INTERNATIONAL MARITIME ORGANIZATION

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AMENDMENTS TO MSC.1/CIRC.1315

Comments on the report of the Correspondence Group on Fire Protection

Submitted by IACS

SUMMARY

Executive summary:	This document provides comments on the report of the Correspondence Group on Fire Protection related to draft amendments to the *Guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk* (MSC.1/Circ.1315)
Strategic direction, if applicable:	Other work
Output:	OW 39
Action to be taken:	Paragraph 18
Related document:	SSE 6/7

Introduction

1 This document is submitted in accordance with 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 SSE 6/7 (Japan), containing the report of the Correspondence Group on Fire Protection related to draft amendments to MSC.1/Circ.1315.

2 IACS participated in the work of this Correspondence Group and would like to extend its deepest appreciation to the coordinator and the other participants for the constructive discussions in the Group. IACS's comments on the work undertaken by the Correspondence Group are provided in the following paragraphs.

Comments

3 In general, IACS agrees, in principle, that the use of sodium-based dry chemical powder in such systems should be excluded and, hence, the discussion should be restricted to the use of potassium-based salts only. However, while IACS agrees, in principle, that potassium-based salts should be the main component of the dry chemical powder, it is

considered that the use of a new dry chemical powder in which the majority of the components are chemicals with either a similar or superior performance to potassium salts in all aspects should not be precluded (subject to compliance with the test requirements).

Testing, storage and quantities of dry chemical powders

4 IACS believes that it is necessary that the tests for dry chemical powder (DCP) should conform to a unified/common internationally agreed standard rather than national standards, which can be different and may result in a lack of consistency in their application. The undertaking of testing to national standards could be additional at the discretion of the relevant Administration, on a one-off or case-by-case basis, if the national standards are equivalent to or no less stringent than the provisions in MSC.1/Circ.1315.

5 IACS is of the view that all the tests in accordance with ISO 7202:2018 should be included in the appendix to MSC.1/Circ.1315.

6 The powder quantity and storage conditions are dependent on the anticipated size of the fire and the location of the dry chemical powder tanks. However, the currently specified ambient temperature of +55°C may be retained so that a suitable location of the tanks in the vessel is chosen so as to avoid a rise of temperature above +55°C in the tank as per the existing guidelines and to enable the use of the dry chemical powder without thermal decomposition occurring.

7 It should be the responsibility of the owner/master of the vessel to ensure that the container temperature remains below +55°C at all times. This may necessitate the consideration of the trading areas in which the ship will operate. The conduct of temperature stability tests at +55°C (minimum temperature) means that dry chemical powder should not be permitted on board ships travelling to locations where a higher temperature in the storage containers is expected.

8 The composition of the dry chemical powder mixture and the definition of the main component in such a mixture need consideration by experts to ascertain adverse effects to human health and the environment, as well as meeting the other "fire-fighting effectiveness" testing provisions.

9 The quantity of dry chemical powder is crucial and is not currently considered in MSC.1/Circ.1315. The quantity of powder to be stored on board has to be evaluated in relation to its extinguishing capabilities and efficiency. The lower the efficiency, the more has to be stored on board and used to fight a fire effectively. Hence, the manufacturer's recommended quantity with an appropriate validation of this amount should be evaluated prior to approval.

10 The quantity of dry chemical powder is a key factor to estimate the storage capacity requirement and its location. This should be considered at the design stage for new construction vessels and before modifications are undertaken to systems on existing vessels.

Maintenance and servicing

11 IACS is of the view that the maintenance and servicing of these systems are important issues and, therefore, consideration should be given to including relevant provisions in the draft guidelines.

Acceptance criteria

12 IACS considers that the fire scenarios for the fire tests should include at least a jet fire and a tray fire. This is because the fire scenario should be based on the actual situation faced by the liquefied gas carriers. In particular, the jet fire scenario should be conducted, as it is believed to be more likely and more challenging.

13 A fuel in its gaseous state is likely to get diffused faster and, hence, the effectiveness of the fire test using a flammable liquid, such as heptane, would be more realistic as the heat release rate is likely to be more. Also, a fire can be more persistent when it occurs closer to the piping/tanks carrying the fuel in its liquid state. Three fire scenarios with heat release rates of 6 MW, 8 MW and 11 MW should be considered to cover the likely range that may be encountered.

14 IACS is of the view that fire tests should be carried out in a controlled environment. IACS also considers that the acceptance criteria for extinguishment in the fire test with reference to ISO 7165:2017 should be developed carefully, considering that this standard refers to portable fire extinguishers, rather than fixed powder installations.

15 IACS recognizes that MSC.1/Circ.1315 is the only currently available internationally agreed instrument for the approval of these systems. Consequently, thorough consideration should be given to its amendment including its application to LNG propelled ships, including passenger ships. The necessity for a cost effectiveness evaluation should be considered.

16 IACS is of the view that in addition to compliance with the testing criteria, a system needs to be approved together with a specified dry chemical powder taking account of such issues as the discharge duration and flow rate of the powder discharged from the monitor/hand hose, which may differ depending on the system configuration. This may require unit certification of the system as a whole for a specific installation. While the report of the Correspondence Group makes reference to this issue, it is considered that it is not currently adequately addressed and needs further deliberation, particularly on standardizing the testing procedures.

Establishment of a working group at SSE 6

17 In light of the comments above, IACS urges the Sub-Committee to establish a working group at SSE 6 to allow experts to give further consideration to this work to amend MSC.1/Circ.1315.

Action requested of the Sub-Committee

18 The Sub-Committee is invited to consider the comments provided above and take action, as appropriate.