INTERNATIONAL MARITIME ORGANIZATION

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REVIEW OF THE IGC CODE

Proposal to amend chapter 11 of the IGC Code concerning a water spray system for fuel storage tank(s)

Submitted by IACS

SUMMARY

Executive summary:	This document proposes amendments to paragraph 11.3.2 of the IGC Code concerning a water spray system for fuel storage tank(s).
Strategic direction, if applicable:	1
Output:	1.17
Action to be taken:	Paragraph 8
Related documents:	None

Introduction

1 This document proposes amendments to the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (the IGC Code) (resolution MSC.307(93)) concerning the nozzle spacing of a water spray system for fuel storage tanks in chapter 11 of the IGC Code.

Background

2 In the last five years, dual-fuel ships carrying liquefied gases in bulk have been constructed with the fuel storage tank(s) installed in their cargo area. Paragraph 11.3.1.2 of the IGC Code requires the installation of a water spray system for cooling and fire prevention of the fuel storage tank(s) that are the exposed on-deck storage vessels for flammable products, as follows:

> "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:
> …
> .2 exposed on-deck storage vessels for flammable or toxic products;"

3 IACS understands that the fuel storage tank needs to be protected from the fire or heat around the tank by cooling. Water spray from the system flows on the surface of the tank so that the heat does not impact the tank.

4 The IGC Code requires a water spray system to be provided for the cargo tanks but does not stipulate how the water spray nozzles are to be arranged to cover the cargo tanks, i.e. the surface of the fuel tank is wetted by the water sprayed directly or by the rundown (flowing on the surface).

Discussion

5 Normally, the surface of the cargo deck tanks, gas fuel deck tanks or exposed parts of cargo tanks on open weather deck is neither vertical nor horizontal, unlike, for example, the accommodation where its structure is made up of horizontal and vertical surfaces (figure 1). On the other hand, a curved surface allows water to flow on its surface, same as from the vertical surface, considering the anticipated rundown from higher areas as required in paragraph 11.3.2.2 of the IGC Code, as follows:

> "On vertical surfaces, spacing of nozzles protecting lower areas may take account of anticipated rundown from higher areas. Stop valves shall be fitted in the main supply line(s) in the water-spray system, at intervals not exceeding 40 m, for the purpose of isolating damaged sections. Alternatively, the system may be divided into two or more sections that may be operated independently, provided the necessary controls are located together in a readily accessible position outside the cargo area. A section protecting any area included in 11.3.1.1 and .2 shall cover at least the entire athwartship tank grouping in that area. Any gas process unit(s) included in 11.3.1.3 may be served by an independent section."

Figure 1: Illustration of a typical gas fuel storage tank arrangement

6 Therefore, IACS is of the view that for structures without clearly defined horizontal or vertical surface, the spacing of the nozzles protecting the lower areas may take account of the anticipated rundown from the higher areas.

Proposal

7 Based on the discussion in paragraphs 2 to 6 above, IACS proposes the draft amendments to the IGC Code as contained in the annex of this document for the consideration of the Sub-Committee.

Action requested of the Sub-Committee

8 The Sub-Committee is invited to consider the foregoing, the proposal in paragraph 7 and the draft amendments to the IGC Code set out in the annex of this document, and take action, as appropriate.

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ANNEX

DRAFT AMENDMENTS TO THE IGC CODE

The following amendments to paragraph 11.3.2.2 of the IGC Code are proposed:*

"11.3 **Water-spray system**

…

11.3.2.2 On vertical surfaces and for structures having no clearly defined horizontal or vertical surface, spacing of nozzles protecting lower areas may take account of anticipated rundown from higher areas. Stop valves shall be fitted in the main supply line(s) in the water-spray system, at intervals not exceeding 40 m, for the purpose of isolating damaged sections. Alternatively, the system may be divided into two or more sections that may be operated independently, provided the necessary controls are located together in a readily accessible position outside the cargo area. A section protecting any area included in 11.3.1.1 and .2 shall cover at least the entire athwartship tank grouping in that area. Any gas process unit(s) included in 11.3.1.3 may be served by an independent section."

* Tracked changes are indicated using "grey shading" to highlight new insertions and "strikethrough" to highlight deletion of the text.