White Paper: Technologies Answer to COVID-19 Impacts for Water and Wastewater Systems

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The COVID-19 Virus has forever changed our perspective on everyday work-related activities and personal interaction. Municipalities responsible for maintaining our critical infrastructures need to protect our vital resources and at the same time, manage strained budgets and protect their most valuable resource, their workforce. In addition, they must maintain strict OSHA safety requirements for airborne pathogens.

As everyone is looking for safer and more effective ways to run and maintain water and wastewater systems during the COVID Pandemic, many are finding the solutions they need through technology. Remote Monitoring and Control via a SCADA-like system addresses many of the current limitations and will help eliminate the need for many on-site visits to keep your workforce safe and ready to handle emergency situations.

Larger municipalities have the advantage of being able to install and maintain large and costly SCADA systems. However, the thousands of smaller organizations do not have the budget to implement full SCADA solutions, but they still need many of the features SCADA offers to manage their remote sites. We call these solutions SCADA-Lite. One of the biggest advantages of a SCADA system is to allow you to manage all your locations remotely and receive alerts when equipment goes offline, or they encounter issues outside of normal parameters. By making these SCADA-Lite systems affordable and easy to use, the same benefits seen by larger cities will be possible for other areas.

Here are just a few benefits that a SCADA system can offer during this Corona Virus Crisis:

- Allow visibility to systems without direct physical contact or exposure
- Free up resources on non-critical tasks allowing for redirection of limited resources
- Allow a single operator to manage multiple Water/Wastewater systems remotely
- Minimize human error from manual observations

Protecting Your Resources

The best way to stop the spread of the virus is to minimize physical contact with people or objects frequently touched. Smaller cities that do not have a SCADA system, must deploy people to physically visit critical assets to monitor the sites and determine their condition. While this is important, it introduces the opportunity for many different people to come into physical contact with one another. By viewing the condition of assets remotely, the need to travel and view properly functioning assets is virtually eliminated.

OSHA and the Virus

OSHA's General Duty Clause, Section 5(a)(1) of the Occupational Safety and Health (OSH) Act of 1970, 29 USC 654(a)(1), states that employers are required to furnish to each worker "employment and a place of employment, which are free from recognized hazards that are causing or are likely to cause death or serious physical harm." By keeping your workforce at home to monitor remotely you are helping to fulfill this requirement.

OSHA's Bloodborne Pathogens standard 29 CFR 1910.1030 could additionally apply to the virus and by maintaining many of the same standards documented in the standard noted above, when dealing with COVID-19 and could help with exposure to this virus. COVID-19 can be a recordable illness if a worker is infected while performing their work-related duties. OSHA reporting can be a painstaking task requiring many hours to complete. By minimizing the risk of contracting the virus you will also free up administrative resources and keep them focused on the business not completing OSHA reports.

Contingency Planning

One serious difficulty that many utilities have faced during this pandemic is what to do if the only licensed operator for a system falls ill or needs to be quarantined. Many municipalities have had to find creative ways to keep systems operating safely and efficiently when an infection is reported. By adding SCADA-Lite systems, a single licensed operator can now operate multiple municipal systems safely from one location, such as a home or office. This greatly expands the limited pool of operators and allows for contingency planning and cooperation across multiple municipalities.

Advantages

The first advantage of a SCADA system is giving real time visibility of critical infrastructure without the inherent exposure opportunities of travel. This also allows for critical logs, such as pump run times and tank levels to be collected generated remotely and even automatically. Many people see SCADA systems as exceptionally large, automated controllers that cost 100's of thousands of dollars, take months to install and require specialized training to operate. Technology has reached the point where smaller low cost very direct sensors can be employed to monitor and even control one or more pieces of equipment. These systems are what we refer to as SCADA-Lite. This makes critical monitoring affordable for even the smallest Municipalities.

Physical checks of properly functioning assets utilize a significant amount of labor. For most utilities, labor is a limited resource. By only having to view an asset when an alert is sounded, such as power loss, the bandwidth of this critical and limited resource is greatly increased. As addressed earlier, time and human error is also minimized by not having to take manual readings and create logs for regulatory compliance. Having employees physically travel also increases instances where social distancing may be difficult, such as eating at a restaurant or stopping at a local convenience store to purchase fuel. Allowing employees to do more tasks remotely inherently reduces these contact points exponentially.

SCADA-Lite Systems are less complicated and less expensive than ever before. With proper planning and executions, Municipalities can add this technology and greatly reduce the risk to your workforce during the pandemic. This allows you to quickly adapt when local infection rates periodically rise or one of your employees contracts the virus.

Now that we have moved into another phase of the pandemic where the number of cases are rising, it is time to take advantage of SCADA-Lite technology to minimize risks to employees, with an added benefit of maximizing your resources, and monitoring your assets performance before there is an outage. This shift to working remotely has identified what systems are truly critical and necessary to achieve the highest, now is the time to act on this information.

Conclusion

Each day we learn more about the COVID-19 virus, how it behaves, and the best recommendations and strategies for dealing with it. Our goal is to help you protect your workforce, minimize outages, and achieve greater performance through implementation of targeted SCADA-Lite solutions within your infrastructure. Call us today to learn more about how to implement systems tailored specifically for your Municipality.

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