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Rosatom Introduces 3D Printing Technology for Nuclear Equipment Production

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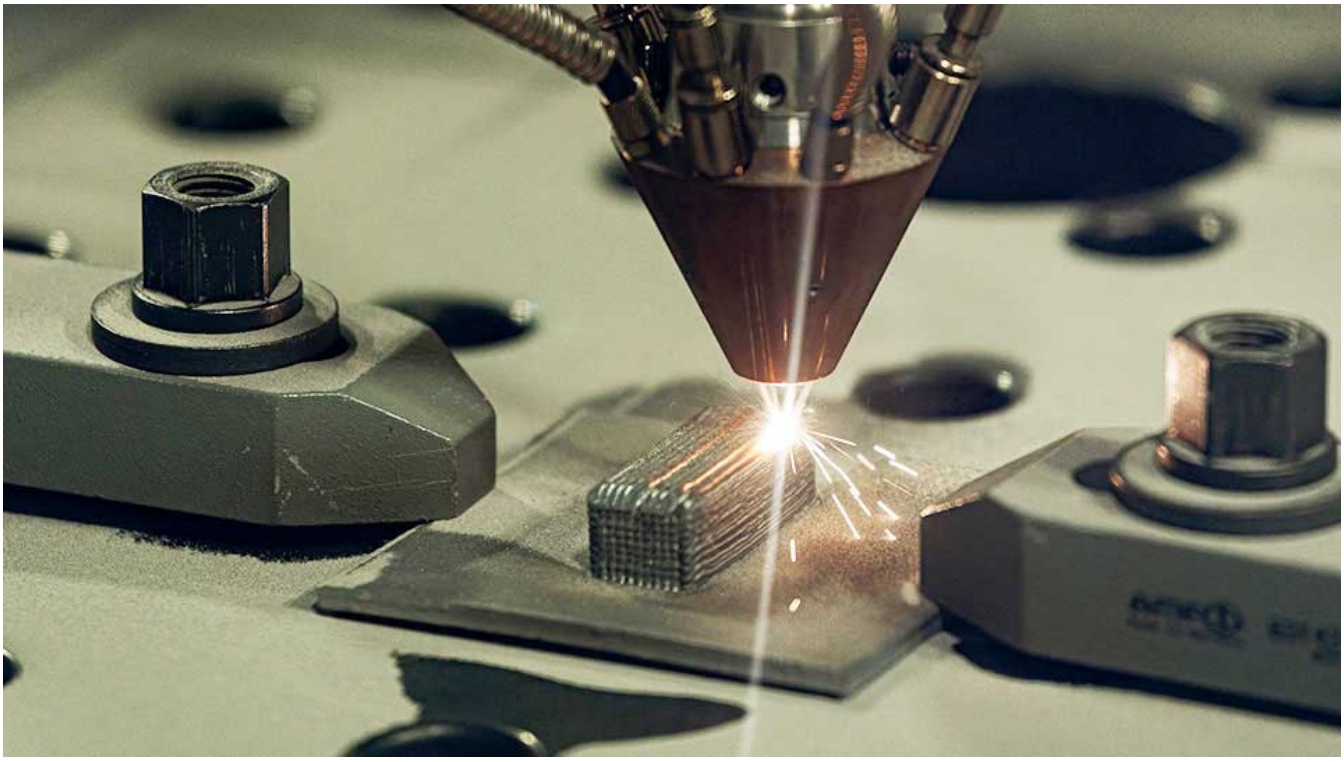

Afrikantov Experimental Design Bureau of Mechanical Engineering, part of Rosatom's Mechanical Engineering Division, has received approval to manufacture components for the RITM-200 nuclear reactor using 3D printing technologies. The first additively manufactured component is a terminal box; an essential part of the pumping equipment used in nuclear power plants.

"Obtaining regulatory approval for the first additive-manufactured component of the RITM-200 reactor plant paves the way for wider use of 3D printing in producing various equipment for marine nuclear power plants, as well as other nuclear industry applications," said Yuri Vytnov, Chief Technologist at Afrikantov OKBM.

According to Ilya Kavelashvili, Director of the Additive Technologies business area within Rosatom's Fuel Division, the introduction of 3D

printing “opens up new opportunities in design and production. It enables the creation of parts with optimized geometry and enhanced performance characteristics, improving equipment efficiency and reliability while reducing weight and cost.”

This achievement marks the first time in the Russian nuclear industry that reactor unit components have been produced using additive manufacturing. Previously, 3D printing was used only for bench-testing equipment, process tooling, and prototype models. The adoption of additive technologies in industrial applications offers significant benefits, including extended product service life, improved economic efficiency, and reduced labor intensity.

3D printing is a technology that creates three-dimensional objects by adding materials (plastic, resin, iron, etc.) layer by layer based on a digital design. It is also called additive manufacturing.

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