

IEEE Recommended Practice for Personnel Qualifications for Installation and Maintenance of Stationary Batteries

IEEE Power and Energy Society

Sponsored by the
Energy Storage and Stationary Battery Committee

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Energy Storage and Stationary Battery Committee
of the
IEEE Power and Energy Society

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Abstract: The areas of recommended knowledge for installers and maintainers of stationary batteries and related systems, to the extent that they affect the battery, are defined in this recommended practice. Design of the dc system and sizing of the dc battery charger(s) are beyond the scope of this document. Only lead-acid and nickel-cadmium battery technologies are covered in this recommended practice. An outline (not necessarily in training order) of the items that should be covered by training programs for stationary battery installation and maintenance personnel is provided. Certifying trained personnel and providing its own battery technician training programs will not be performed by IEEE.

Keywords: battery, certification, classroom, competent, course, curriculum, education, experience, IEEE 1657™, inspect, install, instruct, knowledge, level, maintenance, monitor, preventative, proactive, proficient, qualification, routine, service, skill, student, teach, technician, test

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Introduction

This introduction is not part of IEEE Std 1657™-2018, IEEE Recommended Practice for Personnel Qualifications for Installation and Maintenance of Stationary Batteries.

Although ac and dc electricity follow the same physical laws, there are differences. Training of electricians worldwide is fairly standardized through apprenticeship programs, classroom and self-paced training courses, etc. Although electricians are trained on dc, they spend most of their time working on ac systems. As a result, an electrician hired to work on dc systems (especially battery systems) may not have the expertise, training, or experience to install or work on batteries. The Energy Storage and Stationary Battery (ESSB) committee of the IEEE Power and Energy Society (PES) recognizes that specific training on battery system installation and maintenance is necessary. The committee also recognizes that training of battery maintenance and installation technicians is generally nonexistent or, at the least, nonstandard. With those concerns in mind, the committee has written this recommended guide for training to specify the types of knowledge a battery installation or maintenance technician should possess in order to safely and competently work on primarily stationary standby lead-acid and nickel-cadmium (Ni-Cd) batteries (although the document does give some minimal guidance on other battery chemistries, and most of the principles herein are usually applicable to stationary cycling applications as well).

Acknowledgments

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IEEE Recommended Practice for Personnel Qualifications for Installation and Maintenance of Stationary Batteries

1. Overview

1.1 Scope

This recommended practice defines the areas of recommended knowledge for installers and maintainers of stationary standby batteries (primarily lead-acid and Ni-Cd standby batteries) and related systems to the extent that they affect the battery, personnel safety and reliability of any related systems. Designing the dc system (including any connected ac inverters) and sizing of the dc battery charger(s) are beyond the scope of this recommended practice. While some of the battery information covered by this practice applies to small off-grid cycling applications, information relative to large energy storage cycling applications is limited.

1.2 Purpose

The purpose of this recommended practice is to provide an outline (curriculum) of the necessary items that should be covered by training programs for stationary battery installation and maintenance personnel. The order in which the items in this document are covered is at the discretion of the training developer/provider.

1.3 How to use this document

This recommended practice is written as a syllabus for the benefit of the course developers and instructors. It assumes that the developers and instructors will arrange the sequence and create the content of the training to fit personal preference and the needs of the audience. The guidelines included here detail the minimum skill levels that would be expected for a battery technician. Nothing precludes the instructor from creating a more extensive curriculum.

This recommended practice further assumes that all material covered will be tested and scored to demonstrate the students' grasp of the material. Such testing should utilize both written and hands-on demonstration as appropriate for the particular skill. No test guidelines are included in this document; however, suggestions regarding items appropriate for hands-on testing instead of written testing can be found in [Annex B](#).