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RDT Standards Transmittal

Hanford Engineering Development Laboratory

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	RDT F 2-4T	Quality Verification Program Requirements, December 1974.		D

MASTER

RDT F 2-4T has been reorganized and rewritten to identify Quality Verification requirements which can be applied to materials, simple machined parts, services, or other work where the quality may be verified by inspection, test, or examination without inprocess controls. The provisions of the October 1969 issue, with Amendments 1, 2, and 3, have generally been retained, but in revised form to permit greater flexibility. The more significant changes are as follows:

Para. 1.1 The standard now provides mandatory requirements which apply whenever RDT F 2-4T is specified, plus optional provisions, (Section 7) which may be invoked by reference.

Para. 1.3 A provision was added to accept the QA programs of suppliers holding the ASME Quality Systems Certificate (Materials) per NA-3700 as meeting RDT F 2-4T requirements.

Para. 1.5 RDT E 3-15T, ANSI N45.2.6 and ANSI N45.2.9 are added as reference documents. These documents are referenced in the Optional Provisions.

Para. 1.6 Nonconformance is redefined. In connection with the revised definition, a statement was added to 3.3 to require control of items whose quality could be suspect or open to question.

Section 7 This section identifies optional provisions which are applicable only if specified in the contract.

SIGNATURE

[Signature]

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RDT F 2-4T

Supersedes
RDT F 2-4T, October 1969

RDT Standard

QUALITY VERIFICATION PROGRAM REQUIREMENTS

DECEMBER 1974

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FOREWORD

This revision supersedes the October 1969 issue of RDT F 2-4T, including Amendments 1, 2, and 3. Because of the extensive changes, no marginal notations have been made for identifying and locating the changes made.

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QUALITY VERIFICATION PROGRAM REQUIREMENTS

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QUALITY VERIFICATION PROGRAM REQUIREMENTS

1. INTRODUCTION

1.1 Scope. This standard sets forth mandatory and optional requirements for the establishment and implementation by the contractor of a program designed to verify that the quality of items or services conforms to all requirements of the contract.

The quality verification program prescribed herein comprises the elements of an inspection system, including planning, organization, identification, and control of items and services, inspection, testing, control and calibration of measuring and test equipment, corrective action, and records.

1.2 Applicability. The mandatory requirements of this standard shall apply to the procurement of items or services when this standard is referenced in the contract. The optional requirements of this standard shall apply only when specifically referenced in the contract. Requirements of this standard, including applicable optional requirements specified by the contract, shall be included in subcontracts for items or services to be procured by the contractor.

It is intended that this standard be used for the procurement of items or services that require only an effective control of inspection and testing activities to verify conformance to specified quality requirements.

1.3 Relationship to Other Requirements. The provisions of this standard complement and shall be satisfied in addition to the requirements elsewhere in the contract. The requirements of this standard shall not be interpreted in a manner that would result in a duplication of work effort.

Contractors may elect to use policies, procedures, or instructions established to satisfy the requirements of other nationally recognized codes, standards, or specifications, provided that they meet the applicable requirements of this standard. For material procurements, holders of an ASME Quality Systems Certificate (Materials) are considered to have programs which satisfy RDT F 2-4 requirements.

1.4 Purchaser's Actions. The contractor's quality verification program shall be subject to evaluation and audit by the purchaser or his designated representative at any time during the course of the contract. The purchaser shall have the option to inspect at the facilities of the contractor or his subcontractor those records, items, or services intended for ultimate acceptance by the purchaser. Such actions by or on

behalf of the purchaser shall not relieve the contractor of his responsibility for compliance with contract requirements.

1.5 Applicable Documents. The following documents are a part of this standard to the extent specified herein. The issue of a document in effect on the effective date of the referencing specification or procurement document, including any amendments also in effect on that date, shall apply.

1.5.1 RDT Standards.

RDT F 3-2T Calibration Program Requirements

RDT F 3-15T Requirements for Inspection of Dimensional Characteristics

1.5.2 American National Standards (ANSI).

ANSI N45.2.6 Qualifications of Inspection, Examination, and Testing Personnel for the Construction Phase of Nuclear Power Plants

ANSI N45.2.9 Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants

1.6 Definitions.

1.6.1 Characteristics. Any property or attribute of an item, process, or service that is distinct, describable, and measurable as conforming or nonconforming to specified quality requirements.

1.6.2 Contract. A purchase order, contract, subcontract, or any other document which authorizes work to be performed by another company or another unit of contractor's organization that is not directly controlled by the contractor.

1.6.3 Contractor. The individual or company entering into a contract with the purchaser.

1.6.4 Item. Any unit of the product required to be delivered by the contract, such as, but not limited to, material, a machined part, an electronic component, an instrument, or an assembly.

1.6.5 Nonconformance. A condition of any material, product, or process in which one or more characteristics do not conform to established requirements. This includes, for example, data discrepancies, procedural or documentation deficiencies, and material defects.

1.6.6 Objective Evidence. Any statement of fact, information or record, either qualitative or quantitative, pertaining to the quality

of an item or service based on observation, measurement, or testing, which can be verified.

1.6.7 Quality Verification. Those actions required to confirm that items or services, including subcontracted items, submitted to the purchaser for acceptance conform to the specified quality requirements.

1.6.8 Purchaser. The agency responsible for issuance and administration of a contract.

1.6.9 Services. Activities such as manufacturing processes, chemical analyses, mechanical property or electrical tests, nondestructive examination, and calibration of measurement and test equipment.

2. QUALITY VERIFICATION PROGRAM

The contractor shall be responsible for the establishment and implementation of a quality verification program in accordance with this standard, utilizing documented methods, procedures, and instructions appropriate to the items or services to be provided under the contract. Delegation of any verification activities does not relieve the contractor of responsibility for the product quality verification program.

2.1 Organization. The authority and responsibility of the contractor's organization and persons who perform quality verification activities shall be clearly defined. Contractor personnel responsible for checking, inspecting, or otherwise verifying that quality-related activities are correctly accomplished shall be independent of those performing such activities.

2.2 Planning. Prior to the initiation of work, the contractor shall review the contract to ensure that its quality requirements are known and understood and that provisions are made for any special training, equipment, or procedures required.

3. IDENTIFICATION AND CONTROL

3.1 Identification. The contractor shall identify items in accordance with the requirements of the contract to ensure that only correct and acceptable items are delivered to the purchaser. Identification and quality status shall be maintained on the item by marking or tagging, on records traceable to the item, or both.

3.2 Handling and Storage. The contractor shall ensure that adequate protection is provided for items during handling and storage prior to shipping to prevent damage, deterioration, corrosion, contamination, or substitution.

3.3 Control of Nonconforming Items. The contractor shall provide for the identification, documentation, segregation, investigation, disposition, and control of nonconforming items or services. Purchaser

approval is required to accept nonconforming items or services, to perform repairs other than those permitted by the contract, or to reject items on cost-plus or customer-furnished material contracts. Purchaser approval is not required for rework or repair using methods permitted by the contract, or to reject items on fixed price contracts involving only contractor furnished materials.

Items whose quality has been brought under question shall be identified and controlled, and immediate measures shall be taken to establish their conformance or nonconformance.

4. INSPECTION AND TEST

The contractor shall perform or have performed all inspections and tests in accordance with documented procedures and instructions established by the contractor or purchaser which include the methods and acceptance criteria. The contractor shall verify that procedures and instructions are clear, complete, and appropriate to the item or service. Inspection and test results shall be documented and evaluated to determine conformance to specified quality requirements.

4.1 Purchased Items or Services. The contractor shall conduct or witness inspections and tests at the source or after receipt of purchased items or services to verify conformance to specified quality requirements. Certified quality documentation showing inspection and test data may be the basis for determination of conformance provided the validity of such documentation can be verified through independent inspection, analysis, or overcheck.

4.2 Completed Items. The contractor shall perform final inspections and tests of completed items in accordance with specified requirements of the contract to verify completeness, marking, calibration, adjustments, cleanness, freedom from damage or deterioration, or other appropriate characteristics.

4.3 Measuring and Test Equipment Calibration and Control. The contractor shall provide measuring and test equipment having the precision and accuracy needed to establish conformance with specified quality requirements. Calibrations shall be in accordance with nationally recognized standards.

5. CORRECTIVE ACTION

The contractor shall take prompt action to prevent or correct any condition which has resulted or could result in the submittal to the purchaser of nonconforming items or services.¹

¹The contractor should also notify other purchasers who may have received similar nonconforming items or services.

6. RECORDS

The contractor is responsible for generation, retention, and retrieval of legible records providing objective evidence of conformance to the specified quality requirements. Records shall be available to the purchaser for review.

7. OPTIONAL PROVISIONS

The following provisions shall apply when specified and to the extent specified by the purchaser.

a. Personnel Qualification. Inspection, examination, and testing personnel shall be qualified in accordance with ANSI N45.2.6.

b. Inspection and Test Plan. An inspection and test plan shall be prepared by the contractor and submitted to the purchaser for approval. The plan shall describe the characteristics to be verified, the sequence and location of inspections and tests, the methods and procedures to be used, and the acceptance criteria. The plan may be prepared in a format mutually agreeable to the contractor and the purchaser, such as flow chart, diagram, narrative, or integrated manufacturing, inspection, and test plan.

c. Inspection of Dimensional Characteristics. Dimensional characteristics shall be inspected in accordance with RDT F 3-15.

d. Calibration of Measuring and Test Equipment. Measuring and test equipment shall be controlled in accordance with RDT F 3-2.

e. Alloy Verification. The contractor shall check each item by an appropriate nondestructive test to verify that it conforms to the specified alloy type. The checks shall be performed at the time permanent identification is applied to a part, at the time of assembly, or just prior to shipment. The contractor shall demonstrate or justify, to the satisfaction of purchaser, that the test device or method will reliably detect incorrect materials.

f. Sampling Inspection. Sampling inspection procedures used by the contractor to determine quality conformance of items shall be as stated in the contract or be subject to purchaser approval.

g. Records. The contractor shall establish and maintain a quality records system in accordance with the applicable sections of ANSI N45.2.9, as mutually agreed upon by the contractor and the purchaser.

h. Audits. The contractor shall conduct planned and documented audits of his quality verification program to verify compliance with

code, standard, specification, or contract requirements and to evaluate the adequacy of procedures, instructions, work operations, and documentation.

Audits shall be performed in accordance with written procedures and checklists by experienced personnel who do not have direct line responsibility for the areas being audited. Audit findings shall be documented, reported, and reviewed by management having responsibility of the area audited. Follow-up audits, including re-audits of deficient areas, shall be conducted to evaluate the effectiveness of actions taken.

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1. ~~INTRODUCTION~~

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The quality verification program prescribed herein comprises the elements of an inspection system, including planning, organization, identification, and control of items and services, inspection, testing, control and calibration of measuring and test equipment, corrective action, and records. (auth)

~~1.2 Applicability. The mandatory requirements of this standard shall apply to the procurement of items or services when this standard is referenced in the contract. The optional requirements of this standard shall apply only when specifically referenced in the contract. Requirements of this standard, including applicable optional requirements specified by the contract, shall be included in subcontracts for items or services to be procured by the contractor.~~

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