

150-Year-Old Danish Water Utility Boosts Network Operational Efficiency with Aquis Water Network Management Software

VCS Denmark

INDUSTRY
Water & Wastewater

Story

After running without modeling software for 150 years, VCS Denmark implemented Aquis Water Network Management in 2004, modernizing their contingency planning and enabling the expansion and maintenance of their water distribution network.

Solution

Aquis Water Network Management water supply network software forecasts the behavior of the distribution network and anticipates the impact of planned and unplanned events before they happen. It is used for contingency planning, expansion and maintenance of the network as well as dynamic pressure control.

Results

Aquis Water Network Management replaced previous manually-created simulation models to greatly increase VCS Denmark's ability to detect contamination, both forwards and backwards in the network.

Aquis Water Network Management was an immediate success. The advanced network operation tool today plays an essential role in VCS Denmark's contingency planning, maintaining dynamic pressure control as well as in the expansion and maintenance of the network. They consider it indispensable.

Odense, Denmark – VCS Denmark is a Danish water and wastewater company with more than 150 years of operational experience and a strong tradition for innovation.

They were looking for a means of better water network management, and proactive measures for contamination identification and confinement, to provide their customers with safe drinking water.

"As one of the nation's largest and oldest utilities, we have a good image we want to maintain, in addition to our commitment to the citizens and the authorities. So we acted immediately when a simulation tool that was significantly better than the combination of common sense, experienced staff and programs which we had previously applied in the event of contamination, was available," says Erling Nissen. "It's not matter of if, but when there will be a contamination of drinking water. So we strive to be as well-prepared as possible at all times."

How it Started

In 2004 VCS Denmark entered into a partnership with AVEVA to replace their historically based, static models with a solution offering models based on online data retrieved from a SCADA solution.

VCS Denmark knew that it was possible to have Aquis Water Network Management dynamically adjust the pressure for the entire network, and with AVEVA assisting the implementation, the project was started.

Based on online data, Aquis Water Network Management calculates a new pressure set point every five minutes, which is sent through the underlying SCADA system to the pumping stations, to continuously adjust the pressure so the total water pressure is maintained at a very accurate, constant level.

"We started gently, but have since increased the use of Aquis Water Network Management, which over the years we have consulted every time we need to make major changes in the network, track the spread of the water from

our five water utilities in the network or trace a possible contamination," says Nissen.

"Aquis Water Network Management has evolved a lot over the years and today we work almost exclusively with dynamic models which are so quickly built that we do not hesitate to use the tool even for small jobs."

"Indispensable Tool"

"To us, Aquis Water Network Management is an indispensable tool which we consult every time we make changes to the network or need to assess the mixing ratio of water from the five different waterworks that pump water into the mains," says Erling Nissen. "We also use it for contingency planning, where it is very important for us that we can track the spread of a potential contamination in the network."

"Today we can hardly do without a program like Aquis Water Network Management. Aquis Water Network Management gives us certainty and precise answers, and consequently we have a surety that is invaluable in everyday life."

Erling Nissen,
Senior Network Specialist



Data

- Network: 1,100 km
- Consumers: ~ 180,000
- Service pipes: ~ 36,000
- Loss: ~ 6%
- Production per year: 9,100,000 m³

"We use Aquis Water Network Management at least once a week and can, for example quickly run a specific time series, showing the development of a particular sector over a day.

The newest initiative is that we have built an Aquis Water Network Management model in close cooperation with AVEVA which automatically calculates and controls the pressure in parts of our network," says Nissen.

The Results

For more than 10 years, Aquis Water Network Management has been a natural part of VCS Denmark's tested methodology and technology stack.

"Above all, Aquis Water Network Management gives us a sense of security in the operation, which is very important. We know that we are optimally equipped to deal with a contamination if and when it occurs. We also know that we do not risk annoying citizens or companies when we change something in the network. We always double-check the consequences in Aquis Water Network Management and therefore rarely experience anything unexpected."

"The network grows with the demand for supply of water, and if we had not installed a program like Aquis Water Network Management 10 years ago we would not be among the most modern water treatment and distribution operations today," says Nissen.



About AVEVA

AVEVA is a global leader in engineering and industrial software driving digital transformation across the entire asset and operational life cycle of capital-intensive industries. The company's engineering, planning and operations, asset performance, and monitoring and control solutions deliver proven results to over 16,000 customers across the globe. Its customers are supported by the largest industrial software ecosystem, including 4,200 partners and 5,700 certified developers. AVEVA is headquartered in Cambridge, UK, with over 4,400 employees at 80 locations in over 40 countries.

AVEVA believes the information in this publication is correct as of its publication date. As part of continued product development, such information is subject to change without prior notice and is related to the current software release. AVEVA is not responsible for any inadvertent errors. All product names mentioned are the trademarks of their respective holders. Copyright © 2019 AVEVA Group plc and its subsidiaries. All rights reserved.