ABSTRACT for the 2015 ISA WWAC Symposium

Migrating to Digital Bus Technology

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ABSTRACT

Older municipalities are usually the last to incorporate new technologies, mainly due to the cost, but also due to the unknowns. The philosophy of "If it's not broken, don't fix it" is the main driving force. Given the changes in instrumentation in the past few years, following general industry trends and going into the digital age, today's instruments provide a plethora of information. All of this information is available to the user, given that their instrument network can "talk the talk". For utilities still hanging on to the older analog and digital discrete signals, they will find themselves unable to properly use all of the additional smarts that are built into their new instruments. The question we looked into is how would a utility go about migrating to this new instrument network, and how best to convince a historically risk-averse culture to embrace something new, and all digital.

Working with the controls and operations groups, we identified a pump station that would serve as a pilot for migrating to a digital bus network. The selected station had a good mix of analog instruments, digital instruments, control valves, and a combination of VFD and constant speed motors. A study was conducted to select the best bus network that would be compatible with the existing DCS system, and Foundation FieldBus was the choice. New instruments were selected initially to run alongside their analog counterparts, until the digital system could be proven out. The goal was to migrate as much as possible at this station to FieldBus and create a migration plan that could be used at DWSD's other facilities.

This presentation will cover the steps we took in the selection of a bus technology, the creation of design standards, instrument selection, installation planning, and DCS tie-in. We will also show the end results highlighting the new information that became available on the system, and the benefits of going with a smart system. The audience for this presentation would be anyone involved in Instrumentation and Controls.

The goal is to utilize smart instrumentation to assist with process optimization, water management, and to build digital plant architecture and utilize model based technology. This should help the department to move to predictive maintenance instead of preventative and help avoid unplanned shutdowns and inefficient practices that have significant cost.

ABOUT THE AUTHORS

Hassan Ajami, PE *has been involved in the Water/Wastewater industry for 15 years. His roles have covered all aspects of control systems, ranging from design, integration, commissioning and planning. He is currently the General Manager at PCI. Contact: hajami@pci-detroit.com.*

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