RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

RULES

Part N Ships Carrying Liquefied Gases in Bulk

2019 AMENDMENT NO.2

Rule No.103 27 December 2019

Resolved by Technical Committee on 22 July 2019

An asterisk (*) after the title of a requirement indicates that there is also relevant information in the corresponding Guidance.

Rule No.103 27 December 2019
AMENDMENT TO THE RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Rules for the survey and construction of steel ships" has been partly amended as follows:

Part N SHIPS CARRYING LIQUEFIED GASES IN BULK

Amendment 2-1

Chapter 3 SHIP ARRANGEMENTS

3.2 Accommodation, Service and Machinery Spaces and Control Stations (*IGC Code* 3.2)

Paragraph 3.2.5 has been amended as follows.

3.2.5 Windows and Sidescuttles*

Windows and sidescuttles facing the cargo area and on the sides of the superstructures and deckhouses within the limits specified in **3.2.4**, except wheelhouse windows, are to be constructed to *A*-60 class. ~~Wheelhouse windows are to be constructed to not less than *A*-0 class (for external fire load), except in cases where *A*-0 class construction is not deemed necessary by the Society.~~ Sidescuttles in the shell below the uppermost continuous deck and in the first tier of the superstructure or deckhouse is to be of fixed (non-opening) type.

EFFECTIVE DATE AND APPLICATION (Amendment 2-1)

1. The effective date of the amendments is 1 January 2020.

Amendment 2-2

Chapter 11 FIRE PROTECTION AND EXTINCTION

11.1 Fire Safety Requirements (*IGC Cod*e 11.1)

Paragraph 11.1.1 has been amended as follows.

11.1.1 General*

1 The requirements for tankers in **Part R** are to apply to ships covered by this Part, irrespective of tonnage including ships of less than 500 *gross tonnage*, except those specified in **(1)** to **(~~4~~5)** below. ~~Where alternative and supplementary arrangements are provided to the satisfaction of the Society, the requirements in **Part R** need not apply to ships covered by this Part. Where alternative arrangements for inert gas systems are provided to ships covered by this Part, the requirements in **4.5.5-1, Part R** need not apply to these ships, even if these ships carry crude oil and petroleum products having a flashpoint not exceeding 60°C and other liquid products having a similar fire hazard.~~

(1) **1.1.1** (except **1.1.1-2**), **4.5.1-6** and **-8**, **4.5.10** and **Chapter 21, Part R** are not to apply;

(2) **10.4** and **10.5** (except **10.5.5**)**, Part R** are to apply, as they would apply to tankers of 2,000 *gross tonnage* and over;

(3) **10.5.5**, **Part R** is to apply to ships of 2,000 *gross tonnage* and over.

(~~3~~4) The following requirements in other Parts related to tankers are not to apply and are to be replaced by Chapters and Sections of this Part as detailed in **Table N11.1**.

(~~4~~5) **13.3.3** and **13.4.7**, **Part R** are to apply to ships of 500 *gross tonnage* and over.

2 Where alternative and supplementary arrangements are provided to the satisfaction of the Society, the requirements in **Part R** need not apply to ships covered by this Part. Where alternative arrangements for inert gas systems are provided to ships covered by this Part, the requirements in **4.5.5-1, Part R** need not apply to these ships, even if these ships carry crude oil and petroleum products having a flashpoint not exceeding 60°C and other liquid products having a similar fire hazard.

EFFECTIVE DATE AND APPLICATION (Amendment 2-2)

1. The effective date of the amendments is 1 January 2020.

2. Notwithstanding the amendments to the Rules, the current requirements apply to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date.

(Note) The term "*a similar stage of construction*" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 *tonnes* or 1% of the estimated mass of all structural material, whichever is the less.

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE

Part N Ships Carrying Liquefied Gases in Bulk

2019 AMENDMENT NO.2

Notice No.70 27 December 2019
Resolved by Technical Committee on 22 July 2019

Notice No.70 27 December 2019
AMENDMENT TO THE GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Guidance for the survey and construction of steel ships" has been partly amended as follows:

Part N SHIPS CARRYING LIQUEFIED GASES IN BULK

Amendment 2-1

N11 FIRE PROTECTION AND EXTINCTION

N11.4 Dry Chemical Powder Fire-extinguishing Systems

Paragraph N11.4.8 has been amended as follows.

N11.4.8 Test after Installation

1 For the purpose of the requirements in **11.4.8, Part N of the Rules**, tightness tests are to be carried out with a pressure not less than the maximum working pressure.

2 For the purpose of the requirements in **11.4.8, Part N of the Rules**, "sufficient amounts of dry chemical powder" means that testing arrangements are to involve the discharge using dry chemical powder from all monitors and hand hose lines on board, but it is not required that there is a full discharge of the installed quantity of dry powder. This testing can also be used to satisfy the requirement that the piping is free of obstructions, in lieu of blowing through with dry air all the distribution piping. However, after the completion of this testing, the system, including all monitors and hand hose lines, are to be blown through with dry air, but only for the purpose of the system subsequently being clear from any residues of dry chemical powder.

EFFECTIVE DATE AND APPLICATION (Amendment 2-1)

1. The effective date of the amendments is 27 December 2019.
2. Notwithstanding the amendments to the Guidance, the current requirements apply to dry chemical powder fire-extinguishing systems for which onboard discharge testing before the effective date.

Amendment 2-2

N17 SPECIAL REQUIREMENTS

Paragraph N17.12 has been added as follows.

N17.12 Ammonia

N17.12.2 Provisions to Use Carbon Manganese Steel

For the purpose of the requirements in **17.12.2, Part N of the Rules**, steels for which the specified value of the maximum yield point or proof stress and "*U*" are to be suffixied to the grade mark are to be used in accordance with the requirements in **Chapter 3** or **Chapter 4, Part K of the Rules**.

EFFECTIVE DATE AND APPLICATION (Amendment 2-2)

1. The effective date of the amendments is 27 December 2019.

2. Notwithstanding the amendments to the Guidance, the current requirements apply to steels for which the application for survey is submitted to the Society before the effective date and steels being used on ships for which the date of contract for construction is before the effective date.

Amendment 2-3

N2 SHIP SURVIVAL CAPABILITY AND LOCATION OF CARGO TANKS

N2.5 Flooding Assumptions

N2.5.8 Buoyancy of Superstructures

Sub-paragraph -2 has been amended as follows.

1 For the purpose of **2.5.8, Part N of the Rules**, the longitudinal extent of damage to superstructures above a machinery space located aft is to be the same as the longitudinal extent of the side damage to the machinery space specified **2.6.1, Part N of the Rules**. (*See* **Fig. N2.5.8**)
2 The sliding watertight doors specified in **2.5.8(2), Part N of the Rules** are to satisfy the requirements of **13.13.3, Part C of the Rules**, unless otherwise specified in this chapter and to be remotely operable from a readily accessible place in case of damage. Further, the openings of weathertight accepted within the minimum range of residual stability are to be capable of being securely closed at final equilibrium.

N2.7 Survival Requirements

Paragraph N2.7.1 has been amended as follows.

N2.7.1 Survival Requirements

1 For the purpose of the requirements of **2.7.1-2(1), Part N of the Rules**, openings specified in the following **(1)**, **(2)** and **(3)** may be regarded as watertight flash deck openings.
(1) Openings protected by tank covers with strength equivalent to deck plating.
(2) Openings for cargo containment systems on the weather decks sealed with effectively packing of non-combustible material complied with the requirements in **3.2.33, Part R of the Rules** or equivalent and of sufficient strength.
(3) Sounding pipe with closing head.
2 The "remotely operated watertight sliding doors" referred to in **2.7.1-2(1), Part N of the Rules** are such doors satisfying the requirements of **13.13.3, Part C of the Rules**, unless otherwise specified in this chapter.
~~**2**~~**3** For the purpose of **2.7.1-3(1), Part N of the Rules**, openings capable of being closed weathertight whose immersion are accepted within the required range of residual stability are to be closed securely at final equilibrium after flooding. Openings which are unable to be closed by remote control are to be provided at the place readily accessible at the final equilibrium. However, the requirement may not apply to float type airpipes with automatic closing systems in water.
~~**3**~~**4** In applying the requirements of **2.7.1-3(1), Part N of the Rules**, "other openings capable of being closed weathertight" do not include ventilators provided with weathertight closing appliances in accordance with the requirements of **23.6.5-2, Part C of the Rules** or **21.6.5-2, Part CS of the Rules** that for operational reasons have to remain open to supply air to the engine room or emergency generator room (if the same is considered buoyant in the stability calculation or protecting openings leading below) for the effective operation of the ship.

EFFECTIVE DATE AND APPLICATION (Amendment 2-3)

1. The effective date of the amendments is 1 January 2020.

2. Notwithstanding the amendments to the Guidance, the current requirements apply to ships other than ships that fall under the following:

(1) for which the contract for construction* is placed on or after the effective date; or

(2) in the absence of a contract for construction, the keels of which are laid or which are at *a similar stage of construction* on or after 1 July 2020; or

(Note) The term "*a similar stage of construction*" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 *tonnes* or 1% of the estimated mass of all structural material, whichever is the less.

(3) the delivery of which is on or after 1 January 2024.

* "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

1. The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

2. The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.

For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:

(1) such alterations do not affect matters related to classification, or

(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.

The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

4. If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.

Amendment 2-4

N3 SHIP ARRANGEMENTS

N3.2 Accommodation, Service and Machinery Spaces and Control Stations

Paragraph N3.2.5 has been deleted.

~~**N3.2.5 Windows and Sidescuttles**~~

~~The wording "not deemed necessary by the Society" in **3.2.5, Part N of the Rules** refers to cases where the Administration has decided on the voluntary early implementation of the amendments in resolution *MSC*.411(97) in accordance with *MSC*.1/*Circ*.1549.~~

EFFECTIVE DATE AND APPLICATION (Amendment 2-4)

1. The effective date of the amendments is 1 January 2020.

Amendment 2-5

N5 PROCESS PRESSURE VESSELS AND LIQUID, VAPOUR, AND PRESSURE PIPING SYSTEMS

N5.9 Welding, Post-weld Heat Treatment and Non-destructive Testing

N5.9.3 Non-destructive Testing

Sub-paragraphs -1 and -3 have been amended as follows.

1 For the purpose of **5.9.3, Part N of the Rules,** the radiographic testing method and the judgement for acceptance are to conform to the requirements in **-2** and **-3** of **D11.6.5~~-1 and -2~~**.
2 The wording "procedures approved by the Society" specified in **5.9.3(2), Part N of the Rules** requires that well-documented quality assurance procedures and records are available to enable the Society to assess the ability of the manufacturer to produce satisfactory welds consistently.
3 The "other non-destructive tests" referred to in **5.9.3(3), Part N of the Rules** means, depending upon the use of the pipe, magnetic particle testing or liquid penetrant testing, and the testing procedures are to conform to the requirements in **-3** and **-4** of **D11.4.6~~-3 and -4~~**.

N11 FIRE PROTECTION AND EXTINCTION

N11.3 Water Spray System

Paragraph N11.3.6 has been amended as follows.

N11.3.6 Pipes, Valves, Nozzles and Other Fittings

1 The wording "means are to be provided to back-flush the system with fresh water" referred to in **11.3.6, Part N of the Rules** is to be understood to mean that arrangements are to be provided so that the water-spray system as a whole (i.e. piping, nozzles and in-line filters) can be flushed or back-flushed, as appropriate, with fresh water to prevent the blockage of pipes, nozzles and filters.
2 Where "F.O. tanks" are installed at the after end of the aftermost hold space or at the forward end of the forwardmost hold space instead of cofferdams as allowed for in **3.1.2** and **3.1.3, Part N of the Rules**, the weather deck area above these tanks is to be regarded as part of the "cargo area" for the purpose of applying **11.3.6, Part N of the Rules**, i.e. piping, fittings and related components of water-spray systems are to be designed to withstand 925°C.

EFFECTIVE DATE AND APPLICATION (Amendment 2-5)

1. The effective date of the amendments is 1 January 2020.

2. Notwithstanding the amendments to the Guidance, the current requirements apply to ships for which the date of contract for construction* is before the effective date.

* "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

1. The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

2. The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.

For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:

(1) such alterations do not affect matters related to classification, or

(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.

The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

4. If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.

Amendment 2-6

N5 PROCESS PRESSURE VESSELS AND LIQUID, VAPOUR, AND PRESSURE PIPING SYSTEMS

N5.13 Testing Requirements

N5.13.1 Type Testing of Piping Components

Sub-paragraphs -2 and -3 have been renumbered to Sub-paragraphs -3 and -4, and Sub-paragraph -2 has been added as follows.

2 The wording "to be certified" specified in **5.13.1-1(2), Part N of the Rules** means the following:

(1) For pressure relief valves (PRVs) that are subject to **8.2.5, Part N of the Rules**, the flow or capacity is to be approved by the Administration or by the Society in accordance with the requirements of the **Annex 1** "**GUIDANCE FOR EQUIPMENT AND FITTINGS OF SHIPS CARRYING LIQUEFIED GASES IN BULK**"; or

(2) For other types of valves, the manufacturer is to certify the flow properties of the valves based on tests carried out according to recognized standards deemed appropriate by the Society.

~~2~~**3** **"**Emergency shutdown valves, with materials having melting temperatures lower than 925°C" referred to in the requirements in **5.13.1-1(4), Part N of the Rules** does not include an emergency shutdown valve in which components made of materials having melting temperatures lower than 925°C do not contribute to the shell or seat tightness of the valve.

~~3~~**4** For the purpose of **5.13.1-2, Part N of the Rules**, all bellows-type expansion joints provided for all cargo piping, including the cargo liquid/vapour piping, provided both inside and outside tanks as well as vent piping with open ends are to be approved in accordance with the requirements of the **Annex 1** "**GUIDANCE FOR EQUIPMENT AND FITTINGS OF SHIPS CARRYING LIQUEFIED GASES IN BULK**".

N8 CARGO TANK VENT SYSTEMS

N8.1 General

Paragraph N8.1.1 has been amended as follows.

N8.1.1 General

For the purpose of the requirements in **8.1.1, Part N of the Rules**, the pressure relief system of hold spaces and interbarrier spaces is to be in accordance with the following requirements **(1)** ~~and **(2)**~~ to **(3)**:

(1) In hold spaces not regarded as the interbarrier space and environmental control within the space is required in accordance with the provisions in **9.2** and **9.3, Part N of the Rules**, one or more pressure relief systems of sufficient capacity are to be provided. The set pressure of those pressure relief systems is to be so set as not to exceed the design pressure of the cargo containment system and hull construction under the condition of dry air sealing or inerting. The location of the vent discharge outlet to which the outlets from the pressure relief systems is lead is to be in accordance with the requirements in **13.6.4, Part D of the Rules**, and in addition, consideration is to be given so as not to cause the inert gas to accumulate on deck.

(2) The pressure relief system of hold spaces regarded as the interbarrier space or part thereof is to conform to the requirements in the following **(3)** and **N8.2.2**.

(3) The size of interbarrier spaces pressure relief devices is to conform to the following requirements **(a)** to **(e)**:

(a) The combined relieving capacity of the pressure relief devices for interbarrier spaces surrounding type *A* independent cargo tanks where the insulation is fitted to the cargo tanks may be determined by the following formula:

$$Q_{sa} = 3.4 A_c \frac{\rho}{\rho_v} \sqrt{h} \quad (m^3/s)$$

where:

Q_{sa} = minimum required discharge rate of air at standard conditions of 273 *K* and 1.013 *bar*

A_c = design crack opening area (m^2)

$$A_c = \frac{\pi}{4} \delta l \quad (m^2)$$

δ = max crack opening width (*m*)

$$\delta = 0.2t \quad (m)$$

t = thickness (*m*) of tank bottom plating

l = design crack length (*m*) equal to the diagonal of the largest plate panel of the tank bottom.

h = max liquid height (*m*) above tank bottom plus 10*MARVS*

ρ = density of product liquid phase (kg/m^3) at the set pressure of the interbarrier space relief device

ρ_v = density of product vapour phase (kg/m^3) at the set pressure of the interbarrier space relief device and a temperature of 273 *K*

MARVS = max allowable relief valve setting (*bar*) of the cargo tank.

(b) The relieving capacity of pressure relief devices of interbarrier spaces surrounding independent type *B* cargo tanks may be determined on the basis of the method given in **(1)** above, however, the leakage rate is to be determined in accordance with **4.7.2, Part N of the Rules**.

(c) The relieving capacity of pressure relief devices for interbarrier spaces of membrane and semimembrane tanks is to be evaluated on the basis of specific membrane/semi-membrane tank design.

(d) The relieving capacity of pressure relief devices for interbarrier spaces adjacent to integral type cargo tanks may, if applicable, be determined as for type *A* independent cargo tanks.

(e) The interbarrier space pressure relief devices specified in the preceding **(a)** to **(e)** are emergency devices for protecting the hull structure from being unduly overstressed in case of a pressure rise in the interbarrier space due to primary barrier failure. Therefore, such devices need not comply with the requirements of **8.2.10** and **8.2.11, Part N of the Rules**.

N8.2 Pressure Relief Systems

Paragraph N8.2.2 has been amended as follows.

N8.2.2 Pressure Relief Devices for Interbarrier Spaces

1 The "pressure relief devices" referred to in the requirements in **8.2.2, Part N of the Rules** means *PRV*s, rupture discs or equivalent, or two or more of them in combination are to be provided in each space to be covered. The size of i~~I~~nterbarrier space pressure relief devices is to conform to the preceding **N8.1.1(3)**~~in the scope of this interpretation are emergency devices for protecting the hull structure from being unduly overstressed in case of a pressure rise in the interbarrier space due to primary barrier failure. Therefore such devices need not comply with the requirements of **8.2.10** and **8.2.11, Part N of the Rules**~~.

2 When only *PRV*s are provided as the pressure relief devices given in the preceding **-1**, the following requirements **(1)** and **(2)** are to be complied with:

(1) In case where the cargo tank is of the type *A* independent tank, semi-membrane tank provided with complete secondary barrier, membrane tank or integral tank, the following requirements **(a)** and **(b)** are to be complied with:
   (a) The capacity of the pressure relief system is to be sufficient to relieve the greater of the maximum supply capacity of the inerting system and dry air supply system or the estimated volume of cargo evaporation in an event of failure of the cargo tank.
   (b) *PRV*s are to be in accordance with the requirements in **N8.2.5**.

(2) In case where the cargo tank is of the type *B* independent tank or semi-membrane tank provided with partial secondary barrier, the following requirements **(a)** and **(b)** are to be complied with:
   (a) The capacity of pressure relief device is to be in accordance with the preceding **(1)(a)**.
   (b) *PRV*s may not be such as being approved in accordance with the requirements in **N8.2.5**. However, they are to be equivalent to those complying with the requirements for *PV* valves in **R11.6.1**.

3 When, as a pressure relief device referred to in the preceding **-1**, pressure valve and rupture disc are provided in combination, they are to conform to the following requirements **(1)** to **(3)** for the cargo tank types indicated in the preceding **-2(1)**:

(1) The capacity of the *PRV* is to be sufficient to relieve the maximum supply capacity of the inerting system.

(2) *PRV*s are to be in accordance with the requirements in the preceding **-2(2)(b)**.

(3) The capacity of rupture disc is to be sufficient to relieve the volume of cargo evaporation in an event of failure of the cargo tank, and the construction is to be as deemed appropriate by the Society.

~~**4 Size of pressure relief devices**~~

~~(1) The combined relieving capacity of the pressure relief devices for interbarrier spaces surrounding type *A* independent cargo tanks where the insulation is fitted to the cargo tanks may be determined by the following formula:~~

$$Q_{sa} = 3.4 A_c \frac{\rho}{\rho_v} \sqrt{h} \ (m^3/s)$$

~~where:~~

~~Q_{sa} = minimum required discharge rate of air at standard conditions of 273 *K* and 1.013 *bar*~~

~~A_c = design crack opening area (m^2)~~

$$A_c = \frac{\pi}{4} \delta l \ (m^2)$$

~~δ = max crack opening width (*m*)~~

$$\delta = 0.2t \ (m)$$

~~t = thickness (*m*) of tank bottom plating~~

~~l = design crack length (*m*) equal to the diagonal of the largest plate panel of the tank bottom.~~

~~h = max liquid height (*m*) above tank bottom plus 10*MARVS*~~

~~ρ = density of product liquid phase (kg/m^3) at the set pressure of the interbarrier space relief device~~

~~ρ_v = density of product vapour phase (kg/m^3) at the set pressure of the interbarrier space relief device and a temperature of 273 *K*~~

~~*MARVS* = max allowable relief valve setting (*bar*) of the cargo tank.~~

~~(2) The relieving capacity of pressure relief devices of interbarrier spaces surrounding independent type *B* cargo tanks may be determined on the basis of the method given in **(1)** above, however, the leakage rate is to be determined in accordance with **4.7.2, Part N of the Rules.**~~

~~(3) The relieving capacity of pressure relief devices for interbarrier spaces of membrane and semimembrane tanks is to be evaluated on the basis of specific membrane/semi-membrane tank design.~~

~~(4) The relieving capacity of pressure relief devices for interbarrier spaces adjacent to integral type cargo tanks may, if applicable, be determined as for type *A* independent cargo tanks.~~

N11 FIRE PROTECTION AND EXTINCTION

N11.1 Fire Safety Requirements

Paragraph N11.1.1 has been amended as follows.

N11.1.1 General

~~1~~ The "~~A~~alternative arrangements" for inert gas system specified in **11.1.1-2, Part N of the Rules** means the arrangements which comply with the requirements specified in **4.5.5-4(1), Part R of the Rules**.

~~**2 For the purpose of 11.1.1, Part N of the Rules**, the provisions of **21.2.1, Part R of the Rules** is not to apply to.~~

N13 INSTRUMENTATION AND AUTOMATION SYSTEMS

N13.2 Level Indicators for Cargo Tanks

Paragraph N13.2.2 has been amended as follows.

N13.2.2 Arrangement of Liquid Level Gauge

~~For the purpose of the requirements~~ The wording "can be maintained" specified in **13.2.2**, **Part N of the Rules**~~,~~ means that any part of the level gauge other than passive parts can be overhauled ~~where only one level gauge is fitted, it is to be arranged so that any necessary maintenance, such as an overhaul, can be carried out~~ while the cargo tank is in service. In this regard, passive parts are those parts assumed not subject to failures under normal service conditions.

EFFECTIVE DATE AND APPLICATION (Amendment 2-6)

1. The effective date of the amendments is 1 January 2020.

2. Notwithstanding the amendments to the Guidance, the current requirements apply to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date.

(Note) The term "*a similar stage of construction*" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 *tonnes* or 1% of the estimated mass of all structural material, whichever is the less.