**For the first time Rosatom Fuel Division supplied fresh nuclear fuel to the world's only floating nuclear cogeneration plant in the Arctic**

TVEL JSC supplied nuclear fuel for reactor unit No. 1 of the world's only floating nuclear cogeneration plant (FNPP, a branch of Rosenergoatom Concern) based on the Akademik Lomonosov floating power unit in Pevek, Chukotka Autonomous Okrug. The fuel was supplied to the northernmost town of Russia along the Northern Sea Route.

The first in the history of the power plant refueling, that is, the replacement of spent nuclear fuel with fresh one, is planned to begin before 2024. The manufacturer of nuclear fuel for all Russian nuclear icebreakers, as well as the Akademik Lomonosov FNPP, is Machinery Manufacturing Plant, Joint-Stock Company (MSZ JSC), a company of Rosatom Fuel Company TVEL that is based in Elektrostal, Moscow Region.

The FNPP includes two KLT-40S reactors of the icebreaking type. Unlike convenient ground-based large reactors (that require partial replacement of fuel rods once every 12-18 months), in the case of these reactors, the refueling takes place once every few years and includes unloading of the entire reactor core and loading of fresh fuel into the reactor.

The cores of KLT-40 reactors of the Akademik Lomonosov floating power unit have a number of advantages compared to the reference ones: a cassette core was used for the first time in the history of the unit, which made it possible to increase the fuel energy resource to 3-3.5 years between refuelings, and also reduce the fuel component of the electricity cost by one and a half times. The FNPP operating experience formed the basis for the designs of reactors for nuclear icebreakers of the newest series 22220. Three such icebreakers have been launched by now.

***Background***

*For the first time the power units of the Akademik Lomonosov floating nuclear power plant were connected to the grid in December 2019, and put into commercial operation in May 2020. The supply of nuclear fuel from Elektrostal to Pevek and its loading into the second reactor is planned for 2024.*

*The total power of the Akademik Lomonosov FNPP, supplied to the coastal grid of Pevek without thermal energy consumption on shore, is about 76 MW, being about 44 MW in the maximum thermal power supply mode. The FNPP generated 194 million kWh according to the results of 2023. The population of Pevek is just a little more than 4 thousand, while the FNPP has a potential for supplying electricity to a city with a population of up to 100 thousand people.*

*After the FNPP commissioning two goals were achieved. These include first of all the replacement of the retiring capacities of the Bilibino NPP, which has been operating since 1974, as well as the Chaunskaya TPP, which has already been operating for more than 70 years. Secondly, energy is supplied to the main mining companies in western Chukotka in the Chaun-Bilibino energy hub - a large ore and metal cluster, including gold mining companies and projects related to the development of the Baimsk ore zone.*

*In September 2023, a 110 kilovolt power transmission line with a length of 490 kilometers was put into operation, connecting the towns of Pevek and Bilibino. The line increased the reliability of energy supply from the FNPP to both Bilibino consumers and mining companies, the largest of which is the Baimsky GOK.*

*The comprehensive development of the Russian Arctic is a national strategic priority. To increase the NSR traffic is of paramount importance for accomplishment of the tasks set in the field of cargo shipping. This logistics corridor is being developed due regular freight voyages, construction of new nuclear-powered icebreakers and modernization of the relevant infrastructure. Rosatom companies are actively involved in this work.*

***Rosatom Fuel Company TVEL*** *(Rosatom Fuel Division) includes companies fabricating nuclear fuel, converting and enriching uranium, manufacturing gas centrifuges, conducting researches and producing designs. As the only nuclear fuel supplier to Russian NPPs, TVEL supplies fuel for a total of 75 power reactors in 15 countries, for research reactors in nine countries, as well as for propulsion reactors of the Russian nuclear fleet. Every sixth power reactor in the world runs on TVEL fuel. Rosatom Fuel Division is the world's largest producer of enriched uranium and the leader on the global stable isotope market. The Fuel Division is actively developing new businesses in chemistry, metallurgy, energy storage technologies, 3D printing, digital products, and decommissioning of nuclear facilities. TVEL also includes Rosatom integrators for additive technologies and electricity storage systems.*[*www.tvel.ru*](http://www.tvel.ru/)

***Rosenergoatom, Joint-Stock Company*** *(www.rosenergoatom.ru) is part of Rosatom Electric Power Division and one of the largest companies in the industry acting as an operator of nuclear power plants. It includes, as its branches, 11 operating NPPs, including the FNPP, the Scientific and Technical Center for Emergency Operations at NPPs, Design and Engineering as well as Technological companies. In total, 37 power units with a total installed capacity of over 29.5 GW are in operation at 11 nuclear power plants in Russia.*

***Machinery Manufacturing Plant, Joint-Stock Company*** *(MSZ JSC, Elektrostal) is one of the world's largest manufacturers of fuel for nuclear power plants. The company produces fuel assemblies for VVER-440, VVER-1000, RBMK-1000, BN-600,800, VK-50, EGP-6; powders and fuel pellets intended for supply to foreign customers. It also produces nuclear fuel for research reactors. The plant belongs to the TVEL Fuel Company of Rosatom.*[*www.elemash.ru*](http://www.elemash.ru/)