

# **Case Study**

Hybrid Power System for Remote Railroad Application

#### **Customer Motivation:**

Seeking an ultra-reliable solution to power a remotely located intermediate signal and PTC location.

# **Solar Power System**

The R1060 Solar Power System was designed using high quality components and combined in a manner to ensure proper battery charging under the range of expected on-site conditions and customer loads. The system features our patented 20' RP Series Retractable Mast which allows personnel to raise and lower the solar array for safe and convenient installation, maintenance and troubleshooting.

## **Solar Charge Controller**

Regulation of the Solar output is provided by Dual Morningstar TriStar 60 MPPT controllers with backplate, meter and AAR terminal blocks. The controller is housed inside the Battery Box and prevents the overcharging of the batteries.

#### **Batteries**

The system battery bank consists of (2) parallel strings of (10) cells of Saft Sunica.plus 660AH Ni-Cd Batteries. Saft Sunica. plus Ni-Cd Batteries feature excellent high and low temperature performance, abuse tolerance and very low maintenance.

## **Battery Box**

A 56"L x 56"W x 24"H All-Welded Aluminum Battery Box provides excellent year-round protection for the system batteries. The Battery Box features fully insulated paneling, pre-fitted conduit access and a tamper resistant lockable lid.

#### Solid Oxide Fuel Cell

The Ultra-USSI P250i Solid Oxide Fuel Cell provides extended run backup power protection to the Solar Power System during periods of inclement weather. Powered by propane, the P250i sits in standby mode until the batteries dip below a certain predetermined threshold voltage. After a 25-30 minute startup, the P250i will charge the batteries and power the load. Telematics monitoring provides real-time and historical operational visibility to reduce site trips and maximize uptime.



1060W Solar System w/RP Series Retractable Mast



(20) SUN+660 Batteries & Battery Box



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