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Proposed IEEE Criteria for Nuclear Power Plant Protection Systems

(Effective August 30, 1968)

Superseded by IEEE Std 279-1971
ANSI N42.7-1972, Apr 5, 1972

FOREWORD

(This Foreword is not a part of the Proposed IEEE Criteria for Nuclear Power Plant Protection Systems.)

The functional performance and reliability of power reactor protection systems is a matter of concern for manufacturers, for users, and for those who are responsible for licensing and regulating reactor facilities. With the increased volume of nuclear power generation plants planned or being designed, attention has focused on criteria and standards as mechanisms for promoting safe design practice and for evaluating the performance and reliability of proposed systems. These criteria are an industry consensus of an acceptable approach to assessing the adequacy of protection system functional performance and reliability in meeting design requirements.

The Institute of Electrical and Electronics Engineers (IEEE) undertook the development of these Criteria in 1964 at the request of ASA Sectional Committee N6, Reactor Safety Standards. In September of that year the Standards Committee of the Nuclear Science Group initiated work on the project. An initial draft appeared in March, 1965, and went through seven revisions before a satisfactory consensus was achieved.

Early in 1966, the working group responsible for generating these Criteria was made a subcommittee of the Reactors and Reactor Controls Committee of the IEEE Nuclear Science Group. Unanimous subcommittee approval for the proposed Criteria was obtained in June, 1966, and in the Nuclear Science Group Standards Committee in September, 1966. In addition, the proposed Criteria have been widely reviewed by other interested persons, both within and outside of the Nuclear Science Group.

The user of these Criteria should be aware that a full national consensus, which would permit their adoption in their present form by the United States of America Standards Institute, does not yet exist. This is basically because of a feeling in some quarters that paragraph 4.7 should be more stringent in its requirements for separation of control and protection functions. On January 1, 1968, the subcommittee was reconstituted as the Nuclear Science Group Standards Committee, and as such it will continue its efforts to improve these Criteria in future editions.

Subcommittees within the present Nuclear Science Group Standards Committee are preparing a number of supporting Standards and Guides that will interpret the intent of the Protection System Criteria and otherwise enhance their usefulness. This work includes, but is not necessarily limited to, the following subject areas:

- (1) Application of the Single Failure Criterion,
- (2) Equipment Qualifications Testing,
- (3) Periodic Testing,
- (4) Numerical Reliability Analysis Techniques.

The Nuclear Science Group Standards Committee invites comments on and suggestions for additional material that should be included in the Criteria and in the supporting documents. Comments and recommendations should be addressed to

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