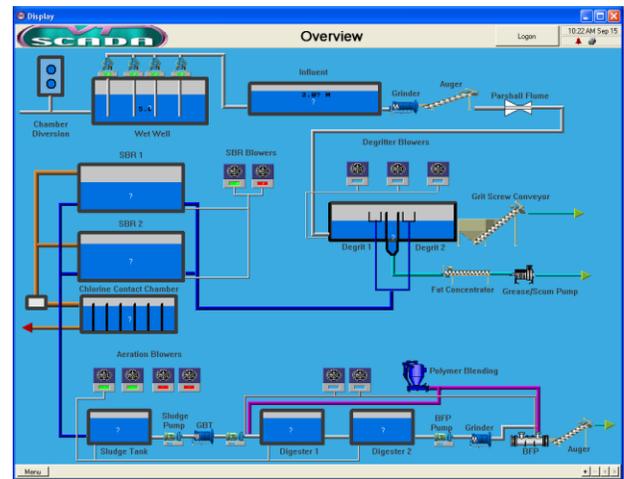


Bringing it all Together

Centralized Backup & Online Configuration for Remote Plant HMIs

Nicole MacDonald is the Wastewater Manager for Colchester County, Nova Scotia. She wanted to be able to monitor and configure all four of her sewage treatment plants from her office. After reviewing the existing infrastructure, she saw the potential to transform these four systems into one unified solution that would also address long standing issues such as remote data backup and automatic system failover. Engineers from Trihedral Engineering worked closely with MacDonald to bring her idea into reality.



Monitoring at the main Colchester plant was handled by RS View HMI software connected to four Allen Bradley PLCs via a Data Highway Plus (DH+) network. An alarm dialer notified staff of changes in flow, gas or fire. The Tatamagouche, Great Village, and Brookfield plants each consisted of a SCADAPack PLC and an alarm dialer connected to VTScada HMI software from Trihedral Engineering. Despite the sophistication of these systems, several issues remained.

- Two different kinds of HMI software meant more training and a steeper learning curve for new employees
- Plants could not be monitored from one central location
- Configuration changes had to be done on-site at each plant
- There was no remote backup of each plant's historical data
- Servers at the Colchester plant communicated with local PLCs simultaneously, resulting in unnecessary network traffic

Since VTScada was already being used in three of the plants, the Colchester plant would switch to VTScada as well. Trihedral developer Doug Spurrell worked closely with MacDonald to create an elegant design that made the best use of existing infrastructure. "The people at Trihedral were great to work with," remembered MacDonald. "I always knew I could reach them if I needed to speak with them."

A Unified Design

Each plant now runs a primary HMI server which communicates with local I/O via its own Local Area Network (LAN) and maintains a database of local historical data. Each plant's HMI can be viewed remotely via Internet client and has an alarm dialer that communicates alarm information to operations personnel. Alarms for all of the plants can be viewed and acknowledged from a single computer in the Colchester office.

Benefits

1. Centralized monitoring & control: A workstation in Colchester is connected to the other three plants via high speed Internet.
2. Security: Each connection is secured using an inexpensive VPN firewall device.
3. Remote configuration: MacDonald can make remote configuration changes from her office without restarting on-site primary servers.
4. Remote back up: All four historical databases are replicated on the central workstation in Colchester.
5. Remote failover: MacDonald's workstation can now take over all server functionality, including I/O communications, for any or all of the plants in the event their (on-site) primary servers fail.
6. Reduced learning Curve: Adopting a single, unified SCADA software methodology was not the only way that things were simplified. Spurrell recalls, "I made sure that the screens for the new VTScada application shared the look & feel of the old Colchester HMI" At the same time he improved workflow by drastically reducing the number of screens and grouping together related data.
7. Overlapping trend data: A stopped pump can result in mysterious readings across the system. By overlaying pump rates and flow curves in the VTScada Historical Data Viewer, users can trace anomalous readings back to their source.
8. Integrated Logbook: VTScada provides an electronic operator's notes display to replace hand-written log books. Once a user's notes have been automatically time-stamped and labeled with the operator's name, they cannot be edited.
9. More historical data: "Before, we could only record twenty-four hours worth of trend information. Now we can go back three weeks."

The Future

The municipality is currently building a new treatment plant and MacDonald is very clear about what SCADA software they are going to use. "We definitely want VTScada running in all of our plants."

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