

Integrated Process Control & Management Systems Creating More Effective Working Environments

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ABSTRACT

Most Utility and Municipal Water Departments are faced with the difficult challenges of aging infrastructure, workforce attrition and financial restraints while being held to regulatory accountability. As systems are becoming more automated and the workforce generation is changing, the physical exposure to field equipment is becoming less frequent. These two coupled events create a landscape where the need to integrate Operational and Maintenance systems is apparent to ensure sustainability, compliance and awareness. Entering the realm of Manufacturing Execution (ME) Systems to accomplish this has created complexity and inconsistency to business management.

ME systems have evolved extensively in the past decades becoming enterprise solutions containing corporate modules for financial systems, contract administration, time and attendance systems, etc. The added features and development of a one stop corporate solution typically inflate the cost of implementation, usually require additional staffing to support, significant customization and lose sight of operational needs.

Based on the need for a simpler and more operational effective solution to provide the tools for sustainability, the implementation of automated workflow tasking technology was developed. It has been utilized by several industries across North America and supports the integration of disparate data silos into one common interacting user interface without customized integration. This system provides true operational consistency ensuring that; all alarms are responded to correctly by any staff, digital Standard Operating Procedures are followed and users are held accountable to best practices. The advantage of seamless integration with other applications such as Computerized Maintenance Management (CMM) Systems is the reduction of work response time and ensuring common protocols are used. Due to the modeling capability and flexibility of configuration, directly linking items between SCADA and CMM systems enables Reliability Centered Maintenance practices. Applying the example of SCADA system pump runtime hours triggering a CMMS work order, positions staff wrench time on equipment that requires it and minimizes the intervention of a user to do so.

The ability to provide an end user with a single interface without customized integration has enabled a more stable and reliable platform without the complexity of traditional ME Systems. Utilities have streamlined consistency to staff during training, remote site inspections, alarm response management, equipment maintenance and many other workflows procedures.

Our Water Utilities implementations have proven that a more operational, embedded approach to their business has added value to their delivery. The ability to direct work to problem areas more-timely and effectively resulting in increasing equipment lifecycles has allowed them to do more with less when it comes to manpower and finances while maintaining regulatory compliance.

About the Author:

Mark Presti, M. Eng. D., P. Eng. is a Sr. Automation Consultant, Gray Matter Systems Canada, Inc. He has over 15 years of experience in automation ranging from food processing, printing and water & wastewater treatment. Prior to joining Gray Matter, he was part of the Niagara Region Water and Wastewater Division where he spent seven years as the SCADA Engineer (2 yrs.) then Manager of Technical Trades (5 yrs.). When he was with Niagara, he built 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 BSEE and MSEE from McMaster University. Mr. Presti is also a licensed professional engineer in the province of Ontario, Canada.