

AMERICAN NATIONAL STANDARD  
REACTOR PLANTS AND THEIR MAINTENANCE

# Housekeeping During the Construction Phase of Nuclear Power Plants

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ANSI N45.2.3 - 1973

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## AMERICAN NATIONAL STANDARD

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## FOREWORD

This standard deals with the control of work activities, conditions, and environments that can influence the quality of materials, equipment, components, and facilities, hereafter referred to as items from the time construction activity has been initiated at the job site until the construction phase of the generating station has been satisfactorily completed. The standard was developed under the sponsorship of the American Society of Mechanical Engineers (ASME) as an effort by the American National Standards Institute's (ANSI) Committee N45 on Reactor Plants and Their Maintenance. This 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 N45 Committee of ANSI established an Ad Hoc Committee (N45-2.3) Housekeeping—Total Plant. The purpose of this committee was to prepare a standard for general industry use that would define the requirements for housekeeping activities so as to assure attainment of quality construction. The ad hoc committee was composed of representatives of key segments of the nuclear industry, including utilities, reactor suppliers, construction contractors, insurance underwriters, and consultants.

The initial draft of this standard was prepared in November, 1969. Since then revisions have been made to reflect comments received from committee members, other 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 of 1970 the N45 Committee of ANSI established a subcommittee N45-2 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 N45-2 Subcommittee and concurrently with the development of this standard by the N45-2.3 Ad Hoc Committee, other ad hoc committees of N45 developed 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 plants. These requirements will be coordinated with the requirements of this standard as they are developed. In September 1971, these ad hoc committees were changed to working groups. As of March 1973, these working groups had the following associated standards in preparation:

<b>Working Group</b>		<b>Standard in Preparation</b>
N45-2	N45.2	Quality Assurance Program Requirements for Nuclear Power Plants.
N45-2.1	N45.2.1	Cleaning of Fluid Systems and Associated Components During the Construction Phase of Nuclear Power Plants
N45-2.2	N45.2.2	Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants (During the Construction Phase)
N45-2.4	N45.2.4	Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Stations
N45-2.5	N45.2.5	Supplementary Quality Assurance Requirements for Installation and Testing of Structural Concrete and Structural Steel During the Construction Phase for Nuclear Power Plants

N45-2.6	N45.2.6	Qualifications of Inspection, Examination, and Testing Personnel for the Construction Phase of Nuclear Power Plants.
N45-2.8	N45.2.8	Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants
N45-2.9	N45.2.9	Requirements for Collection, Storage and Maintenance of Quality Assurance Records
N45-2.10	N45.2.10	Quality Assurance Terms and Definitions
N45-2.11	N45.2.11	Quality Assurance Requirements for the Design of Nuclear Power Plants
N45-2.12	N45.2.12	Quality Assurance Program Auditing Requirements for Nuclear Power Plants
N45-2.13	N45.2.13	Supplementary Quality Assurance Requirements for Preparation of Procurement Documents for Nuclear Power Plants
N45-2.4	N45.2.14	Supplementary Quality Assurance Requirements During the Manufacture of Class 1E Instrumentation and Electric Equipment for Nuclear Power Generating Stations

Suggestions for improvement gained in the use of this standard will be welcomed. They should be sent to the Secretary, American National Standards Committee N45, The American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, New York 10017.

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## HOUSEKEEPING DURING THE CONSTRUCTION PHASE OF NUCLEAR POWER PLANTS

### 1. INTRODUCTION

#### 1.1 Scope

This standard defines the housekeeping requirements for the control of work activities, conditions, and environments that can affect the quality of important parts of a nuclear power plant during the construction phase. These parts include the structures, systems, and components whose satisfactory performance is required for the plant to operate reliably, to prevent accidents that cause undue risk to the health and safety of the public, or to mitigate the consequences of such accidents if they were to occur. Housekeeping encompasses all activities related to control of cleanness of facilities, cleanness of material and equipment, fire prevention and fire protection including disposal of combustible materials and debris, control of access, and protection of equipment not denoted in other standards. The requirements may also be extended to other appropriate parts of nuclear power plants when specified in contract documents. This standard is intended to be used in conjunction with ANSI N45.2. Quality Assurance Requirements For Nuclear Power Plants.

#### 1.2 Applicability

The requirements of this standard apply to the work of any individual or organization that participates in housekeeping activities during construction activities of nuclear power plants as discussed in paragraph 1.1. The extent to which the individual requirements of this standard apply will depend upon the nature and scope of the work to be performed and the importance of the item or service involved. The requirements are intended to assure that only proper materials, equipment, processes, and procedures are utilized in the maintenance of housekeeping during the construction of power plants and that the quality of items is not degraded as a result of housekeeping practices and techniques during construction processing.

#### 1.3 Responsibility

The organization or organizations responsible for establishing the applicable requirements for the

activities covered by this standard shall be identified and the scope of their responsibilities shall be documented. The work of establishing practices and procedures and providing the resources in terms of personnel, equipment, and services necessary to implement the requirements of this standard may be delegated to other organizations, and such delegations shall also be documented. However, it is the responsibility of each organization performing work covered by this standard to comply with the procedures and instructions issued for the project and to conform to the requirements of this standard applicable to his work.

It is the responsibility of the organization performing these activities to specify the detailed methods and procedures unless they are specified in the contract documents.

#### 1.4 Definitions

The following definition is provided because it is used uniquely in this standard.

*Construction Phase*—The period of time beginning with the start of construction activity and ending as each plant area is turned over to the plant operator.

Other terms and their definitions are contained in ANSI N45.2.10.

#### 1.5 Referenced Documents

Other documents that are required to be included as a part of this standard are either identified at the point of reference or identified in paragraph 5 of this standard.

### 2. GENERAL REQUIREMENTS

This paragraph contains requirements that are to be fulfilled by the contractor who is responsible for performing any segment of work described in paragraphs 3 and 4 of this standard. Measures shall be established and implemented for documenting housekeeping operations to verify conformance to specified requirements.













