



In-house End User Training Class - Raleigh, NC

Introduction

Cellwatch provides immediate warnings of battery deterioration and imminent battery failure. In this full-day training class you will learn the features of the Cellwatch system, how to manage your batteries effectively and how to make battery replacement decisions based on the battery's condition. After completing this training course you will be able to identify individual batteries that exhibit problems as they begin failing so you can proactively ensure the reliability of your UPS/Generator.

Fully understanding and using Cellwatch is the key to maintaining healthy batteries and preventing unplanned downtime. If the attendee has a Cellwatch system they are encouraged to bring the data with them for analysis. Refer to cellwatch.com/support for instructions on retrieving the data.

Prerequisites

All students should bring a laptop computer to the class. If they do not have one then they should notify NDSL so we can provide a loaner. Students should also read the End User training primer prior to the class. This will familiarize the student with many basics of Cellwatch. The primer can be downloaded from the Cellwatch website under Training.

Training Schedule

8:30 AM – 4 PM

Trainings are scheduled approximately once every quarter. Refer to the Cellwatch website for upcoming dates. End user training classes are one day, 7 hour classes. This training class is very interactive and participants are encouraged to ask questions throughout the training. (Please note class sizes are limited to 10 participants.)

Battery Basics Overview

High-level review of battery makeup, characteristics of failing cells and how they perform during discharge. Focus on Thermal Runaway and how to prevent critical jar failures.

Battery Basics Exercise

Cellwatch System Components

Review each of the Cellwatch components and the function it performs.

- IBMU – Intelligent Battery Monitoring Unit
- CU – Control Unit / Thermal Runaway Controller
- CT – Current Transducer

- TP – Temperature Probe
- DCM – Data Collection Module
- Generator Extender Kit

Components Exercise

Navigating Cellwatch User Interface

Cellwatch makes it easy to access information about your batteries. In this section, the graphical user interface is reviewed and all key features are explained.

Hierarchical Battery structure

- Hover, Left Click, Right Click

The instructor and participants will access and review an actual system to gain familiarity of Cellwatch component installation, battery configurations, and available battery data. Additionally, you will gain an understanding of how configurations are represented in the Cellwatch system. Lastly, you will be able to use Cellwatch to isolate battery failures and determine where to target corrective action.

- Making sure Cellwatch is scanning
- Investigate latest data returned by system
- Recognize alarm events
- Setting Alarms
- Daily data graphing
- History and discharge graphing
 - Zoom, Pan, Color graphical interface
- Accessing the System & Methods of Communication
- Advanced software features 4.0+
 - Data Manager
 - Autoset ohmic alarms
- System lifetime graphing

Hands-on Training – User Interface

This section will include:

- Running Cellwatch demo on personal laptop
- Understanding the Configuration Builder feature and how it helps you expand your Cellwatch system and manage battery changes
- Initiated Scans and Scan control
- Practice alarm limit setting
- Investigating alarms
- Enable and Disable strings
- Managing adding or replacing strings
- Supplemental Software
 - Email Notification

- CW.net
- SNMP
- Battery Warranty Report - Submitting warranty claims using the Battery Warranty Report tool

User Interface Exercise

Data Analysis

If the end user has a Cellwatch system and the instructor has access to the customer's data, then the customer's system configuration and alarm settings will be reviewed. This will provide a clear and complete overview of the customer's actual system.

- Extracting Cellwatch data from Cellwatch system
 - Reading data and using it practically
- Extracting insight from a discharge curve (know the battery design)
- How to access and evaluate the historical data
- Evaluate historical data on a lifetime scale to determine change from baseline
 - Maintaining baseline values

Data Analysis Exercise

Troubleshooting

This section is focused on reviewing the most frequently used troubleshooting techniques.

- DCM communication issue isolation
- Pinging a failed jar to find the failed jar in your battery
- Replacing a jar: How to remove and reinstall Cellwatch
- Setting alarm levels for a new string
- Extracting data to send to NDSL or reseller
- Diagnostic tools
- Others identified by the instructor as appropriate for the students

Troubleshooting Exercise

Resources

There are many resources available to you to ensure you get the most out of your system. We will review how to find them and how to use them.

- Technical Support
- AppNotes and User Manual
- Cellwatch.com

Interactive Skills Test

Our instructors want to make sure all class participants gained the knowledge and understanding they need to successfully operate a Cellwatch system. To make sure we didn't miss anything, there will be an interactive review following the afternoon training session. Students will be able to practice their knowledge and demonstrate they understand how to use the system. This usually inspires questions and identifies areas for further training or review. All students will be given a demo copy of the software for practice and use on their personal computer.

Q&A/Wrap Up/Survey

At the end of this training session you will be able to:

- Assess the present status of all of your batteries
- Identify poor or failing jars that need attention
- Configure alarm settings based on your battery configuration
- Identify, interpret and respond to Cellwatch alarms
- Analyze data captured during discharge events
- Analyze historical measurements to analyze battery trending
- Take action in response to problems with your battery, and prevent outages.

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