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To: relevant departments of CCS Headquarters, Shanghai Rules & Research Institute, Plan Approval Centers, CCS branches/offices, related shipyards, products manufacturers, designers, ship management companies, and ship owners

**Notice on Implementation of Resolution MSC.291(87) relating to the  
Amendments to Para.4.5.7 Gas measurement of SOLAS Chapter II-2  
(Effective from 1 January 2012)**

1. Background

1.1 The amendments to the International Convention for the Safety of Life At Sea, 1974 was adopted by the resolution MSC.291(87) at the 87th session of IMO Maritime Safety Committee on 21 May 2010, and effective from 1 January 2012.

1.2 This Circular covers revisions to Chapter II-2 contained as set out in the Annex to the resolution MSC.291(87), which is effective from 1 January 2012.

1.3 The original English version and Chinese version of Annex to MSC.291(87) are given in the Annex 1 and 2 to this Circular respectively.

2. Technical Note

2.1 A new requirement with regard to equipment of at least one portable instrument for measuring oxygen concentrations for tankers is added in regulation 4.5.7.1 of SOLAS Chapter II-2. New requirement apply to all tankers including the tankers constructed before 1 July 2002, i.e. newly added paragraph 4.5.7.1 is a retroactive requirement.

2.2 New regulation 4.5.7.3 of SOLAS Chapter II-2 reads as follows:

***“5.7.3 Arrangements for fixed hydrocarbon gas detection systems in double-hull and double-bottom spaces of oil tankers***

5.7.3.1 In addition to the requirements in paragraph 5.7.1 and 5.7.2, oil tankers of 20,000 tonnes deadweight and above, constructed on or after 1 January 2012, shall be provided with a fixed hydrocarbon gas detection system complying with the Fire

Safety System Code for measuring hydrocarbon gas concentrations in all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks, including the forepeak tank and any other tanks and spaces under the bulkhead deck adjacent to cargo tanks.

5.7.3.2 Oil tankers provided with constant operative inerting systems for such spaces need not be equipped with fixed hydrocarbon gas hydrocarbon gas detection equipment.

5.7.3.3 Notwithstanding the above, cargo pump-rooms subject to the provisions of paragraph 5.10 need not comply with the requirements of this paragraph.”

### 3 Requirements during construction survey

The approval and inspection for fixed hydrocarbon gas detection system and main components of the system shall comply with Chapter 16 of FSS Code and MSC.1/Circ.1370 “Guidelines for the design, construction and testing of fixed hydrocarbon gas detection system”.

### 4. Notes

This Circular is available on [www.ccs.org.cn](http://www.ccs.org.cn) and should be forwarded by each branch and plan approval center to relevant shipyards, product manufacturers, ship owners and designers within its business area.

Please feel free to contact Technical Management Department of CCS for any inquiry ([rt@ccs.org.cn](mailto:rt@ccs.org.cn)). CCS’ guidance “Corrosion Inspection Guide for Ship Structures (2009)” can be also referred to.

### 5. Attachments

Attachment 1: The original English version of Resolution MSC291(87)

Attachment 2: The Chinese version of Resolution MSC291(87)

**ANNEX 5**

**RESOLUTION MSC.291(87)  
(adopted on 21 May 2010)**

**ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE  
SAFETY OF LIFE AT SEA, 1974, AS AMENDED**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"), concerning the amendment procedure applicable to the Annex to the Convention, other than to the provisions of chapter I thereof,

HAVING CONSIDERED, at its eighty-seventh session, amendments to the Convention, proposed and circulated in accordance with article VIII(b)(i) thereof,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2011, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;
3. INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2012 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT  
SEA, 1974, AS AMENDED**

**CHAPTER II-1  
CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY  
AND ELECTRICAL INSTALLATIONS**

**Part A-1  
Structure of ships**

- 1 The following new regulation 3-11 is added after regulation 3-10:

**"Regulation 3-11  
Corrosion protection of cargo oil tanks of crude oil tankers**

1 Paragraph 3 shall apply to crude oil tankers\*, as defined in regulation 1 of Annex I to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, of 5,000 tonnes deadweight and above:

- .1 for which the building contract is placed on or after 1 January 2013; or
- .2 in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 July 2013; or
- .3 the delivery of which is on or after 1 January 2016.

2 Paragraph 3 shall not apply to combination carriers or chemical tankers as defined in regulations 1 of Annexes I and II, respectively, to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto. For the purpose of this regulation, chemical tankers also include chemical tankers certified to carry oil.

3 All cargo oil tanks of crude oil tankers shall be:

- .1 coated during the construction of the ship in accordance with the Performance standard for protective coatings for cargo oil tanks of crude oil tankers, adopted by the Maritime Safety Committee by resolution MSC.288(87), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I; or

- .2 protected by alternative means of corrosion protection or utilization of corrosion resistance material to maintain required structural integrity for 25 years in accordance with the Performance standard for alternative means of corrosion protection for cargo oil tanks of crude oil tankers, adopted by the Maritime Safety Committee by resolution MSC.289(87), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.
- 4 The Administration may exempt a crude oil tanker from the requirements of paragraph 3 to allow the use of novel prototype alternatives to the coating system specified in paragraph 3.1, for testing, provided they are subject to suitable controls, regular assessment and acknowledgement of the need for immediate remedial action if the system fails or is shown to be failing. Such exemption shall be recorded on an exemption certificate.
- 5 The Administration may exempt a crude oil tanker from the requirements of paragraph 3 if the ship is built to be engaged solely in the carriage of cargoes and cargo handling operations not causing corrosion\*\*. Such exemption and conditions for which it is granted shall be recorded on an exemption certificate.

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\* Refer to items 1.11.1 or 1.11.4 of the Supplement to the International Oil Pollution Prevention Certificate (Form B).

\*\* Refer to the guidelines to be developed by the Organization."

## **CHAPTER II-2 CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION**

### **Part A General**

#### **Regulation 1 – Application**

2 In paragraph 2.2, in subparagraph .4, the word "and" is deleted; in subparagraph .5 the word "and" is added at the end; and the following new subparagraph .6 is added after the existing subparagraph .5:

".6 regulation 4.5.7.1."

**Part B**  
**Prevention of fire and explosion**

**Regulation 4 – Probability of ignition**

3 The existing paragraph 5.7 is replaced by the following:

**"5.7 Gas measurement and detection**

**5.7.1 *Portable instrument***

Tankers shall be equipped with at least one portable instrument for measuring oxygen and one for measuring flammable vapour concentrations, together with a sufficient set of spares. Suitable means shall be provided for the calibration of such instruments.

**5.7.2 *Arrangements for gas measurement in double-hull spaces and double-bottom spaces***

5.7.2.1 Suitable portable instruments for measuring oxygen and flammable vapour concentrations in double-hull spaces and double-bottom spaces shall be provided. In selecting these instruments, due attention shall be given to their use in combination with the fixed gas sampling line systems referred to in paragraph 5.7.2.2.

5.7.2.2 Where the atmosphere in double-hull spaces cannot be reliably measured using flexible gas sampling hoses, such spaces shall be fitted with permanent gas sampling lines. The configuration of gas sampling lines shall be adapted to the design of such spaces.

5.7.2.3 The materials of construction and dimensions of gas sampling lines shall be such as to prevent restriction. Where plastic materials are used, they shall be electrically conductive.

**5.7.3 *Arrangements for fixed hydrocarbon gas detection systems in double-hull and double-bottom spaces of oil tankers***

5.7.3.1 In addition to the requirements in paragraphs 5.7.1 and 5.7.2, oil tankers of 20,000 tonnes deadweight and above, constructed on or after 1 January 2012, shall be provided with a fixed hydrocarbon gas detection system complying with the Fire Safety Systems Code for measuring hydrocarbon gas concentrations in all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks, including the forepeak tank and any other tanks and spaces under the bulkhead deck adjacent to cargo tanks.

5.7.3.2 Oil tankers provided with constant operative inerting systems for such spaces need not be equipped with fixed hydrocarbon gas detection equipment.

5.7.3.3 Notwithstanding the above, cargo pump-rooms subject to the provisions of paragraph 5.10 need not comply with the requirements of this paragraph."

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