

Advanced Moisture installed at the first NPP in Turkiye

- A Monitor Desk Report

Date: 09 May, 2024



A Moisture Separator Reheater (MSR) of new and improved design has been installed in the turbine hall of unit-1 of Akkuyu NPP, first ever nuclear power facility of Turkiye. Rosatom has manufactured horizontal MSRs, especially for Akkuyu NPP. Previously similar equipment was manufactured in Russia only in vertical design.

The equipment is a part of the NPP steam turbine plant auxiliary systems. MSRs are used to control the temperature and humidity of the steam, which rotates the blades of the turbine rotors. The weight of each equipment is 317 tons, its length is 22 meters, and its diameter is 4.5 meters.

The MSR operating principle is based on centrifugal acceleration, which allows steam and water to be separated. When passing through the separator, the steam and water mixture moves in a circle. Large

particles of water settle on the walls of the separator and partitions. Then they are removed through the drain nozzle. The internal parts in contact with wet steam are produced from ferritic stainless steel, which eliminates erosive and corrosive wear.

The optimized MSR modification made it possible to combine two devices of traditional design in one case and thus their number was reduced from four to two. Also, Russian machine builders have reduced the metal consumption for separation reheaters production almost by half, while generally increasing their efficiency, reliability and cost-effectiveness.

"The innovative horizontal layout of separation reheaters allowed us to reduce the time of their installation significantly. This installation is an important stage in preparing the turbine plant for testing," said Sergei Butckikh, Director of Akkuyu NPP Construction.

Akkuyu NPP is the first nuclear power plant being built in Türkiye. The Akkuyu NPP project includes four power units, equipped with generation 3+ VVER reactors of Russian design. The capacity of each power unit is 1200 MW. Similar reactors have been installed at Rooppur NPP in Bangladesh.