

An American National Standard

IEEE Standard Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems

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

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Foreword

(This Foreword is not a part of ANSI/IEEE Std 338-1987, IEEE Standard for Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems.)

This standard provides criteria and requirements supplementary to those in ANSI/IEEE Std 603-1980, IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations and ANSI/ IEEE Std 308-1980, IEEE Standard Criteria for Class IE Power Systems for Nuclear Power Generating Stations, for the performance of periodic surveillance testing programs for safety systems in nuclear power generating stations. It also recognizes the applicability of (since withdrawn) IEEE Std 279-1971, IEEE Standard Criteria for Protection Systems for Nuclear Power Generating Stations, as referred to in Title 10, Part 50, Section 50.5550a(h) of the Code of Federal Regulations. Development of these criteria and requirements is consistent with safety systems designed in accordance with both ANSI/IEEE Std 603-1980 and ANSI/IEEE Std 308-1980, and the following:

- 1) Station safety systems must, during the life of the station, be appropriately tested to assess the operational availability of the systems.
- 2) Development and application of testing procedures and equipment shall be consistent with safety system criteria (ANSI/IEEE Std 603-1980) and Class IE power system criteria ANSI/IEEE Std 308-1980).
- 3) Procedures for testing and documentation of failures should be such that reliability confidence levels are enhanced.

This standard does not contain within its scope, and subsequently does not address, areas concerning plant maintenance. Requirements, guidelines, or recommended practices for these maintenance issues are currently under development and formulation, and as such, shall be identified through future IEEE standards, as applicable.

The Institute of Electrical and Electronics Engineers has developed these criteria to provide guidance in the development of the procedures for, and documentation of, periodic surveillance testing of nuclear power generating station safety systems. Each applicant for a construction permit or an operating license for a nuclear facility is required to develop these items to comply with the Nuclear Regulatory Commission's Code of Federal Regulations, Part 50.

Adherence to these criteria may not suffice for assuring the public health and safety because it is the integrated performance of the structures, the fluid systems, the instrumentation, and the electric systems of the station that establishes the consequences of accidents. On the other hand, failure to meet these requirements may be an indication of system inadequacy. Each applicant has the responsibility to assure himself and others that this integrated performance is adequate.

During the development of this standard, the Working Group recognized that certain areas relative to its subject material are currently undergoing rapid expansion. Present development and research in automated programmable digital systems, automated testing, and availability of failure rate data at both the component and system levels may require more extensive treatment through future revisions of this document. Based on these considerations, review and subsequent revision of this standard was performed with the purposes of maintaining consistency with current state-of-the-art technology and also to arrive at a standard that is practical and applicable in scope and format for actual implementation in nuclear power generating plants.

The Appendix of this document is structured so as to provide additional referral material, if required, for the user. The addition of pertinent IEEE standards and other publications to enhance its data base nature may be further expanded, through future revision, in recognition of currently evolving technologies and data analysis studies.

The IEEE will maintain this standard current with the state of technology. Suggestions for improvement of this standard will be welcome. These should be addressed to the Secretary of the IEEE Standards Board.

This standard was prepared by Working Group 3.0 of Subcommittee 3, Operations, Surveillance and Testing, of the IEEE Nuclear Power Engineering Committee. At the time of preparation, contributing members of Working Group 3.0 were:

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