

IEEE

Std 336-1971

IEEE STANDARDS
ARCHIVES
DO NOT REMOVE

IEEE Standard
**Installation, Inspection, and Testing Requirements
for Instrumentation and Electric Equipment
During The Construction of
Nuclear Power Generating Stations**

IEEE Std 336-1971



PUBLISHED BY

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, Inc.
345 EAST 47 STREET, NEW YORK, N. Y. 10017



Documents

Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on March 07, 2026 at 02:07:59 UTC from IEEE Xplore. Restrictions apply.

ANSI
N45.2.4-1972 | IEEE
Std 336-1971

An American National Standard

IEEE Standard
Installation, Inspection, and Testing Requirements
for Instrumentation and Electric Equipment
During The Construction of
Nuclear Power Generating Stations

Sponsor
Joint Committee on Nuclear Power Standards
of the
IEEE Nuclear Science Group
and the
IEEE Power Engineering Society

Approved March 1, 1972
American National Standards Institute

© Copyright 1971 by

The Institute of Electrical and Electronics Engineers, Inc.

*No part of this publication may be reproduced in any form,
in an electronic retrieval system or otherwise,
without the prior written permission of the publisher.*

Approved September 16, 1971

IEEE Standards Committee

B. B. Barrow, *Chairman*

J. Forster, *Vice Chairman*

S. I. Sherr, *Secretary*

S. J. Angello
E. C. Barnes
F. K. Becker
W. H. Cook
W. H. Devenish
C. J. Essel
R. F. Estoppey

J. A. Goetz
A. D. Hasley
G. E. Hertig
A. R. Hileman
H. Lance
D. T. Michael
J. B. Owens

R. H. Rose, II
S. V. Soanes
L. Van Rooij
R. V. Wachter
B. O. Weinschel
C. E. White
W. T. Wintringham

Foreword

(This Foreword is not a part of IEEE Standard Installation, Inspection, and Testing Requirements for Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Stations.)

This standard sets forth the requirements for the installation, inspection, and testing of important instrumentation and electric equipment in a nuclear power generating station during its construction phase. This standard was prepared by the Institute of Electrical and Electronics Engineers (IEEE) in response to a request by American National Standards Committee N45 on Reactor Plants and Their Maintenance. The N45 committee has been chartered to promote the development of standards for the location, design, construction, and maintenance of nuclear reactors and plants embodying nuclear reactors, including equipment, methods, and components specifically for this purpose.

In May of 1969 the IEEE Joint Committee on Nuclear Power Standards (JCNPS) established an ad hoc committee on the Installation, Inspection, and Testing of Electric and Instrumentation Equipment. The purpose of this committee was to prepare a standard for general industry use that would define the requirements for installation, inspection, and testing of instrumentation and electric equipment that are necessary to assure attainment of a safe and reliable nuclear power generating station. The ad hoc committee was composed of representatives of key segments of the nuclear industry, including utilities, reactor suppliers, construction contractors, component manufacturers, and consultants.

The initial draft of this standard was completed in July 1970. Since then it has been revised to reflect comments received from committee members in IEEE, other quality assurance ad hoc committees of N45, and selected individuals from the nuclear industry and the United States Atomic Energy Commission. The standard contained herein was developed from this activity.

In April 1970, the N45 Committee established a subcommittee N45-3.0 to guide the preparation of nuclear quality assurance standards. This subcommittee is responsible for establishing guidelines and policy to govern the scope and content of the various standards; monitoring the status of standards in process; recommending preparation of additional standards; and final approval of standards prior to their submittal to the N45 Committee for balloting. Working with the N45-3.0 Subcommittee and concurrently with the development of this standard by the N45-3.4 ad hoc Committee, other ad hoc committees of N45 are developing a series of standards that set forth both general and detailed technical provisions for certain activities to assure quality during the construction phase of nuclear power generating stations.

The planning, management, and conduct of activities required in this standard are intended to be in accordance with applicable requirements of ANSI N45-3.0.

Suggestions for improvement gained in the use of this standard will be welcomed. They should be addressed to:

Secretary
IEEE Standards Committee
The Institute of Electrical and Electronics Engineers, Inc.
345 East 47 Street
New York, N.Y. 10017

The IEEE ad hoc Subcommittee on Installation, Inspection, and Testing of Instrumentation and Electric Equipment included the following personnel during the development of this standard.

S. G. Caslake, Chairman/Secretary

W. J. Bond
B. J. Cochran
J. C. Crews
G. R. Desai
R. T. Hathcote, Jr

T. P. McKale
T. E. Pinkham
H. D. Preszler
J. L. Renehan
V. D. Thomas

In May 1971, at the regular meeting of JCNPS, this standard was approved with minor non-substantive changes. Members of JCNPS at time of approval of IEEE Std 336-1971 were:

J. C. Russ, *Chairman*

T. J. Martin, *Vice Chairman*

J. T. Boettger, *Secretary*

J. F. Bates
R. G. Benham
K. J. Brockwell
D. F. Brosnan
O. K. Brown
F. W. Chandler
E. F. Chelotti
C. M. Chiapetta
R. J. Cooney
S. J. Ditto
D. G. Fitzgerald

J. P. Fitzgerald
J. M. Gallagher
L. M. Johnson
A. Kaplan
W. R. Klein
V. A. Moore
M. I. Olken
E. S. Patterson
D. G. Pitcher
R. A. Saya

A. J. Simmons
J. H. Smith
A. J. Spurgin
C. E. Stine
D. F. Sullivan
L. D. Test
S. Tjepkema
J. L. Voyles
C. S. Walker
E. C. Wenzinger
C. J. Wylie



Contents

SECTION	PAGE
1. Introduction	7
1.1 Scope	7
1.2 Applicability	7
1.3 Responsibility	7
1.4 Definitions	8
1.5 Referenced Documents	8
2. General Requirements	8
2.1 Planning	8
2.2 Prerequisites	8
2.3 Procedures and Instructions	8
2.4 Results	9
2.5 Measuring and Testing Equipment	9
2.5.1 Selection	9
2.5.2 Calibration and Control	9
2.6 Nonconforming Items	9
3. Preconstruction Verification	9
4. Installation	10
5. Verification During Construction	10
5.1 Inspections	10
5.1.1 Inspections to Verify Correctness of Installation	10
5.1.2 Inspections to Verify Housekeeping	10
5.1.3 Inspection of Temporary Conditions	10
5.2 Tests	10
5.2.1 Electrical Tests	10
5.2.2 Mechanical Tests	11
5.2.3 Physical and Chemical Tests	11
6. Post-Construction Verification	11
6.1 Inspections	11
6.2 Tests	11
6.2.1 Equipment Tests	11
6.2.2 System Tests	12
7. Data Analysis and Evaluation	12
8. Records	12
9. Applicable Codes, Standards and Guides	12
APPENDIXES	
Appendix A — Supplementary Provisions for Multi-Unit Stations	14
Appendix B — Additional Codes, Standards, and Guides	15