

SUB-COMMITTEE ON SHIP SYSTEMS AND
EQUIPMENT
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Agenda item 12

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

**Unified Interpretations on provisions relating to inert gas systems on tankers
(paragraphs 15.2.2.3.2.3.3 and 15.2.4.1.4 of the FSS Code)**

Submitted by IACS

SUMMARY

Executive summary: IACS has identified the need to clarify the requirements in the FSS Code related to inert gas systems on tankers. This document provides the rationale behind and the copies of the IACS Unified Interpretation (UI) of paragraph 15.2.2.3.2.3.3 and the draft IACS UI of paragraph 15.2.4.1.4 of the FSS Code, which have been developed to facilitate the global and consistent implementation of these requirements.

Strategic direction, if applicable: 6

Output: 6.1

Action to be taken: Paragraph 8

Related documents: None

Introduction

1 IACS considers that the provisions of paragraphs 15.2.2.3.2.3.3 and 15.2.4.1.4 of the FSS Code (as amended by resolution MSC.367(93)) require further clarification in order to facilitate their global and consistent implementation.

Discussion

Paragraph 15.2.2.3.2.3.3 of the FSS Code

2 This provision in the FSS Code specifies that each cargo tank not being inerted shall be capable of being separated from the inert gas main by:

- .1 removing spool-pieces, valves or other pipe sections, and blanking the pipe ends; or
- .2 arrangement of two spectacle flanges in series with provisions for detecting leakage into the pipe between the two spectacle flanges; or
- .3 equivalent arrangements to the satisfaction of the Administration, providing at least the same level of protection.

3 The above requirement is considerably stricter than in the version of the Code prior to the adoption of resolution MSC.367(93). Indeed, it is even stricter than for a connection between a liquid cargo pipe and the inert gas system (paragraph 15.2.2.3.2.7 of the FSS Code). Apparently, the risk of leaks (high pressure cargo) and the consequences (liquid cargo ingress into the inert gas/vapor/venting system) may be more severe for the connections of inert gas to liquid cargo piping. It is therefore proposed that similar arrangements for connections between liquid cargo and inert gas systems are also accepted for tank connections to the inert gas main. Different options are provided in the IACS Unified Interpretation (UI) SC289 that has been developed, a copy of which is set out in annex 1.

4 The Sub-Committee is invited to note that IACS Members intend to implement UI SC289 from 1 January 2020, 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.

Paragraph 15.2.4.1.4 of the FSS Code

5 According to the provisions of the FSS Code, where a nitrogen receiver or a buffer tank is installed, it may be installed in a dedicated compartment, in a separate compartment containing the air compressor and the generator, in the engine room, or in the cargo area. Where a nitrogen receiver or a buffer tank is installed in an enclosed space, the access shall be arranged only from the open deck and the access door shall open outwards. Adequate, independent mechanical ventilation, of the extraction type, shall be provided for such a compartment.

6 In this regard, IACS has considered the following issues:

- .1 whether the engine room is considered to be an enclosed space in terms of paragraph 15.2.4.1.4 of the FSS Code as regards access from the open deck only;
- .2 the type of ventilation and the conditions under which nitrogen receivers or buffer tanks are located in the engine room;
- .3 the conditions under which positive pressure ventilation can be provided where nitrogen receivers or buffer tanks are located in a separate compartment also containing the nitrogen generator and associated compressors; and
- .4 access to and ventilation of an enclosed space containing nitrogen receivers or buffer tanks that are located adjacent to the engine room.

7 Consequently, IACS has developed a draft IACS UI, a copy of which is set out in annex 2.

Action requested of the Sub-Committee

8 The Sub-Committee is invited to consider the foregoing, the copy of the IACS UI SC289 and the draft IACS UI, as set out in annexes 1 and 2, respectively, and take action, as appropriate.

ANNEX 1

SC 289 Separation arrangements between inert gas piping and cargo tanks

(Dec 2018)

FSS Code Chapter 15.2.2.3.2.3:

Each cargo tank not being inerted shall be capable of being separated from the inert gas main by:

- .1 removing spool-pieces, valves or other pipe sections, and blanking the pipe ends; or*
- .2 arrangement of two spectacle flanges in series with provisions for detecting leakage into the pipe between the two spectacle flanges; or*
- .3 equivalent arrangements to the satisfaction of the Administration, providing at least the same level of protection.*

Interpretation

The following is considered as an equivalent arrangement in accordance with the FSS Code 15.2.2.3.2.3.3:

- .1 Two shut off valves in series with an arrangement to vent the space between the valves in a safe manner; or
- .2 A shut-off valve and a spectacle flange with an arrangement to vent the space between the valve and the spectacle flange in a safe manner; or
- .3 The use of metallic flexible hoses is considered as equivalent to a spool piece referred to in FSS Code 15.2.2.3.2.3.1, but in both cases a valve on the inert gas main side and a valve or a blank flange on the cargo tank side are to be fitted.

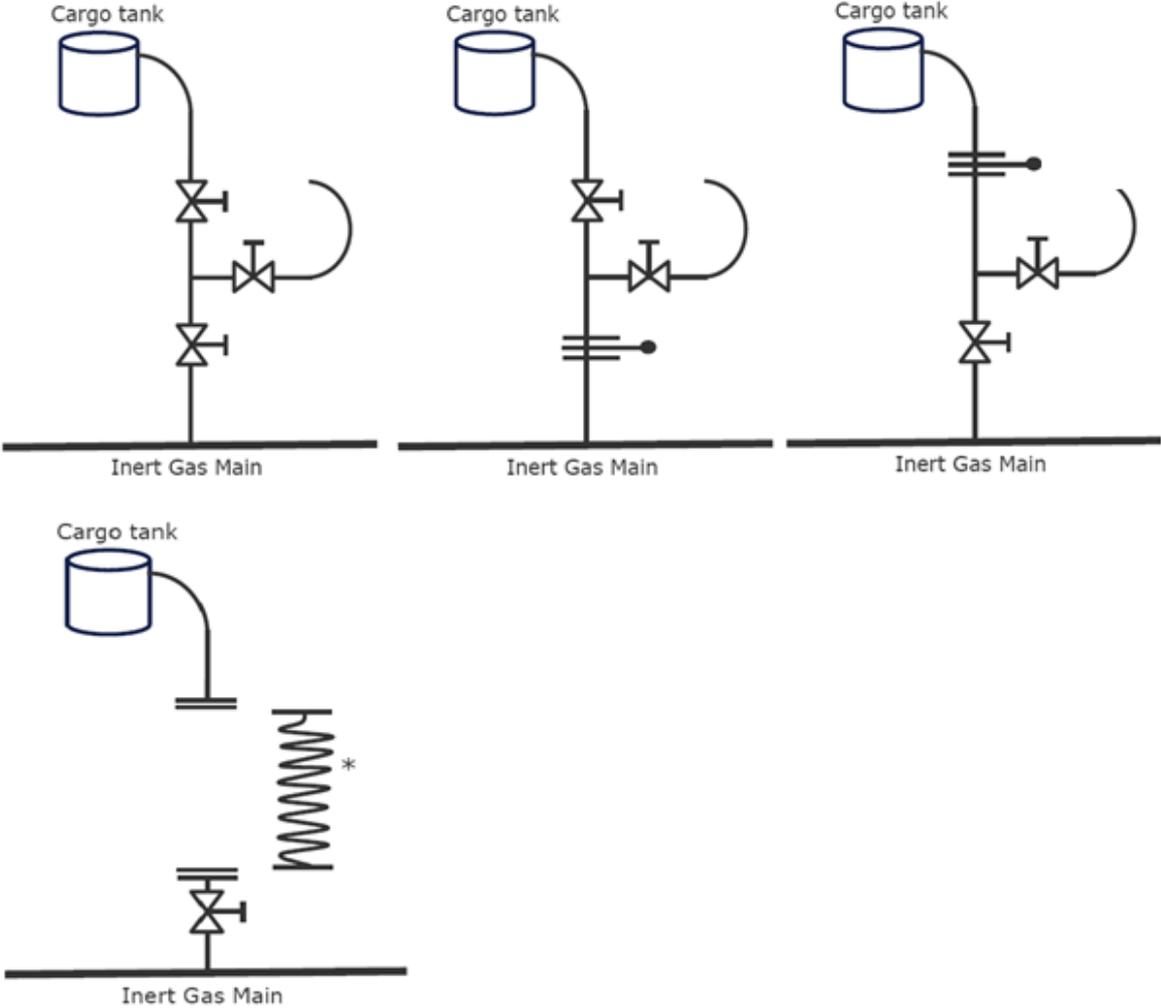
Note: When one or more valves are fitted to comply with this interpretation to FSS Code 15.2.2.3.2.3.3, they may also be regarded as satisfying the requirement in FSS Code 15.2.2.3.2.2 provided at least one of the valves is provided with locking arrangements and the control system provides unambiguous information of the operational status of such valve to at least the control panel required in FSS Code 15.2.2.4.

Note:

1. This UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2020.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No.29.

IACS - Acceptable arrangements as per FSS Code Ch.15.2.2.3.2.3.3



***Metallic Flexible Hoses**

ANNEX 2

DRAFT IACS UNIFIED INTERPRETATION OF PARAGRAPH 15.2.4.1.4 OF THE FSS CODE ON REQUIREMENTS FOR NITROGEN GENERATOR SYSTEMS

Interpretation

1. In consideration of resolution A.1050(27), the engine room is not considered to be an "enclosed space". Therefore, where nitrogen receivers or buffer tanks are located in the engine room, the requirement to access only from the open deck is not considered applicable. Also, where nitrogen receivers or buffer tanks are located in the engine room, the requirement for a separate ventilation system of extraction type is not considered applicable. The nitrogen receiver or buffer tank, however, is to be located in an area of the engine room that is continuously ventilated with minimum six air changes per hour such that any release of nitrogen will be effectively dispersed, thus preventing the formation of a low oxygen atmosphere. Areas considered to have adequate ventilation include the funnel or the areas located in the vicinity of a ventilation opening or fan.

2. Where nitrogen receivers or buffer tanks are located in a separate compartment also containing the nitrogen generator and associated compressors, the mechanical ventilation system may be of positive pressure type, provided the following is complied with:

- .1 the separate compartment has no direct or indirect access to accommodation, service and control station spaces; and
- .2 the gas tight boundaries between the separate compartment and accommodation, service and control station spaces are not arranged with bolted manholes, shaft penetrations, cable penetrations and similar non-welded penetrations, regardless of whether these are of approved gas tight type or not.

3. Where nitrogen receivers or buffer tanks are located in an enclosed space adjacent to the engine room, a gas tight and self-closing access door from the engine room is acceptable in addition to a direct access from the open deck. The access door from the engine room must be located in an area of the engine room that is continuously ventilated with minimum six air changes per hour such that any release of nitrogen will be effectively dispersed, thus preventing the formation of a low oxygen atmosphere. The enclosed space shall be ventilated and provided with oxygen detection in accordance with paragraph 15.2.2.4.5.4 of the FSS Code.

Note:

1. This UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after [...].
2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.