NOZOMI NETWORKS

Case Study
Regional Power Operator Improves ICS Cybersecurity and Operational Efficiency

VERMONT ELECTRIC CO OP INC

Vermont Electric Cooperative (VEC) enhanced the reliability, efficiency and cybersecurity of its utility power delivery services.

By leveraging Nozomi Networks solution, VEC garnered significant improvements in industrial cybersecurity and operational productivity.

Customer Profile
- A Vermont energy provider operating across 75 communities in eight counties
- Annual revenue in excess of $77,000,000

Goals & Challenges
- Enhance the reliability and cybersecurity of the power grid
- Increase operational efficiency by eliminating manually-intensive ICS monitoring

Results
- Implemented proven solution to "greatly enhance [VEC's] security profile"
- Boosted operational efficiency;
  - Slashed ICS administration and cybersecurity labor hours by "10 to 12 hours a week" [12.5 labor weeks annually]
- Reduced the number of repair truck rolls

Visit **www.nozominetworks.com/vec** to hear directly from Vermont Electric Coop

Watch the video ⊙

> "Nozomi Networks SCADAguardian solution delivers the reliability, cybersecurity and operational efficiency benefits that we sought. Its performance gives me peace of mind because we're continuously improving our security profile."

KRIS SMITH
Manager of Operations Engineering, Vermont Electric Cooperative

SCADAguardian™ proves its value to earn system-wide deployment

⊕ The Challenge: Enhancing Security Profile while Increasing Operational Efficiency

Electric industry information sharing and confidential briefings from industry and government agencies worry Kris Smith, Manager of Operations Engineering at Vermont Electric Cooperative (VEC.) That's because the responsibility for service interruptions to VEC's members land squarely on his shoulders. *"As with any utility, service reliability is paramount. And a robust cybersecurity program with robust cybersecurity platforms are how we ensure that reliability."*

In practice, promoting reliability means adopting the U.S. Office of Electricity Delivery and Energy Reliability's (OE) mindset. Specifically, boosting VEC's "cybersecurity preparedness" and "incident response" capabilities[1].

Towards that end, Smith resolved to overcome several challenges that he faced. *"[Prior to implementing the Nozomi Networks solution] we relied heavily on manual, time-consuming processes to administer our systems and mine data. Collating and analyzing large data sets in tabular format, from three different systems, was so resource intensive that it made applying a comprehensive, cybersecurity approach difficult."*

◎ VEC's Goals

To ensure he chose an effective solution, Smith established strict criterion. First among them was a solution with a proven industry track record. *"We didn't want to be beta testers for newcomers in our space."*

Additionally, Smith wanted a solution that could:

- Automatically build an asset inventory, visualize assets and model their interactions
- Systematically detect and provide alerts concerning anomalies and potential threats
- Dramatically improve operational efficiency by:
    - Replacing manual processes with automation features and capabilities
    - Interfacing seamlessly with VEC's existing systems
    - Enabling the consolidation of data from networks onto a single platform
- Scale and adapt for future development, growth and support

☀ The Solution: SCADAguardian Demonstrates its Value in Proof of Concept

"We selected Nozomi Networks because their SCADAguardian solution meets all of our requirements in terms of visualization, detection, response and administration, as well as being a platform for long-term development and support."

The final decision, was based in part on the completion of a successful proof of concept (POC) project at VEC. Smith uses the SCADAguardian solution to consolidate ICS data for analysis, to visualize his assets and their relationships to one another, and to automate alerts to address anomalies and potential threats.

"It allows us to do a deep dive into the network protocols themselves, which supports both our cybersecurity and operational efficiency objectives."

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[1] **"Cybersecurity for Critical Energy Infrastructure,"** Office of Electricity Delivery and Energy Reliability.

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"We chose Nozomi Networks because their solution delivers enhanced ICS cybersecurity, significantly increases our productivity and positions us to adapt to changing circumstances."

KRIS SMITH
Manager of Operations Engineering, Vermont Electric Cooperative

The Results: Improved Reliability, Cybersecurity and Productivity

A Proven Solution

Smith deployed a tried, tested and vetted solution so that he could focus on tuning, monitoring and maintaining his network to ensure its reliability and efficiency. *"Not only do they have major deployments around the world to their credit, but Nozomi Networks specialists demonstrated that SCADAguardian delivers value in our environment. Most significantly, the solution has reinforced our cybersecurity program to help us advance our reliability goals."*

Enriched Cybersecurity-Visualization and Response

"Today, I can visualize all of my network components and see how they interact together," says Smith. *"I've also added IOCs [indicators of compromise] as I get them through the cybersecurity community. So, in a matter of moments, I can identify, and promptly address, any issues."*

Smith likes the automated cybersecurity and operational monitoring feature he gets through SCADAguardian. *"When the system detects anomalies, I get email alerts in real time."*

Additionally, Smith notes that the Nozomi Networks solution's comprehensive and integrated reports have *"... enabled me to do more consistent reviews of my log data and system performance. And it allows me to respond more quickly and comprehensively to information that we get from our peers."*

As a result, *"Vermont Electric Cooperative enjoys a greatly enhanced security posture that reduces our exposure,"* explains Smith. *"So much so that with SCADAguardian in place, I have the peace of mind that lets me sleep at night."*

Greater Operational Efficiency

SCADAguardian gives Smith granular visibility into ICS operations. Specifically, the solution creates an asset inventory and automatically updates it. Furthermore, it visualizes VEC's network and models the relationships between assets. Finally, artificial intelligence features allow SCADAguardian to learn traffic behavior patterns, and issue alerts/warnings when anomalies are detected. *"We've also used this data to tune protocols to be more efficient and to eliminate some communication errors as well,"* adds Smith.

These features combine to eliminate many of the time-intensive, manual tasks that Smith used to perform. *"Previously, it took me two to three hours to go through dozens of pages of information from three systems,"* explains Smith. *"Today, some of the cybersecurity system reviews I do take me as little as 15 minutes. Overall, the Nozomi Networks solution has helped me gain back between 10-12 hours a week."*[2]

The solution also helps Smith reduce time spent on troubleshooting and forensic activities. *"SCADAguardian allows us to drill down in protocols for new and existing equipment to efficiently diagnose issues. Consequently, we've improved our operational performance and in some cases can avoid costly truck rolls."*

Future Plans

While VEC currently doesn't have any NERC CIP jurisdictional assets, *"We're prepared for the possibility that regulators will bump the limit down so that our assets are included,"* says Smith. *"I like that SCADAguardian positions us to be compliant if regulations become more stringent."*

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[2] About 500 labor hours annually (assuming 10 hrs/week @ 50 weeks) - or 12.5 labor weeks per year.

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"Nozomi Networks SCADAguardian, helps us secure reliable, more efficient energy delivery to keep our cooperative members happy."

KRIS SMITH
Manager of Operations Engineering, Vermont Electric Cooperative

The Nozomi Networks Advantage

Today's legacy, manually-configured and monitored ICS cybersecurity systems are no longer sufficient to meet the needs of complex industrial installations. Nozomi Networks technology incorporates the latest artificial intelligence and machine learning developments, along with ICS industry-specific knowledge, to vastly surpass traditional solutions in performance. The result is a comprehensive solution that automatically models and monitors large, heterogeneous industrial systems. One that strengthens your ICS cybersecurity posture, improves your operational efficiency and enhances your high reliability standards.

Let SCADAguardian automate the hard work of knowing and monitoring your ICS – providing you with the real-time, granular visibility and detection that you require to promptly respond to potential threats. It's an easy solution to deploy and use, and it ensures the cyber resiliency and high availability of your network.

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About Vermont Electric Coop

Vermont Electric Cooperative (VEC) is a member-owned electric distribution utility headquartered in Johnson, VT. It provides safe, affordable and reliable energy services to its approximately 32,000 members. Towards that end, it operates under the guidelines of a Service Quality and Reliability Plan (SQRP,) which measures employee's service performance. VEC's operating area covers 75 communities across eight counties and includes 2,882 miles of line and 39,546 meters.

About Nozomi Networks

Nozomi Networks is revolutionizing Industrial Control System (ICS) cybersecurity with the most comprehensive platform to deliver real-time cybersecurity and operational visibility. Since 2013 the company has innovated the use of machine learning and artificial intelligence to secure critical infrastructure operations. Amid escalating threats targeting ICS, Nozomi Networks delivers one solution with real-time ICS monitoring, hybrid threat detection, process anomaly detection, industrial network visualization, asset inventory, and vulnerability assessment. Deployed in the world's largest industrial installations, customers benefit from advanced cybersecurity, improved operational reliability and enhanced IT/OT integration. Nozomi Networks is headquartered in San Francisco, California. Visit *www.nozominetworks.com*