

SELF-REGULATING TECHNOLOGY PROVIDES LONG-TERM, ENERGY-EFFICIENT SOLUTION TO FROST PROTECTION AT MAJOR EUROPEAN LANDMARK

PROJECT DETAILS

Client:	Elektro Neumayr
Location:	Passau - Bavaria, Germany
Completion Date:	2013
Contract Scope:	EHT system manufacture and supply
Applications:	Electric heat-tracing
Technology:	nVent RAYCHEM 20QTVR2-CT self-regulating heating cables



KEY CHALLENGES

The 175 metre wide weir comprises six vertical-lift gates, each 25 metres wide and 11.3 metres high. Each gate is constructed in two flexibly-connected sections – an upper and lower barricade. To allow overflow of lower volumes of water, the upper barricade is lowered to 2.3 metres. At times of very high flood, the lower and upper barricades are both raised to enable large volumes of water to flow beneath.

As the Danube at Kachlet freezes on average 21 days per year and ambient temperatures can reach -20°C, it is vital that the gates remain frost-free to ensure their continuing operation.

Previous methods of freeze protection had required very high power consumption. They also required excessive levels of maintenance and were constantly failing.

SOLUTION

The solution was provided by specialist contractor Elektro Neumayr. They devised an electric heat-tracing system based on nVent Industrial Heat Tracing Solutions self-regulating heating cables and infrared-radiant heating.



Some 1400 metres of cable are being deployed in 66 circuits. The cables are either bonded directly or carried over the surfaces in pockets containing glycol-based heat transfer fluid. They will provide protection to the barricades' sliding surfaces and seals.

For de-icing, the solution is Elektro Neumayr's design of water-pressure resistant medium wavelength infrared radiant heater. This has a fraction of the energy consumption of the previous system. It is protected year-round from damage and pollution in a specially-designed protective housing and used when the temperature drops below zero.

The Kachlet Weir project has taken over a decade to come to fruition. It is scheduled for completion in 2013.

Commenting on the success of the project, Elektro Neumayr owner Franz Neumayr said: "The Kachlet Weir contract represents a considerable investment in both time and development. For such an important project," he continued, "we would not have considered any other products but nVent self-regulating heating systems. We are certain of their excellent quality and outstanding control characteristics."

BENEFITS

- Self-regulating technology automatically adjusts power output to compensate for temperature changes.
- Heat is delivered only when and where it's needed.
- No heat build-up or possibility of burn-out.
- Fluoropolymer outer jacket provides exceptional strength and corrosion resistance.
- Substantial savings in energy and operating costs.



nVent self-regulating heating systems are providing a unique solution for freeze protection at a major landmark on one of Europe's most prominent waterways.

The weir at the Kachlet hydroelectric power station is on the river Danube at Passau in Bavaria. It restrains the river water which flows to the power station and releases excess water in case of turbine failure or during heavy flood.

The Kachlet Weir was constructed in the 1920s to provide flood-protection and improved navigation to the continent's busiest waterway. Today it is under the care of the Waterways and Shipping Administration of the Federal Government (WSV) which administers 23,000 km² of maritime and 7,350 km of inland waterways. For further information visit www.wsv.de

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