

SCADA Datalogging Redundancy for Compliance: Guelph Water's Approach

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Format: 20 minute presentation, plus written paper

OWWA Program Tracks: Automation

Short Abstract for Program (50 words)

In Ontario water utilities, SCADA-based datalogging is vital for both operations and regulatory compliance. O.Reg. 170 outlines strict datalogging requirements, including logging chlorine residuals every 5 minutes. This talk provides insight into how Guelph Water Services used a multiple-redundancy approach to ensure high-availability of its SCADA datalogging infrastructure.

Long Abstract (250 Words)

In drinking water utilities, SCADA (supervisory control and data acquisition) systems play a vital role for both operations and compliance. SCADA enables operators to remotely view, monitor, and control water facilities. For regulatory compliance, SCADA systems log critical process parameters, including meeting the 5 minute datalogging interval for chlorine residuals per Ontario Regulation 170 under the Safe Drinking Water Act.

This presentation provides an overview of how Guelph Water Services has designed and implemented its SCADA system to have multiple redundant datalogging systems. Multiple levels of redundancy are used including data collection redundancy, uplink protocol redundancy, network redundancy, process historian redundancy, and data centre redundancy. The result is a robust SCADA system that can withstand multiple failures, and still be able to meet the strict datalogging requirements outlined in O.Reg. 170.

A cost-benefit analysis will also be presented for various data logging technologies, which led Guelph to design the system that it uses. In particular, the triple-redundant SCADA data logging system at Guelph Water will be highlighted as well as the technology used to make this data immediately available to both operators and the compliance team.

Learning Objective 1

Learn about the options available to implementing SCADA-based datalogging

Learning Objective 2

Understand the challenges involved with implementing datalogging solutions that can tolerate SCADA network and/or server outages and not lose data.

Learning Objective 3

Lear about best practices when it comes to implementing redundant data logging technologies.

About the Speaker



Graham Nasby, P.Eng, PMP, CAP holds the position of Water SCADA & Security Specialist at City of Guelph Water Services, a publicly-owned water utility located in Guelph, Ontario, Canada. Prior to joining Guelph Water, he spent 10 years in the engineering consulting community after completing his B.Sc.(Eng) at the University of Guelph. He is senior member of the International Society of Automation (ISA) and co-chair of the ISA112 SCADA System Standards Committee. He is a member of both OWWA and WEAO, and currently sits on the OWWA Automation Committee. Contact: graham.nasby@guelph.ca