# Effectively Deploying Alarm Management to SCADA Systems

How to realize the benefits of ISA-18.2 in systems that were never designed for it

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## ABSTRACT

In 2009, the ISA released the ISA-18.2 alarm management standard, which provides a comprehensive framework for effectively designing, programming, using and maintaining alarm systems. Written as a document that is applicable to any industry, it has particular applicability to the municipal water and wastewater sectors where nuisance alarms are a growing problem.

SCADA systems now have the capability to be easily configured with hundreds, if not thousands, of alarms with only a few keystrokes. When not well deployed, these systems can generate so many alarms that operators cannot effectively do their jobs due to a constant stream of alarms. Important alarms can also be missed due to the sheer number of total alarms coming in. To effectively harness the power of the alarm system, a comprehensive alarm management approach is needed.

The challenge is that many of the existing SCADA systems used in our sector lack support many of the core functions described in the ISA-18.2 standard. Common problems often include poor support for in-place alarm documentation, alarm timestamps, alarm priorities, and conditional-logic based alarms. Other missing functionality may include: alarm on/off trigger delays, alarm deadbands, the ability to shelve nuisance alarms, and the ability to prevent unauthorized alarm setpoint/configuration changes.

In this presentation, the author will provide an overview of the ten work process of the alarm management standard, and what key features are needed to deploy varying degrees of alarm management in a typical SCADA system. The author will also discuss several commonly used workarounds that can used to bridge gaps of functionality in SCADA systems. Lastly, the author will provide several pointers how to start an alarm management program, weighing the pros/cons of several approaches.

## ABOUT THE AUTHOR

**Graham Nasby, P.Eng., PMP, CAP** *is a senior I&C Engineer with Eramosa, who works extensively in the municipal water and wastewater sectors. His areas of expertise include instrumentation, control systems design, electrical design, project execution and plant start-ups. Nasby is an alarm management subject matter expert, and a voting member of the ISA-18 alarm management standards committee. He is also a certified Functional Safety Engineer for Safety Instrumented Systems (SIS) by TUV Rheinland. In 2013, he received the ISA's society-level Technical Division Leader of the Year award for his contributions to the municipal water/wastewater sector. Graham currently lives in Guelph, Ontario, Canada. Contact:* [graham.nasby@eramosa.com](mailto:graham.nasby@eramosa.com)*.*