

IEEE Std 383™-2003

(Revision of
IEEE Std 383-1974)

IEEE Standards

383™

IEEE Standard for Qualifying Class 1E Electric Cables and Field Splices for Nuclear Power Generating Stations

IEEE Power Engineering Society

Sponsored by the
Nuclear Power Engineering Committee



3 Park Avenue, New York, NY 10016-5997, USA

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IEEE Standard for Qualifying Class 1E Electric Cables and Field Splices for Nuclear Power Generating Stations

Sponsor

**Nuclear Power Engineering Committee
of the
IEEE Power Engineering Society**

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IEEE-SA Standards Board

Abstract: This standard provides general requirements, direction, and methods for qualifying Class 1E electric cables, field splices, factory splices, and factory rework for service in nuclear power generating stations. Categories of cables covered are those used for power, control, and instrumentation services, including signal and communication cables. Field cables, wires, and splices are within the scope of this standard. Cables, wires, and splices within or integral to other devices (e.g., instruments, panels, motors, etc.) should be qualified using the requirements in the applicable device standard or IEEE Std 323™-1983, as appropriate. However, this standard's requirements may be applied to the wire and cable within these devices.

Keywords: class 1E electric cables, factory rework, factory splices, field splices, qualified life, representative cable, representative splices

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Introduction

(This introduction is not part of IEEE Std 383-2003, IEEE Standard for Qualifying Class 1E Electric Cables and Field Splices for Nuclear Power Generating Stations.)

This standard was undertaken as part of the normal IEEE five-year review policy. The purpose of this revision is to provide greater guidance for cable and field splice qualification and to clarify the existing principles of qualification provided by IEEE Std 383-1974. It is not the intent of this revision that cables and field splices qualified to previous editions of this or other standards be requalified to this revision.

This document addresses the qualification of both field splices and factory made splices. Factory splices include splices and insulation repairs constructed in accordance with industry standards.

IEEE Std 383-1974 dealt with type testing as the preferred qualification method. Alternative methods of qualification by past operating experience, ongoing qualification, and qualification by analysis have always been available through IEEE Std 323-1983. They have been specifically included in this revision to emphasize their applicability.

A loss-of-coolant-accident (LOCA) as the design basis event (DBE) is described in subclause 6.4.3 of this standard. Other DBEs, including high-energy line breaks (HELB), may be addressed by type testing and may be combined with the LOCA where practical. A reference to HELB testing is now included.

The vertical flame test procedure of IEEE Std 383-1974 has been removed, and a reference to IEEE Std 1202™-1991 has been substituted.

IEEE Std 383-1974 contained as part of its title and scope the term *connections*. Connections have been removed from the title and scope of this revision because IEEE Std 572™-1985 is specific to the qualification of connections.

The table for recommended test sample selection sizes has been deleted.

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Interpretations

Current interpretations can be accessed at the following URL: <http://standards.ieee.org/reading/ieee/interp/index.html>.

Participants

This standard was prepared by the Working Group on Qualification of Class 1E Electrical Cables and Field Splices for Nuclear Power Generating Stations and the Subcommittee on Tests and Measurements of the Insulated Conductors Committee. At the time this standard was completed, the Working Group on Qualification of Class 1E Electrical Cables and Field Splices for Nuclear Power Generating Stations had the following membership:

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