

JSC "AFRIKANTOV OKBM"



**SERVING THE NUCLEAR MACHINE  
BUILDING INDUSTRY SINCE 1945**

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RITM-200

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Joint Stock Company "Afrikantov OKB Mechanical Engineering"

**RITM-200**

**RITM-200 REACTOR PLANT  
THE MULTIPURPOSE ICEBREAKER**

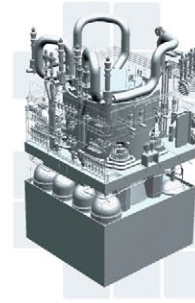


## ❖ NEXT-GENERATION MULTIPURPOSE DOUBLE-DRAFT NUCLEAR ICEBREAKER WITH THE RITM-200 REACTOR PLANT



### ❖ MULTIPURPOSE NUCLEAR ICEBREAKER SPECIFICATIONS

Main dimensions on the design water line (DWL)	
length, m	<b>160</b>
beam, m	<b>33</b>
<b>Draft</b>	
DWL, m	<b>10,5</b>
minimum draft, m	<b>8,5</b>
Shaft power, MW	<b>60</b>
Maximum ice thickness, m	<b>2,9</b>
<b>Displacement, t</b>	
at minimum draft	<b>25540</b>
at DWL draft	<b>33530</b>
Number of reactors, pcs	<b>2</b>
Service life, year	<b>40</b>



## ❖ RITM-200 REACTOR PLANT (RP)

The integrated pressurized water reactor for the multipurpose nuclear icebreaker uses forced circulation of the primary coolant and an external gas pressurizer system.

### ❖ RITM-200 RP SPECIFICATIONS

Steam generator unit (SGU) type	<b>integral</b>
Thermal power, MW	<b>175</b>
Capacity factor	<b>0,65</b>
Fuel enrichment, %	<b>&lt;20</b>
Reloading periodicity (at 0.65 capacity factor), year	<b>7</b>
Overhaul period, year	<b>20</b>
<b>Assigned service life, year</b>	
permanent equipment	<b>40</b>
replaceable equipment	<b>20</b>
<b>Assigned life time, thousand hours</b>	
permanent equipment	<b>320</b>
replaceable equipment	<b>160</b>
Protective shielding dimensions (for two RPs), m	<b>6x13,2x15,5</b>
RP mass within the limits of shielding, t	<b>1100</b>

## ❖ OTHER RITM-200 RP APPLICATIONS TO RESOLVE POWER AND PROPULSION CHALLENGES:



- ❖ 150-300 ton displacement floating fish factories, vessels and lighter carriers (fishing fleet, container ships, tankers, liquefied gas transport ships, chemical transport ship), floating heat-and-power plants and power-and-desalination complexes, offshore drilling rigs
- ❖ offshore facilities: power supply for high seas surface and underwater oil and gas (other minerals) recovery, purification and preprocessing

## ❖ COMPETITIVE ADVANTAGES

- ❖ substantially enhanced technical and economic performance; significantly reduced mass and size characteristics as compared to RPs on operating nuclear vessels
- ❖ competitive against fossil fuel power sources
- ❖ multipurpose applicability for vessels, floating facilities, and use as part of power sources for various applications
- ❖ potential for upgrading and development of a power range family of this type of plant to broaden its field of application

