



# RUSSIAN MARITIME REGISTER OF SHIPPING

**CIRCULAR LETTER**

**No. 392-06-1536c**

dated 29.03.2021

Re:

amendments to the Rules for the Oil-and-Gas Equipment of Floating Offshore Oil-and-Gas Production Units, Mobile Offshore Drilling Units and Fixed Offshore Platforms, 2021, ND No. 2-090601-008-E

Item(s) of supervision:

oil-and-gas equipment

Entry-into-force date:

**01.05.2021**

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Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Parts I "General Regulations For Technical Supervision", V "Systems and Piping" and VII "Heat Exchangers and Pressure Vessels"

Acting 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 Production 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 technical documentation on ships, materials and products, requested for review on or after 01.05.2021, as well as when performing technical supervision during construction of ships, manufacture of equipment/products/machinery. If necessary, the provisions of the Circular Letter may be applied earlier than specified above.

List of the amended and/or introduced paras/chapters/sections:

Part I: Chapter 1.1, Tables 7.1 and 10.2.7, para 11.3

Part V: Chapter 3.6

Part VII: paras 1.1.6 — 1.1.10

Person in charge: Alexey L. Sitchenko

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+7 (812) 380-19-53

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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, Chapter 1.1	New definitions "Pig launchers/receivers" and "Pigs" have been introduced	392-06-1536c of 29.03.2021	01.05.2021
2	Part I, Table 7.1	New codes 25022800 and 25022801 have been introduced. Codes 25040600, 25040601 and 25040602 have been deleted	392-06-1536c of 29.03.2021	01.05.2021
3	Part I, Table 10.2.7	New items 2.27 and 2.27.1 have been introduced. Items 4.5, 4.5.1 and 4.5.2 have been deleted	392-06-1536c of 29.03.2021	01.05.2021
4	Part I, para 11.3	Requirements have been specified for the oil-and-gas equipment installed on the open decks and platforms	392-06-1536c of 29.03.2021	01.05.2021
5	Part V, Chapter 3.6	New Chapter has been introduced containing requirements for pig launchers/receivers	392-06-1536c of 29.03.2021	01.05.2021
6	Part VII, paras 1.1.6 — 1.1.10	Para 1.1.6 has been deleted. Paras 1.1.7 — 1.1.10 and references thereto have been renumbered 1.1.6 — 1.1.9, accordingly	392-06-1536c of 29.03.2021	01.05.2021

**RULES FOR THE OIL-AND-GAS EQUIPMENT OF FLOATING OFFSHORE  
OIL-AND-GAS PRODUCTION UNITS, MOBILE OFFSHORE DRILLING UNITS  
AND FIXED OFFSHORE PLATFORMS, 2021,**

**ND No. 2-090601-008-E**

**PART I. GENERAL REGULATIONS FOR TECHNICAL SUPERVISION**

**1 DEFINITIONS AND ABBREVIATIONS**

1 **Chapter 1.1.** After the definition "Oil-and-gas equipment", the definitions "Pigs" and "Pig launchers/receivers" are introduced reading as follows:

"Pig launcher/receiver is a fixed equipment designed for launching and/or receiving of cleaning, intelligent, separation and sealing pigs in the flow of the conveyed working medium of the subsea pipeline.

Pigs (cleaning pigs, geometry tools and scrapers) are gauges, intelligent pigs and other devices transferred in the pipeline by the flow of conveyed working medium and intended for cleaning and/or inspection of the pipeline."

**7 NOMENCLATURE OF ITEMS OF THE REGISTER TECHNICAL SUPERVISION  
OF THE FPU/MODU/FOP OIL-AND-GAS EQUIPMENT**

2 **Table 7.1.** New codes 25022800 and 25022801 are introduced reading as follows:

"

25022800	<b>Pig launching/receiving systems</b>	—	P	—	P
25022801	Pig launchers/receivers	4	P	P	P

"

**Codes 25040600, 5040601 and 25040602** are deleted.

**10 TECHNICAL SUPERVISION OF OIL-AND-GAS EQUIPMENT IN SERVICE**

3 **Table 10.2.7.** New items 2.27 and 2.27.1 are introduced reading as follows:

"

2.27	<b>Pig launching/receiving systems</b>	—	OP	—	—	OP	—	OPH	—	—	OP	—	OP	—	—	OPH
2.27.1	Pig launchers/receivers	P	OP	P	P	OP	P	OPH	P	P	OP	P	OP	P	P	OPH

"

**Items 4.5, 4.5.1 and 4.5.2** are deleted.

# 11 GENERAL REQUIREMENTS FOR DESIGN OF THE FPU/MODU/FOP OIL-AND-GAS EQUIPMENT

4 **Para 11.3** is replaced by the following text:

"11.3 Class of the oil-and-gas equipment installed on the open decks and platforms shall correspond to the climatic conditions in the operational area in compliance with GOST 15150."

## PART V. SYSTEMS AND PIPING

### 3 REQUIREMENTS FOR THE SPECIAL PURPOSE SYSTEMS AND PIPING

5 **New Chapter 3.6** is introduced reading as follows:

#### "3.6 PIG LAUNCHERS/RECEIVERS

##### **3.6.1 General.**

**3.6.1.1** Pig launchers/receivers are designed for launching and/or receiving of cleaning, intelligent, separation and sealing pigs in the flow of the conveyed working medium. The pig launchers/receivers covered by this Chapter are not intended for subsea use.

**3.6.1.2** The pig launchers'/receivers' design shall provide reliable and safe operation during the specified service life as well as allow for carrying out of surveys, cleaning, complete emptying, purging, repairs, in-service inspection of metal and joints.

**3.6.1.3** The pig launchers/receivers shall be manufactured explosion-proof. Unless otherwise specified in the RS-approved documentation, the pig launchers/receivers shall be manufactured for application in explosion-hazardous zone 1.

**3.6.1.4** The pig launchers/receivers installed on the open decks and platforms shall correspond to the climatic conditions in the operational area in accordance with 11.3 of Part I "General Regulations for Technical Supervision".

**3.6.1.5** The end closure shall be provided on the pig launchers/receivers to permit access to the contents space. The closure shall be fitted with a safety device preventing its opening under excessive pressure in the pig launcher/receiver and impeding the working medium passing.

**3.6.1.6** To improve pig launching/receiving effectiveness, the quick-actuating closures are recommended for use permitting faster access to the contents space of the pig launcher/receiver as compared with a bolted flange connection. The quick-actuating end closures shall be fitted with locking components to prevent a reduction in the load on the holding elements that provide the force required to seal the closure.

**3.6.1.7** When the quick-actuating end closure is used, the following requirements to its design shall be met:

.1 locking elements shall be engaged upon application of pressure in the pig launcher/receiver and shall not disengage until the pressure is released;

.2 failure of a single locking component while the pig launcher/receiver is pressurized or contains a static head of liquid acting at the closure shall not:

cause or allow the closure to be opened or leak;

result in the failure of any other locking component or holding element;

considerable increase in the stress in any other locking component or holding

element;

.3 it may be determined by visual external observation that the holding elements are in satisfactory condition;

.4 all locking components can be verified to be fully engaged by visual observation or other means prior to the application of pressure to the pig launcher/receiver;

.5 all pig launchers/receivers having quick-actuating closures shall be provided with a pressure indicating device visible from the operating area and suitable to detect pressure at the closure.

**3.6.1.8** During strength analysis of the quick-actuating closure, the following shall be considered:

effects of cyclic loading on the holding elements and locking components;  
mechanical wear of the holding elements and locking components;  
effects of loading on the pig launcher/receiver in general (refer to 3.6.1.11).

**3.6.1.9** Quick-actuating end closures designed for manual operation shall be designed such that:

.1 closure shall leak prior to full disengagement of the locking components and release of the closure. The design of the closure and the pig launcher/receiver shall be such that any leakage shall be directed away from the normal position of the operator;

.2 closures shall be equipped with an audible or visible warning device that will warn the operator if pressure is applied to the pig launcher/receiver before the holding elements and locking components are fully engaged in their intended position or if an attempt is made to disengage the locking component before the pressure within the pig launcher/receiver is released.

**3.6.1.10** Leak-tightness monitoring shall be provided to detect leakages at the end closure of the pig launcher/receiver.

**3.6.1.11** During design of the pig launcher/receiver, the following loads on the pig launcher/receiver shall be considered:

internal design pressure (pressure is assumed not less than the pipeline design pressure);

weight of the pig launcher/receiver and its contents during operation or tests;

static loads from the weight of the secured equipment such as vessels, pipelines and insulation;

cyclic and dynamic (including seismic) effects due to the pressure/temperature fluctuations or equipment installed on the pig launcher/receiver;

environmental effects (wind, snow), where applicable;

impact loads induced by the medium hydraulic impact.

**3.6.1.12** The pig launcher/receiver design shall provide for supply of the working medium to the pig launchers and discharge of the working medium to the pig receivers. The pig launcher/receiver design shall provide for the loading of cleaning, intelligent, separation and sealing pigs.

**3.6.1.13** Welding consumables, welding equipment and welding procedure are subject to certification in compliance with 1.2, Part VIII "Materials and Welding".

**3.6.1.14** Materials and corrosion resistant coating used for manufacture of the pig launchers/receivers shall provide their normal operation in zone C5M with very high corrosiveness (marine environment) according to ISO 12944-2 classification.

**3.6.1.15** The number of the pig launcher/receiver piping elements exposed to erosion, such as T-joints and pipe branches, shall be minimized.

### **3.6.2 Requirements to fittings.**

**3.6.2.1** All the fittings shall provide performance of the working functions with regard to operational safety, environmental conditions, explosion-hazardous zones, normative requirements and repairability.

**3.6.2.2** The fittings shall have leak-tightness class "A" for closure according to GOST 9544-2015.

**3.6.2.3** Gaskets of the casing flange connections or bolted covers shall correspond to the pressure class of the fittings and design temperature.

**3.6.2.4** Material of the fittings for piping shall be selected depending on the service conditions, parameters and physical and chemical properties of transferred and auxiliary media and requirements of normative and technical documentation.

### **3.6.3 Requirements for materials.**

**3.6.3.1** During manufacture of the pig launcher/receiver parts, the materials specified in the RS-approved technical documentation shall be used complying with the Russian or foreign standards. Requirements to the form of technical supervision of the pig launcher/receiver materials shall comply with the Nomenclature (refer to Table 7.1, Part I "General Regulations for Technical Supervision").

**3.6.3.2** Casing and piping of the pig launchers/receivers shall be manufactured with regard to allowance for internal corrosion and metal loss due to erosivity of the working medium.

**3.6.3.3** Recommended value of carbon equivalent  $C_{eqv}$  characterizing the steel weldability shall not exceed 0,44 %. Value of carbon equivalent  $C_{eqv}$  is determined by the formula

$$C_{eqv} = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Cu+Ni}{15} \quad (3.6.3.3)$$

where C, Mn, Cr, Mo, V, Cu, Ni - weight percentage in steel of carbon, manganese, chromium, molybdenum, vanadium, copper, nickel, accordingly, in %.

Copper, nickel, chromium contained in steels as impurities are not considered during  $C_{eqv}$  calculation if their total content does not exceed 0,2 %. After welding the pig receivers/launchers shall be subject to heat treatment. The heat treatment conditions shall be specified by the manufacturer.

**3.6.3.4** Impact tests for the base metal shall be carried out on the KCV specimens according to 2.2.3, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships.

Mechanical properties of the pig receiver/launcher material are specified in Table 3.6.3.4.

Table 3.6.3.4

**Mechanical properties of the pig launcher/ receiving material**

Designation		Hardness, max	Yield stress $R_{p0.2}$ , MPa, min	Impact toughness at temperature – 40 °C (for climatic version N) and – 60 °C (for climatic version NF), J/cm <sup>2</sup> , min
Casing, supports, branch pipes	Low-carbon steel	200 HV <sub>10</sub>	245	24,5
	Low-alloy steel	240 HV <sub>10</sub>		
	Corrosion resistant steel	According to ND as per steel grade		
Studs, bolts		—	590	30,0
Nuts		—	440	30,0

**3.6.3.5** Nuts and studs for connections under pressure shall be manufactured from steels of different hardness so that the hardness of the nuts is at least 15 HB lower than that of the studs.

**3.6.3.6** Sealing elements of the closure shall be made of the materials resistant to the transferred medium and ambient temperature.

**3.6.3.7** Spark formation between the closure and pig launcher/receiver casing is prohibited.

**3.6.3.8** The equipment and tools used during operation (including maintenance) shall exclude spark formation.

**3.6.3.9** The applied electrical equipment (pig signaller, pig receiver/launcher pressure gauge, etc.) shall be of an explosion-proof type.

**3.6.4 Types and scope of tests.**

**3.6.4.1** Requirements for types and scope of tests for the pig receivers/launchers shall comply with the RS-approved documentation. The following shall be at least tested and checked:

- strength and leak-tightness of the pig receiver/launcher;
- operability of the closure;
- quality of welds;
- operability of controls.

**3.6.4.2** Values of the pressure during the strength and leak tests of the pig receivers/launchers shall comply with the values of pipeline pressure specified in 8.6.4 and 8.6.5, Part I "Subsea Pipelines" of the Rules for the Classification and Construction of Subsea Pipelines. When using the pig receiver/launcher for the test pressure buildup in the pipeline, the working pressure of the pig receiver/launcher shall be taken equal to the test pressure of the pipeline.

**3.6.4.3** Operability of the pig receiver/launcher closure shall be checked/tested in the following scope:

- strength and stiffness tests of the closure rotator;
- control handwheels' and handles' force check when opening/closing the pig receiver/launcher closure;
- check of the closure locking components;
- check of the closure safety devices.

The specified test procedures shall comply with the requirements of the national, international standards and/or the RS-approved documentation.

**3.6.4.4** Quality of welded joints shall comply with Section 5, Part I "Subsea Pipelines" of the Rules for the Classification and Construction of Subsea Pipelines.

**3.6.5** The pig launcher/receiver units shall be equipped with the pig signallers. The pig signallers may be of both mechanical and electromechanical types. The signallers shall be of bi-directional type with extractable pivotless tumbler mechanism and shall provide visual indication. Indication of pig passage shall be of a flag type, i.e. the flag (indicating device) set in the horizontal position for "pig not passed" and in the vertical position for "pig passed". Electromechanical signallers shall be additionally equipped with the electrical sensor capable of transmitting a signal to the local and/or remote control panel. In case other types (magnetic, acoustic, radiation) of the pig signallers are used, the documentation on such products shall be submitted to the Register for approval.

**3.6.6** In other respects, the pig launchers/receivers shall comply with the applicable requirements of GOST 34568-2019."

## **PART VII. HEAT EXCHANGERS AND PRESSURE VESSELS**

### **1 APPLICATION**

6 **Para 1.1.6** is deleted.

7 **Paras 1.1.7 — 1.1.10** and **references thereto** are renumbered 1.1.6 — 1.1.9, accordingly.