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IEEE Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications

IEEE Power and Energy Society

Sponsored by the
Stationary Batteries Committee

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USA

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(Revision of
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Abstract: Recommendations are provided for installation design and for installation, maintenance, and testing procedures that can be used to optimize the life and performance of vented nickel-cadmium batteries, including partially recombinant types, used in stationary applications.

Keywords: battery tests, capacity test methods, IEEE 1106, stationary applications, vented nickel-cadmium batteries

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Introduction

This introduction is not part of IEEE Std 1106™-2015, IEEE Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications.

Today, stationary storage batteries play an ever-increasing role in industry by providing normal control and instrumentation power and backup energy for emergencies. This recommended practice fulfills the need within the industry to provide common or standard practices of installation, maintenance, testing, and replacement of vented nickel-cadmium batteries, including partially recombinant types. The methods described are applicable to all installations and battery sizes for stationary standby applications.

The installations considered in the body of the document are designed for continuous-float operation with a battery charger serving to maintain the battery in a charged condition and to supply the normal dc load. Separate recommendations are provided in normative Annex I for applications in which the battery is not fully recharged after every discharge (e.g., renewable energy systems).

Contents

IEEE Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications

1. Overview

1.1 Scope

This document provides recommendations for installation design and procedures for installation, maintenance, and testing of vented nickel-cadmium batteries (including partially recombinant types) used for standby operation in stationary applications. This recommended practice also provides guidance for determining when these batteries should be replaced. Separate recommendations are provided for renewable energy systems (e.g., wind turbines and photovoltaic systems), which may provide only partial or intermittent charging.

Sizing, qualification, and other battery types, including sealed nickel-cadmium, are also beyond the scope of this document.

This recommended practice does not include any other component of the dc system, nor does it include inspection and testing of the overall dc system. Preoperational and periodic dc system tests of chargers and other dc components may require that the battery be connected to the system. Details for these tests will depend on the requirements of the dc system and are beyond the scope of this document.