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IEEE Recommended Practice for Sizing Nickel-Cadmium Batteries for Stationary Applications

IEEE Power and Energy Society

Sponsored by the
Stationary Batteries Committee

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USA

IEEE Std 1115™-2014
(Revision of
IEEE Std 1115-2000)

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Abstract: The sizing of nickel-cadmium batteries used in standby operation for stationary applications is discussed in this recommended practice.

Keywords: IEEE 1115™, nickel-cadmium batteries, stationary applications

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Introduction

This introduction is not part of IEEE Std 1115™-2014, IEEE Recommended Practice for Sizing Nickel-Cadmium Batteries for Stationary Applications.

The storage battery is of primary importance in ensuring the satisfactory operation of generating stations, substations, and other stationary applications. This recommended practice is based on commonly accepted methods used to define the load and to help ensure adequate battery capacity. The method described is applicable to all installations and battery sizes.

The installations considered herein are designed for operation with a battery charger serving to maintain the battery in a charged condition as well as to supply the normal dc load. Renewable energy systems (e.g., wind turbines and photovoltaic systems) may provide only partial or intermittent charging and are beyond the scope of this document.

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1. Overview

1.1 Scope

This recommended practice covers the sizing of nickel-cadmium batteries used for standby operation in stationary applications. Recommendations are provided for applications including, but not limited to, generating stations, substations, telecommunications, switchgear and control systems, compressor stations, emergency lighting, and uninterruptible power supplies. Guidance is provided for sizing for engine-starting applications.

The following topics are beyond the scope of this document:

- Installation, maintenance, qualification, and testing procedures
- Consideration of battery types other than nickel-cadmium
- Renewable energy systems (e.g., wind turbines and photovoltaic systems) that may provide only partial or intermittent charging
- Design of the dc system and sizing of the battery charger(s)