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

1106™

IEEE Power Engineering Society

Sponsored by the
Stationary Battery Committee

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Abstract: This recommended practice provides recommendations 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 used in stationary standby applications.
Keywords: battery tests, capacity test methods, stationary applications, vented nickel-cadmium batteries

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Introduction

(This introduction is not part of IEEE Std 1106-2005, 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. The methods described are applicable to all installations and battery sizes for stationary standby applications.

The installations considered herein 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. Applications wherein the battery is not fully recharged after every discharge (e.g., alternative energy applications) are beyond the scope of this recommended practice.

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1. Overview

1.1 Scope

This recommended practice is applicable to all stationary standby applications. However, specific applications, such as emergency lighting units and semiportable equipment, may have other appropriate practices and are beyond the scope of this recommended practice. Stationary cycling applications, such as those found in alternative energy applications, are also beyond the scope of this document.

Sizing, qualification, and other battery types are beyond the scope of this recommended practice.

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 recommended practice.

1.2 Purpose

This recommended practice provides recommendations 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 used in stationary standby applications. This recommended practice also provides guidance for determining when these batteries should be replaced.