REDHAWK ENERGY

Case Study

Solid Oxide Fuel Cells for Extended-Run Backup Power at Railroad Crossings

Customer Motivation:

Seeking reliable and efficient backup power solutions to protect railroad crossings during extended AC power outages.

Application:

Ultra-USSI's P250i Solid Oxide Fuel Cells provide extended-run, zero-maintenance backup power to railroad crossings along a stretch of track in the midwest.

System Operation:

Working in conjunction with the existing power infrastructure, the P250i will monitor battery voltage of the battery plant. Once batteries dip below a certain pre-determined lower threshold voltage, the P250i will automatically start and after a 25-30 minute warm-up period will begin to charge the batteries and power the load. After the batteries reach a pre-determined upper threshold voltage, the P250i will begin to cooldown and return to standby mode. The P250i provides truly autonomous operation.

Fuel & Efficiency

The P250i is powered by readily available and easily transportable propane. With (2) BBQ style propane tanks, the P250i is capable of providing 130-160 hours of runtime, efficiently burning 1/4 lb of propane per hour during operation.

Zero Maintenance

The P250i needs no oil changes, has no moving parts and requires no routine maintenance over the life of the system.

All-Weather Performance

The P250i utilizes a ceramic electrolyte which is not susceptible to freezing and thawing cycles common among other fuel cell types including PEM fuel cells. The P250i's robust design allows it to reliably operate in virtually any climate -40°F to +158°F.

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RedHawk Energy Systems, LLC
10340 Palmer Rd., S.W.
Pataskala, OH 43062

ph: 740-964-4000
www.redhawkenergy.net