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Safeguarding Municipal Drinking Water Systems from Cyber Threat

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Format: 45 min. presentation

Abstract:
The frequency and breath of cyber incidents continue to rise. In the last 5 years there have been more than 50 documented cases of cyber incidents involving water/wastewater SCADA systems, including in Ontario. In addition, there also have been a growing number of cyber incidents affecting municipal IT systems and other public infrastructure. In other critical sectors, cyber incidents and ransomware are now considered to be one of the top risks to business operations and regulatory compliance. Cyber threats are not going to go away – instead they continue to increase in both frequency and sophistication. For water/wastewater utilities, it is imperative that cyber risks be proactively identified, and programs be implemented to control and mitigate the associated risks.

An overview of what the most common types of cyber incidents are and various scenarios of how they can impact a municipal water/wastewater utility will be presented, ranging from the relatively benign to those severely impacting operations. The talk will then outline the essential components of an effective cybersecurity program. Lastly, the talk will provide an overview to develop a comprehensive strategy to counter the ever-growing risk of cyberattacks.

About the Speaker

Graham Nasby is an industry-recognized leader in the OT (operational technology), SCADA, and industrial automation sector for his efforts in cyber security best practices, standards development, alarm management, and operational efficiency. Through his work with the ISA, CSA, ANSI and IEC, he has co-authored international standards on systems design, cyber security, industrial automation, alarm management, and HMI systems. Graham has multi-industry experience, ranging from technical to project/program management, in the pharmaceutical, water/wastewater, nanotechnology, process, and rail transport industries. His background includes operations, capital projects, construction, program development, and developing long term technology roadmaps. As a technical and thought leader, Graham is a frequent author of industry articles and invited speaker at industry events.
Graham currently holds the position of Senior Manager of OT Security architecture for CN Rail, one of the largest Class 1 railroad and logistics companies in North America. Graham also teaches a night course in engineering law and ethics at McMaster University's faculty of engineering. Graham has been the co-chair of the ISA112 SCADA Systems Management Standards Committee since 2015. Prior to joining CN Rail in 2022, he worked in the municipal water sector for over 12 years.