Customer Highlight

UNIVERSITY OF NOTRE DAME

POWERMAX® Microgrid Control System Adds Reliability and Security for Campus' Expanding Grid

Managing the load balance on a university campus is crucial. Any blackout hinders critical activity, including research, student living, and more.

Customer problem

The SEL Plymouth, Michigan, office had been supporting the University of Notre Dame (UND) with their SEL relay settings for a year when UND identified the need to grow their campus load with more robust infrastructure, expanding from an older 4 kV system to a new 12 kV system.

UND needed a new power management control system to tie together their expanding grid—two new Solar turbines on the 12 kV system and the existing 4 kV system—and to manage the load balance of the two halves of campus.

Solution

SEL designed the infrastructure needed to provide SCADA automation, a control system, and protection for the campus once the system was up and running. The POWERMAX Power Management and Control System included generation control, a load-shedding scheme, an automatic synchronization scheme, and a tie flow control scheme to manage the import of power. SEL also provided control panels for each of the substations.

Cybersecurity services were added to provide software-defined networking (SDN) and additional security features, like secure remote access, an intrusion detection system, malware prevention, and disaster recovery solutions.

Results

UND has achieved a robust and reliable power system that also provides the opportunity to expand in the future as their campus and power needs change and grow. The system developed includes a large and secure SDN network configuration for cutting-edge cybersecurity. The increased visibility and access to data has shown immediate benefit for UND.

About SEL

SEL is a 100 percent employee-owned company that specializes in creating digital products and systems that protect, control, and automate power systems around the world. This technology mitigates blackouts and improves power system reliability and safety at a reduced cost. Headquartered in Pullman, Washington, SEL has manufactured products in the United States since 1984 and serves customers worldwide.

Cybersecurity philosophy

We build layers of defense and maintain the integrity of each layer's purpose—in other words, we apply the right technology at the right layer. We believe simpler products are easier to defend and that the safety of the power system and availability of the protection and control devices come first.

Reliability

SEL products are designed and manufactured for the world's most challenging environments, exceeding all industry standards for temperature, shock, and electric stress.

Our products have a mean time between returns for repair (MTBR) of more than 250 years, based on observed field performance. This means that if you have 250 SEL products installed in your systems, you can expect to have less than one unscheduled removal from service per year for any reason, whether it's a defect or an external factor such as overvoltage, overcurrent, wildlife damage, or environmental exposure.

Warranty

SEL backs our products and commitments with a ten-year warranty, no-charge diagnostic and repair services, local support, and a variety of test procedures and certifications.

Support

SEL support teams are stationed in regional offices around the globe and staffed with application engineers who are experts in our products and in power system applications. We offer free, 24/7 emergency technical support for the life of your SEL products, even if they're outside of our ten-year warranty.

Contact us

To learn more about partnering with SEL Engineering Services, contact **esinfo@selinc.com**.