

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

Sponsor

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Abstract: Installation design, installation, maintenance and testing procedures, and test schedules that can be used to optimize the life and performance of vented nickel-cadmium batteries used for continuous-float operations are provided. Guidance for determining when these batteries should be replaced is also provided. This recommended practice is applicable to all stationary applications. However, specific applications, such as alternative energy, emergency lighting units, and semiportable equipment, may have other appropriate practices and are beyond the scope of this recommended practice. Sizing, qualification, other battery types, and battery application are beyond the scope of this recommended practice.

Keywords: continuous-float operation, flooded cell, state of charge determination, stationary battery, vented nickel-cadmium battery

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Introduction

(This introduction is not a part of IEEE Std 1106-1995, 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 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 (see A.4). 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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IEEE Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications

1. Scope

This recommended practice provides installation design, installation, maintenance and testing procedures, and test schedules that can be used to optimize the life and performance of vented nickel-cadmium batteries used for continuous-float applications. It also provides guidance for determining when these batteries should be replaced. This recommended practice is applicable to all stationary applications. However, specific applications, such as alternative energy, emergency lighting units, and semiportable equipment, may have other appropriate practices and are beyond the scope of this recommended practice.

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

The portions of this recommended practice that specifically relate to personnel safety are mandatory instructions and are designated by the word *shall*; all other portions are recommended practices and are designated by the word *should*.

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.

2. References

This recommended practice shall be used in conjunction with the following standards:

IEEE Std 100-1992, The New IEEE Standard Dictionary of Electrical and Electronics Terms (ANSI).¹

IEEE Std 1115-1992, IEEE Recommended Practice for Sizing Nickel-Cadmium Batteries for Stationary Applications (ANSI).

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