Fast and flawless migration of a process control system for fuel distribution on Curaçao and Bonaire
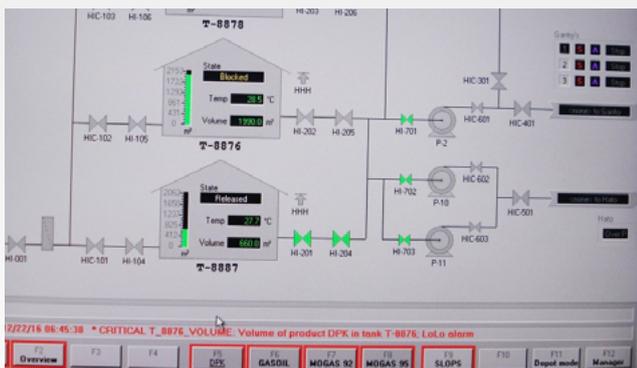
ICT Group has successfully accompanied the migration of the process control system of Curoil, a fuel distribution company for the Caribbean islands of Curaçao and Bonaire. At Curoil's production facility in Curaçao trucks and ships are filled up with petrol, diesel and gas, which are distributed to petrol stations on both islands. Using a pipeline Curoil also transports kerosine to the local airport to fuel planes.

Migration to PCS7

The filling up of the trucks and ships from the storage tanks and the pumping of kerosine through the pipeline was managed by an outdated process control system installed in the previous century. In-depth knowledge of this system was lacking, as were spare parts to fix hardware problems. If the system failed, the distribution of fuels would grind to a halt. This would lead to an immediate shortage of fuels, an economic catastrophe for both islands.

Curoil decided to migrate the outdated operating system to a new one, based on Siemens PCS7 technology. As a Siemens Solution Partner, ICT Group has extensive knowledge and experience with PCS7. This fact, coupled with Curoil's

ICT smarter solutions

based on PCS7 WinCC. The new server was also fitted with web server functionality, making the operator stations accessible online. Web security was updated to current standards.

Migration in a day

The migration was scheduled to happen in a single day. The choice fell on a Sunday, since the company is closed and has no activities that day. Because of the excellent preparation both of ICT Group and Curoil, the migration went smoothly. Curoil operators were very satisfied with the user-friendliness and the extended functionalities of the new system. "They started using the new system the very next morning," says Marc Schröder. "And it worked perfectly. They were surprised about how smooth sailing it all was."

The same look and feel with more functionality

Curoil's wanted the new Process control system to maintain the same look and feel as the old one. This would shorten the adoption period and allowed the operators to quickly find their way with the new system. ICT Group responded to that request by leaving the user interface largely intact. The new system also had to be outfitted with quite a few new functionalities, such as the possibility to repump diesel back from the ships to the storage tanks. ICT Group managed to realise the extra functionalities to Curoil's full satisfaction.

previous experiences with ICT Group, made Curoil award the contract for the migration to ICT Group.

Programming, training and process management by ICT Group

Marc Schröder, consultant and senior control designer at ICT Group, was lead engineer for the assignment. Together with a colleague he programmed the control logic for the new Process control system. He also trained the Curoil staff, both from The Netherlands through Skype as in person on the island itself, so they were able to adopt the new system quickly and faultlessly. Finally, Schröder stayed on the island for three weeks to accompany the migration itself.

Replacing the PLC, server and operating stations

The migration to the new system involved the renewal of several key components. First, the old S7-300 PLC was replaced by a Siemens AS-RTX PLC (a so-called Soft PLC), containing the new control logic programmed by ICT Group. Then the old Profibus was switched to the more modern Profinet. "We decided to keep the old Profibus I/O [inputs and outputs] intact," says Marc Schröder. "By using the same switches and buttons, we avoided extensive I/O testing. That saved us a lot of time."

Second, the old Scada server and two operator stations were replaced by a new OS server and operator stations

Migration in a nutshell
- Replaced the old S7-300 PLC by a Siemens AS-RTX
- Replaced the Scada server by an OS server based on PCS7
- Switched from Profibus to Profinet
- Leaving the I/O intact
- Migration realised in a single day

Do you want to know more about this project or about the migration of process control system, please contact: Martin Bijl, Business Development Manager Industry
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