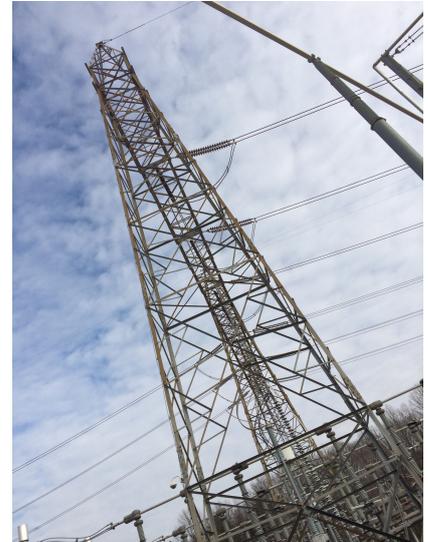




Cellwatch Frontier – Automated Battery Monitoring for Utility Substations

Cellwatch Frontier™ is the most advanced battery monitor for substations, enabling any utility to increase the reliability of their switchgear, telecom and generator-start batteries while substantially reducing the cost of manual maintenance. For substations that must comply with NERC standards, Cellwatch Frontier meets the new PRC-005-2 battery maintenance requirements, making it easy and cost effective to comply with these new regulations while significantly reducing the effort required for battery maintenance related tasks.

Cellwatch Frontier tests substation batteries daily to ensure that they will work when called upon. Frontier integrates into SCADA using DNP3, SNMP or Modbus to centralise monitoring of every remote battery and integrate battery monitoring into existing maintenance procedures. With Cellwatch Frontier, battery experts are coordinated with field personnel, operations and maintenance to ensure maximum efficiency and effectiveness for your team.



Meet new NERC compliance requirements

In December 2013, a FERC order approved PRC-005-2, defining minimum maintenance activities and maximum maintenance intervals for station batteries. PRC-005-2 outlines exclusions to maintenance intervals for sites using battery monitors. By using Cellwatch Frontier, NERC utilities can dramatically decrease the costs of complying with PRC-005-2.

Eliminate unplanned downtime

Decrease the cost of outages due to power failure by eliminating the risk of battery failure. By ensuring remote batteries will work when needed, operators can improve their response to unplanned outages.

Reduce site visits and maintenance costs

Cellwatch Frontier is the only battery monitor with native DNP3 integration for easy integration with your SCADA system, so there is no longer a need to go on-site to conduct tests or to measure the battery. Your field support team will know when and where to go and what they will need to bring.

Slash fuel and vehicle expenses

A huge amount of battery maintenance time is simply traveling to and from sites. Utilizing Cellwatch Frontier reduces truck rolls decreasing fuel consumption and reducing a provider's footprint.

Lower battery replacement costs

Extend battery life and eliminate indiscriminate replacement practices by knowing when a battery needs to be replaced with daily monitoring.

Improve workplace safety

Automated battery monitoring decreases the need for personnel to come into contact with and handle batteries. The solution is optically isolated thus reducing exposure to high battery voltages. Cellwatch Frontier's compact size makes it ideal for tight spaces found in substations.



Complete Battery Monitoring for NERC

Cellwatch Frontier measures voltage and ohmic value for each jar or cell including inter-cell and inter-tier connections as well as temperature, float current, discharge current and AC ripple. Inputs for electrolyte level and unintentional ground detection provide a complete picture of battery health.

Advance Detection of Battery Issues

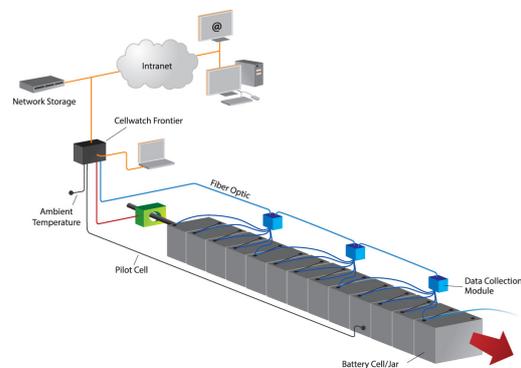
Detect failing cells, over or under charging, incorrect torqueing, out of spec straps, failing chargers, faulty temperature conditions, and more. Alarms are indicated on LEDs, hardware relays, web UI and SCADA via Modbus, DNP3 and SNMP.

Easy Install and Commissioning

With its modular architecture, Cellwatch Frontier does not require custom engineering for each site. The same off-the-shelf components are used to support any switchgear, telecom or gen start battery in the substation.

Cellwatch Frontier can monitor any size or configuration of battery because it uses modular components. Data Collection Modules (DCMs) are attached to battery posts, precisely measuring cell voltage along with cell and strap ohmic values. DCMs are networked with the Frontier device via fibre optic cable for electrical isolation and safety. Current transducers measure float current and discharge events for each string. Temperature probes capture ambient and cell temperatures. Digital inputs enable integration with electrolyte level and ground fault detection systems.

Cellwatch Frontier aggregates this battery data, recording history and looking for alarm conditions. It integrates with SCADA over Ethernet providing a unified view of the battery health across all substation sites.



Specifications:

Power Source: Charger, Battery, AC or DC supply
 Compact Metal Enclosure: 9.75"W x 2.5"H x 5.0"D

Monitors VLA, VRLA, or Ni-Cad cells
 20-70 volts DC
 70-150 volts DC
 100-240 volts AC

Connections:
 4x Temperature Probes
 2x CTs for wall mount model
 4x CTs for rack mount model
 4x Digital Inputs
 5x Hardware Relays for wired alarms
 Ethernet: wall mount – 1 port
 rack mount – 2 ports
 Serial – RS485

Interfaces:
 DNP3, SNMP, Modbus for SCADA integration
 USB port for on-site administration
 Web pages for remote management