



# RUSSIAN MARITIME REGISTER OF SHIPPING

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**CIRCULAR LETTER**

**No. 328-04-1287c**

dated 15.11.2019

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Re:

amendments to the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk, 2019, ND No. 2 020101-122-E

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Item(s) of supervision:  
ships under construction

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Entry-into-force date:

Valid till:-

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Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part I "Classification" and Part VI "Systems and Piping"

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Director General

Konstantin G. Palnikov

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Text of CL:

We hereby inform that the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk shall be amended as specified in the Appendices to the Circular Letter.

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It is necessary to do the following:

1. Bring the content of the Circular Letter to the notice of the RS surveyors, as well as interested organizations and persons in the area of the RS Branch Offices' activity.
  2. Amendments introduced by the Circular Letter shall apply during review of plan approval documentation since the date of their coming into force.
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List of the amended and/or introduced paras/chapters/sections:

Part I: paras 2.2.10, 2.2.11, 4.1 and 4.4

Part VI: para 4.2.7

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**Information on amendments introduced by the Circular Letter  
(for inclusion in the Revision History to the RS Publication)**

Nos.	Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
1	Part I, paras 2.2.10 and 2.2.11	A new para 2.2.10 with the requirements to the assignment of the additional symbol <b>RLU (Reliquefaction unit)</b> assignment has been introduced. The existing para 2.1.10 has been renumbered 2.1.11	328-04-1287c of 15.11.2019	15.11.2019
2	Part I, para 4.1	The requirements for RS stamp type, the list of technical documentation submitted and the scope of failure mode and effects analysis have been specified	328-04-1287c of 15.11.2019	15.11.2019
3	Part I, para 4.4	A new para with the additional requirements for the list of technical documentation submitted to the Register for review when the symbol <b>RLU (Reliquefaction unit)</b> is added to the class notation has been introduced	328-04-1287c of 15.11.2019	15.11.2019
4	Part VI, para 4.2.7	A new para with the requirements for mechanisms, arrangements and equipment of reliquefaction unit for cargo vapours has been introduced	328-04-1287c of 15.11.2019	15.11.2019

## **RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SHIPS CARRYING LIQUEFIED GASES IN BULK, 2019,**

### **ND No. 2-020101-122-E**

#### **PART I. CLASSIFICATION**

##### **2 CLASS NOTATION**

1 **A new para 2.2.10** is introduced reading as follows:

**"2.2.10** Where a ship is fitted with a reliquefaction unit for cargo vapours complying with 4.2, Part VI "Systems and Piping", the symbol **RLU (Reliquefaction unit)** shall be added to the ship's class notation. The documentation specified in 4.4 shall be submitted to confirm the fulfillment of the requirements applying to ships with the symbol **RLU**".

2 The **existing para 2.2.10** is renumbered 2.2.11.

##### **4 PLAN APPROVAL DOCUMENTATION**

3 **Para 4.1** is replaced by the following text:

**"4.1** In addition to the technical documentation specified in Section 3, Part I "Classification" of the Rules for the Classification, the following technical documentation confirming fulfillment of the LG Rules shall be submitted to the Register<sup>1</sup>:

**.1** drawings and strength calculations of cargo tanks with their distances from side plating and the bottom specified (\*);

**.2** drawings of supports and other structures for securing of independent cargo tanks (\*);

**.3** drawings and diagrams of systems and piping for cargo specifying the components like compensators, flange joints, stop and regulating valves (\*);

**.4** drawings and descriptions of an inert gas generation plant (\*);

**.5** justification of fitness of fire-extinguishing media, fire detection and extinction system apparatus for cargoes carried, as well as the documents confirming the design time of fire extinction, the rate of fire-extinguishing media delivery and the stores of fire-extinguishing media on board (\*\*);

**.6** diagrams and calculations of the ventilation system of spaces in the cargo area and of other spaces to be accessible for cargo operations performance. The diagrams are to contain data on fitness of materials used for manufacture of fan impellers and air ducts (\*);

**.7** diagrams and calculations of the vent system (\*);

**.8** drawings and descriptions of all systems and arrangements for the measurement of cargo amount and characteristics, and for gas detection (\*);

**.9** diagrams and calculations of drain and ballast systems in the cargo area, pump-rooms, cofferdams, pipe tunnels, spaces for independent cargo tanks, etc. (\*);

**.10** justification of fitness of insulating materials used in the cargo area, as well as data on the procedure of their manufacture, storage conditions, quality control techniques, the extent of a harmful effect of solar radiation, resistance to vibration and temperature (\*\*);

**.11** drawings of quick-closing arrangements of the cargo containment system (\*);

**.12** diagrams of cargo heating and refrigeration systems and the heat transfer calculation (\*);

**.13** drawings of relief and vacuum relief valves of cargo tanks (\*);

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<sup>1</sup> Stamp types following the documentation (marked with (\*) and (\*\*)) review results according to 3.1.4, Part I «Classification» of the Rules for the Classification.

- .14 diagrams of cargo pressure and temperature regulation systems (\*);
- .15 calculations of stresses in cargo and other piping containing cargo at a temperature below  $-110\text{ }^{\circ}\text{C}$  (\*\*);
- .16 diagrams of piping relating to the use of cargo as fuel with indication of separate units of pipe joints, and of valves location and design (\*);
- .17 diagrams of electric drives and control systems for a reliquefaction unit for cargo vapours, liquefied gas refrigeration units, cargo pumps and compressors, an inertgas generation plant, fans of dangerous spaces and air locks and functional diagrams of control systems for units as above (\*);
- .18 functional diagrams of electric measurement and alarm systems (\*);
- .19 functional diagrams of systems for automatic and remote disconnection of electrical equipment, for remote control over hull structure heating valves (\*);
- .20 drawings of cable laying in dangerous spaces and areas (\*);
- .21 drawings of earthing for electrical equipment, cables, piping located in gas-dangerous spaces (\*);
- .22 justification of electrical equipment fitness (\*\*);
- .23 techniques for mechanical relief of stresses in independent cargo tanks (\*\*);
- .24 Failure Mode and Effects analysis (FMEA) for electrical generation and distribution systems and associated control systems (refer to 2.1.4, Part VII "Electrical equipment") (\*\*);
- .25 an inspection/survey plan for the cargo containment system (\*);
- .26 cargo system operation manual in accordance with the requirements of Chapter 18 of the Code (\*).

4 A new para 4.4 is introduced reading as follows:

"4.4 In addition to technical documentation specified in 4.1 the following technical documentation confirming that a ship complies with the requirements applying to ships with the symbol **RLU** and to a reliquefaction unit for cargo vapours shall be submitted to the Register prior to commencement of a ship's construction<sup>1</sup>:

- .1 technical specification of reliquefaction unit for cargo vapours (\*\*);
- .2 calculation of required capacity for reliquefaction unit for cargo vapours considering thermal flows for each cargo tank (\*\*);
- .3 arrangement plans of reliquefaction unit for cargo vapours and associated equipment (compressors, heat exchangers, pumps, pressure vessels, scrubbers) onboard with indication of escape routes from the compartment, where the unit is installed, and arrangement of permanently installed gas detection system (\*);
- .4 arrangement plans for refrigerant, cooling medium and cooling water pipelines with indication of passing through the bulkheads, decks and platforms (\*);
- .5 arrangement plans for electrical and automation equipment of reliquefaction unit for cargo vapours (\*);
- .6 circuit diagrams of ventilation systems for compartments, where equipment for reliquefaction unit for cargo vapours is arranged, with indication of watertight and gastight bulkheads and fire-proof divisions, as well as the number of air changes per hour (\*);
- .7 circuit diagrams of refrigerant, cooling medium and cooling water systems with indication of heat-transfer properties (\*);
- .8 functional diagram and description of emergency shutdown system for reliquefaction unit for cargo vapours and its interaction with the emergency shutdown system for ship's cargo system (\*);
- .9 list of mechanisms and equipment for reliquefaction unit for cargo vapours with indication of their technical characteristics (\*\*);
- .10 list of electrical and automation equipment for reliquefaction unit for cargo vapours with indication of type of explosion protection and summary technical specification for the equipment (\*\*);
- .11 failure mode and effects analysis (FMEA) for reliquefaction unit for cargo vapours (in accordance with IEC 60812 standard) performed against the level confirming the operation of the unit as intended after any single failure (\*\*);

<sup>1</sup> Stamp types following the documentation (marked with (\*) and (\*\*)) review results according to 3.1.4, Part I «Classification» of the Rules for the Classification.

.12 testing procedures during sea and gas trials of reliquefaction unit for cargo vapours (\*).".

## **PART VI. SYSTEMS AND PIPING**

### **4 CARGO PRESSURE/TEMPERATURE CONTROL**

5 A **new para 4.2.7** is introduced reading as follows:

"**4.2.7** The relevant requirements of the Rules for the Classification shall also apply to mechanisms, arrangements and equipment of reliquefaction unit for cargo vapours unless otherwise specified in the LG Rules."