RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER **No. 110-312-1-1863c** dated 22.11.2022

Re:

amendments to the Rules for the Classification and Construction of Nuclear Ships and Nuclear Support vessels, 2022, ND No. 2-020101-169-E

Item(s) of supervision:

ships under construction

Entry-into-force date:
15.12.2022

~~Cancels / amends / adds Circular Letter No.~~ ~~dated~~

Number of pages: 1 + 4

Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part VIII "Electrical and Automation Equipment"

Acting Director General Sergey A. Kulikov

Text of CL:

We hereby inform that the Rules for the Classification and Construction of Nuclear Ships and Nuclear Support Vessels 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 01.12.2022, in the absence of a contract, during review and approval of the technical documentation on ships requested for review on or after 01.12.2022.

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

Part VIII: Table 15.1

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"Thesis" System No. 22-241622

Appendix 1 to Circular Letter
No. 110-312-1-1863c dated 22.11.2022

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 VIII, Table 15.1	The Table has been supplemented by item 37 "Vibration of the main turbines" and Footnote 2	110-312-1-1863c of 22.11.2022	15.12.2022

Appendix 2 to Circular Letter
No. 110-312-1-1863c dated 22.11.2022

RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF NUCLEAR SHIPS AND NUCLEAR SUPPORT VESSELS, 2022,

ND No. 2-020101-169-E

PART VIII. ELECTRICAL AND AUTOMATION EQUIPMENT

15 ALARM, INDICATION AND PROTECTION SYSTEMS

Table 15.1 is supplemented by item 37 and Footnote 2 reading as follows:

"Table 15.1

No.	Parameter to be checked	Measurement point	Tolerance for alarm parameter	Protection, stop or change of mode	Parameter indication		Record on emergency parameters recorder
					Central control station	Emergency cooling control station	
1	2	3	4	5	6	7	8
1	Neutron power[1]	Ionization chamber	↑	×	●		+
2	Reactor power doubling period	Ionization chamber	↓	×	●		+
3	Position of regulating rods	Control rods group and emergency protection drive	↓↑	×	●	●	+
4	Reactivity	Ionization chamber					
5	Pressure inside reactor	Primary circuit	↓↑	■×	●	●	+
6	Level in volume compensator	Volume compensator	↓↑	▼	●		+
7	Pressure in safety system cylinders and tanks	On container	↓↑	▼■	◗		+
8	Water temperature at reactor output	Nuclear reactor	↑	▼	●	●	+
9	Water temperature at reactor input	Nuclear reactor	↑	▼	●		+
10	Coolant temperature before filter of primary circuit	After coolant circulating pump	↑	▼	◗		+
11	Coolant activity as per the standard RM sensors	Primary circuit	↑	▼	◗		+

No.	Parameter to be checked	Measurement point	Tolerance for alarm parameter	Protection, stop or change of mode	Parameter indication		Record on emergency parameters recorder
					Central control station	Emergency cooling control station	
1	2	3	4	5	6	7	8
12	Feed-water flow	After feed-water valve	↓	▼×	●		+
13	Water flow at the auxiliary feed-water pump discharge	After auxiliary feed-water pump			◗	◗	+
14	Feed-water pressure	After feed-water pump	↓	▼■	◗		+
15	Feed-water temperature	At SG input	↓↑	▼	◗		+
16	Feed-water salinity	Before feed-water pump	↑	▼	◗		+
17	Steam pressure	After SG	↓↑	▼	●		+
18	Steam temperature	In main steam line	↓	▼	●		+
19	Steam and steam-water mixture activity	After SG and main condenser	↑	▼	◗		+
20	Primary circulating pump rpm	In primary circulating pump	↓	▼	◗	◗	+
21	Primary circulating pump load current	After NSSS switchboard	↑	▼	◗		+
22	Temperature under the top cover of the primary circulating pump	In primary circulating pump	↑	▼	◗		+
23	Temperature under the top cover of the coolant circulating pump	In coolant circulating pump	↑		◗		+
24	Coolant flow at coolant circulating pump discharge	After coolant circulating pump	↓	■	◗	◗	+
25	Distillate flow after boost pump	After boost pump	↓		◗		+
26	Pressure in containment	In containment	↑	▼■	◗	○	
27	Air temperature in instrument space	Instrument space	↑		◗		+
28	Water activity in tertiary circuit	After equipment	↑	▼	◗		+
29	Pump state and valve position in primary to quaternary circuits in safety system	On pumps and valves			○		+
30	Before pressure on reactor plant and safety system pumps	On the pump	↓	▼■	◗		+
31	Water levels in reactor plant tanks, safety systems tanks, deaerating plant tanks, and ice boxes	On container	↓	▼■	◗		+
32	Water presence in reactor box	On drainage pipeline	↑	▼			+
33	Water presence in instrument space		↑	×			+
34	Pressure in the SSS pneumatic control system	Within the system	↓	▼■	◗		+
35	Indication of power supply availability on SSS panels and contactors position	On SSS panels	↓		○		+

No.	Parameter to be checked	Measurement point	Tolerance for alarm parameter	Protection, stop or change of mode	Parameter indication		Record on emergency parameters recorder
					Central control station	Emergency cooling control station	
1	2	3	4	5	6	7	8
36	Vacuum in main condenser	On main condenser	↓	▼	◗		
37	Vibration of the main turbines [2]	Bearings	↑		◗		

[1] Record is made after processing in CPS.

[2] Exceeding of the parameter shall not lead to an automatic shutdown of the main turbines.

N o t e s: Parameters in items 1–26 are subject to cyclic recording during the reactor normal operation at power.

S y m b o l s:

● – remote indication (constant);

◗ – remote indication (on call);

↑ – alarm signal when parameter reaches upper limit value;

↓ – alarm signal when parameter reaches lower limit value;

O – alarm signal;

■ – automatic start of stand-by pumps;

▼ – mode change, load decrease;

× – nuclear reactor stop;

+ – available

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