



RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER

No. 413-05-1931c

dated 15.05.2023

Re:

amendments to the Rules for the Oil-and-Gas Equipment of Floating Offshore Oil-and-Gas Product Units, Mobile Offshore Drilling Units and Fixed Offshore Platforms, 2023, ND No. 2-090601-011-E

Item(s) of supervision:

gas detection

Entry-into-force date:

01.06.2023

Cancels / amends / adds Circular Letter No.

dated

Number of pages: 1 + 5

Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Parts II "Drilling Rig Systems and Equipment", III "Systems for Production, Treatment, Gathering and Transportation of Well Fluids" and IX "Special Requirements for Ensuring Explosion and Fire Safety"

Director General

Sergey A. Kulikov

Text of CL:

We hereby inform that the Rules for the Oil-and-Gas Equipment of Floating Offshore Oil-and-Gas Product Units, Mobile Offshore Drilling Units and Fixed Offshore Platforms shall be amended as specified in the Appendices to the Circular Letter.

It is necessary to do the following:

1. Bring the content of the Circular Letter to the notice of the RS surveyors, interested organizations and persons in the area of the RS Branch Offices' activity.
 2. Apply the provisions of the Circular Letter during review and approval of the technical documentation on ships contracted for construction or conversion on or after 01.06.2023, in the absence of a contract, during review and approval of the technical documentation on ships requested for review on or after 01.06.2023.
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List of the amended and/or introduced paras/chapters/sections:

Part II: para 1.2.8

Part III: paras 2.5.31, 2.9.10 — 2.9.17

Part IX: paras 1.2.10, 2.4.3, 2.6.9, 2.16.1, 2.16.2, 2.17.2, 2.18.1, 2.19.1

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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 II, para 1.2.8	Requirements have been specified for gas detection in enclosed spaces of the drilling unit wherein flammable mixtures may be formed or penetrate	413-05-1931c of 15.05.2023	01.06.2023
2	Part III, para 2.5.31	Requirements have been specified for gas detection of flare system	413-05-1931c of 15.05.2023	01.06.2023
3	Part III, paras 2.9.10 — 2.9.17	Para 2.9.10 has been deleted. Paras 2.9.10 — 2.9.17 have been renumbered 2.9.10 — 2.9.16, accordingly	413-05-1931c of 15.05.2023	01.06.2023
4	Part III, para 2.9.11 (renumbered para 2.9.10)	Requirements have been specified for gas detection in rooms for arrangement of gas compressor plant	413-05-1931c of 15.05.2023	01.06.2023
5	Part IX, para 1.2.10	Requirements have been specified for gas detection in rooms with open equipment containing drilling mud	413-05-1931c of 15.05.2023	01.06.2023
6	Part IX, para 2.4.3	Requirement has been introduced regarding justification for selecting types and location of gas analyzers	413-05-1931c of 15.05.2023	01.06.2023
7	Part IX, para 2.6.9	Requirements have been specified for gas detection in rooms for arrangement of gas compressor plant	413-05-1931c of 15.05.2023	01.06.2023
8	Part IX, para 2.16.1	Requirements have been specified for the LFL threshold value for alarm	413-05-1931c of 15.05.2023	01.06.2023
9	Part IX, para 2.16.2	Requirements have been specified for gas detection in non-hazardous spaces	413-05-1931c of 15.05.2023	01.06.2023
10	Part IX, para 2.17.2	Requirements have been specified for the LFL threshold value for ventilation system	413-05-1931c of 15.05.2023	01.06.2023
11	Part IX, para 2.18.1	Requirements have been specified for the LFL threshold value for emergency shutdown of pumps	413-05-1931c of 15.05.2023	01.06.2023
12	Part IX, para 2.19.1	Requirements have been specified for the LFL threshold value for emergency shutdown of the welding equipment	413-05-1931c of 15.05.2023	01.06.2023

**RULES FOR THE OIL-AND-GAS EQUIPMENT OF FLOATING OFFSHORE
OIL-AND-GAS PRODUCT UNITS, MOBILE OFFSHORE DRILLING UNITS
AND FIXED OFFSHORE PLATFORMS, 2023,**

ND No. 2-090601-011-E

PART II. DRILLING RIG SYSTEMS AND EQUIPMENT

1 GENERAL

1 **Para 1.2.8** is replaced by the following text:

"1.2.8 All the enclosed spaces of the drilling unit wherein flammable mixtures may be formed or penetrate shall be provided with gas detection and alarm systems and with plenum-exhaust ventilation, ensuring an air change in compliance with the requirements of the standards recognized by the Register. The ventilation shall be continuously operated from opening-up of the producing horizon till completion of the well construction. When the hydrocarbon concentration in the air reaches 20 % of lower flame limit (LFL) in hazardous spaces, a warning alarm shall be activated in the corresponding space and in the main machinery control room (main control station), and in case of further concentration increase up to 50 % of LFL, the equipment and machinery shall be completely stopped."

**PART III. SYSTEMS FOR PRODUCTION, TREATMENT, GATHERING
AND TRANSPORTATION OF WELL FLUIDS**

**2 REQUIREMENTS FOR SYSTEMS FOR PRODUCTION, TREATMENT, GATHERING
AND TRANSPORTATION OF WELL FLUIDS**

2 **Para 2.5.31** is replaced by the following text:

"2.5.31 The flare systems shall be provided with alarm devices (with signal output at the main machinery control room) operating when the following parameters are reached:
the minimum allowable flow of the purging air to collector and gas seal;
the minimum allowable pressure or flow of fuel gas for the pilot burners;
loss of flame in the pilot burners;
creation of negative pressure at the base of flare stack, equal to or more than 1000 Pa;
the minimum and maximum allowable levels of liquid in separators, condensate collectors;
the minimum allowable level of liquid in flare hydraulic seals;
the maximum allowable temperature of gases supplied to the storage tanks;
the minimum allowable temperature in flare hydraulic seals;
start of condensate pumps;
start of compressors;
presence of combustible gases and vapours, which hydrocarbon concentration in the air reaches 20 % of LFL in compressor room and hydraulic seal with duplication of visual and sound alarm and location of the said alarm devices above the entrance door, as well as at the areas where separators, storage tanks and pumps are arranged."

3 **Para 2.9.10** is deleted. **Paras 2.9.11 — 2.9.17** are renumbered **2.9.10 — 2.9.16**, accordingly.

4 **Para 2.9.11 (renumbered para 2.9.10)** is replaced by the following text:

"2.9.10 Gas compressor plants shall be equipped with the following (refer also to Section 2, Part IX "Special Requirements for Ensuring Explosion and Fire Safety"):

instruments to monitor process parameters (pressure, flow, temperature, etc.) of the transported fluid;

system of instruments to monitor condition of the compressor equipment (vibrations, bearing temperature, etc.);

gas detection and alarm system in the compressor room;

ventilation system;

alarm system to give warning of the process parameter violation and in case of gas contamination in the compressor room;

automatic shutdown and interlocking systems of the compressor when the process parameters exceed the maximum allowable values, gas concentration in air in the compressor room exceeds 40 % of LFL on one sensor or 20 % on two or more sensors, in case of malfunction of the ventilation system;

control panels in the compressor room and in the main machinery control room;

automatic fire detection and fire alarm systems;

fire-fighting system."

PART IX. SPECIAL REQUIREMENTS FOR ENSURING EXPLOSION AND FIRE SAFETY

1 ELECTRICAL EQUIPMENT

5 **Para 1.2.10** is replaced by the following text:

"1.2.10 The FOP rooms with open equipment containing drilling mud are classified by explosion hazard as spaces of zone 1 if the following is provided:

.1 structural measures for decreasing the open areas of tanks and equipment;

.2 inclusion of the drilling mud degassing equipment into the circulating system;

.3 equipment of rooms with process ventilation systems complete with the main and emergency ventilation as well as local exhaust above the open surfaces of the equipment filled with drilling mud. The design capability of the system when activating the emergency ventilation shall provide removal of combustible vapours and/or gases of explosive concentration from the room in less than 1 h;

.4 equipment of rooms with the system for detection of combustible vapours and/or gases of pre-explosive concentration. The system shall:

automatically start emergency fans of the process ventilation system when explosive gases and/or vapours with concentration of 20 % of LFL are detected, and increase the air exchange rate up to 20 air changes in the protected rooms in order to decrease the concentration of explosive gases and/or vapours;

automatically stop the drilling process and drilling pumps when explosive gases and/or vapours with concentration of 50 % of LFL are detected in order to cut off the supply of drilling mud, being a gas ingress source, to the protected rooms. The process ventilation shall continue to operate with the switched-on emergency ventilation in the air exchange mode decreasing the concentration of explosive gases and/or vapours in the room down to the non-explosive level;

close dampers of ventilation ducts and stop supply fans when explosive gases with concentration of 50 % of LFL at air intakes are detected;

.5 continuous monitoring of gas component in the drilling mud and stoppage of drilling when this gas component exceeds 5 %, and switching the drilling mud flow to the separator of the blowout equipment system applying measures to detect the causes of mud saturation with gas."

2 AUTOMATION

6 **Para 2.4.3** is replaced by the following text:

"**2.4.3** Justification for selecting types and location of gas analyzers shall be submitted to the Register for review."

7 **Para 2.6.9** is replaced by the following text:

"**2.6.9** Gas compressor plants and rooms for their arrangement shall be equipped with stationary gas detectors and ESD systems with operating thresholds in accordance with 2.9.10, Part III "Systems for Production, Treatment, Gathering and Transportation of Well Fluids".

8 **Paras 2.16.1 and 2.16.2** are replaced by the following text:

"**2.16.1** When the concentration of explosive gases reaches 20 % of LFL, the automated process control system shall provide:

- activation of visible and audible alarms in the main machinery control room, at the main control station, in the driller's cabin, drilling foreman's office (for drilling rig rooms) and also at the relevant local control stations;

- indication in the main machinery control room, at the main control station of explosive gas concentration;

- automatic start of the back-up fans of a process ventilation system in the relevant spaces of hazardous areas;

- automatic closing of fire dampers at air intakes of non-hazardous spaces.

2.16.2 When the concentration of explosive gases reaches 50 % of LFL, the automated process control system shall provide:

- shutdown of the equipment consuming air for burning/compression;

- shutdown of drilling equipment;

- emergency shutdown of the process system;

- shutdown of non-explosion-proof electrical equipment in open spaces and within the spaces outside the boundaries of a temporary shelter;

- emergency shutdown of ventilation;

- activation of alarm in the main machinery control room and at the main control station indicating the open doors around the temporary shelter boundaries when explosive gases are detected in the open spaces and at the air inlets;

- when the signals on detection of explosive gases are not accepted (acknowledged) by a watch officer within 120 s, provision shall be made for a signal to actuate the automatic start of a public address system and general alarm system."

9 **Para 2.17.2** is replaced by the following text:

"**2.17.2** The emergency shutdown of ventilation and closing of fire ventilation gate valves shall be controlled:

- remotely: from the main machinery control room and the main control station;

- remotely: at escape routes from the spaces of the relevant ventilation section;

- automatically: at activation of the fire smothering gas system, detection of explosive gases and vapours with a concentration of 50 % of LFL in hazardous spaces."

10 **Para 2.18.1** is replaced by the following text:

"**2.18.1** Emergency shutdown of the fuel oil and lubricating oil pumps, pumps for transfer of inflammable and combustible liquids shall be controlled:

- remotely: from the main machinery control room and the main control station;

- remotely: at the escape routes;

- automatically: at activation of the fire smothering gas system, detection of explosive gases and vapours with a concentration of 50 % of LFL in the pump room."

11 **Para 2.19.1** is replaced by the following text:

"2.19.1 Emergency shutdown of the welding equipment shall be controlled:
remotely: from the main machinery control room and the main control station;
automatically: at activation of the fire smothering gas system, detection of explosive gases
with a concentration of 20 % of LFL at the air intakes in the space to carry out welding
operations."