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An American National Standard

IEEE Standard for Type Test of Class IE Electric Cables, Field Splices, and Connections for Nuclear Power Generating Stations

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

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Foreword

(This foreword is not a part of IEEE Std 383-1974, IEEE Standard for Type Test of Class IE Electric Cables, Field Splices, and Connections for Nuclear Power Generating Stations.)

The Institute of Electrical and Electronics Engineers has generated this document to provide guidance for developing a program to type test cables, field splices, and connections and obtain specific type test data. It supplements IEEE Std 323-1974 Standard for Qualifying Class IE Equipment for Nuclear Power Generating Stations, which describes basic requirements for equipment qualification.

Each applicant to the Atomic Energy Commission for a license to operate a nuclear power generating station has the responsibility to assure himself and others that this standard, if used in whole or part, is pertinent to his application and that the integrated performance of his station is adequate.

It is the integrated performance of the structures, fluid systems, the electrical systems, the instrumentation systems of the station, and, in particular, the plant protection system, that limits the consequences of accidents. Seismic effects on installed cable systems are not within the scope of this document.

Section 2. of this guide is an example of type tests. It is the purpose of this guide to deal with cable and connections; however, at the time of issue, detailed examples of tests for connections were not available.

The performance criteria for Class IE service have been expanding in scope during the preparation of this document, and the state of the technology has been continually advancing.

This standard will be revised from time to time to incorporate the latest information available. Topics presently under consideration for future inclusion are: (1) aging correlation procedure, (2) connections, and (3) the corrosive effects from burning cables.

Comments on this document supported by data will be reviewed for later issues.

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An American National Standard

IEEE Standard for Type Test of Class IE Electric Cables, Field Splices, and Connections for Nuclear Power Generating Stations

1. General Provisions

1.1 Scope

1.1.1

This standard provides direction for establishing type tests which may be used in qualifying Class IE electric cables, field splices, and other connections for service in nuclear power generating stations. General guidelines for qualifications are given in IEEE Std 323-1974, Standard for Qualifying Class IE Electric Equipment for Nuclear Power Generating Stations. Categories of cables covered are those used for power control and instrumentation services.

1.1.2

Though intended primarily to pertain to cable for field installation, this guide may also be used for the qualification of internal wiring of manufactured devices.

1.1.3

This guide does not cover cables for service within the reactor vessel.

1.2 Definitions¹

cable type: A cable type for purposes of qualification testing shall be representative of those cables having the same materials similar construction, and service rating, as manufactured by a given manufacturer.

Class IE: The safety classification of the electric equipment and systems that are essential to emergency reactor shutdown, containment isolation, reactor core cooling and containment, and reactor heat removal or otherwise are essential in preventing significant release of radioactive material to the environment.

connection: A cable terminal, splice, or hostile environment boundary seal at the interface of cable and equipment.

¹Other definitions related to this document may be found in IEEE Std 100-1972, (ANSI C42.100-1972) Dictionary of Electrical and Electronics Terms, IEEE Std 323-1974, and IEEE Std 380-1972, Definitions of Terms Used in IEEE Nuclear Power Generating Stations Standards.