AN AMERICAN NATIONAL STANDARD

ANSI/ASME NQA-1b–1987

ADDENDA

to

ANSI/ASME NQA-1–1986 EDITION
QUALITY ASSURANCE PROGRAM
REQUIREMENTS FOR NUCLEAR FACILITIES

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

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This code or standard was developed under procedures accredited as meeting the criteria for American National Standards. The Consensus Committee that approved the code or standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed code or standard was made available for public review and comment which provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

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ANSI/ASME NQA-1b–1987

Following approval by the Main Committee of the Committee on Nuclear Quality Assurance, and after public review, ANSI/ASME NQA-1b–1987 was approved by the American National Standards Institute on December 23, 1987.

Addenda to the 1986 Edition of ANSI/ASME NQA-1 are issued in the form of replacement pages. Revisions, additions, and deletions are incorporated directly into the affected pages. It is advisable, however, that this page, the Addenda title and copyright pages, and all replaced pages be retained for reference.

SUMMARY OF CHANGES

This is the second Addenda to be published to ANSI/ASME NQA-1–1986 Edition. A previous Addenda was approved in 1986 and published in 1987.

Changes given below are identified on the indicated pages by a margin note, **1b-87,** placed next to the affected area. Previous Addenda changes are indicated by **1a-86.** The pages not listed are the reverse sides of the listed pages and contain no changes.

Page	*Location*	*Change*
5, 5.1	S-1, 2	Subparagraph (a) of definition of *Commercial Grade Item* revised
	Footnote 1	Added
62, 62.1	17A-1, 1.3	Added

SPECIAL NOTE

The Interpretations to ANSI/ASME NQA-1–1986 Edition are included in this Addenda as a separate section for the user's convenience. This section, however, is not part of the Addenda or of the Standard itself.

III SUPPLEMENTS

SUPPLEMENT S-1
TERMS AND DEFINITIONS

1 GENERAL

This Supplement contains definitions of certain quality-related terms used in this Standard or in ANSI/ASME NQA-2.

2 TERMS AND DEFINITIONS

Acceptance Criteria. Specified limits placed on characteristics of an item, process, or service defined in codes, standards, or other requirement documents.

Audit. A planned and documented activity performed to determine by investigation, examination, or evaluation of objective evidence the adequacy of and compliance with established procedures, instructions, drawings, and other applicable documents, and the effectiveness of implementation. An audit should not be confused with surveillance or inspection activities performed for the sole purpose of process control or product acceptance.

Certificate of Conformance. A document signed or otherwise authenticated by an authorized individual certifying the degree to which items or services meet specified requirements.

Certification. The act of determining, verifying, and attesting in writing to the qualifications of personnel, processes, procedures, or items in accordance with specified requirements.

Characteristic. Any property or attribute of an item, process, or service that is distinct, describable, and measurable.

1b-87 *Commercial Grade Item.* An item satisfying (a), (b), and (c) below:

(a) not subject to design or specification requirements that are unique to nuclear facilities;[1]

(*b*) used in applications other than nuclear facilities;

(c) is to be ordered from the manufacturer/supplier on the basis of specifications set forth in the manufacturer's published product description (for example, catalog).

Condition Adverse to Quality. An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, and nonconformances. A significant condition adverse to quality is one which, if uncorrected, could have a serious effect on safety or operability.

Corrective Action. Measures taken to rectify conditions adverse to quality and, where necessary, to preclude repetition.

Design Change. Any revision or alteration of the technical requirements defined by approved and issued design output documents and approved and issued changes thereto.

Design Input. Those criteria, parameters, bases, or other design requirements upon which detailed final design is based.

Design Output. Documents, such as drawings, specifications, and other documents, defining technical requirements of structures, systems, and components.

Design Process. Technical and management processes that commence with identification of design input and that lead to and include the issuance of design output documents.

Deviation. A departure from specified requirements.

Document. Any written or pictorial information describing, defining, specifying, reporting, or certifying activities, requirements, procedures, or results. A document is not considered to be a Quality Assurance Record until it satisfies the definition of a Quality Assurance Record as defined in this Supplement.

External Audit. An audit of those portions of another organization's quality assurance program not under the direct control or within the organizational structure of the auditing organization.

1b-87 [1] Nuclear facilities can be either nuclear power facilities or any other facilities subject to the requirements of 10 CFR Part 21. Additionally, any unique requirements which one nuclear facility may elect to apply, including the requirements of 10 CFR Part 21, does not necessarily impact the "commercial grade" status of the item for all nuclear facilities.

Final Design. Approved design output documents and approved changes thereto.

Guideline. A suggested practice that is not mandatory in programs intended to comply with a standard. The word *should* denotes a guideline; the word *shall* denotes a requirement.

Inspector. A person who performs inspection activities to verify conformance to specific requirements.

Inspection. Examination or measurement to verify whether an item or activity conforms to specified requirements.

Internal Audit. An audit of those portions of an organization's quality assurance program retained under its direct control and within its organizational structure.

Item. An all-inclusive term used in place of any of the following: appurtenance, assembly, component, equipment, material, module, part, structure, subassembly, subsystem, system, or unit.

Measuring and Test Equipment (M & TE). Devices or systems used to calibrate, measure, gage, test, or inspect in order to control or acquire data to verify conformance to specified requirements.

Nonconformance. A deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate.

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

Owner. The person, group, company, agency, or corporation who has or will have title to the nuclear power plant.

Procedure. A document that specifies or describes how an activity is to be performed.

Procurement Document. Purchase requisitions, purchase orders, drawings, contracts, specifications, or instructions used to define requirements for purchase.

Purchaser. The organization responsible for establishment of procurement requirements and for issuance, administration, or both, of procurement documents.

Qualification (Personnel). The characteristics or abilities gained through education, training, or experience, as measured against established requirements, such as standards or tests, that qualify an individual to perform a required function.

Qualified Procedures. An approved procedure that has been demonstrated to meet the specified requirements for its intended purpose.

Quality Assurance (QA). All those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service.

Quality Assurance Record. A completed document that furnishes evidence of the quality of items and/or activities affecting quality.

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 does not conform to the original requirement.

Rework. The process by which an item is made to conform to original requirements by completion or correction.

Right of Access. The right of a Purchaser or designated representative to enter the premises of a Supplier for the purpose of inspection, surveillance, or quality assurance audit.

Service. The performance of activities such as design, fabrication, inspection, nondestructive examination, repair, or installation.

Special Process. A process, the results of which are highly dependent on the control of the process or the skill of the operators, or both, and in which the specified quality cannot be readily determined by inspection or test of the product.

Supplier. Any individual or organization who furnishes items or services in accordance with a procurement document. An all-inclusive term used in place of any of the following: vendor, seller, contractor, subcontractor, fabricator, consultant, and their subtier levels.

Surveillance. The act of monitoring or observing to verify whether an item or activity conforms to specified requirements.

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

Traceability. The ability to trace the history, application, or location of an item and like items or activities by means of recorded identification.

Use-as-is. A disposition permitted for a nonconforming item when it can be established that the item is satisfactory for its intended use.

Verification. The act of reviewing, inspecting, testing, checking, auditing, or otherwise determining and documenting whether items, processes, services, or documents conform to specified requirements.

Waiver. Documented authorization to depart from specified requirements.

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commercial grade given in Supplement S-1. The manufacturer's published product description should specify what documents, if any, are supplied with the item. When documentation is required beyond that indicated in the manufacturer's published product description, and when such information is not available for all items with the same part number obtained from the same manufacturer, the item does not meet the definition of commercial grade.

5.2 Reordering

The requirements applicable to the initial procurement of an item should be documented to facilitate reordering. Appropriate catalog pages may be retained or catalog descriptions copied.

APPENDIX 17A-1
NONMANDATORY GUIDANCE ON QUALITY ASSURANCE RECORDS

1 GENERAL

This Appendix provides nonmandatory guidance on records as specified in Basic Requirements 17 and Supplement 17S-1.

1.1 Records System

A procedure describing the records system(s) should include control of records withdrawn from storage which may be required during the completion of work activity.

1.2 Generation of Records

Documents which may later become records should be maintained and processed in a prudent manner to avoid unnecessary delay and/or expense when the record is needed.

1.3 Records Stored on Magnetic or Optical Media

Provisions should be made for the capability to retrieve information stored on magnetic or optical media. Compatible processing systems should be available, or information should be transferred to other readable media.

2 LOST OR DAMAGED RECORDS

If replacement or restoration of lost or damaged records is not practical, action should be taken to assure the quality of items or activities affecting quality, e.g., reexamination or investigation by alternate means.

3 LIST OF TYPICAL LIFETIME RECORDS

The following is a list of typical lifetime records. The nomenclature of these may vary. Records not identified on this list are nonpermanent.

3.1 Design Records

Applicable codes and standards used in design
Design drawings
Design calculations and record of checks
Approved design change requests
Design deviations
Design reports
Design verification data
Design specifications and amendments
Safety analysis report
Stress reports for code items
Systems descriptions
Systems process and instrumentation diagrams
Technical analysis, evaluations, and reports

3.2 Procurement Records

Procurement specification
Purchaser order (unpriced) including amendments

3.3 Manufacturing Records

Applicable code data reports
As-built drawings and records
Certificate of compliance
Eddy current examination final results
Electrical control verification test results
Ferrite test results
Heat treatment records
Liquid penetrant examination final results
Location of weld filler material
Magnetic particle examination final results
Major defect repair records
Material properties records
Nonconformance reports
Performance test procedure and results records
Pipe and fitting location report
Pressure test results (hydrostatic or pneumatic)

Radiograph review records
Ultrasonic examination final results
Welding procedures

3.4 Installation Construction Records

3.4.1 Receiving and Storage — Nonconformance reports

ANSI/ASME NQA-1–1986 EDITION
QUALITY ASSURANCE PROGRAM
REQUIREMENTS FOR NUCLEAR FACILITIES

INTERPRETATIONS

Replies to Technical Inquiries
October 1, 1986, through September 30, 1987

FOREWORD

General Information

This publication includes all of the written replies issued between the indicated dates by the Secretarial Staff, speaking for the ASME Committee on Nuclear Quality Assurance, to inquiries concerning interpretations of technical aspects of ANSI/ASME NQA-1 Quality Assurance Program Requirements for Nuclear Facilities.

These replies are taken verbatim from the original letters except for a few typographical corrections and some minor editorial corrections made for the purpose of improved clarity. In some instances, a review of the interpretation revealed a need for corrections of a technical nature; in these cases a corrected interpretation follows immediately after the original reply.

These interpretations were prepared in accordance with the accredited ASME procedures. ASME procedures provide for reconsideration of these interpretations when or if additional information is available which the inquirer believes might affect the interpretation. Further, persons aggrieved by this interpretation may appeal to the cognizant ASME committee or subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

An interpretation applies either to the latest published Edition and Addenda at the time it is issued, or to the Edition and Addenda stated in the interpretation itself. Subsequent revisions to the rules may have superseded the reply.

For detailed instructions on the preparation of technical inquiries, refer to the Preparation of Technical Inquiries to the Nuclear Quality Assurance Committee (p. v of ANSI/ASME NQA-1).

Index

An index has been prepared to assist the user in locating interpretations by location in this Standard. This index covers interpretations issued as a supplement to the 1a-86 Addenda and the 1b-87 Addenda, and will be updated with each separate supplement included with the Addenda to ANSI/ASME NQA-1.

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File: QA86-011

Subject: ANSI/ASME N45.2-1977, Section 14, and ANSI/ASME NQA-1-1986 Edition, Supplement 13S-1, Para. 3.3: Handling, Storage, and Shipping

Date Issued: November 14, 1986

Question (1): Is ferrous commodity material such as piping, tubing, and structural steel the type of material requiring "special handling tools and equipment" under ANSI/ASME N45.2, Section 14?

Reply (1): Generally, no. The intent of ANSI/ASME N45.2, Section 14, and ANSI/ASME NQA-1, Supplement 13S-1, is to require appropriate measures to prevent damage, deterioration, or loss. Normal shop or warehouse practices using cranes, slings, and forklifts would appear adequate for the material listed in the question. However, some special precautions may be required such as those necessary to prevent ferritic contamination of stainless steel materials as noted in Reply (2).

Question (2): In ANSI/ASME N45.2, Section 14, the phrase, "special handling tools and equipment" is used. What is meant by this phrase?

Reply (2): Special handling tools and equipment include items such as the following:
(*a*) non-metallic slings or nonferrous clamps or fixtures used on cranes to prevent the ferritic contamination of stainless steel plate or pipe;
(*b*) rocker type holding cradles for large vessels that provide a secure shipping platform as well as a method of up-ending the vessels for installation.
Other examples are provided in ANSI/ASME NQA-1-1986 Edition, Supplement 13S-1, and ANSI/ASME NQA-2-1986 Edition, Part 2.2.

File: QA86-014

Subject: ANSI/ASME NQA-1-1983 Edition, Supplement 7S-1, Paras. 3.1 and 8.3: Acceptance of Services Only — Calibration

Date Issued: November 14, 1986

Question: In accordance with ANSI/ASME NQA-1, Supplement 7S-1, is it permissible to select a supplier of calibration service by one of the following methods:
(*a*) review and acceptance of technical records produced;
(*b*) review of objective evidence for compliance with procurement document requirements?

Reply: No. Supplement 7S-1, para. 3.1, of ANSI/ASME NQA-1 requires a supplier to be selected prior to contract award, based on evaluation of the supplier's capability to provide items or services in accordance with the purchaser's procurement document requirements. See para. 3.1 for measures for the evaluation and selection of suppliers.

Following contract award, acceptance of the item or service shall be accomplished in accordance with Supplement 7S-1, Section 8. Paragraph 8.3 delineates three methods, any or all of which shall be used by the purchaser to accept services from the supplier.

File: QA86-015

Subject: ANSI/ASME NQA-1–1986 Edition, Supplement 7S-1, Paras. 3.1 and 8.3: Selection and Acceptance of Services Only — Calibration

Date Issued: November 14, 1986

Question: Does ANSI/ASME NQA-1, Supplement 7S-1, permit selection of a supplier of calibration services based on para. 8.3, Acceptance of Services Only?

Reply: No. Supplement 7S-1, para. 3.1, of ANSI/ASME NQA-1, requires a supplier to be selected prior to contract award, based on evaluation of the supplier's capability to provide items or services in accordance with the purchaser's procurement document requirements. See para. 3.1 for measures for the evaluation and selection of suppliers.

Following contract award, acceptance of the item or service shall be accomplished in accordance with Supplement 7S-1, Section 8. Paragraph 8.3 delineates three methods, any or all of which shall be used by the purchaser to accept services from the supplier.

File: QA86-017

Subject: ANSI N45.2.9-1974, Appendix A, ANSI N45.2.11–1974, Section 10, ANSI/ASME NQA-1–1986 Edition, Supplement 17S-1 and Appendix 17A-1: Retention of Design Calculation Records

Date Issued: March 23, 1987

Question (1): In accordance with ANSI N45.2.9, ANSI N45.2.11, and ANSI/ASME NQA-1, are records of early, pre-final calculations, and associated design inputs considered necessary to provide evidence of the adequacy of the final design at some subsequent time?

Reply: (1): No. The intent of ANSI N45.2.9, ANSI N45.2.11, and ANSI/ASME NQA-1 is to require that final design records enable a person technically qualified in the subject to ascertain the adequacy of the final design and to reverify it, if necessary. Such records are identified for permanent retention in ANSI N45.2.9, Appendix A. Calculations and associated design inputs are only required to be included in the final design records if they are uniquely referenced as design inputs, or if they are necessary to directly support the adequacy of the final design as reflected in the current facility configuration.

We interpret "early and pre-final calculations" to mean calculations that do not support the final design. Such calculations are associated design inputs and are not required to be included as design records unless they are specifically identified as design inputs, or they constitute a basis upon which the final design was performed.

Question (2): In accordance with ANSI N45.2.9 and ANSI/ASME NQA-1, are procedures, in-process documents, and early and pre-final calculations, which are used to initiate and control the design process, required to be permanently retained for the purpose of providing evidence of the adequacy (quality) of the design process at some future time?

Reply (2): No. In-process procedures (design procedures, manuals, standards, etc.) and process documents (check sheets, preliminary calculations, correspondence, etc.) are used to control the design process while it is being performed and to permit the associated in-process reviews and audit. Where procedures, in-process documents, and early and pre-final calculations do not directly support the final design or uniquely provide a basis for design inputs, these documents are not permanent records. Some of these documents may be designated as nonpermanent in accordance with ANSI N45.2.9, Appendix A, or ANSI/ASME NQA-1, Supplement 17S-1 and Appendix 17A-1.

File: QA86-018

Subject: ANSI/ASME NQA-1-1986 Edition, Supplement 2S-2: Supplementary Requirements for the Qualification of Nondestructive Examination Personnel

Date Issued: March 23, 1987

Question: Does ANSI/ASME NQA-1 require recertification of nondestructive examination Level III personnel at 5 year intervals in accordance with ASNT published policy on recertification that was not incorporated in the 1980 edition of SNT-TC-1A?

Reply: ANSI/ASME NQA-1-1986 Edition, Supplement 2S-2, requires that qualification of nondestructive examination personnel be conducted in accordance with SNT-TC-1A. It does not address ASNT policy that was not or has not been incorporated in SNT-TC-1A.

File: QA87-001

Subject: ANSI N45.2.9-1974, Para. 5.6, ANSI/ASME NQA-1-1986 Edition, Supplement 17S-1, Para. 4.4: Quality Assurance Records — Fire Protection

Date Issued: March 23, 1987

Question (1): In ANSI N45.2.9, para. 5.6 describes the vault as an "NFPA Class A, four hour minimum rated facility." Where can I find a description of an NFPA Class A, 4 hr minimum rated facility?

Reply (1): We refer you to NFPA 232-1975.

Question (2): Is the NFPA fire resistance construction Type 443 referenced in NFPA Code 220, the NFPA Class A, 4 hr minimum rated facility to which para. 5.6 refers? Can we use the Uniform Building Code Class I designation, which the Life Safety Code Handbook states is correlated directly with NFPA Class A?

Reply (2): It is not within the scope of this Committee to interpret NFPA or Uniform Building Codes. We suggest you contact the National Fire Protection Association.

Both the nuclear industry and the Nuclear Regulatory Commission have recognized the difficulty in meeting the 4 hr minimum rated facility and have allowed relaxation to a 2 hr rated facility with certain alternatives. These alternatives are listed in ANSI/ASME NQA-1-1986 Edition, Supplement 17S-1, para. 4.4.

File: QA87-002

Subject: ANSI/ASME NQA-1-1986 Edition: Basic Requirements and Supplements

Date Issued: March 23, 1987

Question: What is the relationship between the Supplements and the Basic Requirements in ANSI/ASME NQA-1?

Reply: The Supplements amplify requirements in the Basic Requirements and, as such, do invoke additional requirements. As stated in the Foreword to ANSI/ASME NQA-1, the Introduction, Basic Requirements, and Supplements together are intended to meet and clarify the criteria of Appendix B of 10 CFR Part 50, dated January 20, 1975. However, the extent of application is to be determined by the organization imposing this document. For example, it may only involve the Basic Requirements, Basic Requirements in combination with selected Supplements. Basic Requirements in combination with Supplements with appropriate changes, or the entire document.

File: QA87-003

Subject: ANSI/ASME NQA-1-1986 Edition, Supplement 17S-1, Para. 4.4.1: Quality Assurance Records — Fire Protection

Date Issued: March 23, 1987

Question: In accordance with ANSI/ASME NQA-1, Supplement 17S-1, para. 4.4.1(a), can other noncombustible building materials be used?

Reply: Yes, provided the construction details are reviewed for adequacy of protection of contents by a person who is competent in the technical field of fire protection and fire extinguishing as required by ANSI/ASME NQA-1, Supplement 17S-1, para. 4.4.1.

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