

Implementation of Real Time Pump Efficiency and Optimization System

Adam Plumstead^{1*}, Michael O'Meara², and Matt Spitzig³

¹Eramosa Engineering, 650 Woodlawn Road West, Block C, Unit 4 Guelph, ON N1K 1B8

(*Email: adam.plumstead@eramosa.com and Phone: 519-763-7774 x 247)

^{2,3}Regional Municipality of York, 380 Bayview Parkway, Newmarket, ON, L3Y 4W3

SUBMISSION TYPE

30 minute presentation

KEYWORDS

Energy Management, Optimization, Efficiency, Real-Time, SCADA, Asset Management

ABSTRACT

With electricity costs on the rise there is an ever increasing need to find more efficient ways to operate existing water and wastewater facilities. As the Regional Municipality of York continues to construct new and expand upon existing W/WW facilities to support its service population as the fastest growing large municipality in Canada they have begun to implement a real-time pump efficiency monitoring and optimization system utilizing their existing W/WW SCADA system.

As large motor driven assets such as pumps and blowers age their efficiency is often reduced due to everyday wear and tear of mechanical components. Many of the Region's W/WW facilities also contain pump and blower sets with different configurations including combinations of VFD driven motors, soft starters coupled with flow control valves or even pumps of different sizes intended to support today's demand as well as for the future. With all of the different operating combination possibilities the overall efficiency of the equipment can vary significantly resulting in increased electricity costs and in some cases penalties for peak demands.

By implementing real time pump monitoring the Region hopes to provide the supporting information required to be able to make intelligent decisions regarding pumping operations as well as schedule proactive maintenance for their assets in an effort to improve the overall efficiency of their W/WW operations and ultimately reduce their associated operating costs. This initiative is being undertaken to support the Region's overall W & WW energy roadmap.

The Region wishes to share its experiences from this initiative including lessons learned, application examples and how they are using this data to make intelligent business decisions.

ABOUT THE AUTHORS

Adam Plumstead, C.E.T. is a graduate of Conestoga College in Kitchener, Ontario and has been with Eramosa Engineering for 10 years. He is a Group Leader with Eramosa and is based out of their Guelph office. Adam has been involved in municipal water/wastewater projects throughout Ontario specializing in instrumentation and control design and SCADA integration. Contact: adam.plumstead@eramosa.com

Michael O'Meara, PMP is a graduate of Lakehead University and holds a post graduate diploma in Geographic Information Systems from McMaster University. Michael has been with the Region of York's PCS/SCADA department leading the SCADA Data Management Team for the past 7 years and is currently the Acting PCS/SCADA Manager. Contact: Michael.OMeara@york.ca

Matt Spitzig is a graduate of Fanshawe College and is the PCS/SCADA Supervisor at the Region of York. He has been with the Region for 10 years and has supported the design, construction and maintenance of the Regions Instrumentation and SCADA systems utilized in the water and wastewater systems. Contact: Matt.Spitzig@york.ca