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IEEE Guide for Selection and Use of Battery Monitoring Equipment in Stationary Applications

IEEE Power & Energy Society

Sponsored by the
Stationary Batteries Committee

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Abstract: Operational parameters that may be observed by battery monitoring equipment used in stationary applications and the relative value of such observations are discussed in this guide. Although a list of commercially available systems is not given, a means for establishing specifications for the desired parameters to be monitored is provided.
Keywords: airflow, ambient temperature, automated battery monitoring, battery applications, battery current, battery environment, battery monitoring equipment, battery monitoring techniques, battery temperature, battery types, battery voltage, charge and discharge, communications interfaces, connection, connection resistance, coup de fouet, cycles, ground fault detection, grounding, humidity, IEEE 1491, measurement parameters, ohmic value, operating environment, reports, ripple current, safety, sensors, software, specific gravity, temperature, voltage

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Introduction

This introduction is not part of IEEE Std 1491-2012, IEEE Guide for Selection and Use of Battery Monitoring Equipment in Stationary Applications.

The monitoring of stationary batteries can be an important part of ongoing maintenance, testing, surveillance, and determination of the state of health of the battery system. Monitoring is becoming increasingly significant with the decline of specialist crafts persons, cutbacks in maintenance personnel, the advent of unmanned battery locations, increased understanding of the risks of battery failure, and sites that are difficult to access. This guide is intended to fulfill a need within the industry to provide background information, explain battery measurement parameters, and illustrate monitoring techniques.

This guide may be used separately, and when combined with other pertinent IEEE standards listed in Clause 2, it can provide a guide for total stationary battery maintenance.

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IEEE Guide for Selection and Use of Battery Monitoring Equipment in Stationary Applications

1. Overview

1.1 Scope

This guide discusses operational parameters that may be observed by battery monitoring equipment used in stationary applications, and the relative value of such observations. Although this guide does not give a listing of commercially available systems, it does provide a means for establishing specifications for the desired parameters to be monitored.

1.2 Purpose

Today's critical backup power environments have created a need for reliable monitoring of stationary batteries to determine the current state of health (SOH) of these systems. This guide will define various parameters for battery monitoring that will provide useful information to aid in the ongoing maintenance and potential replacement of these batteries. In addition, other areas affecting battery monitoring, including intermittent charging, communication interface, security, and operating environments, are also addressed in this guide.