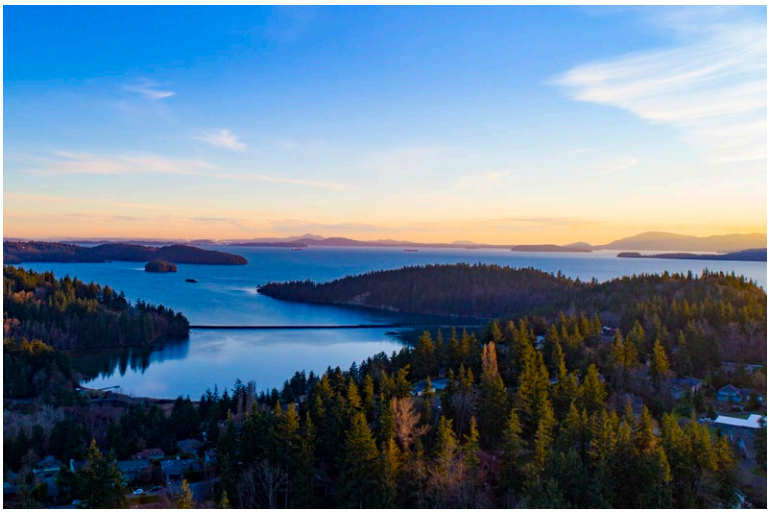

Customer Highlight

PUGET SOUND ENERGY

SEL POWERMAX® microgrid control system ensures reliable power for community fire station during storm season

MICROGRIDS that incorporate energy sources like BESS (battery energy storage system) and photovoltaic (PV) systems allow islanding from the grid during outages to ensure the reliable and resilient delivery of electric power to critical infrastructure and communities. With the SEL POWERMAX Microgrid Control System (MCS), microgrids disconnect and operate independently when there is an outage on the main grid. Upon service restoration, the microgrid resynchronizes with the grid and recharges the BESS.

Customer problem

Samish Island's position in the Salish Sea between Samish and Padilla Bays in northwest Washington exposes it to high winds during the fall and winter storm season. Puget Sound Energy (PSE) provides electric service to Samish Island. Their electric system is often damaged due to the severe weather and downed power lines, leaving critical emergency services vulnerable to frequent and prolonged grid outages.

Solution

PSE, in collaboration with SEL, installed an advanced POWERMAX MCS to provide flexible management of their BESS- and PV-powered microgrid. The solution provides islanded power support to the fire station and neighboring residences at the end of the line during power outages. Other features of the custom-built solution include the ability to actively manage numerous generation sources and loads, along with an HMI to enable real-time control.

Results

During the first storm season of operation, the microgrid operated successfully through multiple islanding events, providing local power, sometimes for several hours, until PSE restored service to the incoming line. The MCS isolated the microgrid and maintained voltage and frequency, which supported the load of the fire station and neighboring homes during the outages. The solution also seamlessly reconnected and synchronized with the grid when conditions improved and managed recharge of the BESS.

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 24/7 technical support at no cost for the life of your SEL products.

Contact us

To learn more about partnering with SEL Engineering Services, contact esinfo@selinc.com or visit selinc.com/engineering-services.