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Valve produced using 3D printing technology tested in Olkiluoto

Olkiluoto is at the cutting edge of development. Teollisuuden Voima Oyj (TVO) and Fortum carry out a joint test of the first valve featuring a 3D printed housing at the Olkiluoto nuclear power plant. The supplier of the valve housing is Neles Oy. The valve is installed by TVO.

The actual valve inside the 3D printed housing is a standard T5-series ball valve of stainless steel.

- The 3D printed valve housing, as well as any other 3D components available in the future, provides us with an alternative in a situation where the number of suppliers for nuclear power plants is being reduced. This gives us the possibility to produce a unique component by printing it ourselves, explains Life Cycle Management Engineer **Dino Nerweyi** from TVO.

- Fortum, for its part, wishes to contribute to the possibility of utilising 3D printing in the manufacture of safety-classified components for nuclear power plants, in particular. When a component no longer is directly available from manufacturers, 3D printing may offer significant cost savings, says Design Engineer **Tomi Rähkä** from Fortum.

According to Nerweyi and Rähkä, both the technology and knowledge of 3D materials have evolved to a sufficient degree to allow the use of 3D printing also in the nuclear power industry. Field tests provide a lot of valuable information on whether 3D printing could be used in the future to produce components with considerably shorter delivery times.

The size of the valve housing 3D printed for the project is 20 x 40 centimetres. The printer itself is the size of an SUV.