

IEEE Recommended Practice for Installation and Maintenance of Nickel-Cadmium Batteries for Photovoltaic (PV) Systems

Sponsor

IEEE Standards Coordinating Committee 21, Photovoltaics

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Abstract: IEEE Std 1145-1990, *IEEE Recommended Practice for Installation and Maintenance of Nickel-Cadmium Batteries for Photovoltaic (PV) Systems*, provides safety precautions, installation design considerations, and procedures for receiving, storing, commissioning, and maintaining pocket and fiber-plate nickel-cadmium storage batteries for photovoltaic power systems. Disposal and recycling recommendations are also discussed. This recommended practice applies to all terrestrial photovoltaic power systems, regardless of size or application, that contain nickel-cadmium battery storage subsystems.

Keywords: battery installation, battery maintenance, nickel-cadmium battery, photovoltaic power systems

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Foreword

[This Foreword is not a part of IEEE Std 1145-1990, IEEE Recommended Practice for Installation and Maintenance of Nickel-Cadmium Batteries for Photovoltaic (PV) Systems.]

This recommended practice applies to all terrestrial photovoltaic (PV) power systems, regardless of size or application, that contain nickel-cadmium battery storage subsystems.

The installations addressed herein apply to the operation of an ac, ac/dc, or dc system with the battery, PV generating subsystem, and load all connected in parallel. Ideally, the PV generating subsystem should be adequate to supply the normal load and maintain the battery or batteries in a charged condition. Proper maintenance is required to ensure satisfactory operation, help prolong battery life, and aid in determining the need for battery replacement.

The Storage Systems Working Group of the Standards Coordinating Committee 21 on Photovoltaics (SCC21) that developed this recommended practice consisted of the following members:

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The final conditions for approval of this standard were met on October 1, 1990. This standard was conditionally approved by the IEEE Standards Board on May 31, 1990, with the following membership:

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1. Scope

This recommended practice provides safety precautions, installation design considerations, and procedures for commissioning, maintenance, and storage of pocket and fiber-plate nickel-cadmium storage batteries for photovoltaic (PV) power systems. Disposal and recycling recommendations are also discussed.

While this document gives general recommended practices, battery manufacturers can provide specific instructions for battery installation and maintenance.

2. References

This recommended practice shall be used in conjunction with the following publications. Additional sources of information are provided in the bibliography in Section 11.

[1] ANSI/NFPA 70-1990, National Electrical Code.¹

[2] IEEE Std 100-1988, IEEE Standard Dictionary of Electrical and Electronics Terms — 4th ed. (ANSI).²

[3] IES Lighting Handbook: 1987 — Application, 1984 — Reference.³

¹NFPA publications are available from the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269-9101.

²IEEE publications are available from the Institute of Electrical and Electronics Engineers, Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331.

³IES publications are available from the Illuminating Engineering Society, 345 East 47th Street, New York, NY 10017.