Energy-efficient cooling solutions for super-computing

Located in Lugano, the Swiss National Supercomputing Centre CSCS is operated by ETH Zurich and is part of the national High Performance Computing and Networking Strategy.

The overarching goal of the CSCS is to provide all Swiss researchers with access to the technologies that are becoming increasingly important to their work. The computing centre was specifically designed with sufficient capacity to accommodate all the supercomputing infrastructure necessary for Swiss scientific endeavour for decades to come.

Constructing a building to house the national supercomputers well into the future was a complex challenge, not least because the technology in this area is advancing so rapidly. To meet this challenge, the new CSCS building had to be innovative, flexible and environmentally sustainable – requirements which placed considerable demands on all the contractors and suppliers involved.

Alongside the actual operation of the IT hardware, the computing centre's cooling system is the second-largest consumer of electricity. As such, it is essential that the cooling system operates as efficiently as possible, using innovative technologies to reduce energy consumption. In most computer centres, a low temperature in the server rooms is maintained using conventional air conditioning; however, the CSCS features a highly energy-efficient water-cooling system.

The water is sourced from Lake Lugano, where it is subsequently returned after passing through the cooling system. This sophisticated water-cooling system consists of two cooling circuits, with the external lake water helping to reduce the temperature of the internal cooling circuit.


Courtesy of CSCS

Due to their high degree of operational reliability, isolation valves from InterApp were selected to control and regulate the cooling circuits. The system features Aquaria and Desponia butterfly valves, brass ball valves with stem extensions, stainless steel ball valves, Neptunia check valves and Y-strainers.

Products installed

- **Desponia butterfly valves**
- **Aquaria plus butterfly valves**
- **Brass and stainless steel ball valves**
- **Neptunia check valves**
- **Y-Strainers**

InterApp

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