

AMERICAN NATIONAL STANDARD
REACTOR PLANTS AND THEIR MAINTENANCE

Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants

ANSI N45.2.9 - 1974

SECRETARIAT

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AMERICAN NATIONAL STANDARD

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FOREWORD

(This Foreword is not a part of ANSI Standard Requirements for Quality Assurance Records for Nuclear Power Plants N45.2.9-1973.)

This standard provides requirements and guidelines for the collection, storage, and maintenance of quality assurance records associated with the design, manufacture, construction, and operation phase activities related to structures, systems, and components of nuclear power plants. This standard was developed under sponsorship of the American Society of Mechanical Engineers (ASME) as an effort by the American National Standards Institute (ANSI) Standards Committee N45, Reactor Plants and Their Maintenance. This committee is 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, 1969, the ASME Boiler and Pressure Vessel Committee's subcommittee on nuclear power expanded its scope of activities to include major components of the nuclear power system of a plant. New Sections III and XI of the Boiler and Pressure Vessel Code were prepared and were published as the 1971 Edition of the Code. The quality assurance provisions of the Code apply directly to owners, manufacturers, and installers of nuclear power system components and include provisions for the establishment and execution of a quality assurance program including requirements for records on activities covered by the Code.

In April of 1970, the N45 Committee of ANSI established a subcommittee N45-3 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 December 1970, the N45-3 Subcommittee of ANSI established an ad hoc subcommittee, which was subsequently designated the N45-3.9 Working Group, on Quality Assurance Records. The purpose of this Working Group was to prepare a standard for general industry use that would define requirements for the collection, storage, and maintenance of records related to and associated with the location, design, manufacture, construction, and operation phase activities of nuclear power plant systems and components. The Working Group was composed of representatives of key segments of the nuclear industry, including utilities, reactor suppliers, architect-engineer constructors, and the AEC. The standard contained herein was developed from this activity. The initial draft was prepared in August 1971.

The ASME Boiler and Pressure Vessel Code (Hereafter referred to as the Code) as well as other ANSI Standards, have been considered in the development of this standard, and this standard is intended to be compatible with their requirements.

However, this standard does not apply to activities covered by Section III Division 1 and 2 and Section XI of the Code for those activities covered by the Code.

Working with the N45-3 Subcommittee and concurrently with the Quality Assurance Records Working Group's development of this standard, other ad hoc Committees of N45 are developing a series of standards that set forth more detailed requirements for certain activities to assure quality of nuclear power plants. These 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. In November 1972 the N45-3 Subcommittee was renamed N45-2 and the working groups were changed to N45-2.1 etc. At this time these working groups have the following associated standards in preparation:

Working Group	Standard in Preparation	
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)
N45-2.3	N45.2.3	Housekeeping During the Construction Phase of Nuclear Power Plants
N45-2.4	N45.2.4	Installation, Inspection and Testing Requirements for Instrumentation and Electrical 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
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
N45-2.10	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	Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants
N45-2.13	N45.2.13	Quality Assurance Requirements for Control of Procurement of Equipment, Materials and Services for Nuclear Power Plants
N45-2.14	N45.2.14	Quality Assurance Requirements for the Design and Manufacture of Class IE Instrumentation and Electric Equipment for Nuclear Power Generating Stations
N45-2.15	N45.2.15	Requirements for the Control of Hoisting, Rigging, and Transporting of Items at Nuclear Power Plant Sites
N45-2.16	N45.2.16	Supplementary Quality Assurance Requirements for the Calibration and Control of Measuring and Test Equipment Used in the Construction and Maintenance of Nuclear Facilities.
N-45.2.17	N45.2.17	Quality Assurance Requirements for Control of the Welding Process for Nuclear Power Plant Construction

Suggestions for improvement gained in the use of this standard will be welcomed. They should be sent to American National Standards Institute, 1430 Broadway, New York, New York 10018.

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AMERICAN NATIONAL STANDARD

**REQUIREMENTS FOR COLLECTION, STORAGE, AND MAINTENANCE
OF QUALITY ASSURANCE RECORDS
FOR NUCLEAR POWER PLANTS****1. INTRODUCTION****1.1 Scope**

This standard provides general requirements and guidelines for the collection, storage, and maintenance of quality assurance records associated with the design, manufacture, construction, and operation phase activities of nuclear power plants. It is not intended to cover the preparation of the records, nor to include working documents not yet designated as quality assurance records.

1.2 Applicability

The requirements of this standard apply to the work of any individual or organization that participates in collection, storage, or maintenance of quality assurance records associated with nuclear power plants. The extent to which the individual or total 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, and shall be specified in the procurement documents. The requirements are intended to assure that records are available when needed for their intended purpose.

The ASME Boiler and Pressure Vessel Code (Hereafter referred to as the Code) as well as other ANSI Standards, has been considered in the development of this standard, and this standard is intended to be compatible with their requirements.

However, this standard does not apply to activities covered by Section III Division 1 and 2 and Section XI of the Code for those activities covered by the Code.

This standard is intended to be used in conjunction with ANSI N45.2.

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, facilities, and services necessary to implement the requirements of this standard may be delegated to other organizations and such delegation shall also be documented. It is the responsibility of each organization performing work covered by this standard to comply with requirements of this standard applicable to its work.

1.4 Definitions

The following definition is provided to assure a uniform understanding of select terms as they are used in this standard.

Quality Assurance Records—Those records which furnish documentary evidence of the quality of items and of activities affecting quality. For the purposes of this standard a document is considered a quality assurance record when the document has been completed.

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 described in Section 8 of this standard. The issue or edition of the referenced document that is required will be specified either at the point of reference or in Section 8 of this standard.

2. GENERAL REQUIREMENTS

This section sets forth general requirements for the control of quality assurance records. The requirements include collection, filing, storing, maintenance and disposition of records that are required by other codes, standards, specifications, or regulatory requirements. The procedures to be employed to perform the required activities shall be planned and documented.

2.1 Quality Assurance Record System

A quality assurance records system shall be established by the organization responsible at the earliest practicable time, consistent with the schedule for accomplishing work activities and in compliance with the general requirements of this standard. The quality assurance records system shall be defined, implemented and enforced in accordance with written procedures, instructions and other documentation.

2.2 Categories

Two categories of quality assurance records are established—lifetime and nonpermanent.

2.2.1 Lifetime Quality Assurance Records. Lifetime records are those which meet one or more of the following criteria:

1. Those which would be of significant value in demonstrating capability for safe operation.
2. Those which would be of significant value in maintaining, reworking, repairing, replacing, or modifying the item.
3. Those which would be of significant value in determining the cause of an accident or malfunction of an item.
4. Those which provide required baseline data for inservice inspection.

Lifetime quality assurance records are required to be maintained by or for the plant owner for the life of the particular item while it is installed in the plant or stored for future use.

2.2.2 Nonpermanent Quality Assurance Records. Nonpermanent records are those which meet all of the following criteria:

1. Those of no significant value in demonstrating capability for safe operation.
2. Those of no significant value in maintaining, reworking, repairing, replacing, or modifying the item.
3. Those of no significant value in determining the cause of an accident or malfunction of an item.
4. Those which do not provide baseline data for inservice inspection.

Nonpermanent records are required to show evidence that an activity was performed in accordance with the applicable requirements but need not be retained for the life of the item.

3. TECHNICAL REQUIREMENTS

3.1 General

This section provides requirements for the retention and control of those records generated during the various phases of the project.

3.2 Records Administration

3.2.1 Generation of Quality Assurance Records. It is not the intent of this standard to specify the preparation of the quality assurance records to be generated. The applicable design specifications, procurement documents, test procedures, operational procedures or other documents shall specify the quality assurance records to be generated by, supplied to, or held for the owner. All such quality assurance records shall be legible, completely filled out and adequately identifiable to the item involved.

The applicable quality assurance records shall be considered valid only if stamped, initialed, signed, or otherwise authenticated and dated by authorized personnel. These records may be either the original or a reproduced copy.

3.2.2 Index. The quality assurance records shall be listed in an index. The index shall indicate, as a minimum, record retention times, where the records are to be stored and the location of the records within the storage area. The index should be established prior to receipt of the records. Index systems used by organizations for the retention of project records should include sufficient identifying information to be compatible with the index system used by the Owner for final storage of records.

3.2.3 Distribution. The quality assurance records shall be distributed and handled in accordance with written procedures.

3.2.4 Identification. Quality assurance records shall provide sufficient information to permit identification between the record and the item, items, or activity to which it applies.

3.2.5 Classification. Quality assurance records shall be classified as "Lifetime" or "Nonpermanent" in accordance with Section 2 of this standard.

3.2.6 Supplemental Information to Quality Assurance Records. Quality assurance records may be corrected or supplemented in accordance with procedures which provide for appropriate review or approval by the originating organization. The correction or supplement shall include the date and the identification of the person authorized to issue such corrections or supplements.

3.2.7 Retention of Records. Types of quality assurance records with recommended minimum retention periods are listed in Appendix A of this standard. It should be recognized that the nomenclature of these records may vary. For records not listed in Appendix A, the type most nearly describing the record in question should be followed with respect to its retention period.

For records generated prior to commercial operation, the retention period begins on the date of commercial operation. For records generated on items installed after commercial operation, the retention period begins on the date upon which satisfactory operation of the item, as part of a system, has been demonstrated. For periodic maintenance, inspection and test records, such as calibration records, generated after the date of commercial operation, the retention time begins on the date of their generation. When a record is generated as a result of an operational phase activity, the classification of those records will be the same as those types of records generated during the initial construction period.

The organization responsible shall establish in writing the retention times of records not listed in Appendix A.

4. RECEIPT OF RECORDS

4.1 General

This section defines requirements for receipt of documentation during the design, procurement, manufacturing, installation, startup and operation of a nuclear power plant.

The designated authority or authorities for receiving quality assurance records shall be aware of the value of such records and shall control their safety during the time that the records are in their possession.

4.2 Timeliness

To assure their availability, a specific submittal plan shall be established for quality assurance records by agreement between the purchaser and supplier.

4.3 Receipt Control

Each organization responsible for the receipt of quality assurance records shall designate a person or agency responsible for receiving the records. The designated authority shall be responsible for organizing and implementing a system of receipt control of quality assurance records. This system shall apply to the receipt of records into a temporary working file and the permanent storage file.

As a minimum, a receipt control system shall include:

1. A records check list designating the required quality assurance records.
2. A record of quality assurance records received.
3. Procedures for receipt and inspection of incoming records.

4.4 Status

Each receipt control system shall be structured to permit a current and accurate assessment of the status of quality assurance records during the receiving process.

5. STORAGE, PRESERVATION AND SAFEKEEPING

5.1 General

This section establishes storage requirements for the maintenance, preservation and protection of quality assurance record files from the time of receipt until their ultimate disposal.

5.2 Location of Facilities

The quality assurance record files shall be stored in predetermined locations as necessary to meet the requirements of applicable standards, codes, and regulatory agencies.

5.3 Storage

Prior to storage of records in a quality assurance record file, a written storage procedure shall be prepared and a custodian shall be designated with the responsibility to enforce the procedure. This procedure shall include the following as a minimum:

1. A description of the storage area.
2. The filing system to be used.
3. A method for verifying that the records received are in agreement with the transmittal document and that the records are in good condition.
4. A method of verifying that the records agree with the preestablished records check list (see paragraph 4.3).
5. The rules governing access to and control of the files.
6. A method for maintaining control of and accountability for records removed from the storage facility.
7. A method for filing supplemental information (see paragraph 3.2.6) and disposing of superseded records.

5.4 Preservation

Records shall be stored in a manner approved by the organization or organizations responsible for the files. In order to preclude deterioration of the records the following requirements shall apply:

1. *Condensation.* Provisions shall be made in the storage arrangement to prevent damage from condensation.

2. *Loose Records.* Records shall not be stored loosely. They shall be firmly attached in binders or placed in folders or envelopes for storage on shelving in containers. Steel file cabinets are preferred.

3. *Special Processed Records.* Special processed records (such as radiographs, photographs, negatives, and microfilm) which are light-sensitive, pressure sensitive or temperature sensitive shall be packaged and stored as recommended by the manufacturer of these materials.

5.5 Safekeeping

A full time security system shall be established to preclude the entry of unauthorized personnel into the storage area. This system shall guard against larceny and vandalism.

5.6 Facility

Permanent and temporary record storage facilities shall be so constructed or located as to protect contents from possible destruction by causes such as fire, flooding, tornadoes, insects, rodents and from possible deterioration by a combination of extreme variations in temperature and humidity conditions.

A satisfactory alternative to the establishing of a record storage facility is maintenance of duplicate records stored in a separate remote location.

Records discussed in this standard are appropriately classified for fire protection purposes as National Fire Protection Association Class I and as such should be afforded the equivalent protection of a NFPA Class A, four hour minimum rated facility.

Where a single record storage facility is maintained, at least the following features should be considered in its construction:

1. Reinforced concrete, concrete block, masonry, or equal construction.
2. Concrete floor and roof with sufficient slope for drainage; if a floor drain is provided, a check valve (or equal) shall be included.
3. Structure, doors, frames and hardware should be Class A fire-rated with a recommended four hour minimum rating.
4. Sealant applied over walls as a moisture or condensation barrier.
5. Surface sealant on floor providing a hard-wear surface to minimize concrete dusting.
6. Foundation sealant and provision for drainage.
7. Forced-air circulation with filter system.
8. Adequate fire protection system.
9. No pipes other than those providing fire protection to the storage facility are to be located within the facility.

For storage of film and other special processed records, humidity and temperature controls shall be provided to maintain an environment as recommended by the manufacturer.

5.7 Audits

An audit system shall be established to assure that the quality assurance records' storage system is effective. The following shall be performed as a minimum:

1. Periodic surveys to assure that records logged in are available and have been placed in their proper location within the files, and to assure that the control system is adequate.

2. Periodic audits to assure that the facilities are in good condition and that the temperature/humidity controls and protective devices are functioning properly.

3. Periodic audits of the records to assure that the documents are not deteriorating due to improper storage practices or rough handling.

6. RETRIEVAL

6.1 General

This section is intended to establish requirements for the retrieval of documents that are stored within the quality assurance record files.

6.2 Accessibility

Storage systems shall provide for the accurate retrieval of information without undue delay.

A list shall be generated designating those personnel who shall have access to the files.

Quality Assurance records maintained by a manufacturer at his facility or other location shall be accessible to the Buyer or Owner, in the case of lifetime records for the life of the items involved or for the designated retention periods for nonpermanent records.

7. DISPOSITION

7.1 General

This section is intended to provide requirements for the transfer of quality assurance records to the Owner, who has ultimate responsibility for these documents, and their disposition.

7.2 Accumulation and Transfer of Records

Quality assurance records accumulated at various locations prior to final transfer to the Owner shall be

made accessible to the Owner directly, or through the procuring organization. Examples of such records are vendor manufacturing records, construction documentation, and startup data. Upon final transfer, the Owner shall inventory the submittals, acknowledge receipt and process these records in accordance with this Standard.

7.3 Disposition of Nonpermanent Records

Records classified as nonpermanent should be retained for at least the minimum period of time as recommended in Appendix A. After this time, these records may be disposed of by or with concurrence of the Owner.

8. REVISIONS OF REFERENCED ANSI STANDARDS

When any of the following standards referred to in this document is superseded by a revision approved by the American National Standards Institute, the revision is not mandatory until it has been incorporated as a part of this standard.

Revisions to the referenced standards, and revisions to this standard issued after the date of a specific contract invoking this standard may be used by mutual consent of the purchaser and the supplier.

N45.2 Quality Assurance Program Requirements for Nuclear Power Plants

N45.2.10 Quality Assurance Terms and Definitions

APPENDIX A

The following is a list of types of records with the recommended minimum retention periods indicated (see paragraph 3.2.7). For definition of lifetime records see paragraph 2.2.1, and for nonpermanent records see paragraph 2.2.2. In the nonpermanent column the number indicates the retention period in years after which the record need not be maintained.

The 0 years minimum recommended retention period is intended to permit dispositioning of the

records on the day following the date of commercial operation. One year retention is intended to require maintenance of the record for the customary periods of warranty. Two year retention is intended to require maintenance of the record through the first overhaul or reload. Five and six year retention is intended to achieve compliance with regulatory requirements.

<u>Record Types</u>	<u>Lifetime</u>	<u>Nonpermanent</u>
A.1 Design Records		
Applicable Codes and Standards Used in Design	X	
As-Constructed Drawings	X	
Design Calculations and Record of Checks	X	
Design Change Requests		1
Design Deviations	X	
Design Procedures and Manuals		2
Design Reports	X	
Design Review Reports		1
Drawing Control Procedures		2
Purchase and Design Specifications and Amendments	X	
QA System Audit Reports		6
Reports of Engineering Surveillance of Field Activity		1
Safety Analysis Report	X	
Stress Reports	X	
Systems Descriptions	X	
Systems Process and Instrumentation Diagrams	X	
Technical Analysis, Evaluations, and Reports	X	
A.2 Procurement Records		
Audit Reports		6
Procurement Procedures		0
Procurement Specification	X	
Purchaser Order (Unpriced) Including Amendments		2
Purchaser's Pre-Award Quality Assurance Survey		2
Receiving Records		0
Supplier's Quality Assurance Program Manual		2
A.3 Manufacturing Records		
Applicable Code Data Reports	X	
As-Built Drawings and Records	X	
Certificate of Inspection and Test Personnel Qualification		0

<u>Record Types</u>	<u>Lifetime</u>	<u>Nonpermanent</u>
A.3 Manufacturing Records (Cont.)		
Certificates of Compliance	X	
Cleaning Procedures		0
Eddy-Current Examination Procedure		2
Eddy-Current Examination Final Results	X	
Electrical Control Verification Test Results		2
Ferrite Test Procedure		2
Ferrite Test Results	X	
Forming and Bending Procedure Qualifications		0
Heat Treatment Procedures		0
Heat Treatment Records	X	
Hot Bending Procedure		0
Inspection and Test Instrumentation and Tooling Calibration Procedures and Records		(Until Recalibrated)
Liquid Penetrant Examination Procedure		2
Liquid Penetrant Examination Final Results	X	
Location of Weld Filler Material	X	
Magnetic Particle Examination Procedure		2
Magnetic Particle Examination Final Results	X	
Major Defect Repair Records	X	
Material Properties Records	X	
Nonconformance Reports	X	
Packaging, Receiving, Storage Procedures		0
Performance Test Procedure and Results Records	X	
Pipe and Fitting Location Report	X	
Pressure Test Procedure		2
Pressure Test Results	X	
Product Equipment Calibration Procedure		(Until Recalibrated)
Product Equipment Calibration Records		(Until Recalibrated)
QA System Audit Report		6
QA Manuals, Procedures and Instructions		2
Radiographic Procedures		2
Radiographic Review Forms and Radiographs	X	
Ultrasonic Examination Procedures		2
Ultrasonic Examination Final Results	X	
Welding Materials Control Procedures		2
Welding Personnel Qualification		2
Welding Procedure Qualifications and Data Reports		2
Welding Procedures	X	
Work Processing and Sequencing Documents		2
A.4 Installation-Construction Records		
A.4.1 Receiving and Storage		
Inspection Reports for Stored Items		0
Nonconformance Reports	X	
Receipt Inspection Reports on Items		1
Receiving, Storage, and Inspection Procedures		2
Storage Inventory and Issuance Records		0
Vendor Quality Assurance Releases		0

<u>Record Types</u>	<u>Lifetime</u>	<u>Nonpermanent</u>
A.4 Installation-Construction Records (Cont.)		
A.4.2 Civil		
Aggregate Test Reports		1
Batch Plant Operation Reports		1
Cement Grab Sample Reports		0
Check-Off Sheets for Tendon Installation	X	
Concrete Cylinder Test Reports and Charts	X	
Concrete Design Mix Reports	X	
Concrete Placement Records	X	
Inspection Reports for Channel Pressure Tests	X	
Material Property Reports on Containment Liner and Accessories	X	
Material Property Reports on Metal Containment Shell and Accessories	X	
Material Property Reports on Reinforcing Steel	X	
Material Property Reports on Reinforcing Steel Splice Sleeve Material	X	
Material Property Reports on Steel Embedments in Concrete	X	
Material Property Reports on Steel Piling		1
Material Property Reports on Structural Steel and Bolting	X	
Material Property Reports on Tendon Fabrication Material	X	
Mix Water Chemical Analysis		1
Pile Drive Log	X	
Pile Loading Test Reports	X	
Procedure for Containment Vessel Pressure-Proof Test and Leak Rate Tests and Results	X	
Reinforcing Steel Splice Operator Qualification Reports		0
Releases to Plate Concrete		0
Reports for Periodic Tendon Inspection	X	
Reports of High-Strength Bolt Torque Testing		1
Slump Test Results		0
Soil Compaction Test Reports	X	
User's Tensile Test Reports on Reinforcing Steel		1
User's Tensile Test Reports on Reinforcing Steel Splices		1
A.4.3 Welding		
Ferrite Test Procedures		2
Ferrite Test Results	X	
Heat Treatment Procedures		0
Heat Treatment Records	X	
Liquid Penetrant Test Procedures		2
Liquid Penetrant Test Final Results	X	
Magnetic Particle Test Procedures		2
Magnetic Particle Test Final Results	X	
Major Weld Repair Procedures and Results	X	
Radiographic Test Procedures		2
Radiographic Test Final Results	X	
Ultrasonic Test Procedures		2
Ultrasonic Test Final Results	X	
Weld Fit-Up Reports		1
Weld Location Diagrams		2
Weld Procedures	X	
Weld Procedures Qualifications and Results		2
Welding Filler Metal Material Reports	X	

<u>Record Types</u>	<u>Lifetime</u>	<u>Nonpermanent</u>
A.4 Installation-Construction Records (Cont.)		
A.4.3 Welding (Cont.)		
Welding Materials Control Procedures		2
Welding Personnel Qualifications		2
A.4.4 Mechanical		
Chemical Composition User's Test (Grab Samples) for Thermal Insulation		1
Chemical Tests of Water Used for Mixing Insulation Cement		1
Cleaning Procedures and Results		1
Code Data Reports	X	
Construction Lifting and Handling Equipment Test Procedures, Inspection and Test Data		0
Data Sheets or Logs on Equipment Installation, Inspection and Alignment		2
Documentation of Systems Check-Off (Logs or Data Sheets)		1
Erection Procedures for Mechanical Components		1
Hydro-Test Procedures and Results	X	
Installed Lifting and Handling Equipment Procedures, Inspection and Test Data	X	
Lubrication Procedures	X	
Lubrication Records		6
Material Property Records	X	
Material Property Test Reports for Thermal Insulation	X	
Pipe and Fitting Location Reports	X	
Pipe and Fittings Material Property Reports	X	
Pipe Hanger and Restraint Data	X	
Safety Valve Response Test Procedures	X	
Safety Valve Response Test Results		6
A.4.5 Electrical and I&C		
Cable Pulling Procedures		0
Cable Separation Check Lists		1
Cable Splicing Procedures	X	
Cable Terminating Procedures	X	
Certified Cable Test Reports	X	
Documentation of Testing Performed After Installation and Prior to Systems Conditional Acceptance		2
Field Workmanship Checklist or Equivalent Logs		1
Instrument Calibration Results		(Until Recalibrated)
Relay Test Procedures and Results	X	
Reports of Pre-Installation Tests		2
Voltage Breakdown Tests on Liquid Insulation	X	
A.4.6 General		
"As-Built" Drawings and Records	X	
Calibration of Measuring and Test Equipment and Instruments Procedures and Reports		(Until Recalibrated)
Certificate of Inspection and Test Personnel Qualification		1
Field Audit Reports		6
Field Quality Assurance Manuals		2
Final Inspection Reports and Releases	X	

<u>Record Types</u>	<u>Lifetime</u>	<u>Nonpermanent</u>
A.4 Installation-Construction Records (Cont.)		
A.4.6 General (Cont.)		
Nonconformance Reports	X	(Until Recalibrated)
Special Tool Calibration Records		
Specifications and Drawings	X	
A.5 Preoperational and Startup Test Records		
Automatic Emergency Power Source Transfer Procedures and Results	X	
Final Systems Adjustment Data	X	
Flushing Procedures and Results		2
Hydrostatic Pressure Test Procedures and Results	X	
Initial Heatup, Hot Functional and Cooldown Procedures and Results	X	
Initial Plant Loading Data	X	
Initial Reactor Criticality Test Procedures and Results	X	
Instrument AC Systems and Inverters Test Procedures and Reports	X	
Main and Auxiliary Power Transformer Test Procedures and Results	X	
Off-Site Power-Source Energizing Procedures and Test Reports	X	
On-Site Emergency Power Source Energizing Procedure and Test Reports	X	
Plant Load Ramp Change Data	X	
Plant Load Step Change Data	X	
Power Transmission Substation Test Procedures and Results	X	
Preoperational Test Procedures and Results	X	
Primary and Secondary Auxiliary Power Test Procedures and Results	X	
Reactor Protection System Tests and Results	X	
Startup Logs	X	
Startup Problems and Resolutions		6
Startup Test Procedures and Results	X	
Station Battery and DC Power Distribution Test Procedures and Reports	X	
System Lubricating Oil Flushing Procedures		2
Water Chemistry Reports	X	
A.6 Operation Phase Activity Records		
A.6.1 Operation, Maintenance and Testing		
Records and Drawing Changes Reflecting Plant Design Modifications Made to Systems and Equipment Described in the Final Safety Analysis Report	X	
New and Spent Fuel Inventory, Transfers of Fuel, and Assembly Histories	X	
Plant Radiation and Contamination Survey Records	X	
Off-Site Environmental Monitoring Survey Records	X	
Radiation Exposure Records of All Plant Personnel, and Others who Enter Radiation Control Areas	X	
Radioactivity Levels of Liquid and Gaseous Waste Released to Environment	X	

<u>Record Types</u>	<u>Lifetime</u>	<u>Nonpermanent</u>
A.6 Operation Phase Activity Records (Cont.)		
A.6.1 Operation, Maintenance and Testing (Cont.)		
Transient or Operational Cycling Records for Those Plant Components That Have Been Designed to Operate Safely for a limited Number of Transients or Operational Cycles	X	
Current Individual Plant Staff Member Qualifications, Experience, Training and Retraining Records	X	
Reactor Coolant System In-Service Inspection Records	X	
Minutes of Meetings of the Plant Nuclear Safety Committee and Company Nuclear Review Board	X	
Normal Nuclear Unit Operation, Including Power Levels and Periods of Operation at Each Power Level		5
Principal Maintenance Activities, Including Inspection Repair, Substitution or Replacement of Principal Items of Equipment Pertaining to Nuclear Safety		5
Abnormal Occurrence Records		5
Periodic Checks, Inspections and Calibrations Performed to Verify that Surveillance Requirements are Being Met		5
Special Reactor Test or Experiment Records		5
Changes Made in the Operating Procedures		5
Radioactive Shipment Records		5