, CCC 5/13 (paragraphs 8.21 and 8.22; and paragraphs 8.24 to 8.26, and 8.38 and annex 10)

Introduction

1 The IGC Code, as amended by resolution MSC.370(93), provides revised international standards for the design and construction of ships constructed on or after 1 January 2016 carrying liquefied gases in bulk. IACS members, in verifying implementation of the revised IGC Code in their roles as Recognized Organizations, have found that some requirements need further clarification in order to facilitate their global and uniform implementation.

2 This document follows up on the discussions at CCC 5 of documents CCC 5/8/2 (IACS) and CCC 5/8/6 (IACS).

Discussion

Emergency fire pump – draft unified interpretation of paragraphs 11.2 and 11.3.4 of the IGC Code

3 Paragraph 11.2 of the IGC Code (resolution MSC.370(93)) states:

11.2 Fire mains and hydrants

11.2.1 Irrespective of size, ships carrying products that are subject to the Code shall comply with the requirements of regulation II-2/10.2 of the SOLAS Convention, as applicable to cargo ships, except that the required fire pump capacity and fire main and water service pipe diameter shall not be limited by the provisions of regulations II-2/10.2.2.4.1 and II-2/10.2.1.3, when a fire pump is used to supply the water-spray system, as permitted by 11.3.3 of the Code. The capacity of this fire pump shall be such that these areas can be protected when simultaneously supplying two jets of water from fire hoses with 19 mm nozzles at a pressure of at least 0.5 MPa.

11.2.2 The arrangements shall be such that at least two jets of water can reach any part of the deck in the cargo area and those portions of the cargo containment system and tank covers that are above the deck. The necessary number of fire hydrants shall be located to satisfy the above arrangements and to comply with the requirements of regulations II-2/10.2.1.5.1 and II-2/10.2.3.3 of the SOLAS Convention, with hose lengths as specified in regulation II-2/10.2.3.1.1. In addition, the requirements of regulation II-2/10.2.1.6 shall be met at a pressure of at least 0.5 MPa gauge.

11.2.3 Stop valves shall be fitted in any crossover provided and in the fire main or mains in a protected location, before entering the cargo area and at intervals ensuring isolation of any damaged single section of the fire main, so that 11.2.2 can be complied with using not more than two lengths of hoses from the nearest fire hydrant. The water supply to the fire main serving the cargo area shall be a ring main supplied by the main fire pumps or a single main supplied by fire pumps positioned fore and aft of the cargo area, one of which shall be independently driven.

11.2.4 Nozzles shall be of an approved dual-purpose type (i.e. spray/jet type) incorporating a shutoff.

11.2.5 After installation, the pipes, valves, fittings and assembled system shall be subject to a tightness and function test.

4 Paragraph 11.3.4 of the IGC Code (resolution MSC.370(93)) states:

11.3.4 The boundaries of superstructures and deckhouses normally manned, and lifeboats, liferafts and muster areas facing the cargo area, shall also be capable of being served by one of the fire pumps or the emergency fire pump, if a fire in one compartment could disable both fire pumps.

5 IACS submitted document CCC 5/8/2 to CCC 5 seeking clarification on the implementation of paragraph 11.3.4 of the IGC Code regarding the capacity of the emergency fire pump.

6 The Sub-Committee agreed to the general principle of dealing with one single incident at a time and invited IACS to take the above comments and agreed principle into account and, if deemed appropriate, develop a draft UI for submission to a future session (paragraph 8.22 of document CCC 5/13). Consequently, IACS has prepared a draft unified interpretation of paragraphs 11.2 and 11.3.4 of the IGC Code, a copy of which is provided in annex 1 to this document.

Draft revised version of IACS UI GC 22 on "Water-spray system" (paragraphs 11.3.1, 11.3.3 and 11.3.4 of the IGC Code)

7 Paragraph 11.3.1.7 of the IGC Code (resolution MSC.370(93)) states:

11.3.1 On ships carrying flammable and/or toxic products, a water-spray system, for cooling, fire prevention and crew protection shall be installed to cover:

...

.7 exposed lifeboats, liferafts and muster stations facing the cargo area, regardless of distance to cargo area; and

...

8 Paragraph 11.3.3.1 of the IGC Code (resolution MSC.370(93)) states:

11.3.3 The capacity of the water-spray pumps shall be capable of simultaneous protection of the greater of the following:

.1 any two complete athwartship tank groupings, including any gas process units within these areas; or

...

9 Paragraph 11.3.4 of the IGC Code (resolution MSC.370(93)) states:

11.3.4 The boundaries of superstructures and deckhouses normally manned, and lifeboats, liferafts and muster areas facing the cargo area, shall also be capable of being served by one of the fire pumps or the emergency fire pump, if a fire in one compartment could disable both fire pumps.

10 IACS submitted to CCC 5 a copy of IACS UI GC22 at the annex to document CCC 5/8/6. This original version of UI GC22 provides a unified interpretation of paragraphs 11.3.1, 11.3.3 and 11.3.4 regarding the deck water spray system.

11 Two parts of the version of IACS UI GC22 submitted to CCC 5 - part a) on "Survival craft protection" and part b) on "Tank groups in cargo area" - were agreed to by the Sub-Committee and included in the consolidated draft MSC circular (paragraphs 8.24 and 8.38, and annex 10 of CCC 5/13).

12 Regarding the third part of IACS UI GC22 submitted to CCC 5 - part c) on "Fire pumps used as spray pumps", noting the discussion, and decision taken, at CCC 5 (paragraphs 8.25 and 8.26 of CCC 5/13); IACS has decided to delete part c) from IACS UI GC22. Consequently, IACS has adopted a new version of IACS UI GC22, which includes only parts a) and b) of the unified interpretation submitted to CCC 5. The Sub-Committee is invited to note that the "original version" of this unified interpretation was withdrawn prior to its coming into force

date (1 July 2019). The new version of UI GC22 will be uniformly implemented by IACS Societies 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.

13 Taking account of the discussion at CCC 5 regarding part c) of the unified interpretation submitted at the annex to document CCC 5/8/6, IACS has prepared a new draft unified interpretation of paragraph 11.3.4 of the IGC Code, a copy of which is provided in annex 2 to this document. Subject to the Sub-Committee's consideration of annex 2, IACS may include this unified interpretation in a future version of its UI GC22.

Action requested of the Sub-Committee

14 The Sub-Committee is invited to consider the foregoing and, in particular, the draft IACS unified interpretation provided in annex 1, and the draft unified interpretation provided in annex 2; and take action, as appropriate.

ANNEX 1

Draft unified interpretation to paragraphs 11.2 and 11.3.4 of the IGC Code - Emergency fire pump

Paragraph 11.2 of resolution MSC.370(93) reads:

11.2 Fire mains and hydrants

11.2.1 Irrespective of size, ships carrying products that are subject to the Code shall comply with the requirements of regulation II-2/10.2 of the SOLAS Convention, as applicable to cargo ships, except that the required fire pump capacity and fire main and water service pipe diameter shall not be limited by the provisions of regulations II-2/10.2.2.4.1 and II-2/10.2.1.3, when a fire pump is used to supply the water-spray system, as permitted by 11.3.3 of the Code. The capacity of this fire pump shall be such that these areas can be protected when simultaneously supplying two jets of water from fire hoses with 19 mm nozzles at a pressure of at least 0.5 MPa.

11.2.2 The arrangements shall be such that at least two jets of water can reach any part of the deck in the cargo area and those portions of the cargo containment system and tank covers that are above the deck. The necessary number of fire hydrants shall be located to satisfy the above arrangements and to comply with the requirements of regulations II-2/10.2.1.5.1 and II-2/10.2.3.3 of the SOLAS Convention, with hose lengths as specified in regulation II-2/10.2.3.1.1. In addition, the requirements of regulation II-2/10.2.1.6 shall be met at a pressure of at least 0.5 MPa gauge.

11.2.3 Stop valves shall be fitted in any crossover provided and in the fire main or mains in a protected location, before entering the cargo area and at intervals ensuring isolation of any damaged single section of the fire main, so that 11.2.2 can be complied with using not more than two lengths of hoses from the nearest fire hydrant. The water supply to the fire main serving the cargo area shall be a ring main supplied by the main fire pumps or a single main supplied by fire pumps positioned fore and aft of the cargo area, one of which shall be independently driven.

11.2.4 Nozzles shall be of an approved dual-purpose type (i.e. spray/jet type) incorporating a shutoff.

11.2.5 After installation, the pipes, valves, fittings and assembled system shall be subject to a tightness and function test.

Paragraph 11.3.4 of resolution MSC.370(93) reads:

11.3.4 The boundaries of superstructures and deckhouses normally manned, and lifeboats, liferafts and muster areas facing the cargo area, shall also be capable of being served by one of the fire pumps or the emergency fire pump, if a fire in one compartment could disable both fire pumps.

Interpretations

1 In paragraph 11.3.4 the term "fire pumps" where not qualified by the word "emergency" refers to the fire pumps required in accordance with SOLAS Reg.II-2/10.2.2.

2 If all the fire pumps mentioned in paragraph 1 above supplying the water spray system (for covering the superstructures and deckhouses) are disabled due to a fire in any one compartment; then the emergency fire pump shall be sized to cover:

- .1 the water spray system for the boundaries of the superstructures and deckhouses, and lifeboats, liferafts and muster areas facing the cargo area, (as per paragraph 11.3.4); and
- .2 two fire hydrants (as per paragraph 11.2).

3 When the ship is also fitted with a total flooding high expansion foam system protecting the engine-room (to comply with SOLAS II-2/10.4.1.1.2 and 10.5.1.1) and the emergency fire pump is intended to supply sea water to this system, then, the emergency fire pump shall also be sized to cover the foam system for dealing with an engine-room fire, when the main fire pumps are disabled.

4 Following the principle of dealing with one single fire incident at a time, it may be concluded that the emergency fire pump would not need to be sized to cover all three systems in 2 and 3 above (i.e. water spray, hydrants and foam) at the same time and would need only be sized to cover the most demanding area and required systems, as follows:

- .1 the foam system + two hydrants; or
 - .2 the water spray system + two hydrants;
- whichever is greater.

ANNEX 2

Draft unified interpretation of paragraph 11.3.4 of the IGC Code – Fire pumps used as spray pumps

Regulation

IGC Code (resolution MSC.370(93)), paragraph 11.3.4 reads as follows:

11.3.4 The boundaries of superstructures and deckhouses normally manned, and lifeboats, liferafts and muster areas facing the cargo area, shall also be capable of being served by one of the fire pumps or the emergency fire pump, if a fire in one compartment could disable both fire pumps.

Interpretation

Paragraph 11.3.4 highlights requirements for availability of fire pumps required by SOLAS regulation II-2/10.2.2 for water supply to the spray system for personnel and survival craft and muster station protection. The supply of fire water shall be redundant.

In view of the above, in cases when the emergency fire pump is used to meet this requirement; its capacity, in addition to being capable of maintaining two jets of water as required by FSS Code, chapter 12.2.2.1.1, shall be increased taking into account the spray application rates stated in paragraph 11.3.2.1, but limiting coverage to boundaries of normally manned superstructures and deckhouses, survival crafts and their muster areas.

For the purpose of this interpretation:

- .1 the expression "one of the fire pumps or emergency fire pump" is related to fire pumps required by SOLAS regulation II-2/10.2.2 installed outside the space where spray pump(s) are located; and
- .2 the expression "fire in one compartment", means a compartment provided with A-class boundaries in which is located the fire pump(s), or the source of power of the fire pump(s), serving the water-spray system in accordance with paragraph 11.3.3.