

MARITIME SAFETY COMMITTEE  
100th session  
Agenda item 11

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## CARRIAGE OF CARGOES AND CONTAINERS

### Comments on document MSC 100/11 regarding the draft amendments to paragraph 9.5 of the IGF Code

Submitted by ICS and SGMF

#### SUMMARY

*Executive summary:* This document provides comments on document MSC 100/11 regarding the draft amendments to paragraph 9.5 of the IGF Code and proposes the inclusion of additional text in order to ensure the applicability of leakage detection requirements for pipes carrying liquefied fuel

*Strategic direction, if applicable:* 2

*Output:* 2.3

*Action to be taken:* Paragraph 14

*Related documents:* MSC-MEPC.1/Circ.5/Rev.1; CCC 4/3/1, CCC 4/12; MSC 99/8/1, MSC 99/22; CCC 5/WP.3 and MSC 100/11

#### Introduction

1 This document is submitted in accordance with the provisions of paragraph 6.12.5 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.1) and provides comments on document MSC 100/11 (Secretariat) regarding draft amendments to paragraph 9.5 of the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code).

#### Background

2 The Sub-Committee on Carriage of Cargoes and Containers (CCC), at its fourth session, having considered document CCC 4/3/1 (IACS) under the agenda item on "Amendments to the IGF Code and development of guidelines for low-flashpoint fuels", instructed the Working Group on Amendments to the IGF Code and Development of

Guidelines for Low-flashpoint Fuels to consider draft amendments to paragraph 9.5, as contained in paragraphs 4 to 10 of document CCC 4/3/1.

3 CCC 4 endorsed the draft amendments prepared by the Working Group, as set out in annex 1 to document CCC 4/12, and invited the Maritime Safety Committee (MSC) to approve them, with a view to adoption at MSC 100 (CCC 4/12, paragraph 3.44).

4 MSC 99, in considering the action requested of it as discussed in paragraph 3 above, discussed document MSC 99/8/1 (Denmark). Subsequently, the Committee agreed to hold the approval of the draft amendments to parts A and A-1 of the IGF Code in abeyance and instructed CCC 5, taking into account the above views expressed and the proposals in document MSC 99/8/1, to reconsider the draft amendments to regulation 9.5.6 of the IGF Code and report the outcome to MSC 100 as an urgent matter (MSC 99/22, paragraph 8.5).

5 CCC 5, having considered the draft amendments to regulation 9.5.6 of the IGF Code, and taking into account documents MSC 99/8/1 and CCC 5/3/5 (IACS), decided not to modify the text as originally drafted and endorsed by CCC 4, as set out in annex 1 to document CCC 4/12.

6 ICS had made related interventions at CCC 4 and CCC 5 highlighting that any separate leakage protection provisions for liquefied gas pipes should retain the safety critical requirements for leakage detection. Based on the ICS intervention at CCC 5, the Working Group had noted some merits in adding an extra clarification, but rejected the proposal following a majority view that the addition would not add any value (CCC 5/WP.3, paragraph 5).

7 The co-sponsors believe that the approved new requirements in paragraph 9.5.6 of part A-1 of the IGF Code, as provided in annex 1 to document CCC 4/12, inadvertently reduce existing safety requirements by waiving the requirement for leakage detection for pipes carrying liquefied fuel, which may result in systems being designed with possible dangerous consequences.

## Discussion

8 The existing paragraph 9.5.1 of part A-1 of the IGF Code reads as follows:

"9.5.1 Where fuel pipes pass through enclosed spaces in the ship, they shall be protected by a secondary enclosure. This enclosure can be a ventilated duct or a double wall piping system. The duct or double wall piping system shall be mechanically underpressure ventilated with 30 air changes per hour, and gas detection as required in 15.8 shall be provided. Other solutions providing an equivalent safety level may also be accepted by the Administration."

9 As per the amendments proposed in document CCC 4/3/1, which have subsequently been approved for adoption at MSC 100, paragraph 9.5.1 of part A-1 of the IGF Code has been modified to be applicable only to gaseous fuels and the following new paragraph 9.5.6 has been introduced in order to provide related specific requirements for liquefied fuel pipes:

"9.5.6 Liquefied fuel pipes shall be protected by a secondary enclosure able to contain leakages. If the piping system is in a space that is able to contain leakages of cryogenic liquids, this requirement can be waived.

The secondary enclosure shall be able to withstand the maximum pressure that may build up in the enclosure in case of leakage from the fuel piping. For this purpose, the

secondary enclosure may need to be arranged with a pressure relief system that prevents the enclosure from being subjected to pressures above their design pressures."

10 By comparing the texts in paragraphs 8 and 9 above, it is apparent that the requirement for leakage detection has not been carried over to the approved new provision specifically applicable to liquefied fuel pipes. The authors of document CCC 4/3/1 that initially proposed new paragraph 9.5.6 have clarified that the original intention of the additional text was not to waive leakage detection for any secondary enclosure protecting liquefied fuel pipes.

11 Paragraph 15.8.1.2 of part A-1 of the IGF Code requires permanently installed gas detectors to be fitted in all ducts around fuel pipes. It is not clear if this requirement is applicable to the secondary enclosures around liquefied fuel pipes, as required in new paragraph 9.5.6. Furthermore, the co-sponsors recognize that, while gas detection as required by paragraph 15.8 is not practical for liquefied fuel pipes, alternative leakage detection systems, such as pressure monitoring of vacuum insulated piping, are applicable and should, therefore, be required.

12 The co-sponsors consider that in order to ensure that the critical safety requirement for positive timely detection of leakages is enforced with no ambiguity, leakage detection for secondary enclosures around all liquefied fuel pipes should be explicitly required. In this regard, the co-sponsors believe that appending paragraph 9.5.6 with similar wording to that used in paragraph 6.4.5.3 of the IGF Code on leakage detection would be sufficient.

### Proposal

13 It is proposed to amend paragraph 9.5.6 of annex 1 to document CCC 4/12 as follows:<sup>1</sup>

"9.5.6 Liquefied fuel pipes shall be protected by a secondary enclosure able to contain leakages. If the piping system is in a space that is able to contain leakages of cryogenic liquids, this requirement can be waived. The secondary enclosure shall be provided with leakage detection by means of effective use of pressure, temperature or gas detection systems, or any combination thereof.

The secondary enclosure shall be able to withstand the maximum pressure that may build up in the enclosure in case of leakage from the fuel piping. For this purpose, the secondary enclosure may need to be arranged with a pressure relief system that prevents the enclosure from being subjected to pressures above their design pressures."

### Action requested of the Committee

14 The Committee is invited to consider the proposed text in paragraph 13 above and take action, as appropriate.

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<sup>1</sup> Modifications are shown with proposed new text in grey shading.