**Construction of Rooppur NPP in the People's Republic of Bangladesh**

|  |  |
| --- | --- |
| The NPP location | Close to the village of Roppur, Pabna district, the People’s Republic of Bangladesh |
| Number of units | 2 |
| Type of reactor | VVER-1200 |
| General designer | Atomenergoproekt JSC |
| General contractor | Atomstroyexport JSC |
| The NPP customer and operator | Bangladesh Atomic Energy Commission (BAEC) |

Rooppur NPP equipped with two VVER-1200 reactors with the total capacity of 2400 MW is being built according to the Russian design 160 km from Dhaka, the capital of Bangladesh, in accordance with the General Contract dated December 25, 2015. The Russian design with VVER-1200 reactors has been selected for the first NPP in Bangladesh. This is an evolutionary Generation III+ design, which fully complies with all the international safety requirements.

In 2017, the Bangladesh Atomic Energy Regulating Authority (BAERA) granted the Rooppur NPP construction license to the Bangladesh Atomic Energy Commission (BAEC). On November 30, 2017, the official ceremony of first concrete pouring into the foundation of Unit 1, took place, and in July 2018 first concrete was poured for the NPP Unit 2.

Currently, the construction of Rooppur NPP in Bangladesh is in its active phase. Jointly with the Bangladeshi colleagues, Rosatom has reached the project key milestone - on October 05, 2023, the first shipment of fresh nuclear fuel (FNF) will be delivered to the site. After the fuel delivery, Rooppur NPP will become a nuclear facility, and the People’s Republic of Bangladesh will get the status of a country that possesses peaceful nuclear technologies.

**Information about VVER-1200 reactor**

The “heart” of Rooppur NPP power units will be Rosatom flagship reactors VVER-1200, which have already proved their efficiency and reliability during the operation of the reference power units in Russia. Currently, five power units are operated on the basis of such reactors - four power units in Russia and one in the Republic of Belarus. Active construction of NPPs under Russian technology is also under way in Bangladesh, Hungary, Egypt, Turkey and China.

Power units based on VVER-1200 reactors belong to generation III+, the newest safety class 3+, and comply with all the post-Fukushima safety requirements: they combine active and passive protection systems providing an NPP with maximum resistance to external and internal impacts. One of the examples of such systems is the “core catcher” - one of the main elements of the passive safety system of a power unit, a unique know-how of Russian nuclear experts, which ensures safety of the environment and the people in any scenarios of the NPP operation. A wide range of technical and organizational measures aimed at prevention of development of emergencies in any scenarios and their combinations, is envisaged at the stages of design, construction and operation.

The life cycle of the NPP is 60 years with the possibility of extension of the service life for another 20 years.

**The key milestones of Rooppur NPP construction**

|  |  |
| --- | --- |
| 2020 | In November, the concreting of the 4th tier of the inner containment of Unit 1 reactor building was completed at Rooppur NPP construction site. In the same month, the main components of the equipment for Unit 1 were delivered that had been manufactured by Volgodonsk branch of AEM-technologies, such as the VVER-1200 reactor vessel, four steam generators and the polar crane. All the components were delivered to the NPP site from Russia by sea, then along the Padma river via the river port close to Rooppur NPP, which was put in operation in 2020. |
| 2021 | The polar crane was installed in the reactor building of Unit 1. The crane was put on the rails and after testing, it was used for installation of oversize and heavy equipment. At the end of July, the installation of metal structures of the containment dome of Unit 1 was completed.  In April, concreting of the 5th tier of the containment of Unit 1 was completed.  In June, concreting of the 4th tier of the containment of Unit 1 2 was completed.  In August, equipment for Unit 2 of Rooppur NPP arrived in Bangladesh: VVER-1200 reactor vessel and four steam generators.  In October, the ceremony of installation of Unit 1 reactor vessel took place. In November 2021, all the four steam generators were installed.  In November, the polar crane was installed on the rails of the reactor building of Unit 2. In December 2021, concreting of the 5th tier of the containment of Unit 2 was completed.  In December, works for welding of the main coolant pipeline (MCP) started which were finished at the end of February 2022. |
| 2022 | In February, the installation of bridge cranes in the design position in the turbine hall of Unit 1 was completed. In April 2022, the generator stator was installed in the design position.  At the end of April, the deaerator was installed in the design position; the concreting of the foundation for the turbine unit in the turbine hall of Unit 2 was completed.  In April, 8 months ahead of schedule, the main concreting works during the construction of auxiliary reactor building 10UKC where the process instrumentation and control systems for Unit 1 are located, were finished. The facility is part of the “nuclear island”.  In June, specialists of the Energospetsmontazh JSC Branch (part of Rosatom Engineering Division) in the People's Republic of Bangladesh completed the installation of the emergency core cooling system (ECCS) in the reactor compartment of Unit 2.  In June, the installation of metal structures of the inner containment in Unit 2 reactor building was completed. The upper part of the dome weighing 194 tons with the diameter of 35.7 meters was installed in the design position. Currently the height of the building is 60.5 meters.  In the same month, the concreting of the inner containment dome of Unit 1 was completed. The work was carried out by specialists of the Trest RosSEM LLC Branch (part of Rosatom Engineering Division). In total, more than 3,200 cubic meters of concrete were laid on the whole structure, which is 17.6m high and has 42.8m in the base diameter.  In August, concreting of the inner containment dome of Unit 2 reactor building started (currently, 9 of 16 tiers have been concreted). The works for concreting of the inner containment dome were completed in May 2023.  In September, the reactor vessel of Unit 2 was installed in the design position.  In the same month, the bridge cranes were installed in the turbine hall of Unit 2.  In October, the training of BAEC personnel started in the training center of the NPP.  In the same months, the generator stator was installed in the turbine hall of Unit 2, and the steam generators were installed in the reactor building.  In November, the outer containment dome was installed in the reactor building of Unit 1.  At the end of the month, work on welding of the main coolant pipeline of Unit 2 began.  In December, the support ring was installed at Unit 2.  Trest RosSEM started the assembly of PHRS deflector for Unit 1.  Safety systems flushing to an open reactor started at Unit 1.  The main concreting works during the construction of the auxiliary reactor building finished 3 months ahead of schedule. |
| 2023 | In January, the installation of the turbine in the turbine hall of Unit 1 began.  At the beginning of the month, the installation of the evaporation cooling tower shell was completed to elevation +175.000  In the same month, the welding of the main coolant pipeline (MCP) was completed at Unit 2.  At the end of February, the installation of the evaporation cooling tower shell was completed to elevation +175.000.  In February, two bridge cranes were installed in the nuclear storage facility building.  At the beginning of March, the installation of a transportation lock in the reactor building of Unit 1 was completed.  In the same month, the concreting of the outer containment dome of the reactor building of Unit 1 was finished 45 days ahead of schedule.  In the same month, the installation of PHRS deflector was completed in the reactor building of Unit 1.  In the same month, the pressurizer was installed in the reactor building of Unit 2.  In April, eight PCFL tanks were installed in the reactor building of Unit 2.  In May, the installation of the evaporation cooling tower shell was completed to elevation +175.000.  In the same month, the concreting of the inner containment dome in the reactor building of Unit 2 was completed.  In June, the installation of the evaporation cooling tower shell was completed to elevation +175.000.  On July 17, Bangladesh Atomic Energy Commission (BAEC) received a license for delivery of nuclear fuel to Rooppur NPP  At the end of July, the installation of the ventilation stack of the reactor building of Unit 1 was completed.  In August, the installation of PHRS heat exchangers (8 pieces) in the reactor building of Unit 1 was completed, as well as the installation of the transport portal crane.  In September, the outer containment dome was installed in record time (two days) at Unit 2. |

**Personnel and development of local communities**

Over 30 thousand employees worked at Rooppur NPP site during the peak period of construction in 2021; 6 thousand people had come to Rooppur NPP from abroad, and the rest were local citizens (over 80% of local employees during the peak period of construction in 2021).

Currently, 23 thousand people are involved in the project implementation.

Over 60 local companies are engaged in the Rooppur NPP construction project.

A training center was opened at Rooppur NPP construction site in 2021. It is intended for training of the operating personnel of various categories and has no rival in terms of its technological infrastructure. Russian experts developed all the training programs, which in the future will allow the Bangladeshi Party to train personnel independently. In total, it is planned to train over 50 groups of Bangladeshi specialists.

Rosatom participates in the social life of the region; it also works on enhancing the awareness about the safety of nuclear technologies and their use in different spheres of life. Atomic Energy Information Center has been established in Dhaka, the capital of the country. It organizes regular expert lectures, intellectual contests, scientific games and other events.

**Rosatom State Corporation Engineering Division**

Rosatom State Corporation Engineering Division unites the leading companies of the nuclear industry, namely: Atomstroyexport JSC (Moscow, Nizhny Novgorod, branch offices in Russia and abroad), Joint Design Institute – Atomenergoproekt JSC (Moscow, Nizhny Novgorod, and St. Petersburg branch offices and design institutes, branch offices in Russia and abroad, R&D branches) and subsidiary construction companies. The Engineering Division ranks first in the world by the order portfolio and the number of NPPs constructed simultaneously across the world. About 80% of the Division’s revenues originate from foreign projects. The Engineering Division implements construction projects for high-power NPPs in Russia and across the world, renders a full range of EPC, EP, EPC(M) services including project management and design activities, and develops Multi-D technologies for the management of complex engineering facilities. The Division relies on the achievements of the Russian nuclear industry and innovative state-of-the-art technologies. [www.ase-ec.ru](http://www.ase-ec.ru/)