

Rosatom builds the most powerful nuclear reactor for icebreakers

- A Monitor Desk Report

Date: 22 May, 2025



Manufacturing of the first RITM-400 reactor, the most powerful in the world, has been completed by Rosatom. The reactor will be used in the nuclear icebreaker Rossiya. The icebreaker will have two such reactors.

Valentina Matvienko, Chair of the Federation Council of the Federal Assembly of the Russian Federation, and Alexey Likhachev, Rosatom Director General, formally announced the milestone achievement on May 21.

The next-generation reactor units of the Rossiya nuclear icebreaker will allow it to break through 4 meters of thick ice. Each of the two reactors, which will make the ship extraordinarily powerful, will be named after the legendary Russian heroes, Ilya Muromets and Dobrynya Nikitich.

"The completion of the RITM-400 reactor is a significant event for the icebreaker fleet, for Rosatom and for our entire country. The new reactors will help Rossiya overcome the special ice conditions of the Arctic," noted Alexey Likhachev.

"Today we have completed the first RITM-400 for Rossiya icebreaker; in a couple of months we will complete the second one. Both units will be sent to the shipyard for installation on the Rossiya nuclear ship and will be a gift from Rosatom's machine builders to mark the 80th anniversary of the nuclear industry. The completion of this project opens up new opportunities in developing the Northern Sea Route," said Igor Kotov, Head of Rosatom's Machine Building Division.

The RITM-400 reactor unit is designed to be used as the main power source for new generation nuclear icebreakers. It builds on the RITM-200 with an increase in thermal power to 315 MW, making it superior to all globally available marine reactor plants. Russia is the only country to possess a fleet of nuclear icebreakers. Today, the Russian icebreaker fleet includes eight nuclear icebreakers.

In 2025, the Russian nuclear industry celebrates its 80th anniversary: on August 20, 1945, the Special Committee on the Utilization of Atomic Energy was established. The 80th anniversary of the industry will be celebrated with several events, the key one being the World Atomic Week international forum.