

Fuel Cell System installation for the French rail network



Case study:

Site: Gagny, France

Application: Backup power for a signaling substation

Installation date: January 2008

Product: ElectraGen™5

Configuration: 24VDC

Fuel: Hydrogen gas
(4 x B50 cylinders)

Customer motivations:

- Space saving in substation (fuel cell system was installed outdoor)
- Increased autonomy of the site (>12hrs)
- Low maintenance and remote monitoring
- Environmental friendly solution



Chloride technology partner

Réseau Ferré de France (RFF) and SNCF were searching for a reliable backup power source for a signaling substation in Gagny. The existing solution - five strings of 24 volt 400 amp hour batteries - was difficult to maintain, took up a great deal of space and proved difficult to dispose of when the batteries failed. In addition, RFF was intent on implementing a more environmentally friendly solution for signaling backup power at this substation in the Paris region.

In collaboration with Chloride, IdaTech's international distribution partner, SNCF selected the IdaTech ElectraGen™5 fuel cell system to provide up to 5 kW of backup power with autonomy for up to 12 hours in the event of grid power loss. Installed in January of 2008, the 24 volt configuration operates on industrial hydrogen bottles supplied by Air Products to enable reliable backup power to this critical signaling substation. The ElectraGen™ system provided a solution that occupied a smaller footprint and significantly reduced maintenance of the backup power system. Designed to provide ten or more years of system reliability, the ElectraGen™ fuel cell system offered an ideal alternative to incumbent solutions such as VRLA batteries.

Based on proton exchange membrane (PEM) technology, ElectraGen™ fuel cell systems are compact, versatile and easy to operate. Utilizing readily available commercial grade hydrogen, or hydrogen derived from methanol, hydrogen and air are combined inside the fuel cell system to produce electricity. Using four standard cylinders of hydrogen, the ElectraGen system is capable of providing 12 hours of autonomy for the Gagny, France signaling substation. For extended run times, customers are able to "hot-swap" these cylinders while the system is in operation or pair the system with an IdaTech fuel reformer to convert a liquid fuel into high purity hydrogen. The systems remote monitoring and controls capabilities make it possible for RFF to receive updates on system status, determine system load and significantly reduce time and cost associated with maintenance of the system.