

Delesto Uses UniSim Simulation Solution to Train Operators and Optimize Productivity



“Honeywell’s UniSim simulation training solution has provided our operators with needed training of plant startup and shutdown procedures in a real-world environment. The simulator helps confirm that our people will react accurately in any situation that is thrown at them and continue to increase the efficiency of the plant.”

Marcel Bartelink, Managing Director, Delesto

Benefits

Delesto B.V., a Dutch combined heat and power producer and supplier, operates one of the most modern and largest cogeneration plants in all of Europe, supplying electricity and steam to more than 12 companies in the Delfzijl Chemical Park and to the public distribution network it serves. In order to meet the demanding nonstop run rate, Delesto needed to train its operators to handle exceptional situations and test different parameters of its continuously running installations.

Having used Honeywell systems for process control at the plant which have been recently upgraded to Honeywell’s Experion® Process Knowledge System (PKS), Delesto also adopted Honeywell’s UniSim® suite of simulation solutions in order to train its staff and help optimize plant operations for best response times to meet changing business needs. Other benefits experienced by Delesto include:

- Real-world testing environment helps ensure accurate responses
- Increase in efficiency and modernization of CHP plants
- Increased knowledge of startup and shutdown procedures and retaining that knowledge among current and new staff
- Operational issues are continuously reviewed and optimized



Honeywell’s UniSim simulation technology helped train Delesto’s operators, increasing their knowledge and efficiency.

Background

Delesto, a Dutch combined heat and power producer and supplier, is a joint venture between AkzoNobel and Essent. The company operates a modern natural gas powered cogeneration plant that provides steam and electricity to customers in the Delfzijl Chemical Park. A major part of the generated electricity is supplied to the public high voltage grid. The company is a forerunner in the field of energy production with a distribution capacity of 700 tonnes of steam per hour and 530 megawatts of electrical power along with other utility products.

Challenge

Delesto wanted to find a simulation solution that would help train its operators and provide a real-world experience and training environment with a clear view into its plant operations and ways to constantly improve processes.

Because the plant is so reliable and exceptional situations are few and far between, Delesto had to find a way to simulate a believable and realistic environment custom to its plants. "The simulator system could help us on a variety of fronts including knowledge retention, modernization and optimization," said Marcel Bartelink, Managing Director, Delesto. "The only way to do this was to find a simulator that presented an exact copy of our real process control system, and had a huge believability factor to our experienced operators."

Solution

A longtime Honeywell customer, Delesto investigated the benefits of a simulation solution that could be integrated into its existing systems and provide a one-stop view into its processes. Delesto selected Honeywell's UniSim suite of simulation solutions to help train its operators and optimize plant operations.

Honeywell's UniSim Design is an intuitive and interactive process modeling technology that enables engineers to create steady-state and dynamic models for plant design, performance monitoring, troubleshooting, operational improvement and asset management. UniSim provides best-in-class technology and comprehensive features along with Honeywell's domain expertise in process simulation and operator training.

"We needed something that was disturbingly realistic and that brought our controllers out of their comfort zone," said Bartelink. "The Honeywell simulation technology was so real that we had to convince our operators that it was indeed a simulation and not the real panel they were viewing and reacting to."

More Information

For more information on Honeywell's UniSim simulation solutions, visit www.honeywell.com/ps or contact your Honeywell account manager.

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The production facilities at Delesto are split between two units. The first plant was built in 1987 and consists of three gas turbine generator units with waste heat recovery boilers with auxiliary firing. The second plant, built in 1999, consists of a single-shaft 9FA combined cycle system.

"What always occupies us is looking for opportunities to further optimize our plant," said Bartelink. "Besides this, continuity in the longer term is an important focal point and experienced operators and training specialists that are willing to train, obtain and maintain their plant intellect are key to our success."

Once a plant is running, the software takes care of an important part of the desired control, but starting and stopping processes demand a lot of knowledge which threatens to be lost if precautions aren't put in place to retain it. With UniSim, Delesto now has experienced staff who can pass on their knowledge.

"Efficiency is another important aspect which we continuously strive to improve," said Bartelink. "With current gas prices, every percentage point improvement in efficiency counts, but is also important from a social viewpoint, and lowering CO₂ emissions is high on our list of priorities. By burning gas at higher temperatures we can extract more energy from natural gas and increase our efficiency. With the simulator we are able to test out varying temperatures and see what effect it has on efficiency and reliability, another huge benefit."

As technology continues to evolve it is important to keep current on training processes. "Thanks to Honeywell's intelligent and dynamic simulator system we can evaluate our plant, processes and people in an interactive way that makes a difference but doesn't interrupt our plant procedures," concluded Bartelink.

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