

AMERICAN NATIONAL STANDARD

Quality Assurance Terms and Definitions

ANSI N45.2.10 - 1973

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AMERICAN NATIONAL STANDARD

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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 for Nuclear Power Plants
N45-2.11	N45.2.11	Quality Assurance Requirements for 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
N45-2.14	N45.2.14	Supplementary Quality Assurance Requirements During the Manufacture of Class 1E Instrumentation and Electric Equipment for Nuclear Power Generating Stations.

In addition, other standards containing nuclear and engineering terms and definitions are being developed as an effort of American National Standards Committee N12 on Terms, Units, Symbols, Identification and Signals. This standard will be coordinated with the work of N12 as they develop their standards.

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.

FOREWORD

This standard contains important terms and their definitions as found in the quality assurance requirements for construction of nuclear power plants. The standard was developed under 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 April of 1970, the N45 Committee 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.

In August of 1970, the N45-2 Subcommittee established an ad hoc committee (N45-2.10) on Quality Assurance Terms and Definitions. The purpose of this committee was to prepare a standard for general industry use that would contain a compilation of terms and their definitions that are important to the understanding of quality assurance requirements. The ad hoc committee was composed of representatives of key segments of the nuclear industry including utilities, reactor suppliers and architect-engineers and constructors. The standard contained herein was developed from this activity. The initial draft was prepared in November 1970.

Working with the N45-2 Subcommittee and concurrently with the development of this standard by the N45-2.10 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. The terms used in these standards will be coordinated with terms and definitions of this standard as they are developed. In September 1971, these ad hoc committees were changed to working groups. As of October 1972, these working groups had the following associated standards in preparation:

Working Group	Standard in Preparation or Issued	
N45-2.7	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)
N45-2.3	N45.2.3	Housekeeping During the Construction Phase of Nuclear Power Plants
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, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants

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QUALITY ASSURANCE TERMS AND DEFINITIONS

1. INTRODUCTION

1.1 Scope

This standard contains certain terms and their definitions that are important to the uniform understanding of the intent of required quality assurance practices for the construction of nuclear power plants.

1.2 Applicability

The definitions herein apply to terms generally used in the N45.2 standards published or under preparation. In certain instances a term included in this standard may also appear in another standard but with a unique or more specific definition peculiar to the application of that standard.

1.3 Responsibility

It is the responsibility of the user of this standard to ascertain that the definitions of terms herein are appropriate for his intended application. Where a term is used to convey a different intent than that contained herein, clarification must be provided at the point of application.

2. TERMS AND DEFINITIONS

Approval – An act of endorsing or adding positive authorization or both.

Appurtenance – A part that is attached to a component which has been completed.

As-Built Data – Documented data that describes the condition actually achieved in a product.

Assembly – A combination of subassemblies or components, or both, fitted together to form a unit.

Audit – An activity to determine through investigation, the adequacy of, and adherence to, established procedures, instructions, specifications, codes, and

standards or other applicable contractual and licensing requirements, and the effectiveness of implementation.

Certificate of Conformance – A written statement, signed by a qualified party, certifying that items or services comply with specific requirements.

Certificate of Compliance – A written statement, signed by a qualified party, attesting that the items or services are in accordance with specified requirements and accompanied by additional information to substantiate the statement.

Certified Test Report – A written and signed document, approved by a qualified party, that contains sufficient data and information to verify the actual properties of items and the actual results of all required tests.

Certification – The action of determining, verifying and attesting, in writing, to the qualifications of personnel or material.

Characteristic – Any property or attribute of an item, process, or service that is distinct, describable, and measurable, as conforming or nonconforming to specified quality requirements. Quality characteristics are generally identified in specifications and drawings which describe the item, process, or service.

Checks – The tests, measurements, verifications or controls placed on an activity by means of investigations, comparisons, or examinations, to determine satisfactory condition, accuracy, safety or performance.

Cleanness – A state of being clean in accordance with predetermined standards, and usually implies freedom from dirt, scale, heavy rust, oil or other contaminating impurities.

Component – A piece of equipment such as a vessel, piping, pump, valve or core support structure, which will be combined with other components to form an assembly.

Construction Phase – A period which commences with receipt of items at the construction site and ends when the components and systems are ready for turn-over to operations personnel.

Contaminants – Foreign materials such as mill scale, dirt, oil, chemicals, and any matter that renders a fluid, solid or surface impure and unclean according to preset standards of acceptable cleanness.

Contractor – Any organization under contract for furnishing items or services. It includes the terms Vendor, Supplier, Subcontractor, Fabricator and sub-tier levels of these where appropriate.

Defective Material – A material or component which has one or more characteristics that do not comply with specified requirements.

Deviation – A nonconformance or departure of a characteristic from specified requirements.

Documentation – Any written or pictorial information describing, defining, specifying, reporting or certifying activities, requirements, procedures, or results.

Examination – An element of inspection consisting of investigation of materials, components, supplies or services to determine conformance to those specified requirements which can be determined by such investigation. Examination is usually nondestructive and includes simple physical manipulation, gaging, and measurement.

Generating Station – A utility company complex, constructed and operated for the purpose of producing electric power.

Guidelines – Particular provisions which are considered good practice but which are not mandatory in programs intended to comply with this standard. The term “should” denotes a guideline; the term “shall” denotes a mandatory requirement.

Handling – An act of physically moving items by hand or mechanical means, but not including transport modes.

Inspector (State or Code) – A qualified inspector employed by a legally constituted agency of a Municipality or state of the United States, or Canadian Province, or regularly employed by an Authorized Inspection Agency and having authorized jurisdiction at the site of manufacture or installation.

Inspector (Owner's or Installer's) – A qualified inspector employed by the Owner or Installer whose duties include the verification of quality related activities or installations or both.

Inspection – A phase of quality control which by means of examination, observation or measurement determines the conformance of materials, supplies, components, parts, appurtenances, systems, processes or structures to predetermined quality requirements.

Item – Any level of unit assembly, including structure, system, subsystem, subassembly, component, part, or material.

Manufacturer – One who constructs any class of component, part, or appurtenance to meet prescribed design requirements.

Material – A substance or combination of substances forming components, parts, pieces, and equipment items. (Intended to include such as machinery, castings, liquids, formed steel shapes, aggregates, and cement.)

Modification – A planned change in plant design or operation and accomplished in accordance with the requirements and limitations of applicable codes, standards, specifications, licenses and predetermined safety restrictions.

Nonconformance – A deficiency in characteristic, documentation, or procedure which renders the quality of an item unacceptable or indeterminate. Examples of nonconformance include: physical defects, test failures, incorrect or inadequate documentation, or deviation from prescribed processing, inspection or test procedures.

Objective Evidence – Any statement of fact, information, or record, either quantitative or qualitative, pertaining to the quality of an item or service based on observations, measurements, or tests which can be verified.

Owner – The person, group, company or corporation who will have or has title to the facility or installation under construction.

Package – A wrapping or container including its contents of material or equipment.

Packaged Unit – An assembly of items and parts which can be disassembled without destroying the integrity of the individual parts.

Part – An item which has work performed on it and which is attached to and becomes part of a component before completion of the component.

Plant – The equipment, piping, structures, buildings and property that comprise an installation or facility.

Procedure – A document that specifies or describes how an activity is to be performed. It may include methods to be employed, equipment or materials to be used and sequence of operations.

Procurement Documents – Contractually binding documents that identify and define the requirements which items or services must meet in order to be considered acceptable by the purchaser.

Project – A planned series of activities including all actions necessary to provide, utilize, and maintain a facility or portion thereof.

Purchaser – The organization or organizations responsible for issuance and administration of a contract, subcontract, or purchase order.

Qualification (Personnel) – The characteristics or abilities gained through training or experience or both that enable an individual to perform a required function.

Qualified Party – A person or organization competent and recognized as knowledgeable to perform certain functions.

Qualified Procedure – A procedure which incorporates all applicable codes and standards, manufacturer's parameters, and engineering specifications and has been proven adequate for its intended purpose.

Quality Assurance – All those planned and systematic actions necessary to provide adequate confidence that an item or a facility will perform satisfactorily in service.

Quality Control – Those quality assurance actions which provide a means to control and measure the characteristics of an item, process, or facility to established requirements.

Receiving – Taking delivery of an item at a designated location.

Repair – The process of restoring a nonconforming characteristic to a condition such that the capability of an item to function reliably and safely is unimpaired, even though that item still may not conform to the original requirement.

Report – Something (document) that gives information for record purposes.

Rework – The process by which a nonconforming item is made to conform to a prior specified requirement by completion, remachining, reassembling or other corrective means.

Source Surveillance – A review, observation, or inspection for the purpose of verifying that an action has been accomplished as specified at the location of material procurement or manufacture.

Specification – A concise statement of a set of

requirements to be satisfied by a product, a material or process indicating, whenever appropriate, the procedure by means of which it may be determined whether the requirements given are satisfied.

Standard – The result of a particular standardization effort approved by a recognized authority.

Storage – The act of holding items at the construction site or in an area other than its permanent location in the plant.

Subsystem – A group of assemblies or components or both combined to perform a single function.

System – A group of subsystems united by some interaction or interdependence, performing many duties but functioning as a single unit.

System Performance Test – A test performed on a completed system including electric, instrumentation, controls, fluid and mechanical subsystems under normal or simulated normal process conditions such as temperature, flow, level, and pressure.

Testing – The determination or verification of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental or operating conditions.

Transit – A state of being conveyed or transported from one place to another.

Transit Carrier (Open) – Trucks, trailers, railroad cars, barges, aircraft or ships which do not afford items protection from the environment.

Transit Carrier (Closed) – Trucks, trailers, railroad cars, barges, aircraft or ships which do provide protection of items from the environment by nature of their closed design.

Trip-Point – A predetermined critical level at which a bistable device changes state to indicate that the quantity under surveillance has reached the selected value.

Use-as-is – A disposition which may be imposed for a nonconformance when it can be established that the discrepancy will result in no adverse conditions and that the item under consideration will continue to meet all engineering functional requirements including performance, maintainability, fit, and safety.

Verification – An act of confirming, substantiating and assuring that an activity or condition has been implemented in conformance with the specified requirements.

3. REVISION OF AMERICAN NATIONAL STANDARDS REFERRED TO IN THIS DOCUMENT

the American National Standards Institute, the revision shall apply:

When the following Standards referred to in this document are superseded by a revision approved by

N45.2 Quality Assurance Program Requirements for Nuclear Power Plants