Developing In-House Sewage Pumping Station Design Standards: Streamlining Integration of Pump Stations in Niagara Region

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FORMAT

6-12 page paper plus 30 minute presentation

KEYWORDS

SCADA, Standards, Architecture, Wastewater

ABSTRACT

From the early onset of engineering practices there had been the focus to create processes which reduce learning curves, inconsistency and human error. The goal has been and still is the ability to complete tasks in a more consistent, efficient and standardized routine.

The Wastewater Collection Process is comprised of several remote Sewage Pumping Stations (SPS) that functionally perform the same task, the collection and pumping of wastewater to a centralized plant for treatment. With the challenges of workforce attrition and financial restraints the undertaking of upgrading aging infrastructure in a standardized fashion can be laborious, resource intensive and result in inconsistent variances from the original intended method unless rigid, detailed standards are put in place. Aside from the physical installation, the methods of control philosophy can also be vulnerable to variation depending on several influential factors such as having no adopted philosophy in place and the development being left to various retained subject matter experts.

Based on the need for a standard that contained physical control architecture and a documented process philosophy but still had the opportunity for minor customization, new innovative technologies and uniqueness the 85% SPS Design Standard was developed. This standard was developed through the combined efforts of the Operations, Process, Electrical, SCADA, Maintenance and Engineering groups to ensure that all interests were accounted for. This collaboration of efforts enabled internal ownership, a benchmark of accountability as well as reduced drawing and process control narrative review time, accelerated SCADA design sign off and increased the overall PLC, SCADA, Data Collection and Reporting commissioning phases of Sewage Pump Station control system upgrades.

About the Authors:

Mark Presti, M. Eng. D., P. Eng. is the President of Provectus Systems, Inc. He has over 15 years of experience in automation ranging from food processing, printing and water & wastewater treatment. Prior to establishing Provectus Systems he was a Sr. Automation consultant with Gray Matter Systems, Inc. and further proceeded by a seven year career with the Niagara Region Water and Wastewater Division. At Niagara he spent seven years as the SCADA Engineer (2 yrs.) then Manager of Technical Trades (5 yrs.). In that time frame he accomplished several

milestones some of which included building at team of professionals that allowed the Region to implement state of the art technologies in all of their 12 treatment facilities along with wide area solutions for management and information distribution. He has extensive experience with both SCADA and Computerized Maintenance Management Systems (CMMS). Mr. Presti has a diploma in Electronics Engineering Technology from Mohawk College, as well as a Bachelor of Electrical Engineering and Master of Engineering Design from McMaster University. Mr. Presti is also a licensed professional engineer in the province of Ontario, Canada. Contact: mpresti@provectussystems.ca

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