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QA PROC

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PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

SEABROOK STATION

PROJECT QUALITY ASSURANCE PROCEDURES

INFORMATION ONLY

BINDER NUMBER 57

SEABROOK STATIONPUBLIC SERVICE COMPANY OF NEW HAMPSHIREINDEX OF UE&C QUALITY ASSURANCE PROCEDURESApril 30, 1982

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* Advance Change Notice No. 28, dated 6/03/80, supplements Rev. 2 of QA-16-2.

** Advance Change Notices No. 36, dated 2/02/81 and No. 37, dated 4/10/81, supplement Rev. 9 of QA-15.

* Advance Change Notice No. 47, dated 8/11/81, supplements Rev. 6 of QA-14.

* Advance Change Notice No. 50, dated 10/07/81, supplements Rev. 1 of Quality Assurance Glossary.

* Advance Change Notice No. 55, dated 10/02/81, supplements Rev. 3 of QA-13

* Advance Change Notice No. 57, dated 12/09/81, supplements Rev. 6 of QA-16-1.

* Advance Change Notice No. 60, dated 11/30/81, supplements Rev. 8 of QA-17.

* Advance Change Notice No. 62, dated 1/21/82, supplements Rev. 8 of QA-6.

* Advance Change Notice No. 63, dated 1/21/82, supplements Rev. 9 of QA-5.

* Advance Change Notice No. 65, dated 4/07/82, supplements Rev. 15 of QA-7-2.

QA/QC PROCEDURE ADVANCE CHANGE NOTICE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

 PROCEDURE TITLE Quality Assurance/Quality Control Glossary

 PREPARED BY B. E. O'Connor

 DATE 9/28/81
CHANGE

(1) QA Procedure Glossary (Rev. 1 8/31/76, Page 1 of 29)

 2nd Item: Accept As-Is

Present: A nonconformance review board disposition indicating material discrepancies do not substantially affect safety performance and maintainability; and that the material can be used for its intended purpose.

Change 1st sentence to read: A disposition by the responsible engineer indicating material discrepancies do not substantially affect safety performance and maintainability; and that the material can be used for its intended purpose.

(2) QC Procedure Glossary (Rev. 0 6/23/75, Page 1 of 26)

 2nd Item: Accept As-Is

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Change 1st sentence to read: A disposition by the responsible engineer indicating material discrepancies do not substantially affect safety performance and maintainability; and that the material can be used for its intended purpose.

REASON FOR CHANGE To delete NRB action for items "Accept As-Is" and to be compatible with the site NOAM.

 CHG. NO. 50
 EFFECTIVE DATE 10/7/81
 QA Glossary
 QCP Glossary
 REV. See Below
 DATE See Below

REVIEWED BY FSQA	DATE	REVIEWED BY PROJECT QAE	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
<i>[Signature]</i>	10/1/81	<i>[Signature]</i>	10/6/81	<i>[Signature]</i>	10/7/81	<i>[Signature]</i>	10/7/81	N/A	10/7/81

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ACCEPTANCE

An approval of an item or service as conforming to specific requirements.

ACCEFT-AS-IS

A Nonconformance Review Board disposition indicating material discrepancies do not substantially affect safety, performance and maintainability; and that the material can be used for its intended purpose.

NRC QUALITY GROUPS

The classifications defined by NRC Regulatory Guide 1.26 which covers "Quality Group Classifications and Standards" for Nuclear Power Plant structures, systems and components.

AGENCY

The regulatory body determined to have legal jurisdiction over the effective licensing and operational control of any structure system or component to be provided under contractual arrangement by United Engineers and Constructors Inc. The Agency designated may be a Legal Authority of the Federal Government, State or Municipality of the United States, a Foreign Country, or an Insurance Company authorized to write boiler and pressure vessel insurance under provisions of Section III, ASME Code.

ANS SAFETY CLASSES

The classifications adopted by the NRC, ANS Subcommittees 51, 52 and 53 which cover PWR, BWR and GCR Nuclear Safety Criteria, respectively, for structures, systems and components. (PNR-ANSI N18.2, BWR-ANSI N212 GCR-ANSI N213)

ANSI STANDARDS

Standards developed under the sponsorship of the American Society of Mechanical Engineers (ASME) by the American National Standards Institute Committee N45 to establish requirements for overall quality assurance programs for nuclear power plants.

APPROVAL

An act of endorsing or adding positive authorization of both.

APPROVED DOCUMENTS

Documents which bear evidence, by signature, initials, stamp or approval letter, that they have been reviewed and accepted by the designated parties.

APPROVED SUPPLIER FILE

The list of suppliers who have demonstrated satisfactory quality performance in previous or current orders or who have received acceptable ratings in Facility Surveys.

APPURTENANCE

A part attached to a previously completed component. Design conditions shall be included in a Design Specification. Data Reports and stamping are as required by the Code.

ARCHITECT/ENGINEER

The organization responsible for the design, engineering, and procurement of equipment for the Balance of Plant of a power plant and for the coordination of all contractor design interfaces.

AS-BUILT CONFIGURATION

The actual configuration of a component, structure or system after all construction has been completed.

AS-BUILT-DATA

Documentation describing a completed item.

ASME CODE CLASSES

The classifications defined by ASME Boiler and Pressure Vessel Code Section III, "Nuclear Power Plant Components." The ASME Code classes define specific requirements for the design, fabrication, inspection, testing and documentation of equipment and components.

ASSEMBLY

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

ASSEMBLY DRAWINGS

Drawings show the assembled relationship of any functional combination of parts and assemblies.

AUDIT

A documented activity performed in accordance with written procedures or checklists to verify, by examination and evaluation of objective evidence, that applicable elements of the quality assurance program have been developed, documented and effectively implemented in accordance with specific requirements. An audit should not be confused with surveillance or inspection for the sole purpose of process control or product acceptance.

BALANCE OF PLANT (BOP)

All components and services of the nuclear power station except the NSSS, Work and Support Services and nuclear fuel provided by the reactor supplier.

BARE FILLER MATERIAL

Filler material without a flux covering. Bare Filler Material includes weld wire and consumable inserts.

BIDDERS LIST

A list of suppliers proposed by Purchasing, Construction, Engineering and the Owner, for procurement of a specific component, part, appurtenance, material, or labor-services. The Reliability and Quality Assurance and Engineering Departments and client approved the listing.

BUY REQUISITION

The document issued by Engineering and Construction which authorizes Purchasing to initiate a purchase order or contract. This document establishes the technical requirements giving sufficient detail to enable Purchasing to prepare the purchase order, contract or change order.

CALIBRATION

Comparison of a measurement standard or instrument of known accuracy with another standard or instrument to detect, correlate, record, or eliminate by adjustment, any variation in the accuracy of the item being compared.

CERTIFICATION

An act of determining, verifying, or attesting to the qualifications of personnel or materials.

CERTIFICATE OF CONFORMANCE

A document, signed by a qualified party, certifying that items or services comply with specific requirements.

CERTIFIED DOCUMENTS

Documents guaranteed by the supplier to represent the approved as-built configuration of the procured item.

CERTIFIED MATERIALS TEST REPORT

A written and signed document from the materials manufacturer which certifies that the material described thereon complies with the applicable material specification, and provides results of the actual chemical & physical tests performed.

CERTIFIED PERSONNEL

Personnel who have been certified as qualified in accordance with the requirements of a given procedure.

CERTIFIED TEST REPORT

A document, signed 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.

CHANGE

Procedure amendments issued as necessary under controlled conditions so as to preclude the possibility of re-issuing procedures in an indiscriminate manner.

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 items, 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.

CLASSIFICATION OF CHARACTERISTICS

An enumeration of the design requirements of a product, i.e., dimensions, materials, test requirements, etc., classified according to their degree of seriousness when the characteristic is nonconforming.

CLEANLINESS

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

CLIENT, OWNER, UTILITY

The organization that owns a nuclear power plant and is responsible for the operation, maintenance, safety and power generation of the nuclear power plant.

CODE

Section III, ASME Boiler and Pressure Vessel Code, "Nuclear Power Plant Components", its Addenda and Case Interpretations.

CODE OF FEDERAL REGULATIONS, TITLE 10, PART 50, APPENDIX B TO 10CFR50

The document which delineates U.S. Atomic Energy Commission quality assurance criteria for nuclear power plants and fuel reprocessing plants. Licensing of production and utilization facilities is contingent on satisfaction of 10CFR50 requirements.

COGNIZANT ENGINEER

An Engineer experienced in nuclear power plant component applications and power plant systems having the responsibility for preparing equipment specifications.

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.

CONCRETE PLACEMENT

Includes all activities associated with the placement of concrete, including pre-placement, post placement, curing and form removal.

CONFIGURATION

The physical arrangement of equipment, systems, structures and components as expressed in the drawings and specifications.

CONFIGURATION VERIFICATION

The documented inspection activity which verifies that the "as-built" configuration agrees with the specified configuration.

CONSTRUCTION

An all-inclusive term comprising materials, design, fabrication, examination, testing, inspection and certification required in the manufacture and installation of components, parts and appurtenances of a nuclear power plant.

CONSTRUCTION DRAWINGS

Drawings which show the association of structures, the interrelation of structural design elements and the supporting services, equipments, and utilities.

CONSTRUCTION MANAGER (CM)

A Construction Division individual assigned responsibility for the construction phase of the Project.

CONSTRUCTION MANAGERS

The organization responsible for the planning, managing and coordination of the efforts of contractors at the construction site.

CONSTRUCTION PHASE

A period which commences with receipt of items at the construction site and ends when the components and systems are ready for turnover to Operations personnel.

CONSTRUCTION PROCEDURE

A procedure written by the Construction organization to describe in detail the erection sequence to be followed. Construction procedures as a minimum shall contain the following:

1. Step by step sequence of events.
2. Space for the Field Quality Control Group to indicate holdpoints.
3. Space for Field Quality Control Group personnel to sign-off holdpoint.
4. Accept and reject criteria.
5. Record of the acceptability or unacceptability of the results of the holdpoint.

CONSTRUCTOR

The organization responsible for the fabrication, installation, construction, inspection and testing of the structures, systems and components of a power plant.

CONSULTANTS

The individual or organization under contract to UE&C to furnish consulting services required for site preparation, engineering studies, or other functions required by the engineer or purchaser.

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 cleanliness.

CONTRACT

The agreement between UE&C and a supplier which defines the requirements and conditions for furnishing labor, services, material or equipment at the construction site.

CONTRACTOR

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

CONTROLLED DOCUMENTS

Documents under limited distribution and accountable through signed receipt procedures both of original document and any revisions thereto.

CONTROLLED STORAGE AREA

A storage area whose access to is controlled and limited; where cleanliness and good housekeeping practices are enforced and measures are taken (where required) to provide adequate fire protection and prevent the entrance of destructive animals. The control, identification, care, inspection, handling and removal of items from a controlled storage area will be controlled by procedure. As a minimum, equipment designated as requiring Level A, B, C or D type storage will be stored in a controlled storage area.

CONTROL AND ELECTRICAL DIAGRAMS

Diagrams which provide an index for identifying electrical items within subsystems and define how these items are interconnected.

CONTROL AND INSTRUMENTATION DIAGRAMS

Diagrams which identify electrical items within subsystems and define how these items operate.

CORRECTIVE ACTION FOLLOW-UP

Actions taken to verify the implementation of corrective action and the evaluation of its effectiveness.

CORRECTIVE ACTION PROCESS

The methods for verifying and determining the cause of an adverse condition and for initiating timely improvements and corrections to preclude repetition.

CORRECTIVE ACTION

Actions taken to assure the prompt detection and correction to preclude recurrence of all conditions adversely affecting quality, including failures, malfunctions, incidents, trends, deficiencies, deviations, nonconformances and defective material.

COVERED WELDING ELECTRODES

Filler material which consists of a metal rod core with a flux covering. (Covered electrodes require greater care than bare filler material because it is necessary to control the moisture content of the flux covering and prevent any damage to the flux covering.)

CRITICAL SURFACE - Includes the following:

- a. Austenitic Stainless Steel
- b. Polished surfaces
- c. Machined mating surfaces
- d. Bearing surfaces
- e. Bearings and seals
- f. Weld end preps
- g. Valve seats, stems, and other valve surfaces and components
- h. Electrical contact surfaces.

DATA PACKAGE

A collection of documents, test reports and correspondence for each item which covers an individual phase such as Purchasing, Receiving, Installation, Testing, Turnover, etc.

DEFECTIVE MATERIAL

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

DESICCANT

Materials used to absorb quantities of water vapor as a means of assuring a dry environment in shipping containers or other packaging modes during shipment and storage or during the following installation prior to use.

DESIGN

The technical and management processes which lead to and include the issuance of design output documents such as drawings, specifications and other documents defining technical requirements of Structures, Systems and Components.

DESIGN BASELINE

An approved, compatible design, established at selected points of design maturity, which serves as a defined point of departure to which all changes relate.

DESIGN CHANGES

Any revision or alteration of the technical requirements defined by an approved and issued design document.

DESIGN CONTROL

The process used to verify that the design drawings and specifications, including fabrication and inspection procedures for both shop and field, meet the project requirements.

DESIGN CRITERIA

Documents which establish overall plant design requirements including NSSS and BOP interface; they establish the overall systems parameters and design requirements for major portions of the BOP as necessary for the interrelationship of systems, components and machines.

DESIGN DOCUMENTS

Engineering specifications, drawings, calculations and/or instructions.

DESIGN INFORMATION

The information provided to the Project Engineering Manager, consisting of dimensions, general arrangements, etc., of specifications, vessels or components.

DESIGN INPUT

The criteria, parameters, bases or other requirements upon which detailed design is based.

DESIGN REPORTS

A summarization of information generated in the development of a final design, which confirm evidence of design adequacy.

DESIGN SPECIFICATION

An engineering document describing function, design requirements, environmental conditions, Code classification, boundary definition, and containing sufficient detail to provide a complete basis for construction in accordance with the Code.

DESIGN VERIFICATION

The process of checking, confirming or substantiating the design to provide assurance that specified requirements have been met. Methods include design review, alternate calculations and testing.

DESIGNATION

Wherein a person or job title is mentioned in this Manual, it means that person or his designated representative.

DEVIATIONS - Those

nonconformances which affect the safety, performance or durability of the material;

discrepancies which can be repaired or reworked for which an approved procedure is not available;

nonconformances for which the responsible organization desires to have the Nonconformance Review Board (NRB) suggest a disposition;

nonconformances which cannot be reworked.

The NRB must act on all Deviations.

DISCREPANCIES

Nonconformances which do not affect the safety, performance or durability of the material. A discrepancy can be repaired or reworked providing an approved repair or rework procedure exists; or it can be "accepted as is" providing the nonconformance does not compromise design or contract criteria. Nonconformance Review Board (NRB) is not required to act on discrepancies.

DOCUMENTATION

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

DOCUMENT PACKAGE

Collection of required data packages which, together, makeup the required documents for each item in a system. These documents are in the data packages and are not required to be in one location in the file. They must be cross referenced. The Data Review-Receiving and the Data Review-Installation are primary sources of the cross reference.

DRAWINGS

The drawings or isometrics prepared and approved by the cognizant engineering activity. The engineering responsibility on any project may rest with the Engineering Department of UE&C or with another engineering organization employed by the Owner.

ENGINEER

The person responsible for the technical aspects of the work.

ENGINEERING DOCUMENTATION

The Drawings, Bills of Material, Special Process Procedures and Calculations.

EQUIPMENT

A combination of materials to form a part, component, subassembly, complete functional machine, structure or system.

ERECTION DRAWINGS

Drawings which show how structures or equipments are to be assembled and erected.

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, gauging and measurement.

EXTERNAL AUDIT

Audits conducted on those portions of another organization's Quality Assurance Program not under UE&C's direct control and not within UE&C's organization structure. Consultants, suppliers, vendors or subcontractors are audited to ascertain their compliance with contractual requirements. Conducting facility surveys prior to placement of a contract or purchase order is also considered an external type audit.

EXTERNAL DESIGN INTERFACE

The relationship between the UE&C design group and design group(s) of the Owner, Contractors and Suppliers.

FABRICATION TRAVELER OR PROCESS CHECK LIST

A process control document identifying step-by-step sequences for work operations, inspections and tests, with provisions for recording completion of each process step.

FACILITY SURVEY

An audit of a supplier's facility to evaluate his capabilities and Quality Assurance Program prior to the award of a purchase order.

FIELD SITE

The location of construction and/or construction management activities.

FINAL INSPECTION

The last inspection before an item is turned over to the Client or for use.

FINAL INSPECTION CHECK LIST

A check list prepared by the Field Quality Control Group that details the inspection to be performed.

FINAL INSPECTION PUNCH LIST

A supplement to the Final Inspection Check List to record additional items requiring resolution.

FINAL INSPECTION TURNOVER AGREEMENT

Form recording turnover of equipment to Test and Startup Department at completion of final inspection.

FINAL SAFETY ANALYSIS REPORT (FSAR)

The Safety Analysis Report submitted to the NRC by the Client as part of the application for a plant operating license.

FOREIGN PRINTS

All documentation formally submitted by a vendor for UE&C approval.

GAUGE FACILITY

Environmentally controlled facility or area provided for maintaining primary and secondary calibration standards and for performing calibrations of measuring devices.

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 established Standards. The term "should" denotes a guideline; the term "shall" denotes a mandatory requirement.

HANDLING

Physically moving items by hand or by machine assisted methods not including transport by carrier.

HOLDPOINT

A point in the manufacturing/fabrication/erection sequence beyond which work may not proceed until the Authorized Code Inspector/Purchaser/Owner, has witnessed or examined the work and given consent to proceed. See also Witness Point.

INDEPENDENT DESIGN REVIEW

The systematic technical audit of complex engineered systems and product designs at conceptual, preliminary and final design baselines occurring during the evaluation of a design by personnel independent of the design process, but technically competent in the same disciplines which have provided input to the design.

IN-PROCESS INSPECTION

The inspection of items during processing or construction to give an immediate and accurate reflection of the status and condition of all items being constructed.

INQUIRY

The document issued by Purchasing which requests proposals from Bidders and defines the technical requirements and contractual conditions of the purchase order or contract.

INQUIRY REQUISITION

The document issued by Engineering which authorizes Purchasing to issue an inquiry. The requisition establishes the technical requirements giving sufficient detail to enable Purchasing to prepare the inquiry.

INSPECTION

The process of measuring, examining, testing, gauging or otherwise comparing the characteristics of a unit of product, equipment, construction process or testing operation with applicable design or specification requirements.

INSPECTION PLANNING

The instruction document that defines and prescribes the manner and sequence of performing product and construction tests or in-service inspection.

INSPECTION REPORT

Documentation of an inspection or surveillance activity.

INSPECTOR (AUTHORIZED CODE)

A qualified inspector employed by a legally constituted agency of a Municipality or State of the United States or regularly employed by an Authorized Inspection Agency and having authorized jurisdiction at the site of manufacture or installation.

INSPECTOR

Normally refers to the UE&C inspector authorized to accept or reject materials, equipment, operations, test, etc. per UE&C Quality Assurance Procedures.

INSTRUCTION

Any organized program intended to train, direct, guide or prepare personnel for the performance and/or observation of inspection functions.

INTERNAL AUDIT

Audits conducted on specific elements or activities of established UE&C Quality Assurance Programs under its direct control and within its organizational structure including site operations within the scope of UE&C responsibilities as Construction Manager and/or Constructor. Where specific project procedures are not defined, the audit is an overall check of adequacy in accordance with project commitments.

INTERNAL DESIGN INTERFACE

The relationship between the UE&C design group and other UE&C Organizations.

ITEM

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

LEVEL III EXAMINER

An individual appointed by UE&C as qualified and certified to Level III per SNT-TC-1A and responsible for administering UE&C's program for training, examining and certifying NDE personnel.

LIFETIME RECORDS

Those records which are considered permanent and which have life of the plant significance.

LIMITED WORK AUTHORIZATION (LWA)

The controlled release of a nonconforming item for rework, repair or other limited activity up through installation, providing the activity does not mask the defect.

LOT

Material which is purchased and furnished on a stock or batch basis. Individual items within a lot cannot be traced to an individual record.

MANAGEMENT CHECK

Measures taken by Corporate management to assess the overall adequacy and status of the quality assurance programs established for specific project application including the activities of the R&QA Department.

MANUAL OF PROCEDURES

The compilation of procedures prescribing the performance and control of detailed engineering and design activities on a project.

MANUFACTURER

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

MANUFACTURING DRAWINGS

Pictorial representations of information required to manufacture special parts.

MATERIAL

A substance or combination of substances forming components parts, pieces, equipment, items, including machinery, castings, formed steel, aggregates and cement.

MEASURING DEVICES

Tools, gauges and instruments used for obtaining measurements during inspections or test operations.

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 pre-determined safety restrictions.

"N" BUY REQUISITION

A written request initiating Purchasing Department activity towards placement of a purchase order or contract for material, components, parts, appurtenances or labor-services requiring compliance to Section III ASME Code.

"N" INQUIRY REQUISITION

A written request initiating Purchasing Department activity towards soliciting proposals from approved bidders.

"N" STAMP

Appropriate "N"-symbol stamps authorized by Section III ASME Code for use on nuclear fabrication or installation.

"N" STAMP ITEM

Component designed and stamped to the requirements of Section III of the ASME Code.

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 failure, incorrect or inadequate documentation, or deviation from prescribed processing, inspection or test procedures.

NONCONFORMANCE REPORT (NCR)

A formal document which identifies, documents, segregates, controls, dispositions, requests corrective action and transmits notification of nonconformances.

NONCONFORMANCE REVIEW BOARD (NRB)

A group of selected individuals who determine the disposition action for all site construction deviation nonconformances.

NONDESTRUCTIVE EXAMINATION (NDE)

Those methods of examination intended to detect flaws and which produce images, displays or patterns requiring observation, interpretation, evaluation, and comparison with acceptance criteria. Such methods shall not damage or otherwise effect the end use of the product. See also Special Inspection Processes.

NSSS

Nuclear Steam Supply System.

NUCLEAR QUALITY ASSURANCE MANUAL

The Manual which establishes UE&C's policy and standard operating procedures for organizing and implementing a quality assurance program applicable to the scope of work governed by Section III ASME Code.

OBJECTIVE EVIDENCE OF QUALITY

Any recorded statement of fact pertaining to the quality of a product, process or operation which is founded on observations, measurement or tests which can be fully checked or verified.

OWNER

Public Service Company of New Hampshire (PSNH),
New England Power Company or
Central Maine Power Company

PACKAGING

Shipping container or wrap used to form a package to exclude dirt and other contaminants and to facilitate handling and labeling.

PARTS

All items which have work performed on them requiring the presence of or verification by an Authorized Inspector and which are furnished to a component Manufacturer by other Manufacturers, or by the same component Manufacturer under a different Certificate of Authorization. Data Reports and stamping are as required by the Code.

PERFORMANCE OF NONDESTRUCTIVE EXAMINATION

Operation of equipment and/or application of materials for the purpose of nondestructive examination, by UE&C personnel. Such equipment or materials may include x-ray/gamma-ray devices, liquid penetrants materials and apparatus, magnetic particle units and materials, ultrasonic or eddy current instruments and related items.

PIPING DRAWINGS

Drawings which define the material, fabricating, routing, connecting, testing and other requirements for steam liquid, gas or pneumatic piping.

PIPING & INSTRUMENT DIAGRAMS (P&ID)

An index for identifying mechanical items within subsystems and defining how the items are interconnected and operate.

PLANT

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

PLANT ARRANGEMENT DRAWINGS

A suggested arrangement of NSSS and BOP equipment within a nuclear power plant.

POWER DIVISION

The UE&C Organization with corporate responsibility for the design efforts of the Company on Nuclear Power Plants.

PRESERVATION

Measures to preserve the "as-manufactured" condition of items.

PREOPERATIONAL TESTING

Tests conducted prior to fuel loading to demonstrate the capability of structures, systems and components to meet functional and safety-related performance requirements.

PRE-PURCHASED ITEMS

All safety related items purchased by UE&C.

PRIMARY STANDARD

A reference standard of the highest accuracy order in a calibration system which establishes the basic accuracy values for the system. Standards with certified accuracies traceable to the National Bureau of Standards (NBS) are considered primary standards.

PRIME DESIGN DOCUMENTS

Design criteria, systems design descriptions, process flow diagrams, component layout drawings, installation drawings and top assembly drawings.

PROCEDURES

Documents that specify or describe how an activity is to be performed. They may include methods, equipment or materials to be used; responsibilities; and sequence of operations.

PROCESS

Specific fabrication, installation, construction, inspection or test routine with precise detailed plans to indicate each basic functional step necessary to perform the required 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 e.g., Purchase Order, Contract, Specification, etc.

PROFESSIONAL ENGINEER

A Registered Professional Engineer who is competent in the field of design of an item, structure or component.

PROJECT

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

PROJECT CRITERIA

Basic engineering concepts of the project set forth in outline form to establish the technical requirements for the preparation of final drawings and specifications.

PROJECT ENGINEERING MANAGER (PEM)

The Manager having the responsibility for all engineering of a nuclear power plant project.

PROJECT MANAGER (PM)

The individual assigned overall responsibility for the project.

PROJECT PERSONNEL

Employees other than R&QA personnel who have been assigned to the Project to perform quality-related tasks.

PRELIMINARY SAFETY ANALYSIS REPORT (PSAR)

The Safety Analysis Report submitted by an applicant for a construction permit. (See SAR).

PURCHASE ORDER (PO)

The agreement between UE&C and a supplier which defines the requirements and conditions for furnishing material, components or equipment.

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 be certified 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 which has been proven adequate for its intended purpose.

QUALITY

The degree of conformance of an item or material to the specified requirements.

QUALITY ADMINISTRATION

The Management and documentation which assure that specified Quality Assurance Measures are carried out.

QUALITY ASSURANCE (QA)

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

QUALITY ASSURANCE DOCUMENTATION

Records, documents, forms or tags which furnish evidence that a program was implemented within the framework of the work activity and scope to ensure quality, planned and systematic, over all "materials" of safety-related importance and/or regulated by applicable standards, codes, agency or clients.

QUALITY ASSURANCE ENGINEER (QAE)

The assigned R&QA representative responsible for the implementation of Quality Programs on a specific project.

QUALITY ASSURANCE MANUAL - CORPORATE STANDARDS

The document which establishes UE&C's policy and standard operating procedures for organizing and implementing the quality assurance program.

QUALITY ASSURANCE MASTER FILE

The designated file(s) where the record copy of the quality documents are kept prior to submittal to the YAEC Site Records Center. It can be in one or more locations and is a controlled access file.

QUALITY ASSURANCE PROCEDURES MANUAL

The compilation of procedures established to organize and implement a quality assurance program for a specific project.

QUALITY ASSURANCE PROGRAM

The overall program established to provide the formal directives and the documentation system necessary to assure that the design, procurement and construction activities of critical items have been carried out with the desired level of control to meet the design intent.

QUALITY CONTROL (QC)

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

QUALITY CONTROL PROCEDURE

A procedure provided by the Project Quality Assurance Engineer (QAE) to describe the inspection activities at the site. Quality Control Procedures as a minimum, contain forms for documenting inspections; accept and reject criteria; evidence of completion of the inspection operation; record of the acceptability or unacceptability of the results of the inspection activities.

QUALITY CONTROL RECEIVING INSPECTION NUMBER

A unique number issued at the time an item is received. This number is placed on the item tag and the Receiving Inspection Report.

RECEIVING

Taking delivery of an item at a designated location.

REJECT

A nonconforming material disposition that states that the item is unsuitable for its intended purpose and economically or feasibly incapable of rework or repair.

RELEASED FOR CONSTRUCTION DRAWINGS

Drawings which have been approved by the cognizant Engineering organization and the Owner and have been certified correct by a Professional Engineer.

REPAIR

A nonconforming material disposition which permits the reprocessing of material to bring it into an acceptable condition that still departs from established requirements.

REPORT

A document detailing the results of an inspection, test surveillance or audit action.

REWORK

A nonconforming material disposition that a nonconforming item can, through subsequent part replacement, reprocessing or completing operations, be brought into conformance to the drawings and specification requirements with a previously approved procedure.

"S" SAFETY RELATED ITEM

Structure, Component or Service not requiring an "N" stamp but which are identified by the PSAR as Seismic Category I, ANS Safety Class 1, 2, 3 or IEEE Class 1E.

SAFETY ANALYSIS REPORT (SAR)

A report, responsive to the requirements of paragraph 50.34 of 10CFR50, which contains sufficient information about the design of the nuclear power plant for the AEC to be reasonably assured that the operation of the facility will not endanger the health and safety of the public.

SAFETY RELATED

Any nuclear system, structure, subassembly, component or design characteristic that prevents or mitigates the consequences of postulated accidents that could cause undue risk to the health and safety of the public. The term "safety related" includes systems, components, etc. designated as Safety Class 1, 2, 3, Class 1E (electrical) and Seismic Category I.

SECONDARY STANDARDS

Standards which accuracies established by comparison to primary standards and used to calibrate measuring devices.

SEGREGATED STORAGE AREA

That storage area, preselected by Construction and approved by Field Quality Assurance, to which "rejected" or "hold" items are moved (if physically possible) pending resolution. It is a "controlled" storage area.

SITE CONTRACTOR

An organization engaged by UE&C to provide fabrication, installation, or testing services at the construction site.

SNT-TC-1A

Recommended Practices for qualifying and certifying NDE personnel. These documents are published by the American Society for Nondestructive Testing.

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.

SPECIAL INSPECTION PROCESSES

Those nondestructive tests or special inspection methods which are used to detect discrepancies without destroying the usefulness of the part.

SPECIAL MANUFACTURING PROCESSES

Those metallurgical, chemical material cleaning, welding, plating and other processes where assurance of the process quality is dependent largely on the inherent skill of the operator and cannot be assured by the inspection of articles alone. See also Special Processes.

SPECIAL PROCESS PROCEDURES

The procedures for the processes that are technical in nature and require written instruction or special qualifications for their application.

SPECIAL PROCESSES

Fabrication and inspection processes which require special equipment and/or personnel with special skills and training.

SPECIFICATION

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

SPECIFIC TITLES

Where specific titles are mentioned, it is understood that duties may be performed by Assistants or Delegates.

SPOOL PIECE

A shop fabricated piping subassembly received at the site.

SPOOL SHEET

A drawing or sketch detailing the geometry and referencing the materials and process of fabrication and examination for a spool piece. These are prepared with sufficient detail to cover pre-fabrication and erection information and approved by the cognizant engineering activity prior to release for fabrication.

STANDARD

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

STARTUP ENGINEERS

Designated individuals, who are responsible for planning, coordinating and technically directing the performance of assigned startup test activities.

STORAGE

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

STORAGE FACILITY

Warehouse or yard area designated and prepared for holding material and equipment prior to installation.

"STORED" MATERIALS

Acceptable materials on site for construction and located in controlled storage areas awaiting utilization.

STRUCTURAL DESIGN CRITERIA

The document that describes the criteria to be employed in establishing project structural design.

SUBCONTRACTOR

Any individual or organization contracted by UE&C to perform part or all of its contract, work activity or scope.

SUBSYSTEM

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

SUPERVISING DISCIPLINE ENGINEER (SDE)

Supervisor of Cognizant Engineers working in a particular discipline on a nuclear power plant project.

SUPPLIER

An organization which provides materials, equipment or services. A supplier may be either a vendor, contractor or a subcontractor.

SURVEILLANCE

A review, observation, or inspection for the purpose of verifying that an action has been accomplished in accordance with applicable drawings, specifications and contractual requirements.

SURVEILLANCE ACTIVITIES

Surveillance activities are defined as activities other than actual performance.

SYSTEM

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

SYSTEMS DESIGN DESCRIPTION

The document that describes the process conditions that the system will be subjected to during its intended life.

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.

TEST EXAMINER - NDE

An individual appointed by UE&C as qualified and certified to Level III per SNT-TC-1A and responsible for administering UE&C's program for training, examining and certifying nondestructive examination personnel.

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.

TRACEABILITY

Maintaining identification for the purpose of preventing the use of incorrect or defective items.

TURNOVER

Administrative procedure by which components or systems are jurisdictionally transferred from one organization or group to another.

TURNOVER AGREEMENT

A document signed by participating organizations acknowledging the satisfactory completion of equipment Turnover.

UNIQUE IDENTIFICATION

A serial number, mark number or any specific identification number which will provide the basis for traceability of the individual item to a specific inspection or record.

UNIT CONTROL FORM

A checklist providing step by step requirements for the preparation of safety related specifications.

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.

VENDOR

Manufacturer, supplier or subcontracting organization providing materials and equipment for the fabrication or construction of permanent plant facilities.

VENDOR DOCUMENTATION

All documents which a vendor is required to generate and maintain in accordance with drawing, specification and Section III ASME Code requirements, and to provide to UE&C in accordance with the purchase order requirements.

VENDOR HISTORY FILE

Records and evaluations of suppliers who have performed work on previous UE&C projects. The file includes copies of Facility surveys of the suppliers' plants; Audit and surveillance trip reports; Reports concerning problems encountered with suppliers in the past; Suppliers' Quality Assurance Manual, if available; other documents pertinent to the suppliers' history.

VENDOR SURVEILLANCE CHECK PLAN

A Document prepared by the QAE for a given purchase order which identifies documentation requirements, manufacturing/inspection points to be witnessed by the Vendor Surveillance representative and the attributes that Field Quality Control Group should inspect during Receiving Inspection.

VERIFICATION

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

WELD FILLER MATERIAL

Material that is consumed in making a weld joint and becomes a part of the weld metal. Filler material includes covered electrodes bare filler material and consumable inserts.

WELD HISTORY RECORDS

A form documenting critical weld parameters, inspections and weld repairs.

WELD MAP

An isometric or line drawing used by the Piping Supervisor and the Field Supervisor - Quality Control as a status record and system check list for operations and system documentation. It identifies weld joint numbers, spool piece and component serial numbers and other information and data as needed for traceability.

WITNESS POINT

A point in the manufacturing/fabrication sequence requiring UE&C witness or examination of the work. Prior notification is expected in accordance with contract.

YEAC SITE RECORDS CENTER

The permanent records center located in the Construction Office Building maintained by YEAC Site QA personnel, which is the final repository for all QA records.

QUALITY ASSURANCE PROCEDURE QA - 1

RELIABILITY & QUALITY ASSURANCE RESPONSIBILITIES & ORGANIZATION

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

June 29, 1973

INFORMATION ONLY

REV.	DATE	PREPARED BY	APPROVED	
			PROJECT	Q.A.
1	1/18/74	R. Holzwarth	BTC	QAS
2	4/12/74	M. Stevens	BTC	QAS
3	7/16/74	J. Knabbe	BTC	QAS
4	9/26/74	R. Thompson	BTC	QAS
5	12/6/74	R. Thompson	BTC	QAS
6	2/25/75	M. Stevens	BTC	QAS
7	10/21/75	R. Thompson	BTC	QAS

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Reliability & Quality Assurance

REVISION			APPROVAL		
No.	Date	Page Nos. Revised	Prepared By	Project Manager	Manager-R&QA
8	12/30/76	2, 3, 4, 6, 7, 8, 11, 12, 13	<i>R. Thompson</i>	BTC	QAS
9	5/18/77	1, ii, 2, 4, 12, 13	<i>R. Thompson</i>	BTC	QAS
10	11/11/77	i, ii, 5, 6, 8, 9, 10, 11, 12, 13	<i>R. Thompson</i>	BTC	QAS
	6/2/78	1, ii, 5, 9, 13, 14	<i>R. Thompson</i>	BTC	QAS
12	11/20/79	Fig. 2 & 3	<i>R. Thompson</i>	BTC	QAS
13	10/23/81	1, ii, iii, 1, 3, 4, 6-17	<i>R. Thompson</i>	BTC	QAS

QA-1 CURRENT PAGE LISTING - REV. 13

10/23/81

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15 (Fig. 1)	10/23/81
16 (Fig. 2)	10/23/81
17 (Fig. 3)	10/23/81

ATTACHMENT 1

QA PROCEDURE QA-1

IDENTIFICATION OF CHANGES

<u>PAGE</u>	<u>REASON</u>
1	Item 12 was added to Section 1 and deleted from Quality Systems
3	Changed Purchasing to Procurement and V.P. - Projects to Power.
4	Changed Purchasing to Procurement
6	Revised to incorporate latest organizational structure.
7	Changed Purchasing to Procurement and made editorial changes.
8	Revised to incorporate latest organizational structure.
9	Revised to incorporate latest organizational structure. Also deleted responsibility from Quality Systems.
10	Revised to incorporate latest organizational structure.
11	Revised Welding Engineering activities to reflect the latest organizational structure
12	Revised identification of paragraph numbers and updated NDE activities.
13	Revised identification of paragraph numbers and added operations Quality Assurance description.
14	Revised Audit section to incorporate latest organizational structure.
15	Revised to incorporate latest organizational structure.

QA PROCEDURE QA-1

IDENTIFICATION OF CHANGES (Cont'd)

- | | |
|----|--|
| 16 | Revised to incorporate latest
organizational structure. |
| 17 | Revised to incorporate latest
organizational structure. |

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

RELIABILITY & QUALITY ASSURANCE
RESPONSIBILITIES & ORGANIZATION

REV: 13

DATE: 10/23/81

PAGE 1 of 17

I. SCOPE

This procedure applies to the responsibilities of UE&C's Reliability and Quality Assurance Department, its organization and its relationship with the Project organization, for those activities associated with design, procurement and construction of nuclear safety-related equipment and activities.

R&QA is responsible for:

- 1) Preparing that section of Chapter 17 of the PSAR and FSAR related to Architect Engineering and Construction Management Services, or referencing the UE&C Topical Report.
- 2) Establishing and implementing the UE&C QA Program.
- 3) Preparing and implementing the UE&C Project QA and QC Procedures.
- 4) Performing QA over containment and civil/structural activities.
- 5) Performing QA during receiving and storage.
- 6) Surveillance of QC activities implemented by site subcontractors performing civil/structural work.
- 7) Coordinating the UE&C QA Program activities with the client QA organization.
- 8) Assuring that appropriate QA requirements are properly specified to UE&C suppliers including vendors, contractors, subcontractors and consultants.
- 9) Auditing and surveillance of QA activities implemented by other operating groups in UE&C, by UE&C suppliers, civil contractors and by R&QA.
- 10) Identifying quality problems and initiating, recommending or providing solutions; and verifying implementation of solutions.
- 11) Coordination of QA records and other quality activities as required with YAEF site QA representatives.
- 12) Develop and maintain QA Standard Documents.

II. GENERAL

A. Purpose

1. Impose the applicable portions of Quality Assurance Manual-Corporate Standard I on the project.
2. Describe the organizational structure of the UE&C Reliability & Quality Assurance Department (R&QA) which meets the requirements of the Project Quality Assurance Program, as defined in the PSAR.
3. Describe the authority, responsibility and duties of R&QA performing activities on the project.
4. Describe the organizational freedom of R&QA to identify quality problems; initiate, recommend, or provide solutions; and to verify implementation of solutions.
5. Identify reference standards and procedures describing the control of quality related activities to be employed by other operating groups of UE&C.

B. Reference Documents

Operations Manual, Power Engineering Department, Power Division
QA-7-2 Control of Purchased Material - Vendor Surveillance
QA-18 Quality Assurance Audits
QCP-7-1 Receiving Inspection of UE&C Purchased Items
QCP-7-2 Receiving Inspection of Westinghouse Purchased Items
QCP-13-1 Storage Inspection

III. RESPONSIBILITIES

A. Corporate QA Responsibilities

Architect-Engineer (A-E) - AS A-E on the project, UE&C is responsible for the design, engineering, and procurement of those portions of the nuclear power plant contractually defined between UE&C and the Client. For the safety-related and engineered safeguards portions of the project, UE&C will assure the control of quality related activities through the implementation of procedures for engineering and design, procurement and quality

assurance. Engineering and design procedures are prepared by the Power Engineering Department and approved by the Manager-R&QA. Procurement procedures are prepared by the Procurement Department and approved by the Manager-R&QA. In both cases, approval by the Manager-R&QA indicated that activities detailed in the procedures comply with the requirements of Appendix B to 10CFR50, ANSI Standards and NRC Regulatory Guides.

Construction Managers (CM) - As CM on the project, UE&C is responsible for planning, managing and coordinating the efforts of the construction and service contractors at the project site. For the safety-related and engineered safeguards portions of the project, UE&C will assure the control of quality related activities through the implementation of Construction and Quality Assurance procedures, within the scope of their responsibility. Construction procedures are prepared by the site subcontractors and reviewed and approved by UE&C Construction and R&QA. In both cases, approval by R&QA indicated that activities detailed in the procedures comply with the appropriate requirements of Appendix B to 10CFR50, ANSI Standards, NRC Regulatory Guides and ASME Code.

As CM, UE&C is responsible for receipt and storage of pre-purchased equipment at the construction site. Receiving and storage activities are performed in accordance with construction procedures prepared and approved as noted above. Receiving and storage inspection will be performed in accordance with field Quality Control procedures prepared by R&QA.

B. UE&C Organizational Responsibilities

1. Project Management

The Vice President - Power assigns a Project Manager to coordinate all UE&C authorities and responsibilities toward the successful completion of the project.

2. Engineering

The UE&C Power Division is also responsible for the design and engineering of nuclear power plants. The Manager Power Engineering supplies the engineering manpower required for its design.

The control of quality-related activities affecting the design and engineering is performed in accordance with the Power Division procedures which are approved by the Vice President - Power and the Manager - R&QA.

UE&C Power Division departments supplying services to the Engineering Department will perform their work in accordance with the procedures of the Power Division. Work performed by the Engineering Department is further controlled via a system of surveillance and audits performed by R&QA.

3. Procurement

The Manager - Procurement reports to the Vice President - Project Support Operations and is responsible for the procurement of equipment to requirements specified by the Project.

The procurement activity which includes buying and expediting is performed in accordance with the provisions of Power Division procedures prepared by the Procurement Department and approved by the Manager - Purchasing and the Manager - R&QA. Work performed by the Purchasing Department is monitored through a system of audits and approval of procurement documents by R&QA.

It is important to note that the Procurement Department cannot waive or change any engineering or QA requirements or allow one to be changed without the prior approval of Engineering and R&QA.

Further, the Expediting group has no inspection responsibility or authority and cannot waive inspection or witness points. Release of equipment for shipment is prohibited without prior R&QA approval.

4. Construction

The UE&C Construction Division, headed by the Vice President - Construction is responsible for providing the Construction Management Services.

The Vice President-Construction assigns a Construction Manager, in the home office, and a Resident Construction Manager, on the site, to lead the UE&C construction efforts for the projects. Coordination of site contractor work forces on the project site are handled through Area and Craft Superintendents and Craft Supervisors who report to the Resident Construction Manager.

Nuclear and safety construction activities are performed in accordance with field developed construction procedures or subcontractor procedures, or both, which are approved by the Resident Construction Manager, the Field Superintendent - QA and, when required, the Engineer.

Quality-related activities in the receiving and storage areas performed by the Construction Division is monitored via a system of surveillance, audit, inspection, test and examination, by R&QA.

5. UE&C Reliability and Quality Assurance

- a. The responsibility for Quality Assurance with UE&C rests with the Vice President-Project Support Operations, who established Quality Assurance policies, goals and objectives. The UE&C President endorses the QA policies via the management statement in the Quality Assurance Manual-Corporate Standards. The Vice President-Project Support Operations is on an organization level with the Vice President-Power and the Vice President-Construction, all reporting to the President as shown on the corporate organization chart, Figure 1. This reporting scheme provides for resolving disputes arising from various interpretations by QA personnel and other functional organizations such as Engineering, Construction or Purchasing.
- b. The Manager-Reliability and Quality Assurance reports directly to the Vice President-Project Support Operations and has been delegated full responsibility for the total quality assurance activity within UE&C. Figure 1 depicts the organization of R&QA indicating major functional responsibilities of management and

operating groups of the department. Written position descriptions and position qualification requirements are maintained by R&QA for R&QA personnel. Figure 3, Functional Organizational Chart - R&QA Department, delineates the duties and responsibilities of the Home Office and site personnel.

- c. The R&QA Department is divided into two functional sections, Project Quality and Quality Engineering, each directed by an Assistant Department Manager as shown on Figure 1. The exception to this is the Audit group. The Manager-Audits reports directly to the Manager-R&QA. The functions and responsibilities of the operating groups under these Managers are described below.

1) Project Quality

The Assistant Department Manager - Project Quality is responsible for the Project Quality and Quality Systems functions.

A) Project Quality - Home Office

The Manager - Project Quality Assurance assigns a Quality Assurance Engineer (QAE) to the project. The QAE's prime responsibility will be planning, coordination and control of the UE&C Project Quality Assurance Program. He is responsible for the implementation of the home office portion of the UE&C Quality Assurance Program and QA direction for implementation of the QA plan at the site.

He is responsible for the coordination of the implementation of the UE&C QA program with other operating groups within UE&C and with the QA activities of the Client and NSSS Contractor.

In carrying out his responsibilities for implementation of the home office portion of the UE&C QA Program, he is required to assure

that Engineering and Procurement are effectively carrying out their portions of the program in accordance with their approved procedures. He is required to see that other sections within R&QA perform their assigned duties in a timely manner and in accordance with the approved Project Quality Assurance Procedures.

Duties of Project QAE's are as follows:

- (1) Prepare UE&C portion of the Chapter 17 of the PSAR and FSAR.
- (2) Establish QA plan for the Project.
- (3) Identify tasks & manpower requirements.
- (4) Develop budgets for the project.
- (5) Develop project QA and QC Procedures.
- (6) Coordinate R&QA activities on the project.
- (7) Coordinate YAEC QA activities with UE&C Project team.
- (8) Reviewing and approving safety-related bidders lists prepared by Procurement.
- (9) Reviewing and approving requisitions pertinent to purchase of safety related item to assure that proper quality requirements and applicable code and contract requirements are contained therein.
- (10) Participating in pre-award meeting with suppliers to assure use of capable suppliers and clarify questions concerning quality requirements.

- (11) Establish and monitor vendor surveillance program.
- (12) Establish and monitor internal and external audit program.
- (13) Provide for departmental review of UE&C and supplier design documents and procedures.
- (14) Provide status reports to R&QA management, project management and YAEC.
- (15) Identify quality problems, issue corrective action and nonconformance reports, follow resolution and implementation of corrective action and initiate stop work orders, when required.

.B) Project Quality Field (Figure 2)

The Manager - Project Quality Assurance is responsible for directing the Field Superintendent - Quality Assurance in implementing the Project's QA Program at the site.

The Field Superintendent - Quality Assurance reports to the Manager - Project Quality Assurance. In the performance of his duties he is responsible for:

- (1) Supervision of Field Quality Assurance personnel, instructing them in the provisions of the Project Quality Assurance & Control Procedures and the requirements of the specifications and drawings.
- (2) Surveillance of civil testing laboratory.
- (3) Initiation of Stop Work Orders.

Field Quality Assurance & Quality Control activities include:

- (1) Performing applicable Receiving & Storage Inspection in accordance with QCP-7-1, and QCP-7-2 and QCP-13-1.
- (2) Surveillance of site contractors engaged in safety-related civil/structural activities in accordance with UE&C approved field QA procedures.
- (3) Identifying quality problems, issuing corrective action and nonconformance reports and assuring resolution and implementation of corrective action.

B.5.c.1).C)

Nuclear Projects Quality Assurance

The Manager-Nuclear Projects Quality Assurance is responsible for providing the Project Quality Assurance Program direction and implementation for Home Office and Field Nuclear Projects of varying scope. He is supported by the Supervising Engineer -Quality Systems.

The Supervising Engineer-Quality Systems is responsible for the performance of the following tasks:

- (1) Develop and maintain the ASME Section III Nuclear Quality Assurance Manuals and the Quality Assurance Manual Corporate Standards.
- (2) Provide Indoctrination & Training Programs for personnel engaged in activities affecting quality.
- (3) Administration of Qualification & Certification Programs.

- (4) Review project QA procedures vs QAM-CS/NQAM.
- (5) Provide for R&QA review and approval of General Engineering and Design Procedures and Standard Guideline construction Procedures.
- (6) Assist in new vendor capability studies and surveys.
- (7) Assist, as needed, in the review of UE&C and supplier design documents and procedures.
- (8) Provide QA Data Management System.

2) Quality Engineering

The Assistant Department Manager - Quality Engineering is responsible for Quality Services, Materials Engineering, and Codes and Standards.

.A) Quality Services

The Manager, Quality Services is responsible for Vendor Surveillance, Welding Engineering, and Nondestructive Examination.

a) Vendor Surveillance

The Supervising Engineer - Vendor Surveillance is responsible for carrying out the Vendor Surveillance Program as identified and required by the QAE for the project.

Vendor Surveillance scope of activities and procedures are defined in QA-7-2.

b) Welding Engineering

The Supervising Engineer - Welding Engineering is responsible for implementing a system to control site contractor and supplier welding activities.

Welding Engineering activities include:

- (1) Preparing and qualifying UE&C welding procedures, if required.
- (2) Reviewing and approving of supplier and site contractor welding procedures.
- (3) Assisting Project QA in review of specifications involving welding.
- (4) Assisting Vendor Surveillance on matters involving welding.
- (5) Consulting, advising and assisting on matters involving contractor welding.

c) Nondestructive Examination

The Supervising Engineer - Nondestructive Examination Engineering is responsible for implementing a system to control UE&C and supplier nondestructive examination activities.

Nondestructive Examination activities include:

- (1) Administering UE&C's program for training examination and certifying nondestructive examination personnel.

- (2) Assisting Project QA in reviewing and approving supplier and contractor NDE procedures.
- (3) Preparing and qualifying UE&C nondestructive examination procedures, if required.
- (4) Acting as final UE&C authority on evaluation of NDE results where agreement cannot otherwise be reached.
- (5) Assisting Vendor Surveillance on matters involving NDE.

.B) Materials Engineering

The Manager - Materials Engineering is responsible for implementing a system to control the selection of materials and manufacturing processes.

Materials Engineering activities include:

- (1) Assisting the QAE in review of specifications and procedures for inclusion of proper materials and processes.
- (2) Assisting Vendor Surveillance and Audits on audits of suppliers' and construction activities for implementation of proper material and process controls.
- (3) Reviewing supplier or contractor submittals for selection of materials and fabrication processes.
- (4) Reviewing coating materials specifications and processes to assure necessary protection against corrosion.
- (5) Investigating failures.
- (6) Specifying corrective action.

.C) Codes & Standards

The Manager-Codes and Standards is responsible for investigating, analyzing and maintaining cognizance of Regulatory requirements, Codes and Standards for their application and effect on the QA Program. Codes & Standards Group activities include:

- (1) Disseminating information throughout UE&C regarding Codes and Standards.
- (2) Providing consultation to appropriate levels of management, including the Project QAE, on matters concerning Codes & Standards.
- (3) Assisting the Manager-RQA in coordinating the activities of the Authorized Inspection Agency.
- (4) Providing consultation to project management for developing project positions responsive to Codes and Standards.

.D) Operations Quality Assurance

The Manager-Operations Quality Assurance reports to the Assistant Department Manager-Quality Engineering. He is responsible for directing activities pertaining to the establishment, preparation and implementation of Quality Assurance Programs for operating power plants and during startup of new plants. His responsibilities include interfacing with potential Client Management personnel to offer UE&C services on their Operations QA Programs and coordination with other UE&C organizations whose personnel interface with the Operations QA in the performance of their work.

3) Audits

The Manager-Audits reports directly to the Manager-R&QA and is responsible for the implementation of the audit system in accordance with QA-18.

The Audit group activities include:

- (1) Planning, developing and implementing project audit activities.
- (2) Scheduling audits.
- (3) Conducting project internal audits.
- (4) Conducting audits of suppliers.
- (5) Documenting and distributing reports of findings.
- (6) Performing follow-up audits to verify corrective action.
- (7) Performing vendor facilities surveys.

- 4) Titles - when a specific title is referenced in any of the QA or QC procedures, it is understood that the duties may be performed by higher supervision or delegated to other qualified personnel.

C. Contractor

1. Each contractor shall implement his UE&C approved quality assurance program in accordance with the contract of purchase order requirements.
2. UE&C shall periodically monitor and audit to verify that the Quality Assurance Program is being satisfactorily implemented.

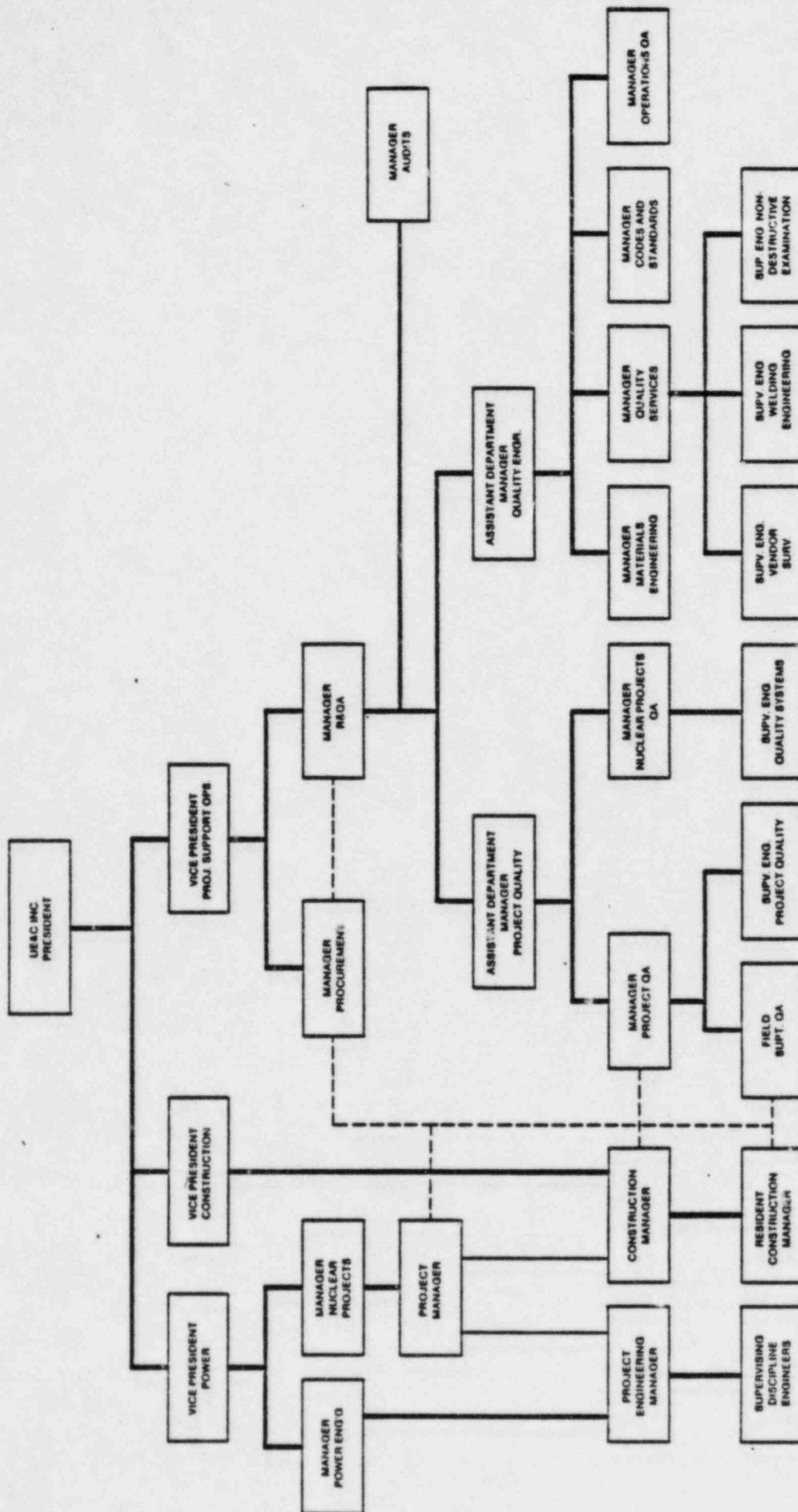


FIGURE I
UESC RSCA DEPARTMENT
AND THE
ORGANIZATIONAL RELATIONSHIPS

LEGEND

———— ADMINISTRATIVE & TECHNICAL DIRECTION

----- TECHNICAL DIRECTION

----- COMMUNICATION

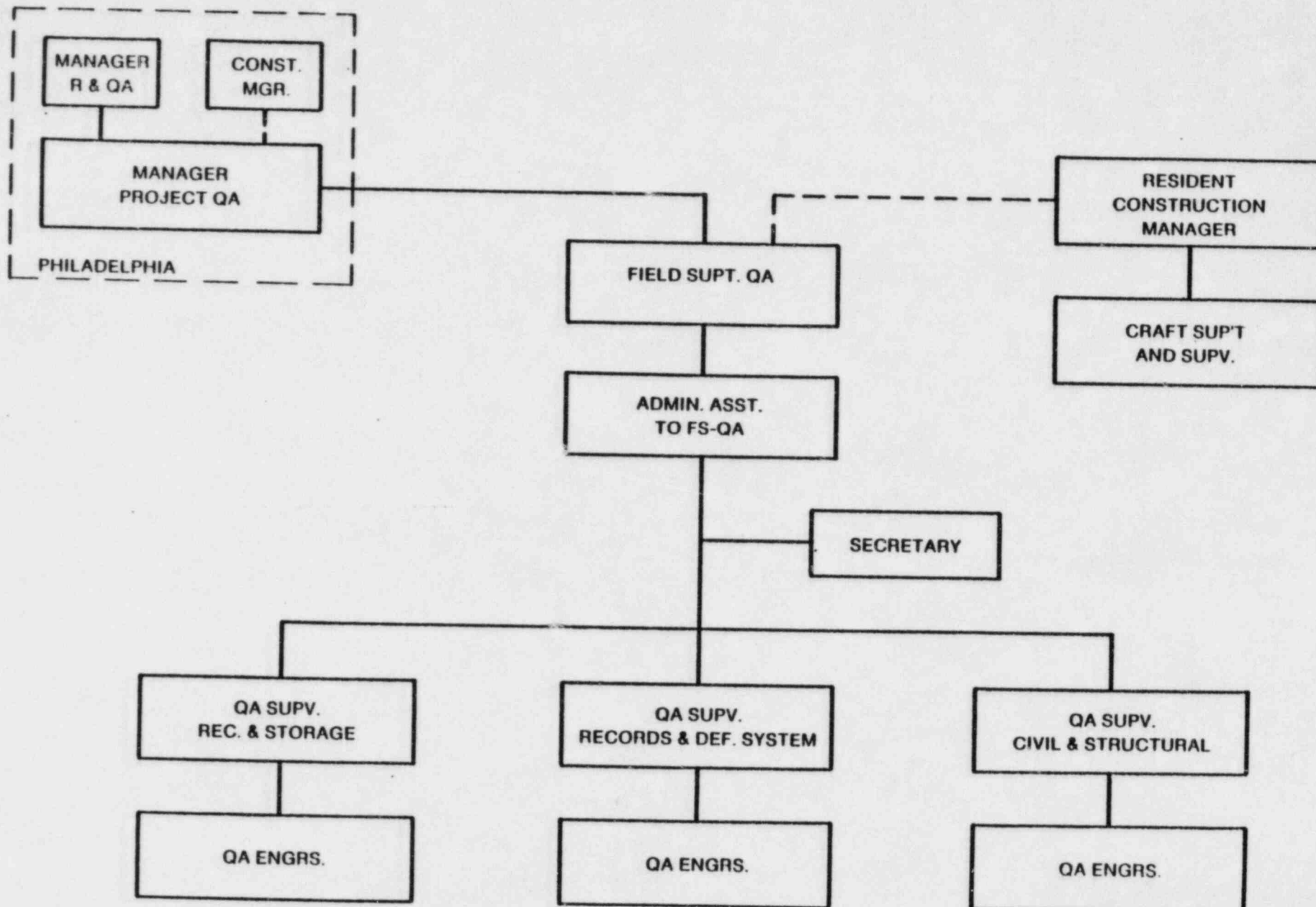
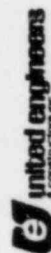


FIGURE 2
UE&C FIELD QUALITY ASSURANCE GROUP



APPROVED GB Silverman

DATE JULY 21, 1981

QUALITY ASSURANCE PROCEDURE QA - 2-1

QUALITY ASSURANCE PROGRAM

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

INFORMATION ONLY

January 16, 1974

Prepared by:

Robert C. Holzworth
R. C. Holzworth
Quality Assurance Engineer

No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/8/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
2	9/9/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
3	12/6/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
4	10/21/75	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

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REVISION				APPROVAL	
No.	Date	Page Nos. Revised	Prepared By	Project Manager	Manager-R&QA
5	2/28/77	7,8,9,10,12,13,14,16	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

2/28/77

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ATTACHMENT 1 TO PROJECT QUALITY
ASSURANCE PROCEDURE QA-2-1, REV. 5

IDENTIFICATION OF CHANGES

<u>SECTION</u>	<u>PAGE</u>	<u>REASON</u>
V.B.1	7	Changed title to Manager-Field QA
V.B.7, 8	8	Referenced latest procedures, QCP-7-1, QCP-7-2 and QCP-8
V.B.10	9	Deleted "and installed" since installation is not within UE&C's scope of inspection.
V.B.14	10	Clarified "UE&C approved contractor systems."
VII	12	Add a "Management Review" section from the QA Manual - Corporate Standards in response to an NH-134 and NEP-11 internal audit finding.
Figure 1	13	Deleted obsolete suffix from QA-6
Figure 2	14	Referenced latest implementing procedures.
Figure 3	16	Corrected issue date of AYSI N45.2.2



constructors inc.

QUALITY ASSURANCE PROCEDURE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

QUALITY ASSURANCE PROGRAM

QA - 2-1

REV: 4

DATE: 10/21/75

PAGE 1 of 16

I. INTRODUCTION

- A. All quality assurance and quality control activities performed on the Project are under the control of and subject to audit by the Reliability and Quality Assurance Department (R&QA). The personnel and organization of the department is shown on the chart in Quality Assurance Procedure QA-1.
- B. The department is headed by a manager who reports directly to the Vice President - Project Support Operations and as such, has sufficient authority and organizational freedom to identify quality problems; to initiate, recommend or provide solutions; and to verify implementation of solutions independent of individuals or groups directly responsible for performing a specific activity.
- C. The Reliability and Quality Assurance Department covers four essential activities:
1. Project Quality Assurance Engineering
 2. Engineering Quality Assurance, in the areas of Materials, Welding, Codes & Standards & Non-destructive examination (NDE)
 3. Vendor Surveillance (Shop Inspection)
 4. Field Quality Assurance
- D. The Quality Assurance Program applies to UE&C's activities as Architect Engineer (A/E) during the design and procurement phase of the project. It also applies to UE&C's activities as both A/E and Construction Manager during the construction phase. The QA Program applies to those items listed as Seismic Category I, Safety Class 1, 2, 3 and Class 1E items in PSAR Tables 3.2-1 and 3.2-2. These activities are conducted in conformance with the U.S. Nuclear Regulatory Commission's "Quality Assurance Criteria for Nuclear Power Plants" contained in Appendix B to 10CFR50 and the Reg. Guides & Staff comments as defined in the PSAR. The basic elements of compliance are described under subsequent section "Response to NRC Criteria".

II. SCOPE

This Procedure applies to UE&C's Quality Assurance Program for the performance of activities affecting the quality of structures, systems and components identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

III. ORGANIZATION

In order to implement an effective Quality Assurance Program, the Reliability and Quality Assurance Department is organized as detailed in procedure QA-1. The five major functional areas are: Quality Engineering, Quality Services, Materials Engineering, Audits and Codes & Standards.

IV. PROCEDURE

A. The UE&C Quality Assurance Manual-Corporate Standards forms the basis for the specific Quality Assurance procedures for use on the Project. These policies are incorporated into the project Quality Assurance and Quality Control procedures in the implementation of the program. These project QA & QC procedures form the total Quality Assurance program for the project and are responsive to Appendix B to 10CFR50 and ANSI N45.2 for nuclear-safety related portions.

B. UE&C's QA Program consists of three levels:

Level 1 - UE&C imposes quality assurance and quality control requirements on its contractors through specifications, drawings and other procurement documents. UE&C performs receiving and storage inspection at the site of equipment and material purchased by UE&C and NSSS equipment provided by Westinghouse.

Level 2 - The quality activities of Level II are subdivided into two phases. The first phase involves the design and procurement cycle in which specifications, drawings and procurement documents are reviewed by independent reviewers to assure proper incorporation of applicable codes, standards and regulatory requirements including the quality aspects. In the second phase, the quality programs and procedures of UE&C equipment suppliers and construction contractors are reviewed by UE&C to assure compliance with requirements of specifications and purchase orders. UE&C performs surveillance over suppliers and site contractors operations to assure that specified quality requirements are met.

Level 3 - UE&C audits, through personnel who are not directly involved in Levels 1 and 2, (see QA-1 organization chart) the activities of personnel involved in Level 1 and 2 activities.

This Level 3 responsibility is related to UE&C's QA Program, however, it should be considered as part of Level 2 in the Owner's overall QA Program as described in Section 17.1.2 of the PSAR.

V. PROGRAM RESPONSE TO NRC CRITERIA (APPENDIX B 10CFR50)

A. Design & Procurement Phase

1. Organization

The Reliability & Quality Assurance Department is responsible for assuring that the QA program established for the project complies with regulatory and specific project requirements and that the program is correctly implemented. The R&QA Department organization structure is defined in procedure QA-1 which outlines responsibilities of R&QA personnel and their relationship with other corporate departments, defining its organizational freedom and independence for identifying quality problems, effecting resolutions and verification of solution implementation.

2. Quality Assurance Program

The Project Quality Assurance Manual, composed of various procedures, is the governing document for this project. The QA procedures written for the Project reflect the requirements of the Corporate Standards and implement this program within UE&C's scope of work. A list of the procedures applicable to the program is shown on Figure 1. Figure 2 is a matrix which correlates the procedures to the 10CFR50 Appendix B criteria. Figure 3 lists the applicable drafts and revisions to ANSI Standards (as addressed in the PSAR) referred to in this and subsequent procedures.

3. Design Control

Procedure QA-3 summarizes and references the Engineering Department procedures and defines the actions and responsibilities of R&QA to assure the application of required design bases, Codes and Standards into the specifications and drawings. Through a planned system of reviews and audits, these actions provide measures of assuring compliance. Design changes (engineering; vendor or field), are subject to the same design control measures as the original design document requirements.

4. Procurement Document Control

Bid documents, requisitions, inquiries and purchase orders are reviewed and approved by R&QA for inclusion of appropriate Regulatory, Design Bases & QA/QC requirements in accordance with the provisions of procedure QA-4.

V. PROGRAM RESPONSE TO NRC CRITERIA (Continued)

5. Instructions, Procedures & Drawings

Activities affecting quality are performed in accordance with documented instruction, procedures or drawings, as outlined in procedure QA-5, which include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

6. Document Control

Drawings, specifications, procedures and instructions are distributed to designated parties per controlled lists. Master lists indicating the latest revision are maintained. Control for distribution including revisions by Engineering and R&QA are outlined in procedure QA-6.

7. Control of Purchased Material Equipment & Services

Specifications require Contractors to furnish their QA Programs and/or Procedures for concurrence prior to starting work.

The QAE has concurrent approval authority for such procurement actions including evaluation and acceptability of vendors. R&QA utilizes historical data on vendor capabilities and past performances on nuclear work. These activities are in accordance with procedure QA-7-1.

Surveillance of vendors is performed by the Vendor Surveillance Group in accordance with procedure QA-7-2.

In addition, the QAE and the Manager-Audits establish a planned audit program covering the material and equipment furnished by suppliers.

8. Identification and Control of Materials, Parts and Components

Engineering specifications (equipment and construction) define the necessary requirements in response to this criteria. Procedure QA-8 defines the general methods of assuring that vendors and contractors comply with the requirements.

9. Control of Special Processes

Vendors, contractors and subcontractors are required to submit procedures for approval and implement such approved procedures covering welding, heat and treatment, bending, cleanliness, nondestructive examination and performance testing as applicable for their scope of work. Procedure QA-9-2 defines the general requirements for special process control.

V. PROGRAM RESPONSE TO NRC CRITERIA (Continued)

10. Inspection

Engineering specifications (equipment and construction) define the required inspection requirements. Procedure QA-10 defines the general methods of assuring that vendors and constructors comply with the requirements.

11. Test Control

Engineering specifications (equipment and construction) define the necessary test control requirements. Procedure QA-11 defines the methods of assuring that vendors and constructors comply with the requirements.

12. Control of Measurement and Test Equipment

Procedure QA-12 provides the systematic control over the calibration, use, recall and recalibration of test equipment. Vendors, contractors and sub-contractors are required by the procurement documents to provide calibration control measures within their quality control system which is subject to review and audit by R&QA personnel.

13. Handling, Storage and Shipping

Vendors providing equipment are required to submit for approval procedures detailing how they will handle and/or store and ship their equipment. Any special requirements for handling and storage of the equipment at the site are contained in the engineering specifications or the vendor is required to furnish any special instructions for protection of his equipment. Procedures are established outlining the general requirements for handling and storage control at the site. Moving and handling of major equipment (e.g. reactor vessels, steam generators, coolant pumps, reactor internals, etc.) at the project site will be performed in accordance with approved construction procedures. R&QA activities are covered in procedure QA-13.

14. Inspection, Test and Operating Status

Procedure QA-14 requires a system that indicates the status of inspections and tests performed upon items. Vendors, contractors and subcontractors are required by the procurement documents to provide a controlled system of identification marking and inspection status of items they fabricate and ship to the site.

V. PROGRAM RESPONSE TO NRC CRITERIA (Continued)

15. Nonconforming Material, Parts or Components

Procedure QA-15 provides requirements for identification, segregation and dispositioning of nonconformances and nonconforming items. Vendors, contractors and subcontractors are required by the procurement documents to initiate similar controls within their quality control system which will be subject to approval and audit by R&QA personnel.

16. Corrective Action

Procedure QA-16-1 describes the appropriate actions to be taken by UE&C and by their vendors, contractors and subcontractors of purchased equipment and services in providing corrective measures to assure that conditions which are adverse to quality are identified, documented and corrected. When conditions adverse to quality are identified, appropriate action is taken through UE&C Vendor Audits, Corrective Action Requests or Stop Work Orders.

The authority for suspension of UE&C or UE&C-supplier operations because of lack of compliance to the quality assurance program or approved design requirements is assigned to the Manager-R&QA in accordance with procedure QA-16-2. Inherent in this assignment is the authority to signify resumption of work conditions when the cause of the work suspension has been brought under control. Client requests to suspend operations performed by UE&C suppliers and subcontractors for lack of compliance to quality requirements shall be handled by the Home Office Quality Assurance Engineer in accordance with QA-16-2.

17. Quality Assurance Records

UE&C will, initiate, duplicate and maintain QA records during the design and procurement stage. Upon completion of these activities, copies of the documents will be forwarded to the Owner or his representatives in accordance with his directions. YAE&C will maintain permanent QA records at the site during the construction phase.

Procedure QA-17 describes the requirements for QA records. Vendors and contractors are required through the procurement documents to provide comparable systems.

V. PROGRAM RESPONSE TO NRC CRITERIA (Continued)

18. Audits

A comprehensive system of audits of activities within the UE&C scope is conducted. Follow-up action is taken when required. Audit results are distributed for higher management review. Internal and Supplier Audits are described in procedure QA-18.

B. Construction Phase

1. Organization

UE&C maintains an independent Field Quality Assurance organization. The Field Superintendent-QA reports to the UE&C Manager of Reliability and Quality Assurance through the Home Office Manager - Field QA and is responsible for on-site implementation of the QA program. He is assisted by a staff of experienced QA Engineers in various technical disciplines. The organization of the UE&C Field QA personnel is shown in procedure QA-1, Figure 2. Site Contractors QC organizations are reviewed and upon implementation of the contracts are under QA surveillance.

2. Quality Assurance Program

The QA Program established for the Project consists of specific Project QC Procedures to be carried out within UE&C's pre-determined scope of work at the site. UE&C requires site contractors and suppliers providing safety-related equipment to implement Quality Assurance programs that are in compliance with the applicable criteria of 10CFR50, Appendix B and ANSI N45.2.

3. Design Control

Through a planned system of reviews, and approval cycles at the site, design and construction revisions or changes are controlled and available prior to implementation. Errors and deficiencies in the design change process which adversely affect safety related structures systems or components are documented and the proper corrective action taken. Design changes including field changes are subject to the same design controls applicable to the original design.

4. Procurement Document Control

UE&C implements a program of surveillance over site contractor procurement documents, process and construction procedures in

V. PROGRAM RESPONSE TO NRC CRITERIA (Continued)

order that Contractor Quality Assurance programs, as specified, are consistent with the appropriate provisions of 10CFR50, Appendix B. The details of the contractors program including procurement of spare and replacement parts are reviewed for compliance with the Contract Specifications.

5. Instruction, Procedures and Drawings

Site Contractors maintain a program of control over and construction procedures, instructions and drawings to assure that all quality related Contractor activities on structures, systems and components within their QA Program are controlled. Review, audit and surveillance of these activities are performed by UE&C to verify these controls on civil/structural activities.

6. Document Control

Provision for maintenance, approval, review, distribution, filing, updating and monitoring of Contractor applicable documentation is implemented as a result of the UE&C and Contractor Site QA Programs. Document files are controlled and maintained to preclude the inadvertent use by the Contractors of obsolete or superseded documents. Document control systems are established and implemented by the Contractors in accordance with specification requirements.

7. Control of Purchased Material, Equipment and Services

- a. Inspection of materials and equipment received at the site are performed by UE&C in accordance with procedure QCP-7-1 and QCP-7-2.
- b. Inspection of materials and equipment purchased by contractors are performed in accordance with the contractors UE&C approved procedures.
- c. UE&C and Site Contractor procedures will also provide for auditing and surveillance activities to assure that quality requirements for accepting and releasing materials and equipment including nonconformance activity is implemented. Control of records is in accordance with approved QA Records procedures.

8. Identification and Control of Materials, Parts and Components

Identification and control systems using tags and stamps will be employed at the site for prepurchased and Contractor purchased materials, parts and components in accordance with procedures QA-8, QCP-8, QCP-7-1, QCP-7-2 and QCP-13-1. These procedures provide identity and traceability of the status of materials,

V. PROGRAM RESPONSE TO NRC CRITERIA (Continued)

parts, components and work operations throughout construction activities. Verification of the correct identification of these items will be accomplished prior to installation.

9. Control of Special Processes

UE&C will not perform special processes during construction, but the QA program imposes the applicable controls of processes and personnel on the Site Contractors. Special procedures and requirements for the qualification and certification of the process and for the personnel performing these processes are imposed. UE&C audit and surveillance of these activities assure that the contractors are conforming to their approved procedures. Documentation and records are retained and maintained current and active.

10. Inspection

Site inspection activities affecting quality are verified through a system of inspections of materials, parts and components when received, handled, and stored. Procedures and instructions are implemented to assure that receiving inspections, construction inspections and final acceptance inspections are conducted by qualified site personnel to verify acceptability.

11. Test Control

The QA program for Test Control provides for the performance of tests in conformance with Engineering and Construction practices and code requirements. Storage tests, measuring and test equipment tests, receiving tests, installation tests, and other field tests are typical of those tests performed by qualified personnel. Pre-operational and performance startup tests are in accordance with Chapter 14 of the Project PSAR.

12. Control of Measuring and Test Equipment

All measuring and testing equipment used at the site to determine the acceptability of material, equipment or installations, is under control of either UE&C's or the Contractor's site calibration program, where applicable. The system established by the QA program controls, calibrates and adjusts those tools, gauges, instruments and other inspections, measuring, testing and maintenance devices used at the site. The system will also control the usage of the proper type, range and accuracy of the measuring and testing devices including records and documentation pertaining thereto.

V. PROGRAM RESPONSE TO NRC CRITERIA (Continued)

13. Handling, Storage and Shipping

Storage, preservation, handling and cleaning activities at the site are controlled by a QA program administered by contractors at the Site. Each contractor responsible for administering the storage of site materials and equipment provide written approved procedures defining their program for storage inspection, maintenance, handling, surveillance and records activities. Periodic inspection of equipment and reviews of storage records enables UE&C to verify the adequacy of the control, examination, review and filing procedures.

14. Inspection, Test and Operating Status

The QA program provides measures for indicating the status of tests and inspections performed on material, parts and components when received, tested, inspected, stored and installed at the construction site. The status of the item is established by UE&C - approved Contractor systems of tagging which, when applied and recorded, prevents their inadvertant operation and precludes the inadvertant by-passing of their inspection and test requirements.

15. Nonconforming Materials, Parts and Components

The QA program provides that Site Contractors identify, document, segregate, review and dispose of nonconforming material, parts and components at any stage of fabrication, erection or construction to prevent their inadvertant use or installation. Nonconformances detected either by UE&C or Site Contractors are identified, controlled and documented in accordance with an approved procedure. Significant deficiencies are reported by YABC to the NRC as defined by 10CFR50, 55(e). The program also provides for the reinspection of all site actions effected to clear nonconformances.

16. Corrective Action

The QA program provides for the identification, documentation, reporting and dispositioning of those site conditions adverse to quality. These site conditions adverse to quality are determined and corrected. The contractor implements an approved system and responds in a timely manner to his own corrective action requests or to UE&C's. The program also provides to the implementation, verification and analysis of corrective action for repetitive adverse conditions and assures management action for lack of response.

V. PROGRAM RESPONSE TO NRC CRITERIA (Continued)

The authority for suspension of UE&C or UE&C Subcontractor operations for lack of compliance to the QA program is assigned to the Manager-R&QA: Inherent in this assignment is the authority to signify resumption of work when the cause of the suspension has been brought under control. Client requests to suspend operations performed by UE&C Subcontractors for lack of compliance with quality requirements shall be processed through the UE&C Resident Construction Manager.

17. Quality Assurance Records

Site master files of QA records will be maintained and controlled by YAEC. Records of Receiving and Storage Inspection and associated surveillance are maintained by UE&C up to the point of installation. Records on Containment and Civil/Structural activities will be maintained by UE&C prior to "turnover" as instructed by YAEC. The QA program also provides for the accumulation, organization, custody and retention of QA and QC records by Contractors as referenced in the Contract Specifications and the UE&C QA procedures. Records are identified and filed to provide accurate retrieval without delay. Records are also reviewed, filed, stored and retained in accordance with approved procedures to provide complete and acceptable "Turnover" documentation packages.

18. Audits

The UE&C Audit Program at the site provides for regularly scheduled and unscheduled audits of site quality programs to verify compliance with approved QA and QC procedures. Audits of the contractor's construction and installation practices assure contractor implementation and compliance with the requirements. Audits are performed at the site to verify that activities of UE&C Construction Management and Field QA are consistent with the approved procedures and documents to govern their site activities. Record files of audits will be kept to provide UE&C and YAEC management with a means to analyze and evaluate the contractor effort.

VI. IMPOSITION OF THESE REQUIREMENTS ON VENDORS

The requirements of this procedure are imposed upon individual vendors through the Quality Assurance section of the specification or through quality assurance standards used as attachments to specifications in accordance with procedure QA-4.

VII. MANAGEMENT REVIEW

Management reviews are conducted to assure an independent assessment of the adequacy in scope, implementation, and effectiveness of the QA Program. Utilization of management personnel outside the QA organization assures achieving an objective program assessment.

These reviews occur no less than once a year, and are executed by a team designated by the Vice President of Project Support Operations. Members of the team are typically from the Power Division, and the Construction Division. The team members are middle management and senior engineering level individuals, and may include Project Managers, Project Engineering Managers, Division Section Managers, and Chief Discipline Engineers. Each review is performed in accordance with a documented check list, and all observations and findings are documented and reviewed by the Manager of R&QA and the Vice President of Project Support Operations. When and where weaknesses or deficiencies are identified in the QA Program, a reassessment of the program is exercised to determine, plan, and effect positive corrective measures.

UE&C QA PROCEDURES

<u>Procedure Number</u>	<u>Title</u>
QA-1	Reliability & Quality Assurance - Responsibilities & Organization
QA-2-1	Quality Assurance Program
QA-2-2	Education and Training
QA-3	Design Control
QA-4	Procurement Document Control
QA-5	Control of Quality Assurance Procedures
QA-6	Document Control
QA-7-1	Control of Purchased Material - Vendor Evaluation & Selection
QA-7-2	Control of Purchased Material - Vendor Surveillance
QA-8	Identification & Control of Materials, Parts and Components
QA-9-1	Control of Special Processes - Control of Supplier Operations
QA-9-2	Control of Special Processes - Training & Certification of NDE Personnel
QA-10	Inspection Control
QA-11	Test Control
QA-12	Control of Measurement and Test Equipment
QA-13	Handling, Storage and Shipping Control
QA-14	Inspection, Test and Operations Status
QA-15	Nonconforming Material, Parts of Components
QA-16-1	Corrective Action
QA-16-2	Work Stoppage
QA-17	Quality Assurance Records
QA-18	Quality Assurance Audits

FIGURE 1

MATRIX
 QUALITY ASSURANCE PROGRAM

Criteria 10 CFR 50 Appendix B	Implementing Procedure
I Organization	QA-1 QA-2 QA-3 QA-4 QA-7-1 QA-18
II Program	QA-1 QA-2 QA-9 QA-10 QA-11 QA-18
III Design Control	QA-3
IV Procurement Document Control	QA-3 QA-4
V Instructions, Procedures and Drawings	QA-2-1 QA-3 QA-5
VI Document Control	QA-3 QA-5 QA-6
VII Control of Purchased Material, Equipment and Services	QA-7-1 QA-7-2 QCP-7-1 QA-18 QCP-7-2
VIII Identification and Control of Material, Parts and Components	QA-8 QCP-8 QA-15
IX Control of Special Processes	QA-9-1 QA-9-2
X Inspection	QA-10 QCP-10-1 QCP-10-2

FIGURE 2

MATRIX
 QUALITY ASSURANCE PROGRAM
 (Continued)

Criteria 10 CFR 50 Appendix B	Implementing Procedure
XI Test Control	QA-11
XII Control of Measuring and Test Equipment	QA-12
XIII Handling, Storage and Shipping	QA-13 QCP-13-1
XIV Inspecton, Test and Operating Status	QA-14
XV Nonconforming Material, Parts and Components	QA-15
XVI Corrective Action	QA-16-1 QA-16-2
XVII Quality Assurance Records	QA-17 QCP-17-1 QCP-17-2
XVIII Audits	QA-18

APPLICABLE ANSI STANDARDS

<u>STANDARD NUMBER</u>	<u>DRAFT</u>	<u>REV.</u>	<u>TITLE</u>
N45.2-1971	Issued		Quality Assurance Requirements for Nuclear Power Plants.
N45.2.1-1973	Issued		Cleaning of fluid systems & associated components during the construction phase of Nuclear Power Plants.
N45.2.2-1972	Issued		Packaging, shipping, receiving, storage and handling of items for Nuclear Power Plants.
N45.2.4-1972	Issued		Quality Assurance Requirements for installation, inspection and testing of instrumentation and electric equipment.
N45.2.5-1974	Issued		Supplementary QA Requirements for Installation & Testing of Structural Concrete & Structural Steel during the Construction Phase of Nuclear Power Plants.
N45.2.6-1973	Issued		Qualification of Inspection, Examination and Testing Personnel for the Construction Phase of Nuclear Power Plants.
N45.2.9-1974	Issued	0	Requirements for collection, storage and maintenance of Quality Assurance Records for Nuclear Power Plants.
N45.2.11-1973	Issued	1	Quality Assurance Requirements for design of Nuclear Power Plants.
N45.2.12-1974	3	4	Requirements for auditing of Quality Assurance Programs for Nuclear Power Plants.
N45.2.13-1974	3	0	Quality Assurance Requirements for control of procurement of equipment, materials and services for Nuclear Power Plants.

FIGURE 3

INFORMATION ONLY

QUALITY ASSURANCE PROCEDURE QA - 2-2

INDOCTRINATION, TRAINING QUALIFICATION AND CERTIFICATION

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

January 9, 1974

No.	Date	Prep. By	QA/Rev.	Appr. By
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2	9/23/74	<i>M. P. ...</i>	<i>[Signature]</i>	<i>[Signature]</i>
3	10/22/75	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

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Reliability & Quality Assurance

REVISION			APPROVAL		
No.	Date	Page Nos. Revised	Prepared By	Project Manager	Manager-R&QA
4	Reissue 1/31/77	ALL	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
5	12/9/77	2	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
6	9/5/79	2 thru 7	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

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6 (Figure 1)	9/5/79
7 (Figure 2)	9/5/79
8 (Figure 3)	1/31/77

ATTACHMENT A TO PROJECT QUALITY
ASSURANCE PROCEDURE QA-2-2

General Comment: This procedure was revised to:

- a) Distinguish between indoctrination, training and qualification/certification requirements.
- b) Respond to Audit Report NH-269.
- c) Clarify record maintenance.

Specific Changes

<u>Paragraph</u>	<u>Page</u>	<u>Reason</u>
III.B	2	Add responsibility for ITE.
III.C	2	New paragraph to cover Site QA training.
IV.A.1	2	Clarify subject area listing in response to Audit NH-269.
IV.A.3	2	Change from ITE to person conducting the training.
IV.A.5, A.8	3	Add review of training schedules by ITE.
IV.A.9	3	Changed should to shall in response to Audit NH-269.
IV.A.10	3	Combined requirements for making up sessions.
IV.B	4 & 5	Deleted paragraph 5, renumbered paragraphs 6 and 7 to 5 and 6.
IV.B.2.b	4	Added activities Field QA personnel are certified in.
IV.C	5	Revised record filing requirements in response to Audit NH-269. Deleted use of "Request for I&T" form.
Figure 1	6	1. Revised to show Indoctrination and Training separately. 2. Added site subject areas.
Figure 2	7	Added - "Makeup Session" form.



QUALITY ASSURANCE PROCEDURE

QA 2-2

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT: INDOCTRINATION, TRAINING
QUALIFICATION AND CERTIFICATION

REV: 4 - Reissue

DATE: 1/31/77

PAGE 1 of 8

I. SCOPE

This procedure applies to the UE&C program for the indoctrination, training qualification and certification of responsible UE&C personnel who perform activities affecting the quality of design and construction related to structures, systems components identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. PURPOSE

- A. Describe the UE&C program which meets the applicable requirements of Appendix B to 10CFR50 - Criterion II, ANSI N45.2, ANSI N45.2.6 and ANSI N45.2.23 dealing with indoctrination, training, qualification and certification programs.
- B. Impose the applicable portions of Quality Assurance Manual - Corporate Standard II.
- C. Describe the measures taken by UE&C to provide for the indoctrination and training of personnel performing activities affecting quality.
- D. Establish methods for certifying qualified personnel responsible for the performance, evaluation and supervision of the inspection, test and surveillance activities within the scope of this procedure.

III. RESPONSIBILITIES

- A. The Project and Construction Managers are responsible for establishing, implementing and maintaining an Indoctrination and Training Program to assure that project and construction personnel performing quality-related tasks are suitably prepared for their work.
- B. The Manager-R&QA is responsible for developing that portion of the overall Indoctrination and Training Program dealing with provisions of the Nuclear Quality Assurance Program and quality-related procedural instruction. He is responsible for the development, implementation and maintenance of the program for the qualification and certification of personnel who inspect or otherwise control special process operations. He designates

a Quality Assurance Engineer who functions as the Indoctrination and Training Engineer (ITE), to coordinate I&T programs. The Manager-R&QA is also responsible for conducting audits, as required, to assure that the overall Indoctrination, Training, Qualification and Certification Programs are maintained.

- C. The Field Supervisor Quality Assurance (FS-QA) is responsible for conducting the Indoctrination and Training sessions for the Site QA personnel.

IV. PROCEDURE

A. Indoctrination and Training (I&T)

1. The ITE shall develop an overall Program Plan for the Indoctrination and Training of the various personnel shown in Figure 1. Training sessions will be planned to cover the subject areas shown in Figure 1. The subject presentation is considered typical, with the actual content and frequency determined by the person responsible for conducting the sessions, based on the needs of the Project.
2. The Indoctrination and Training Program Plan is reviewed and approved by the Manager-R&QA. Copies of the I&T Program Plan are provided to the Project Manager and the Resident Construction Manager.
3. The person designated to conducting the training sessions shall:
 - a) Obtain the services of speakers in cooperation with Project Management. (A principle speaker is an individual with expertise in a specific subject area. The principle speaker or ITE may supplement the presentation with guest speakers as desired.)
 - b) Arrange for training session facilities.
 - c) Assure that training sessions are announced and attendees are scheduled. The announcement will identify the topic to be covered, the speakers, the date and the location.
4. Training sessions may take the form of lectures, panel discussions or work shop activities depending on the material to be presented. Visual aids and handouts will be used, as needed, to supplement presentation material.

5. The ITE shall review the various training schedules of Project Engineering, Construction, Field QA and others to assure that the scheduled training sessions satisfy Figure 1.
6. The ITE assures that the following files are maintained:
 - I&T Program schedule.
 - Texts of course material or tapes of Lectures for one (1) year.
 - Attendance rosters.
7. The Project Administrators and Resident Construction Engineer shall develop and maintain records indicating what training session individuals are scheduled to attend and which sessions they have attended. They will also establish the training schedules in conjunction with the ITE.
8. Indoctrination sessions are mandatory for all personnel who perform activities affecting quality. New personnel shall receive their indoctrination within six (6) months after starting with the Project.
9. Individuals scheduled for training sessions shall either attend or make up 80% of those sessions the individual is scheduled to attend, within six (6) months from the date the presentation was given.
10. When an indoctrination or training session is missed for any reason, arrangements will be made for making up the session. This makeup indoctrination or training session may be obtained by replay of a taped lecture, review of the written material covering the subject, or by repeating the session. These makeup sessions are documented by the attendees completing Figure 2 - Makeup Training.
11. Additional training sessions may be scheduled as deemed necessary to inform project personnel of changes in procedures, codes and standards.
12. R&QA Quality Control Bulletins are issued, as needed, to alert personnel of important changes, developments and industry experiences.

B. Qualification and Certification

1. The ITE assures that UE&C programs for the qualification and certification of personnel engaged in inspection, examination and testing activities are implemented and maintained. Provisions are made for personnel engaged in all three levels of capability, as described in ANSI N45.2.6, SNT-TC-1A and Division 2 of ASME III. These levels are:
 - a. Level I - performance
 - b. Level II - evaluation of results
 - c. Level III - planning and supervision
2. Personnel performing quality related activities for the project are qualified and certified in their particular specialty as follows:
 - a. Lead Auditors - to the requirements of QA-18 and ANSI N45.2.23.
 - b. Inspection and Test Personnel - to the requirements of the QA Manual-Corporate Standard II-3 which complies with ANSI N45.2.6. Field QA personnel are certified in the following activities:
 - Surveillance
 - Receiving inspection
 - Handling and storage inspection
 - Records review
 - c. Non-destructive Test Personnel - to the requirements of the QA Manual-Corporate Standard IX-2 which complies with SNT-TC-1A.
 - d. Concrete Inspection and Test Personnel - to the requirements of the QA Manual-Corporate Standard II-4 which complies with ASME Section III, Division 2.
3. The need for certification is determined by program and code requirements.
4. In order to qualify for certification, the trainee must complete the training phases, pass the physical requirements, demonstrate proficiency in all areas of instruction by practical test and/or pass a written examination as required by the applicable qualification program procedure.

5. The Discipline Level III evaluator issues a Certificate of Qualification, Figure 3, to each successfully qualified candidate identifying the employee and listing the special process(es) for which qualified, the date certified, and the period of certification. The certificate is valid only if properly signed by the Manager-R&QA or his designee.
6. Certifications are renewed by signature and date in the space provided on the Certificate, only after personnel have requalified in accordance with the applicable qualification procedure.

C. Records

1. The records of indoctrination and training sessions presented will be kept on file by the department responsible for conducting the sessions. For R&QA, the records for Home Office and site personnel shall be retained at their respective locations. These records shall consist of:

IT Program Schedule
Attendance Roster
Text of Course Material or Tapes

2. Copies of qualification and eye examinations, The 7010 Qualification Record and the certificate verifying that the trainee has met all of the criteria of the qualification program are maintained on file by the cognizant Level III who certified that person, subject to review by the Client or other authorized personnel. The Manager-Audits shall maintain the Lead Auditor records.
3. QA indoctrination, training and certification records including eye exams shall be entered into the REQUEST system. The ITE shall monitor these records on a monthly basis to assure that certifications are current.
4. Duplicate files of the certification/qualification records of vendor surveillance and Home Office R&QA Department personnel who perform surveillance will be established and maintained at a separate remote location. This duplicate file will include the following records:
 - a. Eye examinations
 - b. Form 4514 for NDE, ANSI 45.2.6 and ASME III, Div. 2
 - c. Copy of test scores
 - d. Form 7010
 - e. Copy of typical NDE, ANSI 45.2.6 and ASME III, Division 2 Tests (blank)

TYPICAL
INDOCTRINATION AND TRAINING PROGRAM

A. INDOCTRINATION

- | | |
|--|---|
| I Project and QA Requirements | Mandatory for all personnel |
| II Implementation of Project and QA Requirements | who perform activities affecting the quality of Nuclear Power Plants. |

B. TRAINING

Subject Area	Personnel				
	<u>Engineering</u>	<u>Constr.</u>	<u>Purch.</u>	<u>R&QA</u>	<u>Site</u>
1. NRC Requirements, Procedures, Regulations	X	X	X	X	
2. ANSI Standards	X	X	X	X	
3. ASME Code	X	X	X	X	
4. UE&C QA Manuals	X	X	X	X	X
5. PSAR	X			X	
6. QA Procedures	X			X	X
7. QC Procedures		X		X	X
8. Engineering and Design Procedures	X			X	
9. Construction Procedures		X		X	
10. Special Processes		X		X	
11. QA Auditing	X	X	X	X	

Note: Requirements for attendance at these sessions shall be determined by the Department or Project.

Figure 1

UNITED ENGINEERS

Date: _____

To: I&T Engineer (R&QA)

From: _____
Print

Employee No.

Subject: Make-up Training

I have reviewed the subject matter presented in R&QA
Procedural Training Session No. _____, on Date _____.

This review was conducted by:
(Check the method of make-up)

Reading Material Prepared by the Lecturer

Listening to a Tape of the Session

Attending a Make-up Lecture

Signature of Attendee

ISSUE DATE _____

THIS IS TO CERTIFY THAT

HAS BEEN EVALUATED AND IS CONSIDERED QUALIFIED TO
PERFORM THE SPECIFIC ASSIGNED TASKS OF

ON THE BASIS OF

IN COMPLIANCE WITH

CERTIFIED LEVEL _____

CERTIFICATION FROM: _____ TO: _____

LEVEL III EVALUATOR _____

MANAGER _____



QUALITY ASSURANCE PROCEDURE QA - 3

DESIGN CONTROL

INFORMATION ONLY

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

August 18, 1972

REV.	DATE	PREPARED BY	APPROVED PROJECT	Q.A.
1	4/24/73	R. Holzwarth	[Signature]	[Signature]
2	7/3/73	R. Holzwarth	[Signature]	[Signature]
3	2/22/74	R. Holzwarth	[Signature]	[Signature]
4	7/19/74	[Signature]	[Signature]	[Signature]
5	10/25/74	[Signature]	[Signature]	[Signature]
6	12/6/74	[Signature]	[Signature]	[Signature]
7	10/21/75	[Signature]	[Signature]	[Signature]
8	2/27/76	[Signature]	[Signature]	[Signature]
9	8/16/76	[Signature]	[Signature]	[Signature]
10	12/12/77	[Signature]	[Signature]	[Signature]

PREPARED BY: R. C. Holzwarth
R. C. Holzwarth
Quality Assurance Engineer

APPROVED BY: [Signature]
K. W. Sieving
Project Manager

APPROVED BY: [Signature]
J. B. Silverwood, Manager
Reliability & Quality Assurance

12/12/77

QA-3 CURRENT PAGE LISTING - REV. 10

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Appendix A2	8/16/76
Appendix A3	8/16/76
Appendix A4	8/16/76

ATTACHMENT 1 TO PROJECT QUALITY
ASSURANCE PROCEDURES QA-3, REV. 10

IDENTIFICATION OF CHANGES

<u>Section</u>	<u>Page</u>	<u>Reason</u>
IV.E.3.b	10	To comply with the requirements of UE&C Procedure QCP-2 "ASME Section III Division 2 Quality Assurance Program."
IV.E.3.b	10	To comply with commitment as the result of YAEC Audit Report #NA017UE02 and UE&C letter NMV-N-907.

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

DESIGN CONTROL

REV: 9

DATE: 8/16/76

PAGE 1 of 17

& constructors inc

I. SCOPE

This procedure defines the actions for control of design work performed on the project. The procedure describes two systems of design control:

- A. Nuclear - Nuclear work will be in accordance with the requirements of 10CFR50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants," ANSI N45.2, ANSI N45.2.11, Section III of the ASME Boiler and Pressure Vessel Code or IEEE Standards, as applicable. Nuclear work includes those items identified as Seismic Category I or Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.
- B. Non-Nuclear - Utilizing the normal engineering controls imposed on all engineering work as outlined in this document and the project Manual of Procedure.

II. GENERALA. Purpose

1. Impose the applicable portions of Standard III in the Quality Assurance Manual - Corporate Standards on this project.
2. Establish a system of document generation that will include an independent verification of these documents to assure design adequacy, inspectability, testability and compatibility with the Preliminary and Final Safety Analysis Report provisions.
3. Establish measures for the identification and control of internal and external design interfaces.
4. Provide for the same degree of control over design changes as exercised over original designs.
5. Provide for the implementation of corrective action in the design process to correct deficiencies.
6. Provide for periodic audits, review and evaluation of the program.
7. Provide for design control of non-nuclear design documents.

II. GENERAL (Continued)

B. Reference Documents

Project Manuals of Procedure
Operations Manual, Power Engineering Department
Project Administrative Procedures
QA-2-2 Education and Training
QA-4 Procurement Document Control
QA-6-1 Document Control
QA-17 Quality Assurance Records
QA-18 Quality Assurance Audits

- C. Where review or approval responsibilities are delineated in this document, it is understood that supervisory project personnel above any level may act for such level in the absence of the designated person. Project personnel below such level may act if they are a designated alternate. Definitions of the meanings of signatures on documents is shown in Appendix A.

Project Organization Structure is defined in Section II of the Project Manual of Procedure.

III. RESPONSIBILITIES

- A. The Project is responsible for the preparation and certification of the design documents.
- B. Planning of the engineering activities is provided by the Project Engineering Manager.
- C. The Supervising Discipline Engineers prepare Systems Descriptions (or Structural Design Criteria) which incorporate the design criteria. These documents designate reference codes, the ASME Section III classification, seismic category and IEEE classification as applicable, and are updated and reissued periodically.
- D. The QAE assigned to the Project will review the engineering selection of code and safety related requirements and provide Quality Control and code requirement input during the preparation of specifications. In addition, the QAE reviews the completed specification for these requirements prior to final approval and issue. QAE inputs are available to the Project for Non-Nuclear specifications upon request.

III. RESPONSIBILITIES (Continued)

- E. The Supervising Discipline Engineers are responsible for assuring that the design procedures described herein are being implemented. The QAE assigned to the project shall, consistent with the commitments on audits made with the Client, request the Manager-Audits to determine compliance of the project with this procedure. The Manager-Audits will prepare a check list identifying activities to measure, conduct audit, report the audit team's findings, and follow-up to assure that corrective action has been taken.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS

A. Design Planning

1. Planning of Engineering associated with a UE&C project shall be provided by the Project Engineering Manager.
2. All design work is performed in accordance with UE&C Corporation General Engineering Design Procedures as specifically implemented for the Project by Administrative Procedure No. 28 and 28A.

B. Design Definition and Control

1. Power Division design control procedures establish the policy, assign responsibility and provide direction to Project Engineering for development and control of design documents. Included in the Power Division Operations Manual are procedures describing:
 - a. The standard format and content of design documents.
 - b. Identification of design documents encompassed by the procedures.
 - c. A description of the methods for assuring that applicable regulatory, design bases and SAR requirements are translated into design documents.
 - d. Delineation of criteria for selection of design verification methods.
 - e. Establishment of varying design review levels.
 - f. Identification of internal and external design interface and responsibilities.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

- B. 1. g. Provisions for the development and use of check lists during design development and design review when applicable.
- h. Method for assuring inclusion of Quality Assurance Standards in design documents.
- i. Provisions for assuring the suitability of selected materials, parts and processes.
- j. Provisions for the issue and control of design documents.
- k. Method for initiation, incorporation and control of design changes.
- 2. The Project Manual of Procedure and Administrative Procedures supplement or reference the Power Division Operations Manual procedures and include:
 - a. A description of responsibilities for activities unique to the project.
 - b. Identification of external design interfaces, definition of responsibilities, establishment of lines of communication and required documentation.
 - c. Identification of deviations from Operations Manual procedures authorized by Power Division Management.
 - d. Procedures for overall administrative control of the Project.
- 3. The Supervising Discipline Engineers for the project prepare Systems Design Descriptions (SDD) or Structural Design Criteria (SDC) in accordance with GEDP 0003 and 0004 respectively as instructed in Administrative Procedure No. 28 and 28A.
- 4. Where the design requirements of established Codes and Standards are not strictly incorporated into UE&C design documents, the reasons for these departures are identified to the Project Engineering Manager for UE&C approval, documentation and control. The Project Engineering Manager shall initiate any additional action required.
- 5. The components, structures, systems and services for the project shall be classified with respect to function, importance and contribution to overall plant operation.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

- B. 5. a. The classification of items and services included on the project shall be based on the consequences of failure, nuclear safety hazards and operational capability. The "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants", ANSI N18.2, will be used as a guideline for classification. The classification is documented in Chapter 3 of the PSAR.
- b. The resultant classifications are employed by the QAE in developing Quality Assurance Procedures, in passing on QA requirements to equipment suppliers through procurement documents and in planning Vendor Surveillance activities.

C. Interface Control

1. The Project Engineering Manager shall provide for the definition of internal and external design interfaces in accordance with Administrative Procedure No. 28 and shall exercise control and management of these interfaces.
2. Internal Design Interface
- a. All organizations or groups within UE&C shall conform to the requirements of QA-3 by following the procedures applicable to their group or organization.
- b. Each group other than the Project Engineering Group, when requested to perform work on the project, shall be provided with written definition of the scope of work to be performed, including the assumptions and design guidelines to be used.
- c. The lines and methods of communication of design information across the design interface are identified in General Engineering Design Procedures and the Project Administrative Procedures.
- d. The requirements for formal documentation of design information exchanges are provided in General Engineering Design Procedures and the Project Administrative Procedures.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

C. 3. External Design Interface

- a. Where UE&C employs external organizations to perform work affecting the quality of design on the project, details of the work to be performed shall be described in the procurement documents. This includes quality assurance requirements, procedural guidelines, lines of communication to be employed, documentation to be developed, design criteria, assumptions, and technical direction. These procurement documents are subject to the review and approval procedures specified in Procedure QA-4.
- b. UE&C reviews the Nuclear Steam Supplier's (NSSS) specifications and drawings with respect to interfaces with equipment designed or purchased by UE&C as delineated in the Project Administrative Procedure #6, Microfilm Foreign Print System-NSS Vendor Drawings and #12, Foreign Print System-NSS Vendor Specifications. Design responsibility for specific systems and components is listed in Table 3.2-2 of the PSAR.
- c. External design organizations performing work under contract to UE&C affecting nuclear or safety-related aspects of the project shall be audited by Reliability & Quality Assurance to assure compliance with the applicable criteria of Appendix B to 10CFR50.

D. Training

1. The Project Engineering Manager shall provide for suitable training of responsible personnel engaged in design activities. This training shall include the project training program described in QA-2-2 and any supplemental training deemed necessary.

E. Design Process

1. Design Analyses

- a. Upon initiation of the project, the Project Engineering Manager shall establish a system to assure that design analysis calculations such as physics, stress, thermal, hydraulic and accident are performed in a planned, controlled and correct manner. These analyses shall be legible and in a form suitable for reproduction and filing.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

- E. 1. b. Project Engineering will originate the design and prepare calculations and reports in compliance with the rules of referenced Codes or Standards. Calculations and stress reports shall be prepared in accordance with GEDP 0005 and 0007 respectively.
- c. Design calculations contain a statement of the problem, or purpose, method, assumptions made in solving the problem, references to sources of data and standards used, and the detailed calculations. The calculation sheets are numbered and each page shall contain the name of the person performing the calculation, date and project. The signature of the checker or reviewer and date shall be on the cover sheet of the calculations. When there is no cover sheet, each page shall be initialed and dated by the reviewer.
- d. In recognition that more than one set of calculations may be necessary for a particular component or system before final decisions are made, these requirements apply to all calculations.
- e. Calculations made with computer programs shall have the input data checked, signed and dated, and the name of the program identified. The results of the computer calculations shall be reviewed by a responsible person other than the originator, and signed off to indicate acceptability. All references shall be clearly identified in the calculations. The Project Discipline will maintain the master copy of all calculations.
- f. Prior to initial issue of calculations and for any subsequent revision and issue, the following action shall be taken:
 - 1) Review and check by a competent person other than the originator provided he neither is the Originator's Supervisor nor reports to the Originator.
 - 2) Approval by the Supervising Discipline Engineer.
- g. Stress reports and calculations for Class 1, Class MC and Class 2 designed by analysis "N Stamp Items" will be certified by a registered Professional Engineer to comply with the requirements of Section III, ASME Code, and to be correct and complete with respect to the design specifications.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

- E. 1. h. Where stress reports are prepared by other organizations covered by UE&C purchase orders, UE&C will review them in accordance with GEDP 0017 to the extent necessary to certify that they have satisfied the requirements of the design specification.
2. Specifications
- a. All prepurchased material, equipment and service specifications are prepared by the project in accordance with GEDP 0014, 0015, 0016, 0043 and Administrative Procedures No. 3, 9, 28 and 28A.
 - b. Each specification will contain sufficient detail to provide a complete basis for design, material selection, fabrication requirements and Quality Assurance requirements in accordance with the rules of the applicable Codes and Standards. Where quality standards identified in established Codes and Standards are not strictly incorporated into the UE&C specification, the specification file shall identify requirements not incorporated, reasons for omission, and management approval.
 - c. When applicable, each specification will be certified to comply with the requirements of Section III, ASME Code.
 - d. The engineer assigned the responsibility for preparing specifications will refer to the calculations that are pertinent to that specification.
 - e. When a draft of the specification has been prepared, a "Review of Document" form (see GEDP 0033) shall be attached and it shall be submitted for timely review by:
 - 1) A UE&C engineer other than the one who prepared the specification, and other than the preparer's supervisor or one reporting to the preparer.
 - 2) Other disciplines for interface review as determined by the Supervising Discipline Engineer.
 - 3) Home Office Technical Staff, as required.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

- E. 2. e. 4) The Quality Assurance Engineer. (For review of materials and quality standards.)
- 5) Project Engineering Manager.
- f. The comment sheet shall be returned to the originator, initialed and dated by the reviewer. The review process is for the purpose of:
- 1) Proper incorporation of calculations and studies.
 - 2) Compatibility with other phases of the project.
 - 3) Incorporation, where known, of the Owner's prior comments, specifications and standardization programs.
 - 4) Incorporation of applicable quality assurance and code requirements. Comments may be noted on the document itself, or on the "Review of Document" form.
- The cognizant engineer must indicate how each comment received, but not included in the final specification, was resolved including the concurrence of the originator.
- g. After internal review, the specification is revised where appropriate, and submitted to the checker in accordance with GEDP0022, the Supervising Discipline Engineer, QAE and the Project Engineering Manager for approval.
- h. The specification is sent to the YAEC for review and approval. If YAEC's review results in changes, they shall be incorporated in a revision to the specification. The revised specification shall be submitted to the Supervising Discipline Engineer, QAE and Project Engineering Manager for approval.
- i. Where required by Para. NA-3255 of ASME Section III, and CA-3251, the specification will be certified by a Professional Engineer.
- j. A Material Requisition is initiated and signed by the cognizant engineer, and approved and signed by the QAE, the Supervising Discipline Engineer and the Project Engineering Manager. The formal inquiry issued by the Purchasing Department shall require that each Bidder specifically name exceptions, technical or otherwise, that he has taken to the specification.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

- E. 2. j. When the proposals have been received they are reviewed in accordance with Procedure QA-4, paragraphs IV.A.6 and IV.A.7.
- k. The specification flow sheet delineated in GEDP 0015 serves as a guidance to assure that applicable requirements contained in referenced Codes and Standards and the NRC Criteria are correctly translated into design.

3. Drawings

- a. The engineer assigned responsibility for the preparation and approval of a drawing, works closely with the designers and draftsmen during the preparation of the drawing, in accordance with GEDP 0013 and Administrative Procedures No. 28 and 28A.
- b. After a drawing has been completed it shall be initialed by the originator, and then reviewed, checked and initialed by a person other than the originator in accordance with GEDP 0013. Where required by paragraph NA-3255 of ASME Section III Division 1 and CA-3252 of ASME Section III Division 2, the drawing will be certified by a professional engineer.
- c. All drawings prepared by UE&C Engineering for items that require the application of an N type symbol or is otherwise safety-related, will be annotated with a reference to "N-Stamp Item" or "S-Safety Related Item" near the title block.
- d. Drawings for ASME Section III, N-Stamped piping and the containment and liner shall be submitted to QAE for review of the Quality Control material, welding and inspection notations.
- e. Each drawing shall be submitted to other disciplines as determined by the Supervising Discipline Engineer for review and signoff.
- f. The drawing shall then be submitted to the SDE for review and approval and then to the Project Engineering Manager for his review and approval.
- g. In order to insure that each design group is working only with the latest revision of the drawing, each Supervising Discipline Engineer or a designated design supervisor will maintain a master file for his group which will contain the latest issue of each drawing.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

E. 4. Systems Descriptions and Structural Design Criteria

- a. These documents are prepared under the direction of the Supervising Discipline Engineers as the basis and underlying philosophy for the design. The latest revision of these documents is maintained in a master file by the Project Document Control Center.
- b. System Design Descriptions and Structural Design Criteria will be subject to the review requirements listed in Para. IV.E.2.e. through h. for specifications.

5. Other Design Documents

- a. Other design documents such as construction specifications and installation specifications are prepared in accordance with GEDP 0015 and GEDP 0016.

6. Design Changes

- a. Design changes including changes from quality standards and field changes and reasons are reviewed and approved in the same manner as the original document, as described in GEDP 0032.
- b. Minor changes to design documents such as inconsequential editorial corrections or changes to commercial terms and conditions can be initiated through the Engineering Department and approved by the Supervising Discipline Engineer and the Project Engineering Manager.

7. Design Verification

The extent of design verification required is primarily a function of the importance to safety or reliable power production of the item under consideration and the uniqueness of the item.

The Project Engineering Manager verifies the applicability of standardized designs, with respect to meeting pertinent design requirements of the project, as part of the design verification process.

Design verification may be accomplished and documented through any of the following methods:

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

E. 7. a. Design Review

- 1) The basic method of design verification will be by informal design review described in Section IV.E.1. through 5. The written comments of all reviewers shall be collected, resolved, and maintained as documentation of the design review. Whether the review is conducted by one individual or a multi-organization the following basic considerations should be addressed where applicable:
 - a) The inputs have been correctly selected and incorporated into the design.
 - b) The assumptions necessary to perform the design activity are adequately identified.
 - c) The appropriate quality and quality assurance requirements are specified.
 - d) The applicable codes, standards and regulatory requirements are properly identified.
 - e) Design interface requirements have been satisfied.
 - f) An appropriate design method has been employed.
 - g) The output is reasonable compared to inputs.
 - h) The specified parts, equipment, processes and materials are suitable for the required application and are compatible with each other and the design environmental conditions to which they will be exposed.
 - i) The design provides for proper maintenance and for accessibility both during repair and in-service inspection.
 - j) The acceptance criteria incorporated in the design documents are sufficient to allow verification that design requirements have been satisfactorily accomplished.
 - k) Adequate identification, testing, handling, storage, cleaning and shipping requirements have been appropriately specified.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

- E. 7. a. 1) 1) Applicable construction and operating experience has been considered.
- m) The design has properly considered radiation exposure to the public and to plant personnel.
- n) Requirements for record preparation have been adequately specified.
- 2) Management Level Design Reviews will be conducted in accordance with Administrative Procedure No. 21 on critical systems, sub-systems, and components as identified by Power Engineering Management and/or the Project Engineering Manager, to assure that systems are to function as designed, in a safe manner. The basic considerations listed in IV.E.7.a.1) shall be utilized for this review where applicable.
- 3) The project will employ Design Reviews as described in GEDP 0022 for the critical review of the design to further assure that the actions leading to the design output (such as drawings, calculations, analysis, and specifications) have been satisfactorily performed and the information included in the design output is correct. The depth and extent of this review will be decided by the Supervising Discipline Engineer and/or the Project Engineering Manager.

b. Alternate Calculations or Analysis

The method selected must provide consistent results to assure that errors have not been made.

- 1) Verification of some types of calculations or analyses may be achieved by comparison with alternate methods of calculation or analyses. This shall be performed by a person or persons other than those who performed the original calculations, as described in GEDP 0005 and Administrative Procedure No. 22.
- 2) The alternate method used for comparison may be a more simplified approach or less rigorous, such as when a hand calculation is used to check a computer code output. It shall provide results consistent with the original calculation.

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

E. 7. c. Performance of a Suitable Test Program

The test program shall be designed to demonstrate the adequacy of equipment performance under the most adverse conditions.

- 1) Design verification for some designs or specific design features can be achieved by suitable qualification testing of a prototype or a production unit. The test procedure shall be identified and documented. These activities shall be in accordance with GEDP 0022.
- 2) The test procedures shall include acceptance limits, assuring that test prerequisites have been included and shall provide for appropriate instrumentation and necessary monitoring.
- 3) Testing shall demonstrate adequacy of performance under the most adverse design conditions, and all pertinent operating modes shall be considered in determining these design conditions.
- 4) If testing indicates that modifications to the item are necessary, the modification shall be documented and evaluated by a responsible designer and reviewed by the same procedure as the original design to assure that test requirements have been satisfied.
- 5) Test results shall be documented and evaluated by a responsible designer to assure that test requirements have been satisfied.

F. Design Quality Assurance

1. During development of Systems Design Descriptions, Structural Design Criteria and Specifications the QAE shall provide inputs relating to Quality Assurance, including the QA Program, materials and processes, welding, nondestructive examination and Code requirements.
2. The QAE reviews drafts of System Design Descriptions, Structural Design Criteria and Specifications and submits comments to the cognizant Engineer for resolution.
3. The QAE shall monitor, on a continuing basis, the development of design documents to assure that:

IV. PROCEDURE FOR NUCLEAR DESIGN DOCUMENTS (Continued)

- F. 3. a. Previous R&QA comments have been satisfactorily resolved.
- b. Proposed changes are consistent with the quality assurance requirements.
- 4. Completed drawings for "N" stamp piping and containment structure will be submitted to the QAE for review.

G. Corrective Action in the Design Process

- 1. Deficiencies in the design process are detected primarily by:
 - a. Design verification measures
 - b. Personnel using the design documents
 - c. Audits
 - d. Tests
- 2. Power Division Operations Manual, GEDP 0034, provides for the implementation of corrective action for errors discovered in the design process. This procedure contains provisions for:
 - a. Reporting the deficiency and recommended corrective action to project management for approval.
 - b. Follow-up to assure timely implementation and effectiveness of the corrective action.
- 3. Where a design change is required due to an error in design, the Project Engineering Manager shall assure that the verification process that accepted the error is reviewed and modified as necessary.

V. PROCEDURE FOR NON-NUCLEAR DESIGN DOCUMENTS

A. Specification

- 1. The Engineer prepares a design specification in the same general manner as outlined in Para. IV.E.2.a. and Administrative Procedures No. 3 and 9.
- 2. QAE Review is not required unless requested by the Supervising Discipline Engineer or the item has been previously identified as requiring vendor surveillance (see Appendix B of QA-7-2.)

V. PROCEDURE FOR NON-NUCLEAR DESIGN DOCUMENTS (Continued)

B. UE&C Design Analyses and Drawings

1. The Project will prepare calculations and reports, and will originate and control design drawings in compliance with the rules of referenced Codes and Standards as outlined in paragraphs IV.E.1.a. through IV.E.1.f., IV.E.3.a. and IV.E.3.g.

C. System Descriptions

1. The Engineer prepares system descriptions in the same general manner as outlined in IV.E.4.
2. System Descriptions will be subject to the review requirements listed in Para. IV.E.2.e. through IV.E.2.h. for specifications except QAE review is not required.

VI. AUDITS OF THE DESIGN CONTROL PROGRAM

- A. The QAE coordinates with the Manager-Audits to plan audits of all aspects of the Quality Assurance Program for design.
- B. These audits shall be scheduled and performed using suitably trained personnel in accordance with the provisions of QA-18, QA Audits.

VII. DOCUMENT CONTROL

- A. QA-6-1 provides for the controlled release of design documents and assures that:
 1. Design documents and their changes including field changes are properly prepared, reviewed, coordinated and released by authorized persons, distributed to prescribed parties and maintained current and complete.
 2. Changes to approved design documents are reviewed and approved in the same manner as the original document.
 3. Procurement documents require the contractor's document release and change control system to be in compliance with Appendix B to 10CFR50.

VIII. DOCUMENTATION

- A. The Project shall maintain design documentation and records which provide objective evidence that the design development and review process was performed in accordance with the requirements of this procedure.
- B. Project documentation shall include final design documents, such as drawings, specifications and the following as appropriate:
 - 1. Design Review Reports
 - 2. Safety Analysis Report
 - 3. Systems Descriptions
 - 4. Design Calculations
 - 5. Stress Reports
- C. Collection, storage and maintenance of records shall be in accordance with ANSI N45.2.9 as described in QA-17.

APPENDIX A

SIGNATURES ON PROJECT DOCUMENTS

DRAWINGS

Designer:	His initials on drawing indicate that drawing has been made by him in accordance with instructions from his design supervisor and in accordance with project design criteria and specifications.
Checker:	Certifies that he has reviewed drawing for conformance with project design criteria and specifications, that all latest calculations were used in defining dimensions or sizes shown, and that all dimensions, weights, pressures, temperatures, etc. are correct.
Engineer:	Signature of supervising discipline engineer indicates that he has reviewed the drawing, is satisfied that work has been done in accordance with the project requirements, and that all required checking has been done, including inter-discipline squad reviews.
Project Engrg. Mgr.	This signature indicates that the project engineering manager is satisfied that all reviews prior to his have been properly carried out and that drawing conforms with UE&C and project standards. This generally is an informal design review, however, for major items such as flow diagrams, general arrangements, electrical single line diagrams, etc., a more formal design review may be made.
Inter-discipline Check:	The initials of the design supervisor in the "squad check" box on the drawing signify that each of the other applicable groups have reviewed the drawing for interfaces and interferences with their work, and are satisfied that the design as shown is acceptable.
QAE:	The signature of the quality assurance engineer, when required, signifies that the drawing has been reviewed for compliance with requirements of UE&C Nuclear Quality Assurance Manual (ASME B&PV Code, Sect. III).

SIGNATURES ON PROJECT DOCUMENTS

SPECIFICATIONS & SYSTEM
DESIGN DESCRIPTIONS

Prepared By: The signature of the author indicates that the document has been prepared in accordance with requirements of the project design criteria, systems descriptions, latest issue or revision of calculations, etc.

Checked By: Signature of a second individual, qualified by training and experience, who have reviewed the document, and is satisfied that it is in compliance with all project requirements.

Q/A Review By: When required, the signature of the quality assurance engineer indicates his satisfaction that the document is in conformance with UE&C and project Q/A requirements as well as 10CFR50.

Approved By: The signature of the supervising discipline engineer indicates that he has checked that the originator, checker, and QAE have all performed their functions properly.

The signature of the project engineering manager signifies his agreement that the document is in order and that all project requirements have been met. A formal design review may be held prior to his approval.

Engineer's Seal: Signature of engineer adjacent to his seal on 'N' stamp documents certifies that the signer is qualified by experience and training to confirm that the specification is in compliance with NA 3250 of ASME Boiler and Pressure Vessel Code, Section III.

MATERIAL REQUISITION
AND CONTRACT REQUISITION
(FOR INQUIRY)

Requisitioner: Signature of individual who initiates a requisition for inquiry. Signifies that the specification is in order; all supplementary documents, drawings, etc. have been prepared.

SIGNATURES ON PROJECT DOCUMENTS

MATERIAL REQUISITION
AND CONTRACT REQUISITION
(FOR INQUIRY) (Cont'd.)

Engineer: This is signature of the supervising discipline engineer of the group initiating the inquiry requisition. His approval indicates that the specification has been drawn up under his supervision for an item or items required by the project and that quantity, delivery, etc. are for items listed in the Engineering/Purchasing schedule and project schedule.

QAE: The signature of the quality assurance engineer indicates his satisfaction that all applicable documents are in conformance with all quality control and code requirements, and that bidders list contains no unacceptable organizations. This signature and review is not required on non-nuclear safety related items unless requested by the engineer.

Project
Engrg. Mgr. Signifies that by formal or informal review, he is satisfied that all work leading to preparation of the inquiry has been done in conformance with established procedures.

MATERIAL REQUISITION
AND CONTRACT REQUISITION
(FOR PURCHASE)

Requisitioner: Signature of individual who initiates order to purchase. Signifies that specification is complete, a bid tabulation has been prepared, vendor selected, approved by Yankee, and all purchase or contract documents are in order.

Engineer: Signature of supervising discipline engineer of the group that initiated the inquiry and purchase requisition. This approval indicates that the item(s) or work specified in the requisition are required for the project and all necessary prior approvals have been obtained.

SIGNATURES ON PROJECT DOCUMENTS

MATERIAL REQUISITION
AND CONTRACT REQUISITION
(FOR PURCHASE) (Cont'd.)

QAE: The signature of the quality assurance engineer indicates his satisfaction that the item(s) or work specified are being purchased in conformance with all quality control and code requirements and that the accepted bidder has demonstrated satisfactorily his ability to manufacture or construct the work in a manner that will be in conformance with the required codes and standards. This signature and review is not required on non-nuclear safety related items unless requested by the engineer.

Project Engineering Manager: Signifies that by formal or informal review, he is satisfied that all work leading to preparation of the requisition has been done in conformance with established procedures.

GENERAL

Delegation of Authority: Each individual authorized to sign project documents may delegate this authority in writing to qualified individuals. Documentation of this action must be available for review upon request.

Replication: It is the responsibility of both the preparer and the reviewer of a replicate document to assure its suitability for replication. Their signatures attest to this determination.



QUALITY ASSURANCE PROCEDURE QA - 3-1

INFORMATION ONLY

SURVEILLANCE OF SITE POWER ENGINEERING

FOR

SEABROOK STATION

PUBLIC SERVICE COMPANY

of NEW HAMPSHIRE

J.O. 9763

MARCH 8, 1982

RECEIVED
U. E. & C. INC.

APR 01 1982

SEABROOK
STATION

Prepared By: B. C. Low

B. C. Low
Supervising Engineer
Quality Systems

Approved By: A. M. Ebner

A. M. Ebner
Project Manager

Approved By: J. B. Silverwood

J. B. Silverwood
Manager - Reliability and
Quality Assurance

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION

SUBJECT:

SURVEILLANCE OF SITE POWER ENGINEERING

REV: 0

DATE: 3/8/82

PAGE 1 of 6

& constructors inc

I. SCOPE

This procedure defines the responsibilities and methods for conducting planned, periodic Quality Assurance surveillances of the UE&C field activities associated with the design of nuclear safety-related items, identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the FSAR.

II. GENERALA. Purpose

Establish the method for conducting surveillances of Site Power Engineering by the Site Quality Assurance Engineers.

B. Definition

Surveillance - Observation of the performance of an activity and the verification that the performance is in compliance with procedure specification or drawing requirements.

C. Reference Documents

1. QA-3 Design Control
2. QA-16-1 Corrective Action
3. Project Administrative Procedure No. 15

III. RESPONSIBILITIESA. The Site Quality Assurance Engineer:

1. Established a schedule of surveillance
2. Performs the surveillance and issues report
3. Maintains a surveillance report file

B. Site Engineering

Responsible for implementing the design procedures and control described in Quality Assurance Procedure QA-3 and Administrative Procedure No. 15.

IV. PROCEDUREA. Surveillance Scheduling

1. The Site Quality Assurance Engineer shall determine the frequency and extent of surveillance based on activity currently in progress and from analysis of the frequency and results of past surveillance. At a minimum each discipline will be surveyed once each quarter. The Project Change System shall be surveyed on a monthly basis with special emphasis on the ECA's designated "Minor". A twelve (12) month master surveillance check plan shall be prepared each six (6) months and submitted to the Project QA Manager for approval.
2. The Site QA Engineer shall maintain a Surveillance Status Log (Fig. 1) which list the Surveillance Report Number, the person performing the surveillance, date of surveillance, and status. Numbers shall be assigned sequentially.

B. Surveillance Performance

1. The Site QA Engineer shall prepare a checklist (Figure 2) identifying the activities to be surveilled.
2. The Site QA Engineer will coordinate with Site Engineering as to when the activity will be performed and observe the activity in process or verify the recent performance of a similar activity.
3. The surveillance shall be conducted in accordance with the prepared checklist for each activity or identified increment thereof on the checklist, the QA Engineer shall check the appropriate column (SAT./UNSAT.) and shall include supporting information in the Remarks/Findings column.
4. If an unsatisfactory condition is noted which can not be corrected immediately, the condition shall be identified on an Engineering Notification Report (Figure 3) and a copy given to the Manager - Site Engineering. Unsatisfactory condition corrected immediately shall be reviewed by the site QAE for generic implications.
5. A surveillance report shall be prepared by the Site QA Engineer within two (2) days of the completion of the surveillance. The report shall consist of an interoffice memorandum addressed to the Manager - Site Engineering requesting corrective action. The Engineering Notification Report (s) shall be attached. Distribution shall include

the Project Manager, Project Engineering Managers, Project QA Manager, and site QAE's.

6. The Manager - Site Engineering will respond within five (5) working days stating corrective action taken.
7. A follow-up surveillance will be made of previous unsatisfactory items by a special surveillance.
8. On a quarterly basis the Site QA Engineer shall review the surveillance reports for quarterly trends and initiate Corrective Action Requests per QA-16-1 when so indicated.

C. RECORDS

The Site QA Engineer shall maintain the R&QA file containing copies of the surveillance reports, checklists, correspondence and other pertinent information.

SURVEILLANCE STATUS LOG

Public Service Co. of New Hampshire - Seabrook Station

PREPARED BY:

[illegible]

UNIT NO.

TITLE

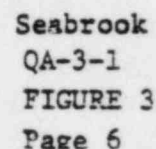
REPORT NO.

REPORTED BY

[illegible]

EVALUATED BY

[illegible][illegible]



Date _____

Page _____ of _____

The unsatisfactory condition described below has been identified. Please take immediate appropriate action to control this condition to document your actions and resolutions.

YOUR RESPONSE IS EXPECTED BY _____

C	<u>SITE ENGINEERING RESPONSE:</u>
SIGNATURE _____ DATE _____	
(ADDRESSEE)	

E	<u>ACTION VERIFIED:</u>	THE CORRECTIVE ACTION DESCRIBED HAS BEEN IMPLEMENTED AND SATISFACTORILY MEETS THE INTENT OF THE REQUEST:	
			DATE



United Engineers
& Constructors
a subsidiary of Raytheon Company

INFORMATION ONLY

QUALITY ASSURANCE PROCEDURE QA - 4

PROCUREMENT DOCUMENT CONTROL

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

June 6, 1973

REV.	DATE	PREPARED BY	APPROVED PROJECT	Q.A.
1	9/11/73	R.C. Holzworth	57C	983
2	1/28/74	R.C. Holzworth	57C	983
3	4/18/74	W.L. [unclear]	57C	983
4	10/22/74	J. [unclear]	57C	983
5	12/6/74	[unclear]	57C	983
6	10/24/75	[unclear]	57C	983
7	2/27/76	[unclear]	57C	983

Prepared by:

R.C. Holzworth
R. C. Holzworth
Quality Assurance Engineer

Approved by:

K.W. Sieving
K.W. Sieving, Project Manager

Approved by:

J.B. Silverwood
J.B. Silverwood, Manager
Reliability & Quality Assurance

REVISION				APPROVAL	
No.	Date	Page Nos. Revised	Prepared By	Project Manager	Manager-R&QA
8	11/9/76	2, 4	D. Mann	57C	983
9	12/13/77	1	[unclear]	57C	983
10	3/2/81	2	[unclear]	57C	983

3/2/81

QA-4 CURRENT PAGE LISTING - REV. 10

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5	11/9/76
6	2/27/76
7	2/27/76
8	2/27/76
9	2/27/76

3/2/81

ATTACHMENT 1 to PROJECT QUALITY
ASSURANCE PROCEDURE QA-4, REV. 10

<u>Section</u>	<u>Page</u>	<u>Reason</u>
III.D.1	2	Revised for processing requisitions for purchase of measuring equipment and subsequent calibration, per field request.
III.D.2		
III.D.3		
III.D.4		



QUALITY ASSURANCE PROCEDURE

QA - 4

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MPS

SUBJECT:

PROCUREMENT DOCUMENT CONTROL

REV: 9

DATE: 12/13/77

PAGE 1 of 9

I. SCOPE

This procedure applies to the control of procurement documents for items identified as Seismic Category I or Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERALA. Purpose

1. To impose the applicable portions of Standard IV in the Quality Assurance Manual-Corporate Standards on this project.
2. To establish measures to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitably included or referenced in the procurement documents.
3. Describe UE&C's procurement document control activities which meet the requirements of Appendix B to 10CFR50 -Criterion IV, ANSI N45.2, ANSI N45.2.13 and ASME Section III Division 1 and 2.

B. Reference Documents

- QA-3 - UE&C Quality Assurance Procedure for Design Control
QA-7-1 - Control of Purchased Material - Vendor Evaluation & Selection

III. RESPONSIBILITIESA. Purchasing Department

1. The Buyer is responsible for procurement of items and services in accordance with the approved requisition, specification and bidder's list.
2. The Buyer is responsible for the control and retention of procurement documents in accordance with Project Administrative Procedure No. 8, 18 and Project Manual of Procedure, Section IV.

B. Engineering Department

The Supervising Discipline Engineer is responsible for preparation of the specification and drawings in accordance with GEDP 0015 and 0013 respectively.

C. Reliability & Quality Assurance Department

1. The Quality Assurance Engineer (QAE) is responsible for assuring that control of procurement documents has been implemented.
2. The Vendor Surveillance Group participates in the evaluation of potential suppliers and monitors the implementation of supplier procurement document control procedures.
3. The Audit Group participates in the evaluation of potential suppliers when requested by the QAE.

D. Site

1. Site Contractors

Site Contractors are required to adhere to UE&C approved procedures for procurement of safety related items and services.

2. Site UE&C Purchasing

UE&C Purchasing may be involved only in the administration and clerical functions as described in the Project Manual of Procedure.

3. UE&C Requisitioners

UE&C can act as a requisitioner for safety related purchase orders as long as they follow Centralized Field Purchasing Procedure.

4. Safety Related Calibration Procurements

- a. Purchase requisition for measuring devices and reference standards. Repair or replacement of these devices or standards are approved by the Gauge Facility Supervisor.
- b. Purchase requisitions for outside calibration services, are approved by the Field Superintendent-Quality Assurance and the Gauge Facility Supervisor.

IV. PROCEDURE

A. Procurement Document Review

1. Specifications, drawings, and other procurement documents including changes thereto, shall be reviewed and approved in accordance with the requirements of procedure QA-3.

2. Review of specifications by the Quality Assurance Engineer is to provide assurance that:

- a. Regulatory requirements, design bases, code requirements and other quality-related requirements are correctly stated, inspectable, controllable and that adequate acceptance/rejection criteria is provided.
- b. Requirements have been placed on the supplier to provide a Quality Assurance Program applicable to the items procured, as described in Section IV.B of this procedure.
- c. Basic technical requirements have been included or referenced. These include test and inspection requirements and requirements for design, fabrication, cleaning, packaging, handling and shipping.
- d. Documentation requirements are specified.

The Quality Assurance Engineer signs the cover sheet of the specification to indicate his approval of the quality assurance content.

3. Specifications are forwarded by the Supervising Discipline Engineer to the Buyer, who prepares a "Suggested Bidders List" (See Attachment A) for the item in accordance with GEDP 0038. The Buyer distributes the "Suggested Bidders List" to the following for approval:

- a. Manager of Purchasing
- b. Project Engineering Manager
- c. Resident Construction Manager (if applicable)
- d. Quality Assurance Engineer.

QAE review action of Bidders List is as follows:

- (1) Should the QAE determine that one or more of the suggested Bidders is unacceptable for quality reasons, he will inform the Buyer in writing of this evaluation.
- (2) Should a Bidder require a facility survey to complete the evaluation process, the QAE will inform the Buyer, in writing, of this requirement.

This Suggested Bidders List is then retyped and a copy transmitted to Engineering for transmittal, with the specification, to YAEC for approval.

4. Upon YAEC approval of the Bidders List, the Engineer prepares a Material Requisition or Contract Requisition (See Attachment A) for inquiry and submits it to the following for approval:

- a. Supervising Discipline Engineer
- b. Quality Assurance Engineer
- c. Project Engineering Manager.

The QAE's approval of the material requisition verifies the inclusion of the following:

- a. Identification of applicable 10CFR50, App. B Criteria to be included in Vendor's QA Program.
- b. The requirement for the Vendor to submit a QA Manual with the proposal.
- c. Specification of the ASME Code or other regulatory requirements.
- d. On ASME items, verify that materials are specified by ASME SA, SB or SFA grades and types.
- e. Requirements for supplier evaluation.
- f. Documentation and certification requirements.
- g. Inspection access at source by UE&C and Client.
- h. Identification requirements for traceability.

These approvals are indicated by signatures on the requisition form.

5. The approved Material or Contract Requisition (for inquiry) is forwarded to the Buyer to initiate solicitation of bids.

The formal inquiry issued by the Purchasing Department shall require that each Bidder specifically state exceptions, technical or otherwise, that he has taken to the specification.

6. When the proposals have been received, a commercial analysis shall be made by Purchasing in accordance with GEDP 0038, and a technical analysis made by the Engineer in accordance with GEDP 0039, to determine whether the Bidders have conformed to the specification requirements. Bid tabulation sheets are

prepared to record the results of these analyses. The technical bid tabulation sheet will be reviewed and signed by the Supervising Discipline Engineer, the QAE for safety related items and approved by the Project Engineering Manager. The commercial bid tabulation sheet is reviewed by the Purchasing Manager, signed by the Buyer and returned to the Project Engineering Manager and the Supervising Discipline Engineer for signature. The Project Manager forwards the bid sheet to YAEC together with a letter of transmittal, including the technical evaluation and recommendation for purchase.

7. After approval by YAEC, a pre-award meeting is arranged to resolve all questions and to clarify specification requirements. The engineer revises the specification, as required, to reflect any changes or exceptions agreed upon in the award meeting. The Supervising Discipline Engineer issues a buy requisition (See Attachment A) with the concurrence of the Quality Assurance Engineer and Project Engineering Manager. These approvals are indicated by signatures on the requisition form.
8. The evaluation of suppliers including supplier submittals and pre-award activities with respect to quality assurance, is conducted with procedure QA-7-1. This evaluation is documented by the signature of the Quality Assurance Engineer on the requisition.
9. The Buyer places a formal Purchase Order or a Contract (See Attachment A) and transmits a copy directly to the Quality Assurance Engineer.
10. Procurement documents for spare or replacement parts are subject to the same controls as the original equipment.
11. All change orders shall be prepared, reviewed, approved, issued and distributed in the same manner as the original procurement documents.

B. Placement of Quality Assurance Requirements on Suppliers

1. Quality control and quality assurance program, procedures, inspection and testing requirements are placed on vendors and contractors in accordance with the applicable requirements of 10CFR50, Appendix B, through the engineering specification.
2. Each specification contains the following sections relative to quality assurance:
 - a. Materials
 - b. Welding and nondestructive examination (if applicable)

- c. Handling, shipping and storage
- d. Quality control/Quality assurance.

The Quality Assurance Engineer (QAE) utilizing other specialists in the Quantity Assurance Department, provides input to these sections during the specification preparation stage, and reviews and approves the prepared specification.

- 3. In addition, the Quality Assurance Department has prepared quality assurance standards to be used as attachments to specifications. These standard documents which identify elements to be contained in the QA Program, basic technical requirements to be satisfied, documentation requirements of the order, controls to be exercised over lower tier procurements, and establish provisions for UE&C source inspection and audit will be made part of the specification by referencing them in the appropriate section of the specification. The QAE, in his review of the specification, assures that the appropriate attachments have been referenced.

C. Documentation

- 1. Documentation in the Purchasing file shall include all documents shown on Attachment A.

The following is a list of the standard documents related to quality assurance, and their intended applicability. Deviations from the applicability requirements must be approved by the QAE.

- a. QAS-1, Quality Assurance Administrative and Systems Requirements

To be attached to all Safety Class 1, 2, or 3 or Seismic Category I specifications, except Class 1E electrical specifications.

- b. QAS-3, Quality Assurance Administrative and System Requirements for Class 1E Electrical Items

To be attached to all Class 1E electrical specifications.

- c. MPS-1, Material and Processing Requirements

To be attached to all ASME specifications for fabrication or installation of Section III, Division 1 (Safety Class 1, 2 or 3) components.

d. WS-1, Requirements for Welding and Nondestructive Examination for Nuclear Pressure Components and Nuclear Power Piping

To be attached to all specifications for fabrication or installation of ASME Section III, Division I (Safety Class 1, 2 or 3) components.

e. WS-3, Requirements for Welding and Nondestructive Examination of Structural Components

To be attached to all specifications for fabrication and installation of Seismic Category I structural items. Does not apply to Seismic Category I items which are under the jurisdiction of ASME, Section III (WS-1).

f. WS-4A, Welding and Nondestructive Examination for Nuclear Concrete Containment Structure

To be attached to specifications for fabrication or installation of ASME, Section III, Division 2 welded components.

g. WS-4B, Stud Welding and Nondestructive Examination for Nuclear Concrete Containment Structure.

To be attached to specifications for fabrication or installation of ASME, Section III, Division 2 welded components.

h. WS-4C, Cadwelding and Nondestructive Examination of the Mechanical Rebar Splice Method

To be attached to specification for field installation of rebar for Seismic Category I structures.

i. WS-5, Requirements for Brazing and Nondestructive Examination and Test Methods for Nuclear Pressure Components

To be attached to specifications for instrumentation procurement and installation.

In addition, the following standards have been prepared for Non-Nuclear Safety Class (NNS) items. They are used as specification attachments for selected equipment as determined by the engineer.

- j. QAS-2, Quality Assurance Administrative and System Requirements.
- k. MPS-2, Material and Processing Requirements for Non-Nuclear Components.
- l. WS-2, Requirements for Welding and Nondestructive Examination for Non-Nuclear Pressure Components and Non-Nuclear Power Piping.

ATTACHMENT A

LIST OF PURCHASING FORMS
SUBJECT TO CONTROL

<u>FORM TITLE</u>	<u>FORM NUMBER</u>	
	"N"*	"S"*
Suggested Bidders List	4400	4431
Material Requisition	4401	4432
Contract Requisition	4402	4433
Inquiries	4404	4435
Contract Documents including:		
a) Contract and Attachment	4409	4442
b) Purchase Orders and Attachments	4406	4437
c) Contract Memoranda	4407	4441
d) Change Orders	4417	4445
Specifications	--	--
Drawings	--	--

* Forms with "N" imprint are used for ASME Section III Code Stamped items.

Forms with "S" imprint are used for other Safety Class 1, 2 and 3 and Seismic Category I items.

QA/QC PROCEDURE ADVANCE CHANGE NOTICE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

PROCEDURE TITLE Instructions, Procedures and Drawings

PREPARED BY B. E. O'Connor

DATE 1/19/82

CHANGE

Paragraph IV.B.3b (page 7 of 11) - 4th line:

Delete "Quality Assurance Engineer" and insert Field DCC

CHG. NO. 63
 EFFECTIVE DATE 1/21/82
 QA 5
 QCP N/A
 REV. 9
 DATE 5/25/81

REASON FOR CHANGE 1. Response to H/O Audit NH 484, Observation #2.
2. To correctly define responsibility.

REVIEWED BY FSGA	DATE	REVIEWED BY PROJECT QAE	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
<i>D. Lambert</i>	<i>1/19/82</i>	<i>TEH</i>	<i>1/19/82</i>	<i>D. Lambert</i>	<i>1/19/82</i>	<i>TEH</i>	<i>1/19/82</i>	<i>D. Lambert</i>	<i>1/19/82</i>

QUALITY ASSURANCE PROCEDURE QA - 5

INSTRUCTIONS, PROCEDURES AND DRAWINGS

FOR INFORMATION ONLY

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

January 23, 1974

No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/5/74	<i>M. L. [unclear]</i>	<i>[Signature]</i>	<i>[Signature]</i>
2	7/18/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
3	10/17/74	<i>RC [unclear]</i>	<i>[Signature]</i>	<i>[Signature]</i>
4	12/6/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
5	10/24/75	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

Prepared by:

R. C. Holzwarth

R. C. Holzwarth
Quality Assurance Engineer

Approved by:

G. F. Cole

G. F. Cole
Project Manager

Approved by:

J. B. Silverwood

J. B. Silverwood, Manager
Reliability & Quality Assurance

REVISION				APPROVAL	
No.	Date	Page Nos. Revised	Prepared By	Project Manager	Manager-R&QA
6	8/9/76	ALL	<i>D. Mann</i>	<i>[Signature]</i>	<i>[Signature]</i>
7	9/8/78	i, ii, 4	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
8	8/21/80	1, 2, 6, 7, Fig. 2 & 3	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
9	5/25/81	All	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

RECEIVED
U. E. & C. INC.

JUL 21 1981

SEABROOK
STATION

QA-5 CURRENT PAGE LISTING

<u>Page</u>	<u>Date</u>
Cover Page	5/25/81
i	5/25/81
ii	5/25/81
1	5/25/81
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5	5/25/81
6	5/25/81
7	5/25/81
8	5/25/81
9	5/25/81
10	5/25/81
11	5/25/81
Figure-1	8/9/76
Figure-2	8/21/80
Figure-3	8/21/80

PROJECT QUALITY ASSURANCE PROCEDURE QA-5

IDENTIFICATION OF CHANGES

REVISION 9

<u>Section</u>	<u>Page</u>	<u>Reason</u>
III.A.1.a	1	Shift responsibility of QC procedures and instructions to Site QA
II.A.1.d	1	Shift responsibility of QC procedures and instructions to Site QA
III.B	2	Place responsibility for QC procedures and instructions on Field Quality Assurance Group
III.C	2	1. Change Subsection "B" to "C" 2. Separate responsibility for QA procedures and QC procedures
III.D	2	Change Subsection "C" to "D"
IV.A	3	Delete words "Quality Control"
IV.A.2.a	3	Add "and the authorized Nuclear Inspector"
IV.A.3.a	4	Delete word "QCP's"
IV.A.5.a	4	Delete work "QC"
IV.B	6,7,8 & 9	Add Section "Quality Control Procedures"
IV.C	9	Change Subsection "B" to "C"
IV.D	9	Change Subsection "C" to "D"
IV.E	9	Change Subsection "D" to "E"
IV.F	10	Change Subsection "E" to "F"
V	11	Separate responsibility for QA procedures and QC procedures

**QUALITY ASSURANCE PROCEDURE**

PUBLIC SERVICE CO., OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

INSTRUCTION, PROCEDURES AND DRAWINGS

QAP - 5

REV: 9

DATE: 5/25/81

PAGE 1 of 11

I. SCOPE

This procedure applies to the preparation, issue, revision, and control of UE&C Quality Assurance Procedures, Drawings and Instructions used for control of items identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR. This procedure also applies to the UE&C Review of Vendor and Supplier drawings, instructions, and procedures.

II. GENERAL**A. Purpose**

1. Impose the applicable portions of Standard V in the Quality Assurance Manual-Corporate Standards on this project.
2. Provide the means whereby UE&C and vendor instructions, procedures, and drawings are initiated, reviewed, approved, issued and revised to meet the requirements of ANSI N45.2.11 and AMSO M45.2.13.
3. Describe the development and review of Quality Assurance procedure and instructions.

B. Reference Documents

QA-3 - Design Control
QA-6 - Document Control
QA-7-1 - Supplier Evaluation and Selection
Administrative Procedure No. 9 - Specifications

III. RESPONSIBILITIES**A. Reliability & Quality Assurance Department**

1. The Quality Assurance Engineer (QAE) has the following responsibilities with respect to quality assurance procedures and instructions:
 - a. Initiating written QA procedures and instructions.
 - b. Distributing procedures and instructions for review and comment.
 - c. Coordinating and resolving comments.
 - d. Issuing approved, controlled Quality Assurance procedures.

2. The QAE will review UE&C "N" stamp piping and containment structure drawings for adequacy and compliance with 10CFR50, Appendix B and other applicable codes, standards and specifications. He will review vendor procedures and instructions in accordance with procedure QA-7-1.

B. UE&C Field Quality Assurance Group

1. The Field Superintendent - Quality Assurance has the following responsibilities with respect to quality assurance procedures and instructions:
 - a. Initiating written QC procedures and instructions.
 - b. Distributing procedures and instructions for review and comment.
 - c. Coordinating and resolving comments.
 - d. Issuing approved, controlled Quality Control procedures.

C. Other Organizations

Interfacing Organizations (Purchasing, Engineering, Construction and Project Management) are responsible for reviewing QA/QC procedure drafts to assure agreement with any aspects affecting their organization. Comments relating to QA procedures are to be forwarded to the QAE by the date specified on the forwarding memorandum. Comments pertaining to QC procedures are to be forwarded to the FS-QA by the date specified on the forwarding memorandum.

D. Project Personnel

Recipients of issued approved procedures are responsible for complying with procedure provisions and for maintaining up-to-date procedures. Superseded procedures are to be destroyed; or if maintained for reference must be marked "void". In addition, project personnel are responsible for the preparation of procedures and instructions for quality-related activities within their scope of work. These are reviewed by the QAE for content and compliance with 10CFR50 Appendix B and other applicable codes, standards, and specifications.

IV. PROCEDURE

A. Quality Assurance Procedures (QAP)

1. Development

- a. The procedure will be developed by the QAE with assistance, as required, from specialists within the R&QA Department. Past practices, regulatory requirements, safety analysis report requirements and UE&C Corporate Standards will be utilized in the procedure development. Administrative Procedure No. 9 defines format.
- b. Appropriate acceptance criteria will be included in each procedure to determine that procedural requirements have been satisfied.

2. Review and Comment

- a. Following development of a draft procedure, the Quality Assurance Engineer shall sign the "prepared by" block and transmit copies for review and comment to appropriate project personnel. As a minimum, preliminary copies shall be distributed to Reliability and Quality Assurance Management, the Project Management, and the authorized Nuclear Inspector. When other Divisions and Departments (e.g., Purchasing, Construction and Engineering) have a responsibility in the implementation of a procedure, their review and comment shall also be solicited.
- b. Draft procedures shall be distributed for review via a "Document Review Request for Comment" Form No. 5601 specifying date comments are due.
- c. Reviewers shall submit written comments, on the review form or on marked up copies of the procedure, to the Quality Assurance Engineer who will incorporate or resolve all comments.

3. Approval and Issue

- a. Upon resolution of all comments, the Quality Assurance Engineer will revise the procedures accordingly and

obtain the approval signatures of the Project Manager and the Manager, Reliability and Quality Assurance on all QAP's. In the event that agreement can not be reached, the differences will be referred to the next higher management level for resolution.

- b. Copies of approved procedures as well as revisions, changes and the index shall be distributed within the Reliability & Quality Assurance Department, to the Project Manager, to Project Engineering Personnel through the Project Engineering Manager, to the Purchasing Department and to the Construction Division in accordance with procedure QA-6.

4. Revision

- a. Procedures shall be revised by the project QAE when it becomes evident that certain provisions are no longer applicable or can be performed through improved methods; when revision are required to meet changing requirements; when changes are incorporated or when other requirements are warranted.
- b. Revised procedures shall indicate the next sequential revision number and issue date on the cover sheet and each revised page.
- c. Lines of revised text will be identified by a vertical line in the right hand column of each revised page. When major revisions are made which cannot be readily identified by the vertical lines, the cover sheet and each page will be identified with the word "reissue" near the revision number.
- d. Revisions will be issued and controlled in exactly the same manner as the original Procedure.

5. Advance Change

- a. Situations may arise at the site necessitating that a change to an approved QA procedure be made quickly and there is insufficient time to issue a revision. In these cases, the QA/QC Procedure Advance Change Notice, Fig. 1, shall be used.

- b. The Field QAE shall complete the advance change notice form listing the procedure title, number, revision and date; the change number and effective date; change desired and reason for change. He shall sign and date form and present it to the FS-QA for review and approval.
- c. When approved, the FS-QA shall sign and send the advance change notice to the project QAE for his review and approval.
- d. After review and approval, the project QAE shall sign and obtain the approval signatures of the Project Manager, Manager of R&QA and Project Construction Manager (if he signed original procedure).
- e. Issue and distribution of the approved advance change shall be in accordance with Paragraph IV A.3.b of this procedure.
- f. If the urgency of the situation will not permit normal processing of the change, the FS-QA with the concurrence of the Resident Construction Manager and the Liaison QA Engineer may immediately initiate changes to procedures obtaining telecon approval of the change from the project QAE at the earliest work period he can be contacted. From the information received by telecon, the project QAE shall prepare the change form, obtain the approval signatures of the signatory of the original procedures (FS-QA signature is not required), issue, and distribute per Para. IV.A.3c. This method of proceeding shall be limited to site emergencies.
- g. Information contained in Advance Change Notices shall be promptly incorporated into the procedure by revision of this procedure.

6. Index

- a. The Document Control Center shall issue an index of procedures with the original issue and each revision or change. This index shall list the issued procedures by No. and Title and shall indicate the latest approved Rev. No. - Date, Change No. - Issue Date, and Date of Index.

- b. Index Distribution shall be made with the Procedure, Revisions or changes as stated in Para. IV A.3b. The acknowledgement form which accompanies the documents shall be executed and returned to the Project Administrator upon Document Receipt.

B. Quality Control Procedures (QCP)

1. Development

- a. The procedure will be developed by the Field Superintendent - Quality Assurance (FS-QA) and the Field QA group. Past practices, regulatory requirements, safety analysis report requirements, and UE&C Corporate Standards will be utilized in the procedure development. Administrative Procedure No. 9 defines format. The QAE will review the procedure with assistance as required from specialists within the R&QA Department.
- b. Appropriate acceptance criteria will be included in each procedure to determine that procedural requirements have been satisfied.

2. Review and Comment

- a. Following development of a draft procedure the Field Superintendent - Quality Assurance shall sign the "prepared by" block and transmit copies for review and comment to appropriate personnel. As a minimum, preliminary copies shall be distributed to the Quality Assurance Engineer, Reliability and Quality Assurance Management, the Project Manager, and the authorized Nuclear Inspector. When other Divisions and Departments (e.g., Purchasing, Construction and Engineering) have a responsibility in the implementation of a procedure, their review and comment shall also be solicited.
- b. Draft procedures shall be distributed for review via a "Document Review Request for Comment" specifying date comments are due.
- c. Reviewers shall submit written comments, on the review form or on marked up copies of the procedure, to the

Field Superintendent - QA who will incorporate or resolve all comments.

3. Approval and Issue

- a. Upon resolution of all comments, the Field Superintendent - QA will revise the procedure accordingly and obtain the approval signatures of the Project Site Engineering Manager and the Liaison QA Engineer signing for Manager of Reliability & Quality Assurance on all QCP's. The QCP's in which the Construction Division has implementation, responsibilities shall also be approved by the Resident Construction Manager. In the event that agreement can not be reached, the differences will be referred to the next higher management level for resolution.
- b. Copies of approved procedures as well as revisions, changes and the index shall be distributed to the Reliability & Quality Assurance Department through the Quality Assurance Engineer, to the Project Manager, to Project Engineering Personnel through the Project Engineering Manager, to the Purchasing Department and to the Construction Division in accordance with procedure QA-6.

4. Revision

- a. Procedures shall be revised by the FS-QA when it becomes evident that certain provisions are no longer applicable or can be performed through improved methods; when revisions are required to meet changing requirements; when changes are incorporated or when other requirements are warranted.
- b. Revised procedures shall indicate the next sequential revision number and issue date on the cover sheet and each revised page.
- c. Lines of revised text will be identified by a vertical line in the right hand column of each revised page. When major revisions are made which cannot be readily identified by the vertical lines, the cover sheet and each page will be identified with the work "reissue" near the revision number.

- d. Revisions will be issued and controlled in exactly the same manner as the original Procedure.

5. Advance Change

- a. Situations may arise at the site necessitating that a change to an approved QC procedure be made quickly and there is insufficient time to issue a revision. In these cases, QA/QC Procedure Advance Change Notice, Fig. 1, shall be used. Prior to issuing an Advance Change Notice for QCP-2, it shall be reviewed by the authorized Nuclear Inspector.
- b. The Field QAE shall complete the advance change notice form listing the procedure title, number, revision and date; the change number and effective date; change desired and reason for change. He shall sign and date form and present it to the FS-QA for review and approval.
- c. After review and approval, the FS-QA shall sign and obtain the approval signatures of the Project Site Engineering Manager, the Liaison QAE for the R&QA Manager and the Project Construction Manager (if he signed original procedure).
- d. Issue and distribution of the approved advance change shall be in accordance with Paragraph IV.B.3.b of this procedure.
- e. Information contained in Advance Change Notices shall be promptly incorporated into the procedure by revision of this procedure.

6. Index

- a. The Field Document Control Center shall issue an index of procedures with the original issue and each revision or change. This index shall list the issued procedures by No. - and Title and shall indicate the latest approved Rev. No. - Date, Change No. - Issue Date, and Date of Index.
- b. Index Distribution shall be made with the Procedure, Revisions or changes as stated in Para. IV. B. 3b. The

acknowledgement form which accompanies the documents shall be executed and returned to the FS-QA upon Document Receipt.

C. Construction Procedures

1. Field Construction Procedures are developed in accordance with Field General Construction Procedures No. 1 (FGCP-1).
2. Procedures related to ASME Section III (Div. I & Div. II) work and special process field construction procedures such as welding, weld procedure qualification, weld filler metal control, stress relieving, mechanical splicing, repair, NDE, and chemical cleaning are submitted to the QAE for review and approval via FGCP-1 and Administrative Procedure No. 29.

D. Vendor Submitted Procedures and Instructions

1. Reliability & Quality Assurance evaluation of Vendor submitted procedures and instructions shall be in accordance with procedure QA-1-1.

E. Drawing Review

1. UE&C Issued Drawings

- a. Review and sign off of nuclear and safety-related designated drawings is in accordance with Section IV.E. of procedure QA-3. The QAE reviews N-stamped piping and containment structure drawings.
- b. When the review has been completed, the QAE shall sign and date the drawings.
- c. Revisions to drawings are reviewed and approved in the same manner as the original.

2. UE&C Issued Drawings (Non-Nuclear)

Internal review of Non-Nuclear designated drawings by the R&QA Department will occur only if requested by Engineering.

3. Supplier Drawings (NSSS)

Review and sign off procedures for NSSS drawings is described in Administrative Procedure No. 6. The R&QA Department is not in the review sequence for NSSS drawings unless specifically requested by Engineering.

4. Vendor Drawings

Review and acceptance of vendor drawings is the responsibility of the Supervising Discipline Engineer. Drawings are controlled through the Foreign Print System. QA does not participate in the review unless requested by Engineer.

5. Drawing Review Observations

- a. The QAE shall ensure that the UE&C drawing contains acceptance limits, effective methods for identification of the item, material and process specifications which detail adequate inspection and test methods and all necessary characteristics determined to influence quality. The UE&C drawing review checklist used by the QAE is found in Figure 2.
- b. The QAE transmits comments in writing to the Responsible Engineer for resolution or effects resolution through the Design Supervisor prior to sign-off.

F. Shop Questions by the Pipe Support Fabricator

1. UE&C will provide detail drawings to the supports manufacturer. When the supports manufacturer needs information other than that shown on UE&C's support detail drawings, the following steps are to be taken to provide an immediate response:
 - a) The manufacturer will complete a Shop Question Form (Figure 3) with all the information required and mail or telex such form to the attention of the UE&C Seabrook Project Piping Discipline.
 - b) The Piping Discipline will give the Pipe Support Group a copy of the question for disposition.

- c) If a revision to a support detail drawing is necessary, the answer to the shop question shall include all the information necessary for the support to be fabricated and shipped, including the support drawing's revision which will include any changes made.
- d) The Shop Question Form containing the answer shall be signed by the UE&C Pipe Support Group and it with applicable attachments, shall then be returned to the Piping Discipline who will forward it to the supports manufactured.
- e) The supports manufacturer, after receiving the information requested, is to implement the changes, if any, on the support detail drawing in his possession and indicate the new revision number on the drawing and NF-1 or NF-2 Forms if applicable.
- f) A copy of the answered shop question is to be attached to the applicable support detail drawing when shipping the support to the job site.
- g) The Pipe Support Group shall revise the support detail drawing in question as early as convenient and issue it in accordance with the project standard distribution.

V. DOCUMENTATION

The Project Administrator is responsible for maintaining the current list of the following project quality assurance documents: QA procedures and QA standards. The FS-QA is responsible for maintaining the current list of QC procedures and QC instructions. Signed acknowledgement forms will be recorded, checked off and filed to assure that each individual or group designated for a controlled copy has received the latest revision in accordance with procedure QA-6.



PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

DATE _____

PROCEDURE TITLE _____

PREPARED BY _____ DATE _____

CHANGE _____

REASON FOR CHANGE

[illegible]

SEABROOK
NEP 1 & 2
MNPS
QA-5
REV. 8
8/21/80
FIGURE 2

RELIABILITY & QUALITY ASSURANCE
UE&C DRAWING REVIEW CHECKLIST

This form is to be used as a guide for the review of drawings. The following characteristics shall be verified for correctness by R&QA.

ITEM	CHARACTERISTIC
1.	Applicable codes and standards
2.	Materials
3.	Inspections and tests
4.	Acceptance criteria and tolerances
5.	Identification requirements
6.	Welding requirements
7.	NDE requirements
8.	Traceability requirements
9.	Cleaning and preservation requirements
10.	Handling, storage and packaging requirements
11.	QA Program requirements
12.	Certified by Professional Engineer (as required)



united engineers & constructors inc.

SHOP QUESTION FORM

PUBLIC SERVICE CO. OF NEW HAMPSHIRE
SEABROOK STATION UNITS 1 & 2
SEABROOK, NEW HAMPSHIRE

REF. DRAWING NO. _____
SUPPORT NO. _____
ASME CLASS _____

QUESTION:

Seabrook
NEP 1 & 2
MNPS
QA-5
Rev. 8
2/21/80

COMPANY _____
LOCATION _____

S.Q. NO. _____
DATE _____
BY _____

ANSWER:

DATE _____
BY _____
UE & C PIPE SUPPORT GROUP

CHANGES INCORPORATED WILL APPEAR IN THE NEXT ISSUE AS REVISION NO. _____



PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

PREPARED BY B. E. O'Connor

DATE 1/18/82

CHANGE

Paragraph IV.E.1: (1st line) - Delete "and Quality Control".

CHG. NO. 62
EFFECTIVE DATE 1/21/82

9A 6

QCP N/A

REV. 8

DATE 5/5/78

Paragraph IV.E.1: Add new sub-paragraph, IV.E.1a, as follows:
Quality Control Procedures as well as revisions
and ACNs issued by the FSQA will be controlled
by the Field Document Control Center.
(Ref: QA-5, para. IV.B.6a & b)

<u>REASON FOR CHANGE</u>	1. Response to Home Office Audit NH 484, Observation #2.
	2. To correctly define responsibility

REVIEWED BY FSQA	DATE	REVIEWED BY PROJECT QAE	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
D. Chamber	1/17/82	D. Chamber	1/21/82	D. Chamber	1/21/82	D. Chamber	1/21/82	D. Chamber	1/21/82

QUALITY ASSURANCE PROCEDURE QA - 6

INFORMATION ONLY
FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

February 15, 1974

No.	Date	Prep. By	QA/Rev.	Appr. By
1	7/17/74	Phonon	JB	BT
2	10/21/74	J. F. Smith	JB	BT
3	12/6/74	Phonon	JB	BT
4	6/27/75	Phonon	JB	BT
5	10/24/75	Phonon	JB	BT

Prepared by: Robert C. Holzwarth
R. C. Holzwarth
Quality Assurance Engineering

Approved by: G. F. Cole
G. F. Cole
Project Manager

Approved by: J. B. Silverwood
J. B. Silverwood, Manager
Reliability & Quality Assurance

REVISION				APPROVAL		
No.	Date	Page Nos. Revised	Prep. By	Proj. Mgr.	Mgr. R&QA	Project Con. Mgr.
6	9/1/76	All	Smann	BT	JB	SRD
7	4/8/77	All	Phonon	BT	JB	SRD
8	5/5/78	i, ii, 3, 6	Smann	BT	JB	SRD

5/5/78

QA-6 CURRENT PAGE LISTING

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5/5/78

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ATTACHMENT 1 - QUALITY ASSURANCE PROCEDURE

QA-6

IDENTIFICATION OF CHANGES

Rev. 8, 5/5/78

<u>SECTION</u>	<u>PAGE</u>	<u>REASON</u>
IV.B.4	3	Correct reference from QA-5 to Manual of Procedure (Response to Observation 1, Audit Report NH-146).
V.B	6	Delete distribution within R&QA which is already covered on the Project Distribution List. (Response to Finding 1, Audit Report NH-146).

SUBJECT:

DOCUMENT CONTROL

REV: 7

DATE: 4/8/77

PAGE 1 of 6

& constructors inc

I. SCOPE

This procedure describes UE&C control measures for releasing, distributing and use of documents, including changes and revisions, applicable to items identified as Seismic Category I or Safety Class 1, 2, & 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERALA. Purpose

1. To impose the applicable portions of Standard VI in the Quality Assurance Manual - Corporate Standards on this project.
2. To establish requirements for the review, issue and distribution of instructions, procedures and drawings including changes thereto.
3. To describe the controls exercised over documents, which meet the requirements of ANSI N45.2.11.

B. Reference Documents

QA-3 - Design Control
QA-4 - Procurement Document Control
QA-17 - Quality Assurance Records
QA-18 - Quality Assurance Audits
QCP-10-1 - Site Surveillance
FGCP-1 - Development and Preparation of Field Construction Procedures
FGCP-2 - Drawing, Specification and Document Control
FGCP-15 - Design Change Notices, Field Change Requests, Engineering Change Approvals
GAP0012 - Preparation of Engineering - Purchasing Schedules
GAP0014 - Document Control Center
GEDP0007 - Preparation and Review of Stress Report for Nuclear Power Plant Components
Project Administrative Procedure No. 23
Project Administrative Procedure No. 29
Project Manual of Procedure

III. RESPONSIBILITYA. Engineering Department

The Project Engineering Manager is responsible for controlling the release and distribution of Engineering Design Documents.

B. Purchasing Department

The Manager - Purchasing is responsible for expediting submission of the required documents - drawings, procedures - from vendors/contractors to Engineering and/or construction as appropriate.

C. Reliability & Quality Assurance Department

The Manager-Audits is responsible for conducting periodic audits to evaluate the degree of compliance with this procedure. Audits will be conducted in accordance with procedure QA-18. Surveillance of suppliers and civil/structural subcontractors' document control systems will be conducted by the Vendor Surveillance and Field QA Groups.

D. Resident Construction Manager

The Resident Construction Manager shall be responsible for:

1. Maintaining a master set of approved drawings, specifications and other documents (written procedures, contracts, field changes, vendor data and field sketches).
2. Managing the review of site contractor submittals such as construction and special process procedures or transferring certain specified site contractor submittals such as QA/QC procedures and manuals to the Field Superintendent - Quality Assurance for his review management.
3. Distributing approved documents to the Field Superintendent-QA/QC, to appropriate department heads, craft superintendents, area superintendents, contractors, client and other designated personnel; recalling superseded documents, and maintaining the records of receipt, distribution and recall.

E. Other Departments

Department Manager responsible for issuing documents shall assure that the documents are at the location where the activity will be performed prior to commencing that activity.

IV. PROCEDURE

A. UE&C Specifications

1. Prior to release for use, specifications are reviewed and approved in accordance with procedure QA-3, Design Control.

2. Released specifications are issued in accordance with a predetermined distribution list in the Manual of Procedure, which includes the Owner, Engineering Supervisor (Yankee) and the Quality Assurance Engineer.
3. Revisions to specifications undergo the same reviews, approvals and distribution control as the original document in accordance with procedure QA-3.
4. After placement of a contract or purchase order, copies of all revised specifications are issued in accordance with the project Manual of Procedure.
5. Identification of the latest applicable revision is maintained on the "Engineering-Purchasing Schedule" per GAP0012. This status listing is up-dated by Engineering and issued monthly, by Planning & Scheduling with distribution as shown in the Manual of Procedure, to provide specification users with a current means of determining the latest revision.

B. UE&C Drawings

1. Prior to release for procurement or construction, drawings will be reviewed and approved in accordance with Procedure QA-3.
2. Released drawings will be issued in accordance with a predetermined distribution list in the Manual of Procedure, which includes the Owner and Engineering Supervisor (Yankee).
3. Drawing revisions will be reviewed, approved and distributed in the same fashion as the originals and revisions numbers will be designated on the changed drawings.
4. After placement of a contract or purchase order, copies of all revised drawings will be issued in accordance with the controlled distribution list detailed in the Manual of Procedure.
5. The Project Drawing Schedule will be maintained and updated monthly in accordance with the Project Manual of Procedure. This report provides a current status of drawing revisions for all users.

C. Stress Reports

Stress reports prepared by UE&C Engineering in accordance with GEDP0007 and are transmitted to the Client for inclusion in the Quality Assurance Records in accordance with QA-17. A copy is retained in the Project Engineering files.

D. Supplier and Contractor Submittals

1. Supplier submittals such as drawings, piping isometrics, Quality Assurance Manuals, welding procedures, NDE procedures, equipment specifications, if applicable, etc. are received by the Project Engineering Manager (PEM), reviewed, processed, distributed and coordinated through the Foreign Print System in accordance with Administrative Procedure No. 29.

Contractor shop procedures and QA/QC procedures are received by the PEM, reviewed, processed, distributed and coordinated through the Foreign Print System in accordance with Administrative Procedure No. 29.

- a. Control of Supplier and Contractor submittals within UE&C is accomplished through a computerized system (see GAPO014 and Project Administrative Procedures).
 - b. Supplier and Contractor submittals will be issued in accordance with a predetermined distribution list which includes the Owner, Engineering Supervisor (Yankee) and the Quality Assurance Engineer. UE&C maintains current "Foreign Print System Monthly Report" as a part of the document control system.
2. Contractor, QA Procedures received by the Resident Construction Manager (RCM) are turned over to the Field Superintendent - Quality Assurance (FS-QA) for management of the review process in accordance with QA-5 and QA-7-1.
 - a. The FSQA will maintain a log of all procedures received, routed for review and returned to the RCM for transmittal to the subcontractor.
 - b. The FSQA shall assure that review of QA/QC procedures is accomplished by the Project QAE or his representative.
 3. Contractor construction procedures including special process procedures to be used at the site are received by the Resident Construction Manager who will manage the review process according to FGCP-1. He will assure that:
 - a. review of construction procedures within UE&C's scope of QA surveillance (civil/structural) is accomplished by the FS-QA.

- b. review of procedures involving ASME III work or "Special Process" procedures is accomplished by the PEM and the Project QAE through their representatives at the site.

E. Quality Assurance Procedures

1. Quality Assurance and Quality Control Procedures as well as revisions will be issued by the Reliability and Quality Assurance Department. Controlled distribution of these documents will be accomplished by the Project Administrator.
2. Identification of the latest procedure revision will be maintained on the "Index of Procedure" in each controlled manual. The index will be issued whenever a procedure is initially issued, revised, or a change notice issued.

F. Superseded Documents

1. Obsolete or superseded controlled documents shall be identified, recalled, or destroyed as directed by the releasing authority for the document in accordance with Project Administrative Procedure No. 23.
2. Current status of drawings and specifications is determined by reference to schedules as noted in paragraph V.B.

G. Verification of Document Control

The QA Manager-Audits will plan, schedule, conduct, and evaluate compliance with this procedure and report the results of periodic Quality Assurance Audits conducted per procedure QA-18.

H. Supplier and Contractor Responsibility

The requirements of this procedure are imposed upon individual suppliers and subcontractors through the Quality Assurance section of the specification or through standard Quality Assurance specification attachments in accordance with Procedure QA-4.

I. Document Transmittal and Control at Construction Site

1. The system for the transmittal of approved documents to the Construction Site is described in the Project Manual of Procedures.
2. The system for the receipt, retention and control of the approved documents, including changes, is described in Construction procedures FGCP-2 and FGCP-15.

3. The FS-QA surveils the control of C/S subcontractor's documents in accordance with procedure QCP-10-1.

V. DOCUMENTATION

- A. The Document Control Center maintains documents in accordance with GAP-0014. The following records with respect to status of drawings and specifications are included:
 1. Current "Project Drawing Schedule"
 2. Current "Engineering Purchasing Schedule"
 3. Current "Foreign Print System Monthly Report"
 4. Transmittal letters distributing issued specifications and drawings.
- B. The "Project Drawing Schedule" and "Engineering Purchasing Schedule" are updated monthly and distributed by the Project to users as identified by project distribution lists.
- C. Site generated documents such as UE&C Construction Procedures and contractor construction procedures, specifications and drawings are maintained in accordance with FGCP-2. Approved subcontractor documents are incorporated into the Foreign Print System in accordance with FGCP-2 and Administrative Procedure #29.
- D. All records on file in the Document Control Center during the Design-Procurement Phase and Construction Phase are treated as lifetime records in accordance with procedures QA-17.



QUALITY ASSURANCE PROCEDURE QA - 7-1

CONTROL OF PURCHASED MATERIAL - VENDOR EVALUATION & SELECTION

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

November 1, 1973

INFORMATION ONLY

REV.	DATE	PREPARED BY	APPROVED	
			PROJECT	Q.A.
1	1/24/74	R. Holzwarth	h7c	h7c
2	7/19/74	R. Holzwarth	h7c	h7c
3	10/21/74	J. F. Cole	h7c	h7c
4	12/6/74	R. Holzwarth	h7c	h7c
5	10/21/75	R. Holzwarth	h7c	h7c

PREPARED BY:

Robert C. Holzwarth
R. C. Holzwarth
Quality Assurance Engineer

APPROVED BY:

G. F. Cole
G. F. Cole
Project Manager

APPROVED BY:

J. B. Silverwood
J. B. Silverwood, Manager
Reliability & Quality Assurance

REVISION				APPROVAL	
No.	Date	Page Nos. Revised	Prepared By	Project Manager	Manager R&QA
6	9/15/76	3	R. Holzwarth	h7c	h7c
7	7/23/79	2, 3	J. F. Cole	h7c	h7c
8	11/30/79	3	R. Holzwarth	h7c	h7c

11/30/79

QA-7-1 CURRENT PAGE LISTING

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1	10/21/75
2	7/23/79
3	11/30/79
4	10/21/75
Attach. 1 - Pgs. 1 thru 17	7/19/74

11/30/79

ATTACHMENT A TO PROJECT QUALITY
ASSURANCE PROCEDURE QA-7-1

IDENTIFICATION OF CHANGES

FOR REVISION 8

<u>Section</u>	<u>Page</u>	<u>Reason</u>
IV.B.6	3	Added new paragraph to comply with recommendation in Audit Report No. SA221UE008
IV.B.7	3	1. Was IV.B.6 2. Editorial change (second line)
IV.B.8	3	Was IV.B.7
IV.B.9	3	Was IV.B.8
IV.B.10	3	1. Was IV.B.9 2. Deleted "along with" substituted "and"



QUALITY ASSURANCE PROCEDURE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

QA - 7-1

SUBJECT:

CONTROL OF PURCHASED MATERIAL -
VENDOR EVALUATION & SELECTION

REV: 5

DATE: 10/21/75

PAGE 1 of 4

I. SCOPE

This procedure applies to the evaluation and selection of vendors for UE&C purchased items identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERALA. Purpose

1. To impose the applicable portions of Standard VII-I in the Quality Assurance Manual-Corporate Standards on this project.
2. To describe UE&C's vendor evaluation and selection activities which meet the requirements of Appendix B to 10CFR50 - Criterion VII, ANSI N45.2 and ANSI N45.2.13.

B. Reference Documents

- QA-4 - Procurement Document Control
- QA-7-2 - Control of Purchased Material - Vendor Surveillance
- QA-17 - Quality Assurance Records
- QA-18 - Quality Assurance Audits
- QAS-1 - Quality Assurance Administrative and System Requirements
- QAS-3 - Quality Assurance Administrative and System Requirements for Safety-Related Electrical Equipment

III. RESPONSIBILITIES

- A. The UE&C Project Manager is responsible for coordinating all vendor evaluation and selection activities within the project and with YAEC.
- B. The UE&C Purchasing Department has the responsibility for coordinating all vendor evaluation activities between UE&C Engineering, Reliability & Quality Assurance and the prospective vendor(s) including arranging for facility surveys.
- C. The Quality Assurance Engineer (QAE) is responsible for providing a quality evaluation of prospective vendors based on previous history, review of submitted documentation or the results of a facility survey.
- D. The Manager - Audits is responsible for providing assistance to the QAE in evaluations of vendors and the conduct of facility surveys.
- E. The Supervising Engineer - Project Quality is responsible for maintaining vendor history files contained in the R&QA library.

IV. PROCEDURE

A. Pre-Inquiry Activities

1. Before an inquiry is submitted to prospective vendors for bidding, the QAE provides input information to the Bidders List, and approves the Bidders List, as described in procedure QA-4, paragraph IV.A.3.
2. Approval of the Bidders List is based on past experience with the vendor on similar items. This approval is for inquiry purposes only. It does not, at this point, constitute approval to place a purchase order.
3. If R&QA has had no previous experience with a prospective vendor, the QAE will approve inclusion of the vendor on the Bidders List. Approval for award of a purchase order or contract is subject to the requirements of paragraph IV.B., below.

B. Pre-Award (Post-Inquiry) Activities

1. When invitations to bid are sent to prospective vendors by the Purchasing Department, copies of the invitation will be forwarded to the QAE.
2. Upon receipt of prospective vendors bid packages which includes an uncontrolled copy of the QA manual, the QAE will review the submitted quality assurance data to evaluate the vendors responsiveness and ability to meet the specified quality requirements. Any adverse findings will be transmitted to the Purchasing Department and the cognizant engineer.
3. If UE&C has been actively performing QA surveillance at a vendor's plant for hardware or services meeting or similar to the requirements of that to be procured, current performance and quality records will be evaluated.
4. If UE&C has satisfactory historical quality performance data on similar items developed from past procurement actions, the QAE may use this as a basis of evaluation.
5. When an adequate evaluation of a vendor cannot be made solely on the basis of vendor history and/or submitted data;
 - a) The QAE may use one of the following as a basis for evaluation.

- 1) Reference to the CASE Registry for commercial (catalog and off-the-shelf) items.
 - 2) CASE survey results and his evaluation together to determine if the information contained therein satisfies the requirements and ensures that the suppliers quality program is acceptable for the items which are not commercial or which require unique design or special engineering specifications.
 - 3) The vendors presence on the current ASME Authorized Manufacturers Listing for the certificate of Authorization required.
- b) The QAE notifies Purchasing who arranges for a facility survey. The QAE, assisted by the Manager-Audits, will conduct a facility survey.
6. When a facility survey is not made the QAE may provide a memorandum documenting the basis for acceptance of a vendor in lieu of a facility survey.
 7. Facility surveys will be performed in accordance with the Manufacturer's Facility Survey checklist, (See Attachment No. 1) or a checklist covering the special requirements of the item to be purchased. Results of the survey will be distributed as shown in Figure 18-6 of procedure QA-18.
 8. Facility surveys will not be performed on those prospective vendors which have been eliminated by other evaluations (quality assurance, technical or commercial.)
 9. Prior to the placement of a purchase order, the Purchasing Department may schedule Pre-Award and/or Award meetings with a prospective vendor to discuss the requirements and resolve any differences. The QAE will be advised of these meetings and will attend whenever quality matters need discussion or resolution. At the request of the QAE, other quality assurance specialists may also attend these meetings. The notes of the meeting shall document resolutions of proposal exceptions to QA Requirements and transmittal of the Findings - Observations listed on the facility survey to the vendor for response.
 10. Results of vendor evaluations and UE&C's recommendations will be transmitted to YAEC by the Project Manager.

C. Post-Award Activities

1. The QAE will evaluate the vendor's QA Manual submitted after award employing appropriate checklists and identifying the areas of noncompliance with Appendix B to 10CFR50 or contract requirements. He will coordinate the R&QA review of submitted special procedures (Welding, NDE, Metallurgical Processing, etc.). He will document the results to the Project Engineering Manager, identifying specific areas requiring revision or correction. He will review the Detailed Document List submitted by the vendor for compliance with the requirements of the procurement documents. The requirement for document submittals by vendors is stated in QAS-1 or QAS-3 which is a part of the procurement documents.
2. The QAE will continuously evaluate the performance of a selected vendor through his review of vendor submitted documentation (procedures and results), Vendor Surveillance reports, and vendor audits performed in accordance with procedure QA-18.
3. The Vendor Surveillance group will continuously evaluate vendor performance through preplanned surveillance visits and audits as described in procedure QA-7-2.

V. DOCUMENTATION

- A. A working file is established by Vendor Surveillance for each purchase order. Documentation in this file includes procurement documents, facility survey (as applicable), Vendor Surveillance Check Plan, Inspection Reports and other associated documentation, as described in procedure QA-17. The Project Document Control Center is the custodian of the official records.
- B. The Vendor History File is a permanent file maintained in the R&QA library by the Supervising Engineer - Project Quality. The file is continually updated by the inclusion of current documentation which will enable the evaluation of suppliers as future procurement sources.



SEABROOK
NEP 1 & 2
MNPS
QA-7-1
ATTACHMENT 1
7/19/74

MANUFACTURER'S FACILITY SURVEY

10CFR50, APPENDIX B

QUALITY ASSURANCE PROGRAM FOR SAFETY-RELATED EQUIPMENT SUPPLIERS

Job. No. _____

Survey Date _____

Surveyor(s) _____

VENDOR _____ LOCATION _____

ITEM(S) SUPPLIED _____ SPEC. NO. _____

CONTACTS: NAME TITLE

	Yes	No	N/A	Applicable QA Proc. & Para.
I. <u>ORGANIZATION</u>				
1. Are the lines of authority for quality clearly established and delineated in writing from top management down to the individual worker level? (Obtain copy of organization chart)				
2. Are the responsibilities and duties of individuals and groups performing quality assurance functions clearly established and delineated in writing?				

Yes	No	N/A	Applicable QA Proc. & Para.

- Remarks

1. Are suppliers evaluated and selected in accordance with a written procedure?
2. Are suppliers periodically audited?
3. Are supplier QC rating files maintained?
4. Is a list of acceptable suppliers maintained?

Yes	No	N/A	Applicable QA Proc. & Para.

1. Are written inspection plans provided to inspection personnel to define
 - (a) test and inspection equipment required?
 - (b) detailed operations to be performed?
 - (c) requirements and acceptance limits for determining quality conformance or rejection?

Yes	No	N/A	Applicable QA Proc. & Para.

- Remarks _____

1. Are there procedures for handling nonconforming items to prevent their inadvertent use?
2. Do these procedures provide for
 - (a) identification?
 - (b) documentation?
 - (c) segregation?
 - (d) disposition (REJECT, REPAIR, USE-AS-IS)?
 - (e) review?
 - (f) notification of affected organizations?
3. Who performs the review and disposition?

4. Are repair and rework operations performed in accordance with written procedures?

Yes	No	N/A	Applicable QA Proc. & Para.

- Remarks _____

PART I PREVIOUS EXPERIENCE

LEVEL OF QC AND
INSPECTION - AEC
ARMY, NAVY, NASA,
STATE OR OTHER CODES

[illegible]☐ ADEQUATE ☐ NOT ADEQUATE ☐ SEE ATTACHMENT NO.

ANSI 831.1	<input type="checkbox"/>
ANSI 831.7	<input type="checkbox"/>
IEEE	<input type="checkbox"/>
NEMA	<input type="checkbox"/>
AWS	<input type="checkbox"/>

SNT - TC - 1A ☐

TO BE COMPLETED BY UE&C Q.C. REPRESENTATIVE

AFTER LEAVING VENDOR'S FACILITY

1. What, in your opinion, should be the rating for this facility?

_____ Acceptable for Nuclear Work _____ Unacceptable (Explain below)
_____ Acceptable for designated _____ Conditionally Acceptable
P.O.(s) but not for Nuclear (Explain below)
Work.

2. In which areas do you find this facility strong?

a. _____
b. _____
c. _____
d. _____

3. In which areas to you find them weak?

a. _____
b. _____
c. _____
d. _____

4. Comments on quality and workmanship of production items observed during this survey.

5. Conclusion:

Date _____

Signature _____

QA/QC PROCEDURE ADVANCE CHANGE NOTICE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

PROCEDURE TITLE Control of Purchased Material Vendor Surveillance

PREPARED BY B. E. O'Connor DATE 4/7/82

CHANGE

1. Appendix "B", Page 2 of 4, List B - (Mechanical)

After P.O. 238-18, add:

245-03 Neutron Shields Industrial Engineering Works

2. Appendix "B", Page 3 of 4, List F - (Electrical)

After P.O. 109-1, add:

113-16 Electrical Cable Assemblies Rowe Industries

CHG. NO. 65
 EFFECTIVE DATE 4/7/82
 QA 7-2
 QCP N/A
 REV. 15
 DATE 10/31/81

REASON FOR CHANGE (1) Update procedure to include Purchase Orders for V/S and Site Receiving Inspection at request of R&QA.

REVIEWED BY FSQA	DATE	REVIEWED BY PROJECT QA	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
<i>W Lambert</i>	<i>4/7/82</i>	<i>DEW Gange</i>	<i>4/7/82</i>	<i>QW</i>	<i>4/23/82</i>	<i>gob</i>	<i>4/23/82</i>	<i>DR Dwyer</i>	<i>4/24/82</i>

QUALITY ASSURANCE PROCEDURE QA - 7-2

CONTROL OF PURCHASED MATERIAL VENDOR SURVEILLANCE

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

REV.	DATE	PREPARED BY	APPROVED	
			PROJECT	Q.A.
1	1/29/74	R. Holzwarth	BTC	QBS
2	7/19/74	R. Holzwarth	BTC	QBS
3	10/23/74	R. Holzwarth	BTC	QBS
4	2/25/75	R. Holzwarth	BTC	QBS
5	7/2/75	R. Holzwarth	BTC	QBS
6	10/27/75	R. Holzwarth	BTC	QBS

November 1, 1973

Prepared by:

Robert C. Holzwarth
R.C. Holzwarth
Quality Assurance Engineer

INFORMATION ONLY

Approved by:

J.B. Silverwood
J.B. Silverwood, Manager
Reliability & Quality
Assurance

REVISION				APPROVAL		
NO.	DATE	PAGE NOS. REVISED	PREP. BY	PROJ. MGR.	MGR. R&QA	
7	7/20/76	1,3,4,5,6,7, Appendix A,B, Att.1 - Pg.1, Att.4,6A,6B	BC Low	BTC	QBS	
8	11/23/76	5, 6 & 7	BC Low	BTC	QBS	
9	10/7/77	1,2,3,4,5,6,7 App. B Pg. 1, 4, 6 Att. 3, 4, 5A, 5B & 6	BC Low	BTC	QBS	
10	10/30/78	i, ii, 1,4, App. A App. B, Att. 2, 3, 5A, 5B	BC Low	BTC	QBS	
11	2/5/79	i, iii, App. B Pg. 4 of 4	BC Low	BTC	QBS	
12	4/23/79	3,4 Att. 2 & 6	BC Low	BTC	QBS	
13	11/9/79	1 thru 5 & 7, App. B Pg.3&4 Att. 4 - Pg. 1	BC Low	BTC	QBS	
14	3/28/80	3, 4 & 6	BC Low	BTC	QBS	

REVISION CONTINUED
ON 2nd TITLE PAGE



QUALITY ASSURANCE PROCEDURE QA - 7-2

CONTROL OF PURCHASED MATERIAL VENDOR SURVEILLANCE

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

INFORMATION ONLY

REVISION				APPROVAL	
NO.	DATE	PAGE NOS. REVISED	PREP. BY	PROJ. MGR.	MGR. R&QA
15	10/31/81	Appendix A Appendix B pages 1-4	<i>W. B. Burt</i>	<i>BT</i>	<i>JPB</i>

QA-7-2 CURRENT PAGE LISTING

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6	3/28/80
7	11/9/79
8	10/7/77
Appendix A	10/30/81
Appendix B (Pg. 1)	10/30/81
Appendix B (Pg. 2)	10/30/81
Appendix B (Pg. 3)	10/30/81
Appendix B (Pg. 4)	10/30/81
Attachment 1 (Pg. 1)	7/20/76
Attachment 1 (Pg. 2)	10/27/75
Attachment 1 (Pg. 3)	10/27/75
Attachment 2	4/23/79
Attachment 3	10/30/78
Attachment 4	11/9/79
Attachment 5A	10/30/78
Attachment 5B	10/30/78
Attachment 6	10/30/81

PROJECT QUALITY ASSURANCE PROCEDURE QA-7-2

IDENTIFICATION OF CHANGES

REVISION 15

<u>Section</u>	<u>Page</u>	<u>Reason</u>
IV	6	Allow the use of Resolution Sheet to resolve discrepancies
Appendix A	1	Deleted per Finding #2 of Audit Report No. NH-394
Appendix B	1-4	Updated Current Purchase Order Titles. Incorporated Advanced Change Notice 46 (delete P.O. 252-20). Deleted P.O. 174-1 and 253-1 as per Yankee letter dtd. 9/28/81 SB-12183.
Attachment 6		Copy of Vendor Notification Report Resolution Sheet



& constructors inc.

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

CONTROL OF PURCHASED MATERIAL -
VENDOR SURVEILLANCE

REV: 13

DATE: 11/9/79

PAGE 1 of 8

I. SCOPE

This procedure describes UE&C's control of purchased items and services through Vendor Surveillance activities. This procedure applies to items identified as Seismic Category I. Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR. It also applies to those non-safety related items shown on Appendix B of this procedure.

II. GENERALA. Purpose

1. Impose the applicable portions of Standard VII-2 in the Quality Assurance Manual-Corporate Standards on the project.
2. Establish means of assuring that purchased material, equipment and services, whether purchased through contractors or subcontractors, conform to the procurement documents prior to release of the item from the contractor's facility.
3. Describe UE&C's vendor surveillance activities which meet the requirements of Appendix B to 10CFR50 and ANSI N45.2.13.

B. Reference Documents

QA-4 - Procurement Document Control
QA-16-1 - Corrective Action
QA-16-2 - Work Stoppage
QA-18 - Quality Assurance Audits
QCP-7-1 - Receiving Inspection
ANSI-N45.2.13 - Quality Assurance Requirements for Control of
Procurement of Items and Services for Nuclear
Power Plants

C. Forms

Form 4505 - Vendor Surveillance Check Plan (Rev. 3/76) (Attachment #1)
Form 4546 - Vendor Shop Surveillance Request (Attachment #2)
Form 4557 - Quality Shipment Release (Rev. 6/77) (Attachment #3)
Form 4509 - Vendor Surveillance Report (Attachment #4)
Form 4687 - Vendor Notification Report (Attachment #5)

INFORMATION ONLY

III. RESPONSIBILITIES

- A. The Quality Assurance Engineer (QAE) will review the procurement documents in accordance with procedure QA-4, and provide post-award Vendor Surveillance Check Plans (VSCP) Form 4505 for use by the Vendor Surveillance Representatives.
- B. The Supervising Engineer-Vendor Surveillance (SE-VS) will assist the QAE, when requested, in pre-award activities.
- C. The SE-VS directs the activities of the Vendor Surveillance Group. This function includes, but is not limited to the following:
 - 1. Developing pertinent Purchase Order files.
 - 2. Assist in developing VSCP's as requested by QAE.
 - 3. Planning and scheduling for vendor visits.
 - 4. Performing surveillance actions at vendor plants as identified on the check plan.
 - 5. Reviewing vendor's techniques and procedures for required inspections and tests.
 - 6. Determine that fabrication processes are being performed in accordance with approved written procedures.
 - 7. Reviewing vendor documents for compliance with specifications.
 - 8. Conducting special investigations as requested by the QAE.
 - 9. Reporting the results of vendor surveillance on Form 4509.
 - 10. Verifying corrective actions taken by the vendor, as applicable.
- D. The UE&C assigned expeditor will make arrangements for vendor visits and will advise the Supervising Engineer-Vendor Surveillance and the Project Quality Assurance Engineer (PAQE) of the arrangements.
- E. The PQAE will forward a written request, Form 4546, to the SE-VS for each Vendor visit.

IV. PROCEDURE

A. Preparation of the Vendor Surveillance Check Plan

1. Subsequent to order placement and 60 days prior to release for fabrication, the QAE will prepare a VCSP.
2. The VSCP will identify documentation requirements, vendor surveillance points, and requirements for receiving inspection at the site. Appropriate specifications, drawings, codes and standards will be utilized in determining surveillance requirements.
3. Copies of VSCP's are distributed for comment to the:
 - a. Supervising Engineer-Vendor Surveillance
 - b. Responsible Engineer
4. Copies of completed VSCP's are submitted to YAEC for review, providing them the opportunity to specify their mandatory surveillance witness points.
5. Completed VSCP's will be transmitted to the vendor by the Supervising Discipline Engineer. Copies of the VSCP are distributed in accordance with Appendix A of this procedure.
6. The SE-VS provides comments to the QAE relative to VSCP revision, as applicable, after experience has been gained with the vendor.
7. As the Purchase Order Requirements change the QAE incorporates changes into the VSCP.
8. The storage requirements will be included in Section C of the vendor Surveillance Check Plan. Initial references will be to storage levels required by the specification. The supplier's recommended storage procedures shall be included upon approval by UE&C. References shall be by foreign print number. Storage information must be at the site thirty days prior to anticipated receipt date of the equipment/material.

B. Establishment of Vendor Surveillance Files

1. The Supervising Engineer-Vendor Surveillance will establish Vendor Surveillance files, for all Purchase Orders within the scope of this procedure. Vendor surveillance files are arranged numerically by Purchase Order number and will consist of a folder for each purchase order. Vendor files will include copies of the following documents:
 - a. Procurement documents including associated engineering specification and subsequent changes.

IV. PROCEDURE (Continued)

- b. Vendor Surveillance Check Plan.
 - c. Quality Control Vendor Surveillance Reports.
 - d. Vendor Notification Report
 - e. Quality Shipment Release
 - f. Additional correspondence or documentation when relevant to Vendor Surveillance activities.
2. The Vendor Shop Surveillance Request form 4546 shall be filed separately by the SE-VS in the Vendor Assignment file. They shall be filed, by weekly assignments.

C. Scheduling

1. Vendors shall advise the Procurement Department that a planned surveillance point is being approached. The Procurement Department then transmits this information to the SE-VS using Vendor Shop Surveillance Request. The following procedure shall be followed to arrange a Vendor Surveillance visit.
- a. Upon learning the required dates the expeditor will contact the QAE by phone to determine if the visit will be made or waived.
 - b. If the visit is to be made the expeditor will contact the SE-VS by phone to determine if personnel are available. Depending on personnel availability the visit will be scheduled as requested by the vendor or for a later date. The expeditor will confirm the arrangements with the vendor. The expeditor will also notify the Client at this time if he has previously indicated his intent to participate at this surveillance point.
 - c. If planned UE&C surveillance is waived as determined by the QAE, the vendor will be so advised within 24 hours of the Vendor's original notification.
 - d. The expeditor shall complete a Vendor Shop Surveillance Request, Form 4546, for both scheduled and waived Vendor Surveillance visits. The expeditor will arrange for the forms to be carried to the QAE on a daily basis. The QAE will sign the form acknowledging the arrangements and adding any additional surveillance requirements. The form will then be distributed in accordance with the pre-printed distribution list on the form.

IV. PROCEDURE (Continued)

- e. The SE-VS will assign a Vendor Surveillance Representative for the scheduled visit and contact him by telephone to determine that he has the applicable VSCP. He will review the appropriate purchase order documents with the Vendor Surveillance Representative to assure his full understanding of the nature and requirements of the forthcoming surveillance visits. Any special instructions will be transmitted at this time.
2. The Vendor Surveillance Representative performs the surveillance actions as identified in the VSCP. In addition, he will:
 - a. Review techniques and procedures for required inspection and/or test (e.g., calibration, control identification system, NDE, records, etc.).
 - b. Review qualification of welding and NDE procedures and individual operator for conformance to applicable codes (e.g., ASME, AWS or other requirements).
 - c. Verify adherence to the vendors submitted fabrication, process, and quality control procedures.
 - d. Verify that the equipment is being fabricated to the latest approved drawings.
 - e. Verify that mill test data complies with the applicable material specification requirements and that material, as well documentation, is properly marked.
 - f. Review packaging and shipping methods for conformance to any special instructions, specification requirements, or vendor standard practices, as applicable.
 - g. Review and approve radiographs after the vendor has indicated his acceptance. This approval does not relieve the vendor of any responsibility for the work.
3. After the Vendor has indicated that the Site Data Package has been Reviewed and accepted by his Quality Assurance Organization, The Vendor Surveillance Representative will review the package. He will use the Data Package Index or itemized list and the VSCP (Part A) to verify that the documents show compliance with the applicable requirements and are identified to the items supplied. The approved Detailed Document List may be used by the Vendor Surveillance Representative to check those documents submitted to the Home Office for review. The Vendor Surveillance Representative will sign or stamp the Data Packaging Index or itemized list.

IV. PROCEDURE (Continued)

4. When material is ready for shipment, a Quality Shipment Release, Form 4557 will be completed by the Vendor Surveillance Representative.

This serves as the release for shipment of the equipment and notifies the construction site that UE&C surveillance actions have been satisfactorily completed and that vendor's documentation has been checked.

5. Final inspection may be waived, and the item released for shipment, with the approval of the QAE. This may be done by telephone or telex and documented by a memorandum from Procurement Department identifying items waived. Release of the equipment at the site will be subject to receipt inspection and data package review by the Site Receiving Inspection Group.
6. Upon completion of a surveillance visit, the Vendor Surveillance Representative will discuss any discrepancies with the appropriate vendor management and seek commitments for corrective action.
 - a. If a nonconformance or potential nonconformance is observed by the Vendor Surveillance Representative during a surveillance visit, he will document the observation by preparing a Vendor Notification Report, (VNR) Form 4687, following the instructions detailed in (Attachment 5B).
 - b. The Vendor Surveillance Representative will present the VNR to the vendor for his acknowledgement of the notification and commitment to a course of corrective action.
 - c. Resolution of the discrepancy will be followed up by the Representative on his next scheduled visit and documented in his report. At the discretion of the QAE, a special visit may be scheduled to verify implementation of agreed upon vendor action.

When conditions warrant the Vendor Surveillance Representative may recommend to the SE-VS that work on a portion of the contract be stopped.

The SE-VS will contact the Quality Assurance Engineer who will issue a Corrective Action Request or Stop Work Order as detailed in QA-16-1 or QA-16-2 depending upon the seriousness of the situation.

IV. PROCEDURE (Continued)

7. Within ten (10) calendar days after a plant visit, a Vendor Surveillance Report - Form 4509 will be completed and submitted to the SE-VS.

The report shall include the following information:

- a. Job Number
- b. Client's Name
- c. Report Date
- d. Purchase Order Number, P.O. Item Number, including latest Change Order when applicable.
- e. Vendor Surveillance Representative's Name.
- f. Date of Visit
- g. Personnel contacted
- h. Items inspected
- i. Purpose of visit
- j. Status of previously documented VNR's.
- k. Summary of inspection findings on visit and corrective action agreed to by vendor.
- l. Decisions made during phone conversations with UE&C Engineering or Quality Assurance Representatives.

Copies of the report will be distributed in accordance with Appendix A.

8. At the conclusion of specific Vendor Surveillance activities at a vendor's shop Sections "A" and "B" of the VSCP are dated and stamped or initialed by the V/S Representative to indicate compliance to applicable requirements for the specific items relevant to the assignment.
9. The QAE and the Manager-Audits arrange for in-process audits of the vendor during the course of his contract, in accordance with Standard XVIII-1.

D. Purchase Order Close-Out

When a purchase order is completed, the Supervising Engineer-Vendor Surveillance or his designate, will review applicable documentation in the surveillance folder to assure that all requirements have been satisfactorily accomplished.

IV. PROCEDURE (Continued)

E. Distribution of Forms and Reports

The distribution of forms identified in this procedure is shown in Appendix A.

F. Supplier Surveillance at the Site

The Field Quality Assurance Group continues supplier surveillance by performing Receiving Inspection in accordance with Quality Control Procedure QCP-7, Receiving Inspection.

APPENDIX A

DISTRIBUTION TABLE

<u>UE&C</u>	<u>Form No.</u> <u>4505</u>	<u>Form No.</u> <u>4509</u>	<u>Form No.</u> <u>4506</u>	<u>Surveillance</u> <u>Notification/</u> <u>Waiver</u>	<u>Form No.</u> <u>4687</u>
Project Manager	1	1	1	0	0
Purchasing Department	2	1	0	0	0
Quality Assurance Engineer	1	1	1	1	1
Vendor Surveillance File	2	1	1	0	1
Field Superintendent QA	2	1	1	1	0
Purch./Expediting - Asst. Mgr.	1	1	1	1	1
Responsible Engineer	1	1	1	1	1
Supervising Discipline Engineer	*8	1	1	1	1

* Supervising Discipline Engineer shall make distribution to YAEC, Owner and Vendor.

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APPENDIX B

NON SAFETY RELATED PURCHASE ORDERS
REQUIRING VENDOR SURVEILLANCE

SEABROOK STATION

LIST A - PIPING

SPECIFICATION NO.

COMPONENT

SUPPLIER

248-6

Vacuum Breaker Valves

Valve & Primer Corp.

248-39

Valves

Powell

248-40

Valves

Lunkenheimer

248-58

Safety and Relief Valves

Dresser

249-6

Reflective Insulation

Transco

248-37

Gate, Globe & Check Valves

Velan Valve Corp.

LIST B - MECHANICAL

SPECIFICATION NO.

COMPONENT

SUPPLIER

200-1

Turbine Generator

General Electric

200-2

Steam Generator Feed Pump Turbines

General Electric

203-1

Surface Condenser

Foster Wheeler

203-2

Condenser Tubes

Timet Company

233-1

Feedwater Heaters

Westinghouse

238-1

Heater Drain Pumps

Ingersoll-Rand

APPENDIX B (Cont'd)

LIST B - MECHANICAL (Continued)

<u>SPECIFICATION NO.</u>	<u>COMPONENT</u>	<u>SUPPLIER</u>
238-4	Circulating Water Pumps	Stearns & Rogers
238-8	Mechanical Vacuum Pumps	Nash Engineering
238-11	Condensate Transfer Pumps	Ingersoll-Rand
238-11	Auxiliary Boiler Feed Pumps	Ingersoll-Rand
238-11	Secondary Component Cooling Water Pumps	Ingersoll-Rand
238-17	Condensate Pumps	Byron Jackson
238-18	Main Feed Pumps	Byron Jackson
246-10	Heater Drain Tanks	Tower Iron
246-10	MS/Reheater Drain Tanks	Tower Iron
248-14	Circ. Water Expansion Joints	General Rubber
248-16	Circ. Water Butterfly Valves	Stearns & Rogers
248-24	Circ. Water Piping	Interpace Corp.
248-28	Feed Pump Turbine Exp. Joints & Piping	Adsco
257-1	Turbine Room Cranes	Whiting
257-1	Heater Bay Cranes	Whiting
258-2	Secondary Component Cooling Water Heat Exchangers	Struthers-Wells

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APPENDIX B (Cont'd)

LIST C - MECHANICAL SERVICES

<u>SPECIFICATION NO.</u>	<u>COMPONENT</u>	<u>SUPPLIER</u>
70-01	Deluge PreAction & Sprinkler System	
70-06	Fire Protection Equipment	

LIST D - NUCLEAR

<u>SPECIFICATION NO.</u>	<u>COMPONENT</u>	<u>SUPPLIER</u>
43-1	New Fuel Elevator	Morris Wheeler
233-3	Degasifier Package	Sentry Equipment
236-17	Resin Sluice Filter	Croll-Reynolds
238-6	Reactor Make-Up Water Pumps	Gould
246-5	Bldg. Waste Hold-Up Sump Tanks	Norwalk
246-5	Bldg. Recycle Hold-Up Sump Tanks	Norwalk
246-9	Fuel Pool Demineralizers	Jos. Oats
246-11	Blowdown Flash Tank	Norwalk
246-11	Spent Resin Storage Tank	Norwalk
257-2	Containment Bldg. Polar Crane	Whiting
257-3	Cask Handling Crane	Whiting

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LIST E - ELECTRICAL

<u>SPECIFICATION NO.</u>	<u>COMPONENT</u>	<u>SUPPLIER</u>
107-1	Main Power Transformers	GE
107-2	Reserve Aux. Transformers	Westinghouse
107-3	Aux. Power Transformers	GE
109-1	Cable Trays	Metal Products
144-1	5K & 5KV Non Segregated Phase Bus Duct	Gould
144-3	25KV Isolated Phase Bus	H.K. Porter
145-1	15KV Switchgear	Gould

LIST F - INSTRUMENTS & CONTROLS

<u>SPECIFICATION NO.</u>	<u>COMPONENT</u>	<u>SUPPLIER</u>
70-03	Fire Detection System	
170-5	Panel Mounted Indicators	Sigma
172-1	Radiation Data Management System	General Atomics
252-20	Vibration Monitoring System	
174-1	Electronic Transmitters	Foxboro
252-10	Level Controls	Energy Controls
253-1	Pneumatic Transmitters & Controllers	Foxboro
501-2	Chemical Analyzer System	

LIST G - STRUCTURAL

225-2	Stainless Steel Liners	Nooter
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QUALITY CONTROL

VENDOR SURVEILLANCE - CHECK PLAN

VENDOR _____	V	1	2	3	4	5	6	LOCATION _____
ITEM _____								SAFETY CLASS _____
CLIENT _____								P.O. _____
								REV. _____
PREPARED BY _____								
DATE _____								

- NOTES: • Release of equipment does not constitute final acceptance and does not relieve the supplier from responsibility according to procurement document.
- UE&C Reliability & Quality Assurance reserves the right to waive any inspection.

Keypunch: Punch a card for each item which has column 15 filled

SECTION A - DATA CHECKLIST

REVIEW REQUIRED	SITE DATA PACKAGE	N/A	DOCUMENT TYPE	18	21
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Quality Assurance Manual	Q A M	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welding Procedures & Qualifications	W L D P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welders Qualifications	W L D Q	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welding History Records	W H R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Radiographic Test Procedure	R T P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Magnetic Particle Procedure	M P P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Liquid Penetrant Procedure	L P P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ultrasonic Test Procedure	U T P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NDE Personnel Qualifications	N D E C	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Radiographic Test Reports	R T R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Magnetic Particle Reports	M P R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Liquid Penetrant Reports	L P R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ultrasonic Test Reports	U T R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Radiographs	X R A Y S	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Heat Treat Procedures	H T P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Heat Treat Records	H T R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cleaning Procedures	C L N P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Packaging Procedures	P K G P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Storage Procedures	S T O R P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Marking & Identifying Procedures	M R K P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pressure Test Procedures	P R E S P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Leak Test Procedures	L E A K P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pressure Test Report	P R E S R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Leak Test Reports	L E A K R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Repair Procedure	R E P R P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Repair Records	R E P R R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Material Test Reports	M T R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Certificate of Compliance	C o f C	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ASME Data Reports	C O D E R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Coating or Painting Procedures	C O A T P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visual Inspection Procedure	V I P	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visual Inspection Report	V I R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Detailed Documents List	D O D L	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Detailed Inspection Point Program	D I P P	

VENDOR SURVEILLANCE - CHECK PLAN

VENDOR _____ LOCATION _____ 10/27/75

[illegible]

ID NO. _____

CLIENT _____ P.O. NO. _____ Rev. _____

PREPARED BY _____	REV.	1	2	3
-------------------	------	---	---	---

DATE	INITIALS			
------	----------	--	--	--

REV.	1	2	3
DATE			
INITIALS			

SECTION B:

SURVEILLANCE POINTS

WITNESSED (1)

VERIFIED

PERFORMED

CERTIFIED (2)

V/S
Signature -- Date

[illegible]

- NOTES: (1) Vendor to notify UE&C prior to SURVEILLANCE POINTS marked WITNESSED.
(2) UE&C V/S Representative shall sign to certify that he:
WITNESSED - personal observation while the vendor performs the task.
VERIFIED - personal confirmation of data applicable to the work.
PERFORMED - personal performance of the task.

VENDOR SURVEILLANCE - CHECK PLANSEABROOK
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VENDOR _____		LOCATION _____	
ITEM _____		SAFETY CLASS _____	
CLIENT _____		P.O. NO. _____ Rev. _____	
PREPARED BY _____		Rev.	
DATE _____		Rev.	

REV.	1	2	3
DATE			
INITIALS			

SECTION C: SITE RECEIVING AND INSPECTION

1. Review Data Package to insure that documents shown in SECTION A are included.
2. Special Requirements _____

ADDITIONAL INFORMATION: _____



united engineers & constructors inc.
30 South 17th Street
Post Office Box 8223
Philadelphia, Pa. 19101

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VENDOR SHOP SURVEILLANCE REQUEST

TO: _____

DATE: _____

JOB NUMBER: _____

P. O. / CONTRACT NO.: _____

UE & C SURVEILLANCE

☐ REQUIRED

☐ WAIVED

CLIENT SURVEILLANCE

☐ REQUIRED

☐ WAIVED

☐ NOT REQUIRED

SPECIFICATION NO. _____

CONTRACTOR _____

SUBCONTRACTOR _____

PLANT LOCATION _____

ITEM _____

PURPOSE _____

WITNESS POINT IDENT. _____

DATE OF VISIT _____ INSPECTOR _____

CONTACT _____ PHONE _____

LAST CHANGE ORDER _____

LETTER TO VENDOR TO FOLLOW.

SIGNATURE (EXPEDITOR)

SIGNATURE (QA ENGINEER)

WHITE COPY - EXPEDITING

PINK COPY - QUALITY ASSURANCE

CANARY COPY - VENDOR SURVEILLANCE

GOLDENROD COPY - ENGINEER

DATE _____

QUALITY SHIPMENT RELEASE

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CONTRACTOR _____

LOCATION _____

CONTRACT/PO _____

DWG. NO. _____ REV. _____

QUALITY/SAFETY CLASS _____

ITEM DESCRIPTION _____

NO RELEASED THIS SHIPMENT _____

S/N(S) _____ MK NO(S) _____

- NOTES**
1. THIS RELEASE FOR SHIPMENT DOES NOT CONSTITUTE FINAL ACCEPTANCE AND DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY ACCORDING TO THE CONTRACT.
 2. UE & C QUALITY ASSURANCE RESERVES THE RIGHT TO WAIVE ANY VERIFICATION.
 3. DISTRIBUTION: UE & C QA REPRESENTATIVE SENDS ONE COPY TO FIELD SUPERINTENDENT-QA AND SENDS ONE COPY TO QA HOME OFFICE AND PROVIDES ONE COPY TO VENDOR FOR TRANSMITTAL WITH DATA PACKAGE.

NOMENCLATURE: REVIEW OF A QUALITY REQUIREMENT AND ITS STATUS IS DENOTED BY: (A) FOR ACCEPTABLE, (W) FOR WAIVED [SEE REMARKS], (C) FOR CONDITIONAL [SEE REMARKS], (F) FOR FOLLOWUP [SEE REMARKS], OR (NR) FOR NOT REQUIRED.

QUALITY REQUIREMENTS

A-VERIFICATION CHECKLIST

1. FINAL VISUAL EXAMINATION (WORKMANSHIP) _____
2. FINAL DIMENSIONAL _____
3. COATING / LINING _____
4. LUBRICANTS/OILS _____
5. CLEANLINESS _____
6. ELECTRICAL INSTALLATION _____
7. MARKING/IDENTIFICATION _____
8. NAMEPLATE / CODESTAMP _____
9. PACKAGING _____

B-DOCUMENTATION CHECKLIST

(AT TIME OF FINAL VERIFICATION)

1. SUBMITTED DOCUMENTS _____
2. NCR's CLOSED _____
3. CHANGE ORDERS APPROVED _____
4. VENDOR DRAWING STATUS (REVISION PRESENTED BY CONTRACTOR) _____
5. DATA PACKAGE (INCLUDING PHYSICAL PROPERTY DATA) REVIEWED (AVAILABLE AND CORRECT) _____

C-CERTIFICATE OF CONFORMANCE _____

D-REMARKS _____

UE & C QUALITY ASSURANCE REPRESENTATIVE

I HEREBY CERTIFY THAT ABOVE APPLICABLE VERIFICATIONS WERE PERFORMED OR WITNESSED AND DOCUMENTATION CHECKED AS INDICATED.

SIGNATURE _____

DATE _____



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☐ SHOP
☐ FIELD

QUALITY CONTROL
VENDOR SURVEILLANCE REPORT

NO. _____
J.O. _____ CONTRACT/P.O. _____ REPORT _____

CLIENT _____ VISIT DATE _____

VENDOR _____ LOCATION _____

REPRESENTATIVE _____

PERSONNEL CONTACTED

PURPOSE

ITEM(S) INSPECTED

PREVIOUS PROBLEMS

NEW PROBLEMS

SUMMARY

VENDOR NOTIFICATION REPORT

DATE _____

PAGE _____ OF _____

A	TO _____	TITLE _____	<input type="checkbox"/> CONTRACT REQ'T	<input type="checkbox"/> DESIGN CONTROL
	COMPANY _____		<input type="checkbox"/> CODE	<input type="checkbox"/> INTERFACE
	LOCATION _____		<input type="checkbox"/> SHIPPING	<input type="checkbox"/> QA PROCEDURE
	PO/CONTRACT _____		<input type="checkbox"/> PACKAGING	<input type="checkbox"/> CLEANLINESS
			<input type="checkbox"/> SUBMITTAL	<input type="checkbox"/> OTHER

THE UNRESOLVED CONDITION DESCRIBED BELOW HAS BEEN IDENTIFIED. PLEASE CONSIDER TAKING APPROPRIATE ACTION TO CONTROL THIS CONDITION AND TO DOCUMENT YOUR ACTIONS AND RESOLUTIONS IN ACCORDANCE WITH THE PROVISIONS OF CONTRACT/PO

B	DESCRIPTION OF FINDING: THE FOLLOWING CONDITION IS	<input type="checkbox"/> A NONCONFORMANCE
		<input type="checkbox"/> AN OBSERVATION (POTENTIAL NONCONFORMANCE)
SIGNATURE _____		DATE _____
UE&C SURVEILLANCE REPRESENTATIVE		

C I AGREE THAT THE ABOVE CONDITION HAS BEEN BROUGHT TO MY ATTENTION.

SIGNATURE _____ TITLE _____ DATE _____

D	<u>RESPONSE RECEIVED FROM VENDOR -</u>	
	<input type="checkbox"/>	NCR IN PROCESS (NO. _____)
	<input type="checkbox"/>	PROCEDURE REVISION INITIATED (TRANSMITTAL NO. _____)
	<input type="checkbox"/>	WAIVER REQUEST INITIATED (NO. _____)
	<input type="checkbox"/>	VENDOR CORRECTIVE ACTION INITIATED
	<input type="checkbox"/>	VENDOR TAKING NO ACTION (_____)
	<input type="checkbox"/>	OTHER (_____)

E	<u>REVIEW OF VENDOR RESPONSE -</u>	<input type="checkbox"/> ADEQUATE	<input type="checkbox"/> RESOLVED
	ACTION PROPOSED BY THE VENDOR TO RESOLVE THE CONDITION DESCRIBED IS	<input type="checkbox"/> INADEQUATE	<input type="checkbox"/> UNRESOLVED

UE&C QUALITY ASSURANCE ENGINEERING WILL REVIEW THE ABOVE VENDOR RESPONSE TO ASSESS THE NEED FOR UE&C FOLLOW-UP, ADDITIONAL VENDOR RESPONSE OR ADDITIONAL VENDOR ACTION

VNR INSTRUCTIONS

GENERAL: The following instructions for completing the Vendor Notification Report (VNR) shall be adhered to by the Vendor Surveillance Representatives (VSR) and other UE&C personnel assigned to off-site vendor surveillance. The form shall be used when a nonconformance or an observation (potential nonconformance) is detected. The form consists of five sections (A through E). The reports are prenumbered and issued by the Vendor Surveillance-Supervising Engineer to the VSR for use.

SECTION "A"

The information required for this section pertains to the vendor and the applicable purchase order/contract number. Where a subvendor is involved the report will be addressed to the prime vendor with the subvendor and their location identified. The applicable area(s) of the nonconformance shall be checked off on the right hand side.

SECTION "B"

The finding is to be briefly and concisely described in this section. The VSR will sign and date this section. The VSR will elaborate on the finding as necessary in his Vendor Surveillance Inspection Report.

SECTION "C"

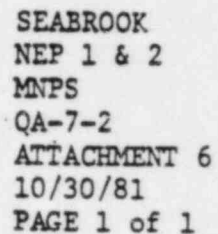
This section is to be signed and dated by the individual the form is addressed to in Section "A". This signature is an acknowledgement that the finding was reported to him and not necessarily his concurrence with the finding. If for any reason the cognizant individual is not available; the VSR shall note it and add the name of the person receiving the VNR for the vendor.

SECTION "D"

The appropriate box is checked in this section based on the disposition of the finding by the vendor. This response is required within a twenty-four hour period or prior to the VSR's departure from the vendor whichever is first. Where the vendor either cannot or will not respond during this period it should be so noted under "other". This response is marked inadequate in Section "E".

SECTION "E"

This section is to be completed, signed and dated by the UE&C Vendor Surveillance Representative based on the vendor's response to the basic finding. One copy of the VNR shall be issued to the vendor, by the Vendor Surveillance Representative, the rest are sent into the Home Office for distribution. All copies are to be clear and capable of reproduction. The finding will be noted under new problems in the Vendor Surveillance Inspection Report. The method of resolution shall be noted for VNR's with adequate response. The VNR's with inadequate response shall be carried as unresolved items until they are resolved. The status of the VNR (Resolved, Unresolved) shall also be indicated by marking the appropriate block.



RESOLUTION SHEET

VNR No. _____

Contract No.

RESOLUTION:

This image shows a single sheet of white paper with horizontal black ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears to be a standard notebook or ledger page.

☐ yes
☐ no

Date _____

QUALITY ASSURANCE PROCEDURE QA - 8

IDENTIFICATION AND CONTROL OF MATERIALS PARTS AND COMPONENTS

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

January 9, 1974

INFORMATION ONLY

Prepared by:

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G. F. Cole
G. F. Cole
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Reliability & Quality Assurance

No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/16/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
2	9/26/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
3	10/24/75	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

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No.	Date	Page Nos. Revised	Prepared By	Project Manager	Manager-R&QA
4	9/28/79	2 and 3	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
5	2/21/80	1, 3 & 4	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

2/21/80
REV. 5

QA-8 CURRENT PAGE LISTING

<u>PAGE</u>	<u>DATE</u>
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1	2/21/80
2	9/28/79
3	2/21/80
4	2/21/80

PROJECT - QUALITY ASSURANCE PROCEDURE

QA-8

IDENTIFICATION OF CHANGES

<u>Section</u>	<u>Page</u>	<u>Reason</u>
II.B.	1	Added QCP-8 Reference
IV.E.3	3	Deleted "LIMITED WORK AUTHORIZATION" in compliance to PSNH correspondence SB-8752 dated 12/19/79.
IV.F.	3	Added "within the storage area" after "handled" per PSNH correspondence.
IV.F.2	3	1. Added first sentence providing for LIMITED WORK AUTHORIZATION per QCP-8. 2. Deleted "throughout fabrication erection and installation" and added "throughout storage" after "identification" per PSNH correspondence 12/19/79. 3. Changed "LIMITED WORK AUTHORIZATION" to "LWA/HOLD" per PSNH correspondence. 12/19/79
IV.G.1	4	DITTO



& constructors inc.

QUALITY ASSURANCE PROCEDURE

QA - 8

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION

NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2

CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

IDENTIFICATION AND CONTROL OF
MATERIALS, PARTS AND COMPONENTS

REV: 5

DATE: 2/21/80

PAGE 1 of 4

I. SCOPE

This procedure applies to UE&C's activities pertaining to the identification and control of items purchased by UE&C. This procedure applies to items identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERALA. Purpose

1. To impose the applicable portions of Standard VIII in the Quality Assurance Manual - Corporate Standards on the project.
2. To establish measures to prevent the use of incorrect or defective material, parts, components and partially fabricated assemblies and to assure that identification is maintained to permit material traceability, when required.

B. Reference Documents

QA-4	Procurement Document Control
QA-7-2	Control of Purchased Material - Vendor Surveillance
QA-13	Handling, Storage and Shipping
QCP-7	Receiving Inspection
QCP-8	Material Control

III. RESPONSIBILITIESA. Engineering Department

The Engineering Department is responsible for establishing in the UE&C drawings, specifications and procurement documents the requirements for the identification of materials, parts, components and partially fabricated assemblies.

B. Quality Assurance Department

1. The Quality Assurance Engineer (QAE) is responsible for reviewing and evaluating the supplier's system for the identification and control of materials, parts, components and partially fabricated assemblies.
2. The Vendor Surveillance Group is responsible for surveillance of the implementation of the supplier's system and for identifying to the construction site those items for which the UE&C surveillance actions have been satisfactorily completed.

III. RESPONSIBILITIES (Continued)

3. The Field Quality Assurance Group is responsible, through receipt inspection, for assuring that material delivered to the construction site is properly identified and traceable to the related documentation. Field Quality Assurance reviews and approves civil/structural site contractor identification and control procedures.

IV. PROCEDURE

- A. The requirements for the identification of materials, parts and components are established in the UE&C drawings, specifications and procurement documents.
- B. When required in the procurement documents, the supplier submits his Quality Assurance Plan to UE&C for review and approval. As part of this review, the supplier's system for identification and control of material, parts, components and partially fabricated assemblies is evaluated for adequacy.
- C. The Vendor Surveillance Representative verifies the implementation of the supplier's Quality Assurance Plan in accordance with procedure QA-7-2.
 1. He verifies that the vendor has followed his procedures and that identification of material has been verified prior to fabrication.
 2. He verifies that partially fabricated sub-assemblies are identified and controlled.
 3. He verifies that identification markings are complete and agree with the associated documentation.
 4. Upon satisfactory completion of the work, he issues a "QUALITY SHIPMENT RELEASE" Form 4557, Attachment #3 of QA-7-2). This serves as notification to the construction site that UE&C surveillance actions have been satisfactorily completed.
- D. The requirements of this procedure are imposed upon individual vendors through the Quality Assurance section of the specification or through standard quality assurance specification attachments in accordance with procedures QA-4.

IV. PROCEDURE (Continued)

- E. Material delivered to the construction site is subjected to receiving inspection by the Field Quality Assurance Group in accordance with QCP-7.
1. Materials such as pipe, tube, fittings, reinforcing bar, electrical cable and welding materials are inspected for identification of specification number, grade, and heat number, as required. The identification marking on the material is verified in conjunction with a review of the documentation required by the applicable code, specification and purchase order.
 2. Pipe spool pieces, parts and components such as valves, pumps, vessels, tanks, heat exchangers and instruments are inspected for identification such as part number, spool number or serial number. The documentation is reviewed to verify that material used in the fabrication of the item is identified and complies with code and purchase order requirements and that the documentation is complete for traceability, when required.
 3. Depending on the results of the receiving inspection, material, components and parts are tagged as "RELEASE" or "HOLD" as referenced in QCP-7.
- F. Material components and parts at the construction site are stored and handled within the storage area in accordance with procedure QA-13.
1. Items tagged as "HOLD" are stored in a segregated storage area when practical to prevent their use until disposition or removal from the site.
 2. To permit processing of items in a "HOLD" status a "Limited Work Authorization" may be issued and items so tagged in accordance with QCP-8. Items tagged as "RELEASE" or "LWA/HOLD" retain their identification throughout storage.
 3. Whenever an item is separated from its identification (such as removing items from a tagged bundle or cutting off a piece of pipe), the identification is transferred to each piece not marked. Field Quality Assurance verifies the transfer of identification prior to removal and assures that the documentation is changed accordingly.

IV. PROCEDURE (Continued)

4. Physical identification shall be used to the greatest extent possible. Acceptable methods include tagging, stamping and marking with paint or other engineer approved substances which will not readily wear or wash off, react with the surface bearing the identification or otherwise affect the function of the item. When identification marking is employed, the marking shall be clear, unambiguous and indelible. Whenever marked surfaces are given surface treatment an alternate method of identification is employed. When stamping is used, only low-stress continuous or interrupted dot die stamps are used.
- G. Material, components and parts are issued from the storage area upon request by authorized supervisory personnel and under the cognizance of the designated custodian responsible for the storage area.
1. Only items tagged "RELEASE" or "LWA/HOLD" are issued for further work.
 2. The supervisor authorizing the issue of an item signs a receipt to document the removal from the storage area. The receipt is retained by the storage area custodian who records the item, quantity, serial or tag number and where it is to be installed.
- H. The Field Quality Assurance Group monitors the performance of contractors engaged in safety-related civil/structural activities to assure that UE&C approved procedures for identification and control are employed throughout fabrication, erection, installation and use.



QUALITY ASSURANCE PROCEDURE QA - 9-1

CONTROL OF SPECIAL PROCESSES - CONTROL OF SUPPLIER OPERATIONS

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

January 9, 1978
INFORMATION ONLY

Prepared by: Robert C. Holzworth
R. C. Holzworth
Quality Assurance Engineer

No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/8/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
2	9/26/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
3	10/27	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

Approved by: G. F. Cole
G. F. Cole, Project Manager

Approved by: J. B. Silverwood
J. B. Silverwood, Manager
Reliability & Quality Assurance

REVISION				APPROVAL	
No.	Date	Page Nos. Revised	Prepared By	Project Manager	Manager R&QA
4	1/31/80	1,2,3,4	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

1/31/80
Rev. 4

QA-9-1 CURRENT PAGE LISTING

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Cover Page	1/31/80
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PROJECT QUALITY ASSURANCE PROCEDURE QA-9-1IDENTIFICATION OF CHANGESFOR REVISION 4

<u>Section</u>	<u>Page</u>	<u>Reason</u>
III.B.2	1	Inserted "off site" to define VSR responsibility.
IV.C	2	Added "/contractor", as required to submit special process procedures.
IV.C.3	3	Deleted "Project Manager and" to comply with Internal Audit NH-308.
IV.H	4	Inserted "typical records such as" in the last sentence.
IV.H.2	4	Deleted "and equipment", not relevant.



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QUALITY ASSURANCE PROCEDURE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT: CONTROL OF SPECIAL PROCESSES -
CONTROL OF SUPPLIER OPERATIONS

QA - 9-1

REV: 4

DATE: 1/31/80

PAGE 1 of 4

I. SCOPE

This procedure applies to UE&C's activities for controlling the special processes performed by equipment suppliers and site contractors. This procedure applies to items identified as Seismic Category I or Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERALA. Purpose

1. To impose the applicable portions of Standard IX-1 in the Quality Assurance Manual - Corporate Standards on the project.
2. To establish measures to assure that special processes, including welding, heat treating and nondestructive examination, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria and other special requirements.

B. Reference Documents

QA-4 Procurement Document Control
QA-7-2 Control of Purchased Material - Vendor Surveillance

III. RESPONSIBILITIESA. Engineering Department

The Engineering Department is responsible for establishing in the UE&C drawings and specifications the requirements for special processes such as welding, heat treatment and nondestructive examination (NDE).

B. Quality Assurance Department

1. The Quality Assurance Engineer (QAE) is responsible for reviewing and approving the supplier's system for the control of special processes as well as procedures for the performance of special processes. The QAE is also responsible for establishing surveillance points at which the supplier's operations are monitored.
2. The Vendor Surveillance Representative is responsible for surveillance of the supplier's off site control and performance of special processes.

III. RESPONSIBILITIES (Continued)

3. The Field Quality Assurance Group is responsible for performing surveillance over contractors utilizing special processes in the completion of work associated with the containment and other civil/structural activities.

IV. PROCEDURE

- A. The requirements for special processes, such as welding, heat treatment and NDE, are defined in the UE&C drawings and specifications and are in accordance with applicable codes, standards, specifications, criteria and other special requirements. Whenever special processes not covered by existing codes or standards are required, the requirements for qualifications of personnel, procedures or equipment is defined in the specification.
- B. When required by the procurement documents, the supplier submits his quality assurance plan to UE&C for review and approval.
 1. As part of his review, the QAE reviews the supplier's control of special processes for completeness and adequacy.
 2. Areas examined include, but are not limited to, control of welding filler material and qualification of welding and NDE personnel.
- C. In addition, the Supplier/Contractor is required to submit to UE&C for review and approval all special process procedures, such as welding, heat treatment and NDE procedures, together with the appropriate procedure qualifications.
 1. All special process procedures must be approved by UE&C prior to use by the supplier.
 2. The QAE with assistance as required from specialists in the Reliability and Quality Assurance Department, reviews and approves the supplier's special process procedures. As part of the review, the procedures will be checked for inclusion of provisions calling for performance:
 - a. Under controlled conditions including the use of written process sheets, travelers or equivalent that specify and provide verification of the conduct of the special processes.
 - b. In accordance with applicable codes, standards, specifications, criteria and other special requirements.
 - c. Using qualified personnel, procedures and equipment, as required.

IV. PROCEDURE (Continued)

3. The QAE informs the SDE in writing of the results of these reviews and identifies any further action required of the vendor.
- D. The QAE establishes surveillance points of the supplier's operation in accordance with procedure QA-7-2. Surveillance points pertaining to special processes may include, but are not limited to, witnessing the fit-up and performance of the first production weld, inspection of a root pass or the witnessing of various nondestructive examinations.
- E. The Vendor Surveillance Representative monitors the supplier's system for control of special process in accordance with procedure QA-7-2. The Vendor Surveillance Representative is trained, qualified and certified in accordance with guidelines of SNT-TC-1A to evaluate nondestructive examinations that he witnesses.
 1. He verifies that all special process procedures used are approved by UE&C and are followed.
 2. He verifies that personnel, procedures and equipment qualifications are current and in accordance with applicable codes and standards.
 3. He witnesses and/or verifies nondestructive examinations and other special processes established as surveillance points. UE&C personnel witnessing nondestructive examinations are qualified in accordance with procedure QA-9-2.
 4. He reviews welding material certifications, heat treat charts, radiographs, NDE reports and other pertinent documentation, as applicable.
 5. The results of these actions are recorded in Inspection Reports prepared for each visit.
- F. The requirements of this procedure are imposed upon individual vendors through the Quality Assurance section of the specification or through standard quality assurance specification attachments in accordance with procedure QA-4.
- G. The Field Quality Assurance Group reviews and approves contractor special process procedures prior to use. Field Quality Assurance surveillance actions assure that contractors are employing only qualified and approved procedures, equipment and personnel in the performance of special processes.

IV. PROCEDURE (Continued)

H. Vendors and subcontractors document the control of special process materials, procedures, personnel and activities. The documentation required is accomplished by typical records such as the following:

1. Material test reports and certifications of special processes and materials.
2. Procedure qualifications (Welding, NDE and Heat Treatment)
3. Personnel qualifications and certifications (Welding and NDE).
4. Weld History Records and Fabrication Traveler and Process Check Lists.
5. Cadweld reports.
6. NDE reports including radiographs.
7. Authorization for issuance of welding and brazing filler materials.

QUALITY ASSURANCE PROCEDURE QA -9-2

TRAINING, QUALIFICATION & CERTIFICATION OF NDE PERSONNEL

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

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January 10, 1979

INFORMATION ONLY

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No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/8/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
2	9/26/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
3	11/26/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
4	10/27/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
5	1/12/78	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

REVISION				APPROVAL		
No.	Date	Page Nos. Revised	Prep. By	Project Manager	Manager R&QA	Project Const. Mgr.
6	5/1/79	4, Appendix E Pg. 1 APP. E	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
7	4/21/80	1, 5, 6, Att. 1, App. C	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
8	11/20/81	1, 11, 3	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

QA-9-2 CURRENT PAGE LISTING - REV. 8

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3	11/20/81
4	5/1/79
5	4/21/80
6	4/21/80

Attachment No. 1 Form 4514	4/21/80
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Appendix A - pg. 1	1/12/78
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SEABROOK
NEP 1 & 2
MNPS
QA-9-2
REV. 8
11/20/81

PROJECT QUALITY ASSURANCE PROCEDURE QA-9-2

Identification of Changes

<u>Section</u>	<u>Page</u>	<u>Reason</u>
IV.B 1 and 2	3	Specify the criteria used to consider NDE candidates.

**QUALITY ASSURANCE PROCEDURE**

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT: TRAINING, QUALIFICATION
& CERTIFICATION OF NDE PERSONNEL

QAP - 9-2

REV: 7

DATE: 4/21/80

PAGE 1 of 6

I. SCOPE

This procedure applies to the training, qualification and certification of personnel who perform, witness or interpret the results of nondestructive examination (NDE) on items identified as Seismic Category I or Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERAL**A. Purpose**

1. To impose the applicable portions of Standard IX-2 in the Quality Assurance Manual-Corporate Standards on the project.
2. To establish methods for qualifying and certifying personnel responsible for the performance or surveillance of nondestructive examinations.

B. Reference Documents

SNT-TC-1A (1975) - ASNT Recommended Practices for NDE Personnel and Certification.
QA-4 - Procurement Document Control
Form 4514 - Certification (Attachment #1)

C. This procedure, supplemented by the appropriate appendix (below), shall apply to the qualification, training and certification of UE&C personnel engaged in NDE programs:

1. Personnel Engaged in Surveillance Activities.
(Appendix A)
2. Personnel Performing NDE (Appendix B)
3. Personnel Engaged in Performance and/or Observation of Inspection Functions, Tests or Measurements (Appendix C)
4. Certification of Level III Personnel by Examination
(Appendix D)
5. Selection and Certification of Visual Inspection Personnel
(Appendix E)

III. RESPONSIBILITIES

- A. The Manager-R&QA is responsible for assuring that all personnel performing, witnessing or interpreting results of nondestructive examinations are qualified and certified in accordance with the guidelines of Recommended Practice No. SNT-TC-1A. (1975)

- B. The Test Examiner - NDE Level III is appointed by the Manager-R&QA and is responsible for administering UE&C's program for training, examining, and certifying nondestructive test personnel.

IV. PROCEDURE

A. Levels of Qualification

1. Personnel performing or evaluating nondestructive examinations are qualified to the appropriate Level in accordance with the requirements of this document and the applicable appendices,
2. There are five(5) levels of qualification as follows:
 - a) Level I - A Level I individual is qualified only as an operator, to physically perform the test. He is under the direction of, and responsible to, a Level II or Level III individual for proper performance of the tests in the applicable method.
 - b) Level IR - A Level IR individual is qualified on a restricted basis. He is under the supervision of, and responsible to a Level II, Level IIR or Level III individual for the interpretation of test results, but shall make no independent final judgement.
 - c) Level II - A Level II individual is qualified to read, interpret and evaluate test results with reference to the applicable codes and specifications, and to accept or reject the work based upon this evaluation. He is qualified to direct and carry out tests, calibrate equipment, and to direct the performance of Level I and Level IIR individuals.
 - d) Level IIR - A Level IIR individual is qualified on a restricted (R) basis to read, interpret and evaluate test results with reference to the applicable codes and specifications. He is able to organize and report nondestructive testing results. He is not qualified to direct and carry out tests, calibrate equipment, or to direct the performance of Level I or Level II individuals.
 - e) Level III - A Level III individual is capable of establishing techniques, interpreting specifications and codes, designating the particular test method and techniques to be used, and interpreting the results. He shall be capable of evaluating the results not only

in terms of existing codes or specifications, but he also has sufficient practical background in applicable materials technology to assist in establishing tests and acceptance criteria when none are otherwise available. It is desirable that he have general familiarity with all other commonly used NDE methods. He is responsible for conducting examinations of Level I and Level II personnel, when authorized by the Test Examiner - NDE Level III.

- f) Home Office Test Examiner - NDE Level III - The Manager - R&QA shall appoint the Test Examiner - NDE Level III at the home office, who will hereafter be referred to as the "Test Examiner - NDE Level III." He shall be responsible for administering the program for training, examining and certifying nondestructive examination personnel and shall be responsible for compliance to this procedure.

B. Candidate Requirements

1. For those positions limited only to performance or trainee activities, personnel shall be considered on the basis of education, previous employment, length and type of experience and qualifications in related NDE methods in accordance with SNT-TC-1A 1975.
2. For those positions which require specific skills or degrees of experience and include responsibility for acceptance, personnel shall be considered on the basis of education, length and type of previous experience, participation in instructional programs, seminars and schools and qualifications in closely related NDE methods in accordance with SNT-TC-1A 1975.
3. Specific candidate requirements and/or exceptions to the above shall be as defined in the applicable appendix.

C. Training

1. Trainee personnel shall receive sufficient briefing to prepare them for their assignments. This may take the form of written or verbal instruction, review of applicable material including regulatory documents, manufacturers instructions, codes, specifications, procedures, basic theory and as otherwise determined by his supervisor, subject to approval by the Test Examiner - NDE Level III.

2. Personnel engaged in surveillance, performance and acceptance activities shall receive sufficient organized training and testing to assure competent performance in their assignments.
3. The specific requirements for training and/or exceptions to the above shall be as defined in the applicable appendix.

D. Examination

1. All personnel levels shall be subject to an examination as a part of determining suitability for a particular activity or to evaluate specific skills.
2. The requirements for and the method and extent of examination shall be as defined in the applicable appendix. As a general practice, examinations for Level I or IR shall be considered as informational data and not subject to formal grading or permanent record.
3. Personnel responsible for acceptance shall obtain an eye examination once each year to determine the following:
 - a) Near vision equal to Jaegers J-1.
 - b) Correction, if required.
 - c) Color blindness, if present.

E. Grading

1. Examinations shall be subject to grading in accordance with the applicable appendix.
2. Eye examinations shall not be graded; however, failure to meet the requirement shall prevent completion of qualification.

F. Completion of Qualification

1. Personnel meeting the requirements of this procedure shall be recognized as qualified.
2. Qualified personnel may begin their assignment upon completion of orientation given by supervision.
3. Pending issuance of formal certification an interoffice memo or speed letter shall be prepared and directed to the responsible supervisor attesting to the qualifications of the individual.

4. Certification by UE&C indicates that the individual has met the qualification requirements for the specified level of a specified nondestructive testing method. Certification Form 4514 (see Attachment #1) is issued and signed by the Test Examiner - NDE Level III and the Manager-Quality Services. Copies of Form 4514 are issued to the individuals supervisor and a copy is on file in the home office.
5. Certification shall be terminated by dismissal, resignation or reassignment to other duties within the company.
 - a) Certification may be suspended or revoked, as appropriate, in the event of unsatisfactory performance or extended inactivity as determined by responsible supervision and/or the Test Examiner - NDE Level III.

G. Recertification

1. Recertification is required for certified personnel, at all levels, every three(3) years.
 - a) Recertification may require complete, partial or no retesting based upon record of performance, activity, length of experience and other factors.
 - b) Records of periodic on-the-job evaluations may be used as a basis for recertification. The evaluation and records shall be the responsibility of the Test Examiner - NDE Level III.
 - c) Regardless of the method used it shall be fully documented and made a part of the certification folder.

H. Records

1. The Test Examiner - NDE Level III maintains a file on each certified individual. This file includes:
 - a) Certification Form 4514 (Attachment #1)
 - b) Resume of individual's educational background and experience.
 - c) Results and grades of examinations (general, specific and practical).

- d) Written examinations.
 - e) Eye examination results.
 - f) Exceptions by the Test Examiner - NDE Level III.
 - g) Unsatisfactory performance reports (specific).
- I. The requirements of this procedure are imposed upon individual vendors through the Quality Assurance section of the specification or through standard quality assurance specification attachments in accordance with procedure QA-4.



SEABROOK
NEP 1 & 2
MNPS
QA-9-2
ATTACHMENT 1
4/21/80
Page 1 of 1

ISSUE DATE _____

THIS IS TO CERTIFY THAT

IT HAS BEEN EVALUATED AND IS CONSIDERED QUALIFIED TO
PERFORM THE SPECIFIC ASSIGNED TASKS OF

ON THE BASIS OF

IN COMPLIANCE WITH

CERTIFIED LEVEL _____

CERTIFICATION FROM: _____ TO: _____

LEVEL III EVALUATOR _____

MANAGER _____

UNITED ENGINEERS & CONSTRUCTORS INC.

APPENDIX TO QA-9-2

QUALIFICATION AND CERTIFICATION OF
NONDESTRUCTIVE EXAMINATION PERSONNEL

APPENDIX A
FOR PERSONNEL ENGAGED IN
SURVEILLANCE ACTIVITIES

I. SCOPE

This Appendix applies to UE&C's program for the qualification and certification of UE&C personnel witnessing nondestructive examination (NDE) and evaluating results thereof.

II. LEVELS OF QUALIFICATION

A. Level IR

1. Level IR shall be a trainee category in which an employee receives necessary on-the-job training and experience under the supervision of a Level IIR or Level III.
2. Designation of personnel to Level IR shall be at the discretion of the Test Examiner - NDE Level III.
3. The duties of the Level IR shall be determined by responsible supervision. At no time shall a Level IR pass judgement on the acceptability of material.

B. Level IIR

1. Personnel who have met the requirements of qualification and are so certified, shall be designated Level IIR.
2. The responsibility of Level IIR personnel shall be the review and acceptance or rejection of materials subjected to non-destructive examination methods.
3. Level IIR personnel may also perform audits, determine compliance, witness performance and refer questionable or unsatisfactory items to the applicable engineering discipline.

4. Level IR activity is not mandatory for Level IIR certification.

III. CANDIDATE REQUIREMENTS

A. Level IR

1. Candidates for Level IR shall be considered on the basis of the criteria contained in paragraph IV-B-1 of this procedure.
2. Selection and acceptance of personnel shall be the responsibility of the Test Examiner - NDE Level III.

B. Level IIR

1. Personnel for Level IIR shall be evaluated based upon paragraph IV-B-2 of this procedure.

C. General

1. Personnel for Level IR and Level IIR shall be subject to these requirements except as determined unnecessary by the Test Examiner - NDE Level III.
2. Exceptions shall be documented by the Test Examiner - NDE Level III and made a part of the personnel record.

IV. TRAINING

- A. The training requirements for Level IR shall be as described in paragraph IV-C-1 of this procedure.
- B. Formal training shall be mandatory for Level IIR personnel.
 1. Subject matter shall be prepared and presented by the Test Examiner - NDE Level III.
 2. At the option of the Test Examiner - NDE Level III the general training requirements shown in Table I may be waived in recognition of formal programs by others, home study, seminars, other programs or verified previous experience.
 3. The specific instruction shown in Table I shall be mandatory for all Level IIR personnel.

4. Training Course content and duration shall be in accordance with Table I of this Appendix.

V. EXAMINATION

- A. Each candidate considered for certification to Level IIR shall be subject to the following examinations:

1. General Examination

- a) A general examination of no less than twenty (20) questions shall be administered closed book.
- b) Written examinations administered by accredited outside agencies, schools, home study, or seminars in conjunction with their program may be accepted in lieu of a) above at the discretion of the Test Examiner - NDE Level III.

2. Specific Examination

- a) The specific examination shall consist of no less than twenty (20) questions dealing with those codes, standards, specifications, procedures or other instructions likely to be encountered by the candidate. This examination shall be open book.

3. Practical Examination

- a) The practical examination is intended to evaluate the candidates' understanding of the practical aspects of the method. For the radiographic method typical films shall be used. To supplement the use of films and for evaluation of other methods one or more of the following techniques shall be employed;
 - 1) Oral questioning and discussion
 - 2) Observation of the candidate's surveillance of nondestructive examinations in progress
 - 3) Review of illustrative material depicting equipment, materials, responses, patterns, etc. relative to the method.

- b) The extent, content and method of practical examination shall be determined by the Test Examiner - NDE Level III on a case basis. The grading shall be in accordance with Section 6 below.
- c) The method of practical examination and score shall be recorded by the Test Examiner - NDE Level III.

VI. GRADING

- A. A minimum numerical grade of 70% shall apply to each required examination.
 - 1. Oral discussion may be used to clarify or verify written test results to a maximum of 10%.
- B. Grades shall be determined by percentile weight factors as shown in Table II of this appendix.
- C. A composite score of 80 is required as the minimum passing grade for the total of all required examinations.
- D. When possible, examinations will be reviewed with the candidate and grades determined at the time of examination.
- E. The review, grading and final scoring of written or practical examination shall be the responsibility of the Test Examiner - NDE Level III.

VII. RECORDS

- A. Complete records of appointments, certifications, tests, scores, and other related data shall be documented and retained in the individual's folder. These data shall be made available for audit or verification by authorized personnel.
- B. As a minimum the following documents shall be required:
 - 1. Certification
 - 2. Resume, including education and work experience
 - 3. Results and Grades
 - 4. Written Examinations
 - 5. Eye Examination
 - 6. Periodic performance evaluations

APPENDIX A

TRAINING PROGRAM DETAILS

TABLE I

QUALIFICATION/CERTIFICATION OF PERSONNEL WITNESSING NDE

RADIOGRAPHIC

General Subjects (8 hours)

1. General Applications
2. Comparison with other methods
3. Comparison of radiation sources
4. Film Speeds
5. Screens
6. Penetrameters
 - a. Types & Selection
 - b. Use & Substitution
7. Shims
8. Techniques
 - a. Options & Section
 - b. Specific Requirements
9. Film processing and handling
 - a. Automatic & Manual
 - b. Artifacts
10. Definitions
11. Math of radiography
 - a. Density

- b. Unsharpness
- c. Penetrameters
- 12. Densitometers
- 13. Viewing equipment

Specific Subjects (16 hours)

- 1. Film Interpretation
 - a. Radiographic technique
 - b. Film Quality
 - c. Material acceptability
 - d. Comparison with reference radiographs and/or written criteria
- 2. Codes, Standards, Specifications
 - a. Applicability
 - b. Variables
 - c. Requirements
 - d. Acceptance
- 3. Discontinuities (type and cause)
- 4. Factors affecting validity

MAGNETIC PARTICLE

General Subjects (4 hours)

- 1. General applications
- 2. Comparison with other methods
- 3. Comparison of equipment
- 4. Techniques

5. Equipment
 - a. Applicable
 - b. Selection
6. Definitions
7. Math of Magnetic Particle
 - a. Amperage requirements
 - b. Examination techniques

Specific Subjects (10 hours)

1. Interpretation
 - a. Technique
 - b. Appearance (relevant/non-relevant)
 - c. Acceptance
 - d. Comparison with photographic or written criteria
2. Codes, Standards, Specifications
 - a. Applicability
 - b. Variables
 - c. Requirements
 - d. Acceptance
3. Discontinuities (type and cause)
4. Factors effecting validity

LIQUID PENETRANT

General Subjects (4 hours)

1. General applications
2. Comparison with other methods

3. Comparison of systems
4. Techniques
5. Equipment
 - a. Applicability
 - b. Selection
6. Definitions
7. Math of liquid penetrant

Specific Subjects (10 hours)

1. Interpretation
 - a. Technique
 - b. Appearance (relevant/non-relevant)
 - c. Acceptance
 - d. Comparison with photographic or written criteria
2. Codes, Standards, Specifications
 - a. Applicability
 - b. Variables
 - c. Requirements
 - d. Acceptance
3. Discontinuities
4. Factors effecting validity

ULTRASONIC

General Subjects (8 hours)

1. General Applications

2. Comparison with other methods
3. Comparison of techniques
4. Contact procedures
5. Immersion procedure
6. Transducer
 - a. Types and application
 - b. Selection and use
7. Flaw Detection
8. Other
9. Accessories
10. Definitions
11. Math of ultrasonics
12. Calibration Blocks

Specific Subjects (16 hours)

1. Interpretation
 - a. Method
 - b. Performance
 - c. Material acceptability
 - d. Comparison with written criteria, standard, blocks, etc.
2. Codes, Standards, Specifications
 - a. Applicability
 - b. Variables
 - c. Requirements
 - d. Acceptance

3. Discontinuities (type and cause)
4. Factors effecting validity

EDDY CURRENT

General Subjects (4 hours)

1. General Applications
2. Comparison with other methods
3. Comparison of systems
4. Equipment
 - a. Applicability
 - b. Selection
5. Probes, Coils
 - a. Application and use
6. Flaw Detection
7. Other
8. Definitions
9. Math of Eddy Current
10. Calibration

Specific Subjects (8 hours)

1. Interpretation
 - a. Method
 - b. Performance
 - c. Material acceptability
 - d. Comparison with written criteria, standards, samples, etc.

2. Codes, Standards, Specifications
 - a. Applicability
 - b. Variables
 - c. Requirements
 - d. Acceptance
3. Discontinuities (type and cause)
4. Factors effecting validity

APPENDIX A

TABLE II

NDE TRAINING COURSE GRADE PERCENTILE WEIGHT FACTORS

	<u>General</u>	<u>Specific</u>	<u>Practical</u>
Radiography	0.2	0.3	0.5
Liquid Penetrant	0.2	0.4	0.4
Magnetic Particle	0.2	0.4	0.4
Ultrasonic	0.2	0.4	0.4
Eddy Current	0.2	0.4	0.4

UNITED ENGINEERS & CONSTRUCTORS INC.

APPENDIX TO QA-9-2

QUALIFICATION AND CERTIFICATION OF
NONDESTRUCTIVE EXAMINATION PERSONNEL

APPENDIX B
FOR PERSONNEL PERFORMING
NONDESTRUCTIVE EXAMINATIONS

I. SCOPE

This Appendix applies to UE&C's program for the qualification and certification of personnel performing nondestructive examinations.

II. LEVELS OF QUALIFICATION

A. Level I

1. Level I shall be an operator category in which an employee receives necessary on-the-job training and experience under the supervision of a Level II or Level III.
2. Designation of personnel to Level I shall be at the discretion of the Test Examiner - NDE Level III.
3. The specific duties of the Level I shall be determined by responsible supervision. At no time shall a Level I pass judgement on the acceptability of materials.

B. Level II

1. Personnel who have met the requirements contained herein, and are so certified, shall be designated Level II.
2. The responsibility of Level II personnel shall include the safe and proper operation of equipment in accordance with applicable regulatory documents, codes, standards, specifications and manufacturers recommendations. Level II personnel shall be capable of interpretation, evaluation and acceptance or rejection of discontinuities in accordance with applicable criteria.

3. Level II personnel may perform audits, determine compliance, witness performance and refer questionable or unsatisfactory items to the applicable engineering discipline.
4. Level I or equivalent activity is mandatory for Level II certification.

III. CANDIDATE REQUIREMENTS

A. Level I

1. Candidates for Level I shall be considered on the basis of the criteria contained in paragraph IV-B-1 of this procedure.

B. Level II

1. Personnel for Level II shall be evaluated based upon paragraph IV-B-2 of this procedure.

C. General

1. Personnel for Level I and Level II shall be subject to the requirements of this Appendix except as determined unnecessary by the Test Examiner - NDE Level III.
2. Exceptions shall be documented by the Test Examiner - NDE Level III and made a part of the personnel record.

IV. TRAINING

- A. The training requirements for Level I shall be as described in paragraph IV-C-1 of this procedure.
- B. Formal training shall be mandatory for Level II personnel.
 1. Subject matter shall be prepared and presented by the Test Examiner - NDE Level III.
 2. At the option of the Test Examiner - NDE Level III, the training requirements shown in Table I may be reduced in recognition of formal accredited programs by others, home study, seminars, other programs or verified previous experience.

C. Training Course Content and Duration

1. Content shall be in accordance with Table I.
2. Hours of training shall be as shown in Table 6.2.1A of SNT-TC-1A subject to the option described in IV-B-2 above.

V. EXAMINATION

A. Each candidate considered for certification to Level II shall be subject to the following examinations:

1. General Examination

- a) A general examination of no less than forty (40) questions for radiography and ultrasonics and no less than thirty (30) questions for other methods shall be administered closed book.
- b) Written examinations administered by accredited outside agencies, schools, home study, or seminars in conjunction with their program may be accepted in lieu of a) above at the discretion of the Test Examiner - NDE Level III.

2. Specific Examination

- a) The specific examination shall consist of no less than twenty (20) questions, regardless of method, dealing with those codes, standards, specifications, procedures or other instructions likely to be encountered by the candidate. This examination shall be open book.

3. Practical Examination

- a) The practical examination is intended to evaluate the candidates ability to perform a representative examination to the satisfaction of the Test Examiner. The examination shall include the operation of appropriate equipment and interpretation of the resulting images, patterns or responses and the identification and evaluation of indications.
- b) The Test Examiner shall evaluate the candidate using at least a ten point check list. The grading shall be in accordance with VI below.

VI. GRADING

- A. A minimum numerical grade of 70% shall apply to each required examination.
- B. Grades shall be determined by percentile weight factors for all methods, as shown in Table II of this Appendix.
- C. A composite score of 80 is required as the minimum passing grade for the total of all required examinations.
- D. When possible, tests will be reviewed with the candidate and grades determined at the time of examination.
- E. The review, grading and final scoring of written examinations shall be the responsibility of the Test Examiner - NDE Level III.

VII. RECORDS

- A. Records of appointments, certification, tests, scores and other related data shall be documented and retained in the individuals folder. This data shall be made available for audit or verification by authorized personnel.
- B. As a minimum the following documents shall be required:
 - 1. Certification
 - 2. Resume, including education and work experience
 - 3. Results and Grades
 - 4. Written Examinations
 - 5. Eye Examination
 - 6. Periodic performance evaluations

APPENDIX B

NONDESTRUCTIVE EXAMINATION TRAINING COURSE

TABLE I

LIQUID PENETRANT

General Subjects

1. Basic principles of liquid penetrant testing
2. Liquid penetrant processing
3. Selection of penetrant test method (advantages and disadvantages of various methods)
4. Liquid penetrant test equipment
5. Liquid penetrant indications
6. Company inspection procedures and standards

Specific Subjects

1. Interpretation
 - a. Technique
 - b. Appearance (relevant/non-relevant)
 - c. Acceptance
 - d. Comparison with photographic or written criteria
2. Codes, Standards, Specifications
 - a. Applicability
 - b. Variables
 - c. Requirements
 - d. Acceptance
3. Discontinuities (Type and Cause)

MAGNETIC PARTICLE

General Subjects

1. Principles and characteristics of magnets and magnetic fields
2. Magnetization by means of electric current
3. Selecting the proper method of magnetization
4. Inspection materials
5. Principles of demagnetization
6. Magnetic particle test equipment
7. Types of discontinuities located by magnetic particle testing
8. Magnetic particle test indications and interpretation

Specific Subjects

1. Interpretation
 - a. Technique
 - b. Appearance (relevant/non-relevant)
 - c. Acceptance
 - d. Comparison with photographic or written criteria
2. Codes, Standards, Specifications
 - a. Applicability
 - b. Variables
 - c. Requirements
 - d. Acceptance
3. Discontinuities (type and cause)

RADIOGRAPHIC METHOD

General Subjects

1. General principles of radiography
2. Physical principles
3. Radiation sources
4. Radiation detection
5. Personnel safety and radiation protection
6. The radiographic process
7. Test result interpretation

Specific Subjects

1. Film Interpretation
 - a. Radiographic technique
 - b. Film quality
 - c. Material acceptability
 - d. Comparison with reference radiographs and/or written criteria
2. Codes, Standards, Specifications
 - a. Applicability
 - b. Variables
 - c. Requirements
 - d. Acceptance
3. Discontinuities (type and cause)

ULTRASONIC

General Subjects

1. Fundamental properties of sound
2. Principles of wave propagation
3. Generation of ultrasonic waves
4. Ultrasonic testing methods
5. Ultrasonic testing equipment
6. Operation of specific equipment
7. Selection of test parameters
8. Test standardization
9. Interpretation of results and test records
10. Variables affecting test results

Specific Subjects

1. Interpretation
 - a. Method
 - b. Performance
 - c. Comparison with written criteria, standard, blocks, etc.
2. Codes, Standard, Specifications
 - a. Applicability
 - b. Variables
 - c. Requirements
 - d. Acceptance
3. Discontinuities (type and cause)

EDDY CURRENT

General Subjects

1. Basic principles of eddy current
2. Effect and properties
3. Sensing elements
4. Equipment
5. Test parameters
6. Standardization
7. Test results and data
8. Variables

Specific Subjects

1. Interpretation
 - a. Method
 - b. Performance
 - c. Material acceptability
 - d. Comparison with written criteria, standards, samples, etc.
2. Codes, Standards, Specifications
 - a. Applicability
 - b. Variables
 - c. Requirements
 - d. Acceptance
3. Discontinuities (type and cause)

APPENDIX B

TABLE II

NDE TRAINING COURSE GRADE PERCENTILE WEIGHT FACTORS

	<u>General</u>	<u>Specific</u>	<u>Practical</u>
Radiography	0.2	0.3	0.5
Liquid Penetrant	0.2	0.4	0.4
Magnetic Particle	0.2	0.4	0.4
Ultrasonic	0.2	0.4	0.4
Eddy Current	0.2	0.4	0.4

APPENDIX TO QA-9-2

FOR CERTIFICATION OF LEVEL III
PERSONNEL BY EXAMINATION

APPENDIX D
QUALIFICATION AND CERTIFICATION OF
NONDESTRUCTIVE EXAMINATION PERSONNEL

I. PURPOSE

- A. The purpose of this Appendix is to establish a method for certification of Level III personnel by examination, as required by the Winter 1975 Addenda to ASME Code Sections III and XI.
- B. This instruction was developed using the applicable sections of Recommended Practice No. SNT-TC-1A (June 1975 edition) as a guide. The parameters described were established to meet the specific needs of United Engineers and Constructors Inc. (UE&C) as provided for in paragraphs 1 and 5 of SNT-TC-1A.

II. PROCEDURE

- A. The initial examination is administered by the Manager of Reliability and Quality Assurance, or his designee the Manager of Codes and Standards, to the Supervising Engineer of Nondestructive Examinations. Thereafter, examinations for subsequent Level III's are administered by the Supervising Engineer of Nondestructive Examinations.
- B. In future, examination by a recognized outside agency or society may partially replace the procedure described above.

III. EXAMINATIONS

A. General

A written examination consisting of thirty (30) assorted questions relative to radiographic, ultrasonic, magnetic particle and liquid penetrant methods selected from the Level II questions of SNT-TC-1A shall be given as a minimum. When certification is sought for methods in addition to those above, at least six (6) questions for each method shall be added to the examination.

B. Specific NDE Method

A written examination consisting of thirty (30) questions devised by the Supervising Engineer of Nondestructive Examinations,

relative to each specific test method for which certification is sought shall be given as a minimum.

C. Practical Proficiency

A practical examination designed to demonstrate the proficiency of the Level III using one (1) or more of the following techniques:

1. Preparation of a typical method procedure
2. Review and comment on a typical procedure submitted by a vendor
3. Review of typical weld configurations and/or product forms and the selection of applicable examination methods and techniques.

IV. GRADING

A. General Examination

Basic (30) question quiz - 3.3 points each	= 100%
Modified (36) question quiz - 2.8 points each	= 100%
Modified (42) question quiz - 2.5 points each	= 100%

B. Specific Examination

Each specific examination consisting of (30) questions - 3.3 points each	= 100%
--	--------

C. Practical Examination

The practical examination is evaluated by the administrator using a checklist and graded accordingly.

V. PERCENTILE WEIGHTS

- A. A percentile weight factor is applied to the graded examinations as follows:

- | | |
|-----------------------------------|------|
| 1. General examinations | - .4 |
| 2. Specific/Practical Examination | - .6 |

- B. A minimum numerical grade of 80% is required for each examination. In addition, a composite grade of 90% is required for qualification. The method of practical examination, selected

in accordance with III.C above, is documented along with the examination results.

- C. Those failing to attain the minimum grades, as stated above, are required to wait (30) days or show evidence of having received additional training prior to re-examination.

VI. SUPPLEMENTAL EXAMINATIONS

- A. When an already certified Level III attempts to qualify for methods beyond those listed in III-A above, he shall comply with all examination requirements (III.A, B, and C) except that:
1. For each new method only six additional general questions are required.
 2. The grade of the original (basic 30 questions general quiz) examination is modified as described in IV.A above to provide the general examination grade for the new method(s).

VII. RECORDS

- A. Certification is based on a combination of successful completion of the examinations listed above and the education, training and experience as stated in SNT-TC-1A.
- B. As a minimum the following documents shall be required:
1. Certification
 2. Resume, including education, training and work experience
 3. Written Examinations
 4. Results and Grades
 5. Eye Examination

UNITED ENGINEERS & CONSTRUCTORS INC.

APPENDIX TO QA-9-2

QUALIFICATION AND CERTIFICATION OF
NONDESTRUCTIVE EXAMINATION PERSONNEL

APPENDIX E
INSTRUCTION FOR SELECTION AND
CERTIFICATION OF VISUAL INSPECTION PERSONNEL

I. SCOPE

This instruction is applicable to inspection and surveillance personnel in the employ of UE&C.

II. PURPOSE

To establish guidelines for the selection and certification of personnel performing, witnessing, or verifying inspections, examinations and tests requiring visual observation.

III. CONTENT

This instruction was developed using a variety of reference sources including ASME Section V Article 9.

IV. PERSONNEL REQUIREMENTS

Personnel considered for certification shall satisfy the following requirements. Suitability and acceptance of personnel shall be determined by the responsible supervisor and the Test Examiner-NDE Level III.

A. Education

Candidates shall evidence sufficient education to read and understand applicable drawings, procedures, specifications and other pertinent instructions in the performance of their duties.

B. Experience

Candidates shall have documented current experience in inspection and/or surveillance activities for a minimum of two(2) years. This experience shall be continuous for the time period specified above.

C. Other

Candidates shall evidence current certification in two(2) or more NDE methods for a minimum of one(1) year or hold a current ANSI or ASME certification for inspection and/or surveillance.

D. Alternate Requirements

In the absence of compliance with IV B. and IV C. above, a training program of suitable content and duration may be used to supplement not more than 50% of the time periods specified.

Training course content and duration shall be determined jointly by the responsible supervisor and the Test Examiner-NDE Level III.

V. EXAMINATION OF PERSONNEL

- A. Each candidate shall successfully complete a written examination consisting of 20 questions applicable to a variety of visual examination tasks. The test shall be administered by the Test Examiner-NDE Level III.
- B. A minimum passing grade of 70% is required.
- C. Each candidate shall receive a vision examination once each year. The minimum requirement shall be as follows:
 - 1) Near vision equal to J-1 (Natural or Corrected).
 - 2) Color blindness, if present.

VI. CERTIFICATION

- A. Those candidates meeting the requirements of IV and V above are considered qualified by the Test Examiner-NDE Level III.
- B. A certification Form No. 4514, shall be issued for each qualified individual.
- C. The certification period shall be for three(3) years.
- D. Re-certification shall be on the basis of one of the following:
 - 1) Continued satisfactory performance.
 - 2) Examination.

VII. SCOPE OF CERTIFICATION

- A. Personnel certified in accordance with this instruction are qualified to perform all visual examinations required during the routine performance of their inspection and/or surveillance assignment.
- B. The nature and scope of these visual examinations and applicable acceptance criteria are defined by drawing, specification, code, practice, procedure or other instructions.
- C. Personnel certified in accordance with this instruction are qualified to verify, evaluate, and accept or reject visual examination observations.

VIII. RECORDS

- A. Complete records of qualifications, tests, ratings and other related data shall be documented and retained in the individual's folder. This data shall be made available for audit or verification by authorized personnel.



QUALITY ASSURANCE PROCEDURE QA - 10

INSPECTION CONTROL

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

January 9, 1975

INFORMATION ONLY

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No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/11/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
2	9/26/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
3	10/23/75	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

**QUALITY ASSURANCE PROCEDURE**

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

INSPECTION CONTROL

QA - 10

REV: 3

DATE: 10/23/75

PAGE 1 of 4

I. SCOPE

This procedure applies to UE&C's activities associated with inspections performed by suppliers and with inspections and surveillance performed by UE&C at the Construction Site. This procedure applies to items identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERALA. Purpose

1. To impose the applicable portions of Standard X in the Quality Assurance Manual - Corporate Standards on the project.
2. To establish measures to assure that suppliers perform the required inspections in accordance with the applicable codes, standards, specifications and other requirements.

B. Reference Documents

QA-4 Procurement Document Control
QA-7-2 Control of Purchased Material - Vendor Surveillance
QA-13 Handling, Storage and Shipping Control

III. RESPONSIBILITIESA. Engineering Department

The Engineering Department is responsible for establishing the inspection requirements in the UE&C drawings and specifications.

B. Reliability & Quality Assurance Department

1. The Quality Assurance Engineer (QAE) is responsible for reviewing and approving the supplier's inspection plan and for establishing surveillance points at which UE&C will monitor the supplier's operation.
2. The Quality Assurance Engineer (QAE) is responsible for reviewing procurement documents to assure that inspection requirements are imposed on suppliers of safety-related equipment.

III. RESPONSIBILITIES (Continued)

3. The Vendor Surveillance Representative is responsible for monitoring the supplier's operation at the designated surveillance points.
4. The Field Quality Assurance Group is responsible for the performance of Level I inspection tasks associated with receiving inspection and storage inspection. They also perform Level II Surveillance over safety-related civil/structural activities.

IV. PROCEDURE

- A. The requirements for inspection are established in the UE&C drawings and specifications in accordance with the applicable codes, standards, specifications and other special requirements.
- B. When required by the procurement documents, the supplier submits his quality assurance plan to UE&C for review and approval prior to the start of the work.
 1. As part of his review, the QAE reviews the supplier's inspection plan to assure the following:
 - a. Inspections are performed in accordance with written procedures which:
 - 1) identify the characteristics to be inspected
 - 2) identify the group responsible for performing the inspection
 - 3) provide acceptance criteria
 - 4) provide a description of the method of inspection
 - 5) verify the completeness and disposition of the inspection
 - 6) specify that modifications, repairs or replacements are inspected to the original design and inspection requirements or to acceptable alternatives
 - b. Examinations, measurements or tests are performed and documented for each work operation, as necessary, to assure quality.
 - c. Individuals performing inspections are independent of the individual or group directly responsible for the work being inspected. They are qualified to appropriate codes, standards and training programs and these qualifications are kept current.

IV. PROCEDURE (Continued)

- d. Certain inspection points will be designated as mandatory inspection hold points beyond which work may not proceed.
 - e. Sampling procedures, when employed, are based on recognized standard practices and provide justification for sample size and selection.
 - f. Provisions have been made to employ process monitoring whenever direct inspection alone will not confirm parameters of the item.
- 2. The QAE establishes surveillance points at which UE&C will monitor the supplier's operation in accordance with procedure QA-7-2. These surveillance points are identified on UE&C and on the supplier's appropriate documents to assure that work does not proceed past these points without the consent of UE&C's Vendor Surveillance Representative.
- C. The Vendor Surveillance Representative monitors the supplier's operations at the designated surveillance points in accordance with procedure QA-7-2.
 - 1. The Surveillance points may include, but are not limited to, verification or witnessing of visual, dimensional or nondestructive examination.
 - 2. The Vendor Surveillance Representative also reviews supplier inspection reports for adequacy.
- D. The requirements of this procedure are imposed upon individual vendors through the Quality Assurance section of the specification or through standard quality assurance specification attachments in accordance with procedure QA-4.
- E. The Field Quality Assurance Group performs receiving inspection on safety-related items received at the Construction Site in accordance with Field QA Procedures. Working with detailed written procedures, they inspect for shipping damage, preservation, proper identification, and for the completeness and accuracy of supplier-furnished documentation.
- F. The Field Quality Assurance Group performs surveillance over the quality control activities of the containment, civil/structural contractors and the Civil/Structural Test Laboratory. Surveillance activities will include the following:

IV. PROCEDURE (Continued)

1. The review and approval of contractor quality assurance and work instructions prior to the start of work.
 2. Designation of pre-selected surveillance points beyond which the Contractor does not proceed without consent of the Field Quality Assurance Group.
 3. Randomly selected inspection points.
 4. Monitoring control over nonconformances including discrepant items identification, dispositioning and remedial action.
 5. Monitoring development and handling of contractor inspection records.
- G. The Field Quality Assurance Group performs inspection of stored equipment as described in procedure QA-13.

QUALITY ASSURANCE PROCEDURE QA - 11

TEST CONTROL

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

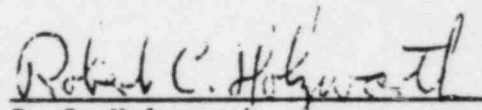
J.O. 6386

J.O. 9763

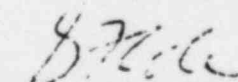
J.O. 6387

January 9, 1974

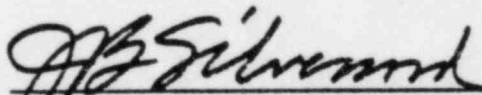
Prepared by:


R. C. Holzwarth
Quality Assurance Engineer

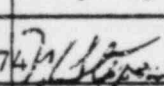
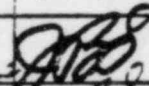
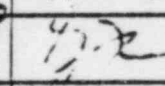
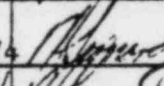

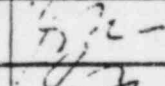
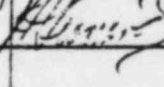
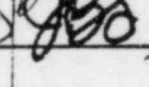
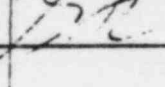
Approved by:


G. F. Cole, Project Manager

Approved by:


B. Silverwood, Manager
Reliability & Quality Assurance

INFORMATION ONLY

No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/11/74			
2	9/26/74			
3	10/23/75			

**QUALITY ASSURANCE PROCEDURE**

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

QA - 11

SUBJECT:

TEST CONTROL

REV: 3

DATE: 10/23/75

PAGE 1 of 4

I. SCOPE

This procedure applies to UE&C's activities associated with test control for proof tests prior to installation and the pre-operational and operational test program for items identified as Seismic Category I or Safety Class 1, 2, 3 and 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERALA. Purpose

1. To impose the applicable portions of Standard XI in the Quality Assurance Manual - Corporate Standards on this project.
2. To establish measures to assure that all testing required to demonstrate that structures, systems and components will perform satisfactorily in service is identified and performed in accordance with applicable codes, standards, specifications and other requirements.

B. Referenced Documents

- QA-4 Procurement Document Control
QA-7-1 Control of Purchased Material - Vendor Evaluation and Selection
QA-7-2 Control of Purchased Material - Vendor Surveillance

III. RESPONSIBILITIESA. Engineering Department

The Engineering Department is responsible for establishing the testing requirements delineating acceptance/rejection criteria in UE&C drawings and specifications. They are also responsible for reviewing and approving test procedures for proof tests performed by suppliers.

B. Test and Startup Engineering Department

The Test and Startup Engineering Department is responsible for developing test procedures for the pre-operational and operational test program for the project, including the NSSS, and reviewing the test results of systems for which UE&C is the cognizant design agency.

III. RESPONSIBILITIES (Continued)

C. Reliability & Quality Assurance Department

1. The Quality Assurance Engineer (QAE) is responsible for reviewing and approving supplier's system for test control as described in QA-7-1. He is responsible for reviewing supplier's proof test procedures and the pre-operational and operational test procedures developed by UE&C. He is also responsible for establishing surveillance points at which suppliers' operations are monitored.
2. The Vendor Surveillance Representative is responsible for monitoring suppliers' operations at the designated surveillance points.
3. The Field Quality Assurance Group is responsible for monitoring the performance of site tests within UE&C's scope of surveillance responsibility.

IV. PROCEDURE

- A. The requirements for testing along with the acceptance/rejection criteria are established in the UE&C drawings and specifications in accordance with applicable codes, standards, specifications and other requirements.
- B. When required by the procurement documents, the supplier submits his Quality Assurance Plan to UE&C for review and approval.
 1. As part of his review, the QAE reviews the supplier's system for test control and verifies that all proof tests are performed in accordance with written procedures.
 2. The supplier is required to submit test procedures to UE&C for review and approval. The Engineering Department and QAE review supplier test procedures to assure that they include the following:
 - a. Adequate and appropriate test equipment and methods.
 - b. Requirements and acceptance/rejection criteria as contained in the applicable design documents.
 - c. Statement of test objectives and a clear description of special precautions.
 - d. Provisions for establishing the status of the preparation, condition and completeness of the item to be inspected.

IV. PROCEDURE (Continued)

- B. 2. e. Calibrated instrumentation required for the test.
- f. Environmental conditions required for the test.
- g. Establishment of necessary inspection and test hold points.
- h. Provisions for documentation and evaluation of test results by qualified personnel.
- i. Compliance with applicable codes, standards and regulatory documents.
- j. Provisions for training, qualifying and certifying test personnel per ANSI N45.2.6.
- 3. In addition, for field assembled equipment the supplier is required to submit assembly and performance procedures to meet Federal, State and local laws.
- 4. The QAE establishes surveillance points at which the supplier's operations are monitored.
- C. The Vendor Surveillance Representative monitors the supplier's operations at the designated surveillance points in accordance with procedure QA-7-2.
 - 1. Surveillance points may include, but are not limited to, witnessing various proof tests.
 - 2. In addition, the Vendor Surveillance Representative verifies the following:
 - a. That the test procedure used is approved by UE&C and is followed.
 - b. That test instrumentation is adequate and calibrated.
 - c. That test results are documented, are satisfactory and those requiring further evaluation are forwarded to UE&C in accordance with the procurement documents.
- D. Pre-operational and operational test procedures for the project, including the NSSS, are developed by UE&C's Test and Startup Engineering Department and reviewed by the QAE. These procedures are reviewed to the identical requirements as Section IV.B.2.

IV. PROCEDURE (Continued)

- E. UE&C Test and Startup Engineering personnel will assist the Owner's personnel in carrying out the pre-operational and operational test program, as required.
- F. The results of pre-operational and operational testing for systems, structures and components for which UE&C is the cognizant design agency are reviewed and approved by the Test and Startup Engineering Department.
- G. The requirements of this procedure are imposed upon individual vendors through the Quality Assurance section of the specification or through standard quality assurance specification attachments in accordance with procedure QA-4.
- H. The Field Quality Assurance Group performs surveillance over the performance of site Civil/Structural testing activities. Surveillance actions will assure the following:
 - 1. Tests are performed in accordance with approved written procedures which incorporate appropriate acceptance criteria.
 - 2. The disposition of test results are on the basis of the acceptance criteria.
 - 3. Documentation is correct and complete.
 - 4. Deviations of test results from acceptance limits are handled as nonconformances.
 - 5. Test status is maintained on equipment undergoing test through the use of stamps, tags, labels or by documentation traceable to the equipment.



QUALITY ASSURANCE PROCEDURE QA - 12

CONTROL OF MEASUREMENT AND TEST EQUIPMENT

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

INFORMATION ONLY

No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/9/74	M. L. ...	[Signature]	[Signature]
2	9/26/74	J. K. ...	[Signature]	[Signature]
3	12/6/74	[Signature]	[Signature]	[Signature]
4	10/23/77	[Signature]	[Signature]	[Signature]
5	12/13/77	[Signature]	[Signature]	[Signature]

Prepared by:

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R. C. Holzworth
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Approved by:

G. F. Cole
G. F. Cole, Project Manager

Approved by:

J. B. Silverwood
J. B. Silverwood, Manager
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12/13/77

QA-12 CURRENT PAGE LISTING - REV. 5

<u>Page</u>	<u>Date</u>
Cover Page	12/13/77
i	12/13/77
ii	12/13/77
1	12/13/77
2	12/13/77
3	12/13/77
4	12/13/77

12/13/77

ATTACHMENT 1 TO PROJECT QUALITY
ASSURANCE PROCEDURE QA-12, REV. 5

IDENTIFICATION OF CHANGES

<u>Section</u>	<u>Page</u>	<u>Reason</u>
IV.A.3i	3	To comply with the requirements of UE&C Procedure QCP-2 "ASME Section III Division 2 Quality Assurance Program."

**QUALITY ASSURANCE PROCEDURE**

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

CONTROL OF MEASUREMENT AND TEST EQUIPMENT

QA - 12

REV: 5

DATE: 12/13/77

PAGE 1 of 4

I. SCOPE

This procedure applies to UE&C's activities associated with the control of measuring and test equipment. This procedure applies to items identified as Seismic Category I or Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERAL**A. Purpose**

1. To impose the applicable portions of Standard XII in the Quality Assurance Manual - Corporate Standards on the project.
2. To establish measures to assure that tools, gages, instruments and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated and adjusted at specific periods to maintain accuracy within necessary limits.

B. Reference Documents

QA-4 Procurement Documents Control
QA-7-2 Control of Purchased Materials & Vendor Surveillance
QA-17 QA Records

INFORMATION ONLY**III. RESPONSIBILITIES****A. Engineering Department**

The Engineering Department is responsible for designating the requirement in the procurement documents for suppliers to maintain systems for the control, calibration and adjustment of measurement and test equipment.

B. Reliability & Quality Assurance Department

1. The Quality Assurance Engineer is responsible for reviewing and approving supplier systems for the control of measurement and test equipment.
2. The Vendor Surveillance Representative monitors the implementation of the supplier's systems for control of measurement and test equipment.
3. The Field Quality Assurance Group is responsible for performing surveillance over contractor systems for control of measurement and test equipment.

IV. PROCEDURE

A. General Requirements

1. The requirements for supplier and contractor systems for the control, calibration and adjustment of measurement and test equipment are established in UE&C drawings and specifications. Requirements of this procedure are imposed upon individual suppliers through the Quality Assurance section of the specification or through standard quality assurance attachments in accordance with procedure QA-4.
2. When required by the procurement documents, suppliers and contractors submit their systems for control of measuring and test equipment as part of the Quality Assurance Plan for UE&C review and approval.
3. The QAE assures that each submitted system and procedure provide, as a minimum, for the following parameters:
 - a. Inspection, measuring, testing including non-destructive test equipment and maintenance devices are calibrated and adjusted at scheduled intervals against certified standards having known valid relationships to national standards. The methods of calibration for each type of device are documented. Where no National Standard exists the basis for calibration is to be clearly documented.
 - b. Calibration methods and intervals for each device are specified and based on the type of equipment, required accuracy, intended usage, degree of usage, stability characteristics and other conditions affecting inspection, measurement, testing and maintenance control.
 - c. Adjustments are made in calibration intervals based upon results of calibration data analysis or when calibration accuracy is suspect.
 - d. Provisions are made to repair or replace devices consistently found out of calibration and to determine the validity of previous inspections made with such devices since the device was last calibrated.
 - e. Calibration standards are maintained, calibrated and used in an environment having temperature and humidity controls that are compatible with required accuracy and operating characteristics of the standards. Calibrating standards are required to have an uncertainty (error) requirement of no more than 1/10 of the tolerance of the equipment being calibrated. A greater uncertainty may be acceptable when limited by the "state of the art".

IV. PROCEDURE (Continued)

- f. Records are maintained to indicate the calibration history and the next scheduled calibration date for each controlled device.
- g. Each inspection, measuring and inspection device including employee owned devices, if used is uniquely identified and marked so that its calibration status is clearly indicated.
- h. Devices that have not been properly maintained or calibrated are identified and removed from service.
- i. If at the end of a frequency period, a device is found to be out of calibration, a nonconformance report shall be processed and an investigation shall be conducted. The investigation shall ascertain the applications of the device since the last recalibration. The investigation shall also determine if corrective action is necessary to provide assurances that quality data generated by the use of the device has not been compromised. If any quality data has been compromised, the engineer shall be notified.

B. Surveillance

- 1. The Vendor Surveillance Representative monitors the supplier's operations in accordance with procedure QA-7-2 to assure that approved plans and procedures are being utilized. He verifies that tools, gages, instruments and other measuring devices used in activities affecting quality have been calibrated within the specified interval and that devices found repeatedly out of calibration are either repaired or placed on "Inactive" status.
- 2. The Field QA group reviews and approves Contractor procedures in accordance with IV.A.3. The Field Quality Assurance Group, through surveillance, assures that these procedures are effectively implemented.

V. DOCUMENTATION

- A. Suppliers and Contractors establish and maintain calibration records and logs for their testing and measuring equipment.
- B. Records are controlled in accordance with procedure QA-17 or the UE&C specification, as applicable, and are subject to the requirements of accuracy, examination, review and filing as defined therein.

V. DOCUMENTATION (Continued)

C. Records include, but are not limited to the following:

1. Calibration record for testing and measuring equipment.
2. Identification of user, calibration due date and location of all usable testing and measuring equipment.
3. List of inactive measuring devices; their status and location.
4. Calibration instructions and procedures.
5. Maintenance and control procedures for primary and secondary standards.

QA/QC PROCEDURE ADVANCE CHANGE NOTICE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

PROCEDURE TITLE Handling, Storage and Shipping Control

PREPARED BY B. E. O'Connor

DATE 9/23/81

CHANGE

Page 3 of 3, Para. IV.F to read:

The Field Quality Assurance Group performs surveillance over handling practices of site C/S subcontractors and other subcontractors as required (i.e. special lifts or movement) to assure compliance with applicable codes, standards and specifications and that equipment is not degraded.

REASON FOR CHANGE To properly define site FOAG involvement/responsibility in the handling of material by site sub-contractors.

REVIEWED BY FSQA	DATE	REVIEWED BY PROJECT QAE	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
<i>W Lambert</i>	<i>9/23/81</i>	<i>AC Kennedy</i>	<i>9/23/81</i>	<i>BTC</i>	<i>10/2/81</i>	<i>JD Shannon</i>	<i>10/2/81</i>	<i>JP Dwyer</i>	<i>10/2/81</i>

CHG. NO. 55

EFFECTIVE DATE 10/2/81

QA 13

QCP N/A

REV. 3

DATE 10/23/75



QUALITY ASSURANCE PROCEDURE QA - 13

HANDLING, STORAGE AND SHIPPING CONTROL

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

January 9, 1974

INFORMATION ONLY

Prepared by:

Robert C. Holzwarth
R. C. Holzwarth
Quality Assurance Engineer

Approved by:

G. F. Cole
G. F. Cole, Project Manager

Approved by:

C. B. Silverwood
C. B. Silverwood, Manager
Reliability & Quality Assurance

No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/11/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
2	9/26/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
3	10/23/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>



QUALITY ASSURANCE PROCEDURE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

HANDLING, STORAGE AND SHIPPING CONTROL

QA - 13

REV: 3

DATE: 10/23/75

PAGE 1 of 3

I. SCOPE

This procedure applies to UE&C's activities associated with the control of handling, storage and shipping of materials, parts and components. This procedure applies to items identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERALA. Purpose

1. To impose the applicable portions of Standard XIII in the Quality Assurance Manual - Corporate Standards on this project.
2. To establish measures which meet the requirements of ANSI N45.2.2 to control the handling, storage, shipping, cleaning and preservation of material and equipment in accordance with work and inspection instructions to prevent damage and deterioration.
3. Provide guidelines to assure that the required quality is preserved from manufacture to turnover to the Client.

B. Reference Documents

QA-4 Procurement Document Control
QA-7-2 Control of Purchased Material - Vendor Surveillance
QCP-13-1 Storage Control

III. RESPONSIBILITIESA. Engineering Department

The Engineering Department is responsible for designating the requirements for handling, storage and shipping in the UE&C procurement documents.

B. Reliability & Quality Assurance Department

1. The Quality Assurance Engineer (QAE) is responsible for reviewing and approving the supplier's system for the handling, storage and shipping of materials and components.
2. The Vendor Surveillance Representative is responsible for monitoring the implementation of the supplier's system for the handling, storage and shipping of materials and components.

III. RESPONSIBILITIES (Continued)

3. The Field Quality Assurance Group is responsible for periodic surveillance of construction site activities to verify compliance with handling and storage procedures.

IV. PROCEDURE

- A. The requirements for handling, storage and shipping as well as instructions for marking, labeling, identification and notation of special controls are established in UE&C's drawings and specifications.
- B. When required by the procurement documents, the supplier submits his Quality Assurance Plan to UE&C for review and approval.
 1. The QAE reviews the Supplier's procedures for compliance to the following requirements.
 - a. designation of the required classification level for packaging, cleaning and storage
 - b. provisions for protection of material during receipt, fabrication, storage and shipping
 - c. provision for storage inspection prior to shipment
 - d. provision for tool control, when required
 - e. provision for adequate marking and labeling requirements
 - f. provisions for long-term storage, if applicable
 - g. provisions for adequate instructions to the Carrier during shipment
 - h. controls required are accomplished by qualified individuals to specific written instructions
 2. Where appropriate, manufacturers and suppliers are required to submit recommended handling and storage instructions for use at the construction site.
- C. The Vendor Surveillance Representative monitors the implementation of the supplier's system for handling, storage preservation and shipping in accordance with procedure QA-7-2.
 1. He verifies that the cleanliness levels of materials, parts and components are in accordance with the procurement documents.
 2. He verifies, that when required by the procurement document or the supplier procedures, special protective environments, such as inert gas atmospheres, specific moisture content levels, and temperature levels are provided.

IV. PROCEDURE (Continued)

- D. The requirements of this procedure are imposed upon individual vendors through the Quality Assurance section of the specification or through standard quality assurance specification attachments in accordance with procedure QA-4.
- E. Field QA personnel performing storage inspection are qualified in accordance with ANSI N45.2.6. Storage inspection is described in procedure QCP-13-1 and assures the following:
 - 1. Equipment is being stored and preserved under pre-designated environmental conditions.
 - 2. Supplier prerequisite inspections and tests are performed to maintain warranties.
 - 3. Nonconforming conditions are identified, dispositioned and corrected.
- F. The Field Quality Assurance Group monitors handling practices of subcontractors to assure compliance with applicable codes, standards and specifications and that equipment is not degraded.

QA/QC PROCEDURE ADVANCE CHANGE NOTICE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

PROCEDURE TITLE Inspection, Test and Operating Status

PREPARED BY B. E. O'Connor

DATE 8/7/81

CHANGE Para. IV.G.4 - Revise as follows:

CHG. NO. 47
EFFECTIVE DATE 8/11/81
QA 14
OCF N/A
REV. 6
DATE 4/24/78

Quality Assurance Inspection - not required (Figure 4 - Purple) applies to non-safety items received at site designated in QA 7-2, Appendix B, which are found to be acceptable at QA Receiving Inspection.

REASON FOR CHANGE To clarify actual use and description of QA Inspection Not Required Tag.

REVIEWED BY FSQA	DATE	REVIEWED BY PROJECT OAE	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
<i>Chambers</i>	<i>8/7/81</i>	<i>BC Linn</i>	<i>8/13/81</i>	<i>576</i>	<i>8/14/81</i>	<i>Richard L. JBS</i>	<i>7/12/81</i>	<i>N/A</i>	<i>8/12/81</i>

QUALITY ASSURANCE PROCEDURE QA - 14

INSPECTION, TEST AND OPERATING STATUS

INFORMATION ONLY

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

January 9, 1974

Prepared by: Robert C. Holzwarth
R. C. Holzwarth
Quality Assurance Engineer

Approved by: G. F. Cole
G. F. Cole, Project Manager

Approved by: B. B. Silverwood
B. B. Silverwood, Manager
Reliability & Quality Assurance

No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/9/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
2	9/26/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
3	10/24/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
4	4/15/77	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
5	10/7/77	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

REVISION				APPROVAL	
No.	Date	Page Nos. Revised	Prepared by	Project Manager	Manager R&QA
6	4/24/78	4, 5	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

4/24/78

QA-14 CURRENT PAGE LISTING (Rev. 6)

<u>PAGE</u>	<u>DATE</u>
i	4/24/78
ii	4/24/78
1	10/7/77
2	10/7/77
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4	4/24/78
5	4/24/78

4/24/78

ATTACHMENT A TO PROJECT QUALITY
ASSURANCE PROCEDURE QA-14

IDENTIFICATION OF CHANGES: Revision 5

<u>Section</u>	<u>Page</u>	<u>Reason</u>
I	1	Clarification: added words "By means of stamps and tags."
IV.E	2	Deleted reference to "Vendor Surveillance Release for Shipment" tag and replaced it with a "Vendor Surveillance Release for Shipment" document, Form 4557.
IV-G	3	To specify how identification is applied.
IV-G-1	3	To be more explicit as to where "RELEASE" tags are used.
IV-G-4	3	Paragraph added to explain use of "Quality Assurance Inspection Not Required" tag.
IV-H-4	3	Deleted paragraph to remove requirement for Vendor Surveillance Release for Shipment tag.
Attachment 2 Fig. 4	5	Deleted former Fig. 4 which was the Vendor Surveillance Release for Shipment tag.
Attachment 2 Fig. 5	6	Now changed to Fig. 4 page 5.

IDENTIFICATION OF CHANGES: REVISION 6

<u>Section</u>	<u>Page</u>	<u>Reason</u>
Figure 1 - "Release"	4	Field Request - to update sample tags to the format currently in use.
Figure 2 - "Hold"	4	
Figure 3 - "LWA"	5	

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:
INSPECTION, TEST AND OPERATING STATUS

REV: 5

DATE: 10/7/77

PAGE 1 of 5

& constructors inc

I. SCOPE

This procedure applies to UE&C's activities associated with the identification and control of inspection and test status by means of stamps and tags. This procedure applies to items identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERAL

A. Purpose

1. To impose the applicable portions of Standard XIV in the Quality Assurance Manual - Corporate Standards on the project.
2. To establish measures to assure that the inspection and test status of items are identified and controlled to preclude inadvertent by-passing of required inspections and tests.

B. Reference Documents

1. QA-4 Procurement Document Control
2. QA-7-2 Control of Purchased Material - Vendor Surveillance

III. RESPONSIBILITIES

A. Engineering Department

The Engineering Department is responsible for designating the requirements for identifying the inspection and test status of items in UE&C procurement documents.

B. Reliability & Quality Assurance Department

1. The Project Quality Assurance Engineer (QAE) is responsible for reviewing and approving the suppliers' and site subcontractors' systems for identifying and controlling the inspection and test status of items.
2. The Vendor Surveillance Representative is responsible for surveilling the supplier's system of identifying and controlling inspection and test status. He is also responsible for identifying items for which UE&C surveillance actions have been satisfactorily completed.
3. The Field Quality Assurance Group is responsible for implementing UE&C's system for the identification of inspection and test status in support of their Level 1 activities. They will perform surveillance over the civil/structural subcontractors to assure the satisfactory implementation of UE&C approved procedures.

IV. PROCEDURE

- A. The requirements for identification and control of inspection and test status shall be established in UE&C procurement documents in accordance with applicable codes, standards and other requirements.
- B. The requirements of this procedure shall be imposed upon individual suppliers and subcontractors through the Quality Assurance section of the specification or through standard quality assurance specification attachments in accordance with procedure QA-4.
- C. When specified in the procurement documents, the supplier or subcontractor shall submit his Quality Assurance plan to UE&C for review and approval. As part of his evaluation, the project QAE shall review the supplier's or subcontractor's system for identifying and controlling the inspection and test status of items being produced.
 - 1. He shall assure that any by-passing of required inspections, test or other critical operations is controlled through documented measures under the cognizance of the QA Organization.
 - 2. He shall assure that items are identified by marking, tagging, labeling, or other appropriate means, either on the items or on documents that are traceable to the items and that the application of these status indicators is controlled. He shall assure that the methods employed are known throughout the affected organization.
 - 3. He shall assure that identification methods will provide for differentiation between items that are awaiting inspection, items that have satisfactorily passed inspection, and items that are discrepant.
- D. The current status of in process or completed inspections and tests performed by Vendors, Subcontractors, UE&C VS and Field QA groups shall be indicated by the responsible QA group using appropriate tags or stamps applied to the item or work instructions/inspection records traceable to the item. This assures that only items that have passed the required inspections and tests are used, installed or operated and thus prevents the inadvertent use of nonconforming items.
- E. The Vendor Surveillance Representative (VSR) shall perform surveillance of the supplier's operation in accordance with procedure QA-7-2. A Vendor Surveillance Inspection Report shall be issued to summarize each visit. Upon satisfactory completion of surveillance, the VSR issues a Quality Shipment Release (Form 4557) which serves as notification to the construction site that UE&C surveillance actions have been satisfactorily completed.

IV. PROCEDURE (Continued)

- F. The Field Quality Assurance Group provides surveillance over the civil/structural subcontractor activities to assure implementation of their UE&C approved inspection and test status procedures.
- G. Tags employed by Field Quality Assurance shall be wired or taped with an acceptable material to the item or part. They include the following:
 - 1. Release (Fig. 1, Green) - Applies to items received on site and found to be in compliance with requirements.
 - 2. Hold (Fig. 2, Red) - Applies to items awaiting inspection at receiving, and to items having either physical or documentary nonconformances.
 - 3. Limited Work Authorization (Fig. 3, Yellow) - Applies to nonconforming items to permit movement for rework, repair or other limited activities on a controlled basis.
 - 4. Quality Assurance Inspection-Not-Required (Figure 4, Purple) - Applies to non-safety related items received at site which do not require Receiving Inspection.
- H. Tag Application and Removal
 - 1. UE&C Hold and Limited Work Authorization tags shall be applied and removed only by UE&C QA personnel.
 - 2. UE&C Release tags shall be applied only by UE&C QA personnel.
 - 3. UE&C QA Inspection Not Required tags shall be applied only by UE&C QA personnel at receiving inspection.
- I. Where appropriate, inspection stamps or identification indicators may be assigned to designated Field Quality Assurance personnel. If inspection stamps or identification indicators are used, their description, issuance, control and application shall be described in UE&C approved procedures. These stamp or identification indicators may be placed on tags, inspection-test records and travelers.

GREEN

 **united engineers & constructors inc**

RELEASE

RIR No _____

ITEM _____

P/O No _____

QC _____ DATE _____

SIGNATURE _____


TO BE ATTACHED OR REMOVED BY QA PERSONNEL ONLY

FORM 4682

1. Add Property Tag Description P#

FIGURE 1

RED

 **united engineers & constructors inc**

HOLD

NCR No. _____

RIR No _____ TAG No _____

ITEM _____

P/O No _____

QC _____ DATE _____

SIGNATURE _____


TO BE ATTACHED OR REMOVED BY QA PERSONNEL ONLY

FORM 4683

1. Add Property Tag Description P#

FIGURE 2

YELLOW

 **united engineers & constructors inc**

**LIMITED WORK
AUTHORIZATION**

LWA NO. _____

ITEM _____

QC _____ DATE _____

SIGNATURE _____


TO BE ATTACHED OR REMOVED BY QA PERSONNEL ONLY

FORM 8484

LWA TAG
LEAF Products Inc. Designation No.

FIGURE 3

PURPLE

 **united engineers & constructors inc.**

**QA INSPECTION
NOT REQUIRED**

ITEM _____

QA _____ DATE _____

SIGNATURE _____ TITLE _____

TO BE APPLIED ONLY BY QA PERSONNEL

FORM 4686 REV. ORIG. 4-76

FIGURE 4

QA/QC PROCEDURE ADVANCE CHANGE NOTICE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

PROCEDURE TITLE Nonconforming Materials, Parts or Components

PREPARED BY B.E. O'Connor, OAS R&D.S

DATE 4/7/81

CHANGE

QA 15, Page 2, Para. II.C.5:

CHG. NO. 37

EFFECTIVE DATE 4/10/81

QA 15

QCP N/A

REV. 9

DATE 10/6/80

1. Last sentence, remove "etc.", and add: "And for reinforcing steel (R/S) received on site with missing shipping, metal storage and/or heat number tags, as long as traceability to the Mill Test Reports and Bar Shop List can be maintained. The R/S shall be placed in a Hold Status by the OAE and the Vendor notified of missing tag(s) by the use of Figure 2 by the Site Expediter. Tags not received within fifteen working days shall be documented on an NCR per QCP 17-1, Figure 1. R/S received with no tags shall immediately be processed on a Non-conformance Report".

2. Incorporate Figure 2 as listed above.

Page 9, Para. IV.G.2 add new sub paragraph 3 as follows:

3. The monthly summary shall also include in the cover letter, the number of Notifications to the Vendor per para. II.C.5 and the number of Rebar Releases involved.

REASON FOR CHANGE To eliminate unnecessary NCRs and still maintain programatic control.

REVIEWED BY FSGA	DATE	REVIEWED BY PROJECT OAE	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
<i>DE M. Horgan</i>	<i>4/9/81</i>	<i>BC L. Murphy</i>	<i>4/9/81</i>	<i>B. J. H.</i>	<i>4/9/81</i>	<i>JBS/BAS</i>	<i>4/9/81</i>	<i>J. R. H. / J. R. H.</i>	<i>4/9/81</i>

BAR SIZE

RELEASE NO

BAR SHOPLIST
LETTER I.D.

HEAT
NUMBER

MARK
NUMBER

REMARKS

SHOP LOCATION

RELEASE NO

TYPICAL

QA/QC PROCEDURE ADVANCE CHANGE NOTICE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

PROCEDURE TITLE Nonconforming Materials, Parts or Components

PREPARED BY D.E. McGarrigan

DATE 1/21/81

CHANGE

IV.F.1 Revise to read as follows:

1. As required by paragraph II.C.4 of this procedure, the contractors shall establish and implement nonconformance procedures requiring prompt reporting of SD's to the UE&C Resident Construction Manager and the UE&C FS-QA. The Resident Construction Manager (RCM) shall report them by memo to the UE&C Project Manager in accordance with FACP-1.

IV.F.2 Revise to read as follows:

2. SD's found by UE&C shall be reported promptly by the FS-QA to the RCM for transmittal to the UE&C Project Manager. NRB action shall be required on all SD's found by UE&C.

IV.F.3 Revise to read as follows:

3. SD's shall be reported at each level in person or by telephone as soon as they are discovered and later confirmed by written report. It shall be the responsibility of EAEC and the Owner to report these deficiencies to the NRC.

REASON FOR CHANGE

To provide for (SD) Reporting responsibilities and implementation.

CHG. NO. 36
EFFECTIVE DATE 2/2/81
QA 15
QCF N/A
REV. 9
DATE 10/6/80

REVIEWED BY FSQA	DATE	REVIEWED BY PROJECT GAE	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
<i>DeK Hanger</i>	<i>1/30/81</i>	<i>BC Low</i>	<i>1/30/81</i>	<i>STC</i>	<i>1/30/81</i>	<i>J. Silverwood</i>	<i>1/30/81</i>	<i>JR Amythor</i>	<i>1/30/81</i>

QUALITY ASSURANCE PROCEDURE QA - 15

NONCONFORMING MATERIALS, PARTS
OR COMPONENTS

FOR

INFORMATION ONLY

NEP-1 AND NEP-2

SLABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

January 14, 1974

Prepared by:

Robert C. Holzworth
R. C. Holzworth
Quality Assurance Engineer

Approved by:

G. F. Cole
G. F. Cole, Project Manager

Approved by:

B. B. Silverwood
B. B. Silverwood, Manager
Reliability & Quality Assurance

No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/10/74	<i>M. Stevens</i>	<i>JSB</i>	<i>JSB</i>
2	9/25/74	<i>M. Stevens</i>	<i>JSB</i>	<i>JSB</i>
3	12/13/74	<i>A. Jones</i>	<i>JSB</i>	<i>JSB</i>
4	10/24/75	<i>M. Stevens</i>	<i>JSB</i>	<i>JSB</i>

REVISION				APPROVAL		
No.	Date	Page Nos. Revised	Prepared By	Project Manager	Manager R&QA	Constr. Mgr.
5	Reissue 7/30/76	ALL	<i>D. Mann</i>	<i>JSB</i>	<i>JSB</i>	<i>JSB</i>
6	11/29/76	i, ii, 4, 5, 6	<i>D. Mann</i>	<i>JSB</i>	<i>JSB</i>	<i>JSB</i>
7	8/8/78	i, ii, 1-6, ATT. 1-3	<i>D. Mann</i>	<i>JSB</i>	<i>JSB</i>	<i>JSB</i>
8	12/7/79	2,3,5,7,8,Att 1 thru 3	<i>D. Mann</i>	<i>JSB</i>	<i>JSB</i>	<i>JSB</i>
9	10/6/80	1 thru 9 & Table 1	<i>D. Mann</i>	<i>JSB</i>	<i>JSB</i>	<i>JSB</i>

10/6/80

QA-15 CURRENT PAGE LISTING

REVISION 9

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7	10/6/80
8	10/6/80
9	10/6/80
Figure - 1	12/7/79
Table - 1	10/6/80
Appendix - A	12/7/79

PROJECT QUALITY ASSURANCE PROCEDURE QA-15REVISION 9

<u>Section</u>	<u>Page</u>	<u>Reason</u>
	1,2,3 & 9	Prefix "Sub" was removed from "Subcontractors"
I	1	Added "documentation" to Scope
II.C.5	2	1. Changed "shall" to "need", editorial 2. Deleted 2nd half of para. after "...etc."
II.C.6	2	Revised to provide for "Authorized Nuclear Inspector" & Code requirements.
III.A	2	Added "documentation" to nonconforming items
III.B	2	Deleted "in the" and substituted "during", editorial
III.C	2	".....Engineering Department" was changed to ".....Engineering Division"
IV.A.2	3	Paragraph revised to provide NCR resolution of observations noted during review of records and hardware
IV.A.3	3	1. Deleted "to" & Substituted "with" following ".....Nonconformances" 2. Eliminated "Power Engineering Department" from review cycle
IV.B.3	3	Revised to incorporate ACN #27
IV.C.2	4	Changed "QA Supv. Admin. & Records" to "QAS-R&DS", per field request.
IV.C.5.d	4	Revised to incorporate ACN #23
IV.C.7.a	5	Revised to incorporate ACN #23
IV.C.9.a(3)	5	Added "Discipline Superintendent"
IV.C.9.b	6	1. Paragraph Properly Designated 2. Added "Authorized <u>Nuclear</u> Inspector" & "ANI"
IV.C.9.c	6	1. Was IV.C.9.b 2. Deleted "most" in first sentence
IV.C.10.b	6	Revised to incorporate ACN #27

REVISION 9

<u>Section</u>	<u>Page</u>	<u>Reason</u>
IV.C.10.d	6	Added to incorporate ACN #27
IV.C.11.a	6	Added "by date specified in section C of NRC Form", per field request
IV.C.11.b	6	Deleted "R&QA" and added "Field QA Group at at end of sentence, perfield request.
IV.C.12	7	Changed "Repair/Work" to "Repair/Rework"
IV.D.1	7	Changed "QAS-A&R" to "QAS-R&DS", per field request
IV.D.2	7	Added Procurement responsibilities to paragraph, per field request
IV.D.3	8	Changed "QAS-A&R" to "QAS-R&DS" per field request
IV.D.5	8	DELETED para., duplication of effort per field request
IV.D.6	8	DELETED para., duplication of effort per field request
IV.D.5	8	Was IV.D.7
IV.D.6	8	1. Was IV.D.8 2. Revised to define Project QAE responsibility
IV.D.7	8	Was IV.D.9
IV.D.8	8	Was IV.D.10
IV.E	8	1. In first sentence, changed "QAS-A&R" to "QAS-R&DS", per field request 2. Para. revised to maintain site control of NCR's per YAEK request 3. In last sentence, changed "QAS-R&R", to "QAS-R&S", per field request
IV.G.1	9	Changed "QAS-A&R" to "QAS-R&DS" per field request
Figure-1	-	Eliminated reference to Attach. 3
Table-1	-	1. Eliminated reference to Attach. 2 2. Changes were made in recipient column and to distribution Code
Appendix-A	-	Eliminated reference to Attach. 1

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

NON CONFORMING MATERIAL, PARTS, OR COMPONENTS

REV: 9

DATE: 10/6/80

PAGE 1 of 9



& constructors inc

I. SCOPE

This procedure applies to UE&C's activities associated with the identification, documentation disposition and control of nonconforming:

- A. Safety Related items classified Seismic Category I, Safety Class I, 2, 3 or 1E.
- B. Non Safety Related items supplied on the Purchase Orders listed in QA-7-2, Appendix B.
- C. Westinghouse NSSS items at Receiving Inspection or in Site Storage - Handling activities.

II. GENERALA. Purpose

- 1. To impose the applicable portions of Standard XV in the Quality Assurance Manual - Corporate Standards on the project.
- 2. To establish measures to assure that nonconforming items are identified, documented, segregated, and dispositioned in accordance with documented procedures.

B. Referenced Documents

- 1. QA-4 - Procurement Document Control
- 2. QA-7-1 - Control of Purchased Material - Vendor Evaluation & Selection
- 3. QA-7-2 - Control of Purchased Material - Vendor Surveillance
- 4. QA-8 - Identification and Control of Materials, Part and Components
- 5. QA-14 - Inspection, Test and Operating Status
- 6. QA-16-1 - Corrective Action
- 7. QCP-7-1 - Receiving Inspection of UE&C Purchased Items
- 8. 10CFR50, 50.55(e) - Conditions of Construction Permits

C. Requirements

- 1. The requirements for the identification, disposition and control of nonconforming items shall be established in UE&C Procurement Documents in accordance with applicable codes, standards, and regulations.
- 2. The requirements of this procedure shall be imposed upon individual suppliers and contractors through the Quality Assurance Section of the specification or through Standard Quality Assurance Specification attachments in accordance with Procedure QA-4.

II. GENERAL (Continued)

3. When specified by the Procurement Documents, the supplier or contractor shall submit his quality assurance plan to UE&C for review and approval in accordance with Procedure QA-7-1
4. Contractors shall promptly report Significant Deficiencies (SD's) as defined in 10CFR50, paragraph 50.55(e) to the YAEK Project Manager via UE&C.
5. Nonconformance Reports need not be processed for certain nonconforming items or conditions, e.g. rejections of concrete batches, nonconforming items or conditions corrected during the course of an inspection or surveillance, standard repairs such as weld repairs made in compliance with the original weld procedure, etc.
6. On ASME Code items, an "Accept-As-Is" or "Repair" disposition shall be acceptable only if the nonconforming item complies with the ASME Code requirements. Nonstandard repairs shall not be approved on ASME Code items without the concurrence of the Authorized Nuclear Inspector. All pertinent information, including radiographs of weld repairs, shall be made available for review upon the request of the Authorized Nuclear Inspector.

III. RESPONSIBILITIES

- A. Suppliers and Contractors when required by contract, shall submit to UE&C for review and approval a procedure for identification, documentation, disposition and control of nonconforming items meeting the requirements of this procedure. These UE&C approved procedures shall be implemented by the suppliers and subcontractors.
- B. Westinghouse Electric Corporation shall disposition all W =NSSS nonconforming items reported by UE&C during receiving, handling and storage activities and shall process the required W documents.
- C. UE&C Power Engineering Division shall evaluate Contractors' nonconformance reports dispositioned "Accept-As-Is" or "Repair" to assure compatibility with design requirements, and shall disposition UE&C nonconformance reports referred to the department by the FS-QA. Supplier's reports of nonconformances to procurement documents shall be evaluated by UE&C Power Engineering to assure compatibility with design requirements.
- D. UE&C Material Department shall arrange for the segregation of nonconforming items in the Receiving-Stores areas and for their preparation and return to the supplier when so dispositioned.

III. RESPONSIBILITIES (Continued)

- E. Reliability & Quality Assurance shall review and approve the supplier and contractor nonconformance programs meeting the requirements of this procedure and shall assure the implementation of the approved programs of suppliers and the Civil/Structural (C/S)' contractors through Vendor and Site Surveillance actions. R&QA shall establish and implement a UE&C Nonconformance Program in the receiving, handling and storage activities meeting the requirements of this procedure.

IV. PROCEDURE

A. Supplier Nonconformances

1. Suppliers shall implement their UE&C approved nonconformance procedures meeting the requirements of this procedure.
2. The UE&C Vendor Surveillance representative shall assure that the supplier is implementing his nonconformance procedure by observing that out of tolerance conditions noted during his review of records and/or witness of inspection of hardware under his cognizance have been resolved by nonconformance reports. In the event of repetitive failure or refusal of the supplier to follow his nonconformance procedure the Vendor Surveillance representative shall notify the Project QAE who will initiate a Corrective Action Request (CAR) in accordance with QA-16-1.
3. Suppliers shall submit reports of nonconformances with procurement documents to UE&C for review and approval as required by their UE&C approved procedures.

B. Site Contractor Nonconformances

1. Contractors shall implement their UE&C approved nonconformance procedures meeting the requirements of this procedure.
2. UE&C Field QA through its surveillance actions shall assure that the C/S contractors are implementing their nonconformance procedures. Repetitive failure or refusal of the C/S contractors to follow their nonconformance procedures shall result in the initiation of CAR by the Field QAE in accordance with QA-16-1.
3. Contractors shall submit all nonconformance reports to the UE&C Site Project Engineer for review and/or approval as required by their UE&C approved procedures.

IV. PROCEDURE (Continued)

C. UE&C Nonconformances

1. UE&C shall implement this nonconformance procedure which applies to the nonconforming items defined in the Scope of this procedure and found in the Receiving-Handling-Storage activities. Nonconforming items shall be tagged "Hold" by the Field QAE per QA-14 and when practical, segregated from acceptable items by the UE&C Material Department.

Form
Part A

2. When a nonconformance reportable on a UE&C Nonconformance Report (NCR), Fig. 1 is found, the Field QAE shall obtain a NCR number from the log maintained by the QA Supv. -Records & Deficiency System (QAS-R&DS) and shall initiate a NCR by supplying all applicable information required in Part A of this form. This shall include a complete description of the nonconformance. The Field QAE shall sign and date the NCR and shall submit it to the Field Superintendent-Quality Assurance (FS-QA) for review and comment. When required, a continuation sheet shall be used, referencing the original NCR number.
3. The FS-QA shall review the information contained in Part A of the NCR and shall have field QAE correct or expand it, if necessary.

Form
Part B

4. The FS-QA shall complete Part B of the NCR by assigning responsibility for the nonconformance, determining department to make disposition, date required, NC Class Code (from Appendix A) and if nonconformance is an SD as defined by 10CFR50, Para. 50.55(e). *
5. Nonconformance Review Board (NRB) action shall be required on NCR's classified SD. NRB action may be invoked on the other NCR's by the FS-QA or he shall request disposition of:
 - a. Liaison Engineer stationed at the site - UE&C Purchased Items.
 - b. Westinghouse Representative - NSSS Items.
 - c. Resident Construction Manager - Site Receiving, Handling or Storage Activities.
 - d. FQAG - Problems related to vendor documentation with assist from site expediting as required.
 - e. YAEC Field Quality Assurance Manager - Problems related to NSSS equipment.
6. The FS-QA shall sign and date the NCR, duplicate as required and distribute in accordance with Table 1 - INITIAL.

IV. Procedure (Continued)

Form
Part C

7. The person making the disposition shall review the NCR and shall:
 - a. Determine the disposition and check applicable block on form. For vendor documentation nonconformances no block need be checked. He may request assistance of the NRB through FS-QA who shall convene the NRB (See Step C.9.).
 - b. Record the technical justification for the disposition only when "accept as is" and/or when the repaired item configuration will require a change to a drawing, specification or procedure.
 - c. Record action to be taken including any work/inspection requirements or restrictions.
 - d. Specify Department or Organization who shall take action.
 - e. Sign Name and Title, Date and return NCR to FS-QA.
8. The FS-QA shall review the NCR and:
 - a. shall evaluate the disposition, justification and action to be taken.
 - b. if the FS-QA rejects the disposition, he shall:
 - 1) return the NCR to the person making the disposition with an explanation of the rejection or,
 - 2) refer the NCR to his next management level for resolution of the difference and final disposition or,
 - 3) convene the NRB for review and determination of final disposition.
 - c. After an acceptable disposition is obtained, he shall sign, date, duplicate and distribute in accordance with Table 1 - AFTER DISPOSITION.

Form
Part D

9. The FS-QA shall convene the NRB when required or requested:
 - a. The NRB is comprised of representatives from:
 - 1) UE&C R&QA - FS-QA who serve as NRB Chairman
 - 2) UE&C Power Engineering - Liaison Engineer
 - 3) UE&C Construction Discipline Superintendent
 - 4) Westinghouse Representative - when NSSS items are involved
 - 5) YAEC - required for NCR's Classified SD.
 - 6) Others - As necessary for technical assistance.

IV. PROCEDURE (Continued)

- b. The Authorized Nuclear Inspector is not a member of the NRB but may participate as an observer at his option. In this capacity, he shall assess the recommended dispositions and concur with those meeting the Code. The FS-QA shall advise the ANI of any NRB actions on Code items.
- c. A recommended disposition is presented by the representative selected as knowledgeable by the FS-QA. This shall be reviewed, modified as necessary and concurred with by the other NRB members. Entries required under Part C are recorded by the FS-QA. NRB is entered on Dispositioned By line.

NRB Members shall sign and date form in space provided. FS-QA shall sign, date and have report distributed as in Step 8.c. above.

10. The Field QAE shall on items dispositioned:

- a. "Accept-As-Is" - Remove "Hold" tag and replace with a "Release" tag per QA-14.
- b. "Rework" or "Repair" - Attach a "Limited Work Authorization" tag as permitted by one of the following conditions:
 - 1. If the nonconforming item is to be installed prior to resolution of the NCR, the provisions of QCP-8, Paragraph IV.F. shall be adhered to.
 - 2. If the repair or rework is to be performed while still in storage or prior to installation, the "LWA" tag will be applied based on specific direction detailed in the disposition of the NCR which has been approved by the FS-QA.
- c. "Reject" or "Return to Supplier" - Proceed as outlined in Para IV.D of this procedure.
- d. Documentation deficiencies will be released by a LWA tag per QCP-8 or as determined by the FS-QA dependent on the significance of the deficiency.

Form
Part E

- 11. Department or Organization designated to take action shall review NCR and shall:
 - a. Take action specified by the date specified in Section C of the NCR Form.
 - b. Sign and date NCR on Action Completed line indicating action is ready for reinspection by Field QA Group.

IV. PROCEDURE (Continued)

- c. Return executed copy of NCR to FS-QA.
- 12. Upon receipt of NCR, FS-QA shall arrange for the reinspection by the Field QAE of items subject to Repair/Rework.
- 13. The Field QAE shall:
 - a. Verify the acceptability of the action taken by reinspecting the items as originally inspected or by a method at least equal to the original method. If other than the original method is used, the details shall be documented and included with the NCR in the Field QA file.
 - 13. b. When accepted, sign, date and return the NCR to the FS-QA who shall duplicate as required and distribute per Table 1 -ON COMPLETION. The "Limited Work Authorization" tag and "Hold" tag shall be removed from the accepted item and replaced by the Field QAE with a "Release" tag per QA-14.
- D. Return of UE&C Purchased Nonconforming Items to Supplier
 - 1. The QAS-R&DS shall send copies of the NCR dispositioned "Return to Supplier" to the Project QAE, the Material Department and the Procurement Department who shall notify the supplier of the pending return.
 - 2. The Procurement Department shall obtain the following from the Supplier: Name - Title - Department and Address to which the items(s) shall be returned, return material tags if used by supplier, method of shipment desired, any special preparation required, packaging requirements, disposition (e.g. scrap at site), etc. The Procurement Dept. shall include a statement that the repaired or replaced items is subject to the UE&C Vendor Surveillance and that the Supplier shall advise the Procurement Dept. three (3) working days prior to the start of repair on the approach of a planned surveillance point (replacement item) as required by QA 7-2. Copies of the memo shall be forwarded to: Project QAE, Material Dept. (2 copies- 1 copy to accompany item(s) returned to vendor), Supervising Engineer- Vendor Surveillance and FSQA.

IV. PROCEDURE (Continued)

3. The information received from the Supplier shall be transmitted by Change to the Purchase Order or Procurement Department Memo to the Project QAE, the QAS-R&DS and the Material Department.
4. The Material Department shall arrange for the proper preparation of the item(s) to be returned and the packaging of the item(s) in the same or similar manner to that received unless special preparation packaging requirements are specified by the supplier.
5. The Material Department shall issue a "Material Returned or Transferred" form and shall arrange for shipping the item(s), including a copy of the NCR and instructions, to the supplier per FGCP-3.
6. The Project QAE shall review the NCR and if necessary shall reissue the Vendor Surveillance Check Plan indicating the UE&C Vendor resurveillance to be performed and shall distribute per QA-7-2.
7. The Supervising Engineer-Vendor Surveillance shall arrange for the resurveillance of the item(s) upon notification from the supplier via the Purchasing Department.
8. Items returned to the site shall be subject to Receiving Inspection per QCP-7-1.

E. Nonconformances-Westinghouse NSSS Items

The QAS-R&DS shall refer UE&C NCR's reporting NSSS items found to be nonconforming during receiving, handling or storage activities to the Westinghouse representative for disposition. Where the disposition is "Accept-As-Is", the Westinghouse representative shall obtain the concurrence of the YAEC Fld. QA and Audit Manager. Where the disposition is "Rework", "Repair", "Reject" or "Return to Supplier", the UE&C NCR shall remain open, pending completion of the Westinghouse action and reinspection if required. The Westinghouse Representative shall provide any special reinspection instructions to the QAS-R&S for use when items are returned to the site.

F. Nonconformances-Significant Deficiencies-10CFR50, Para. 50.55 (e)

1. As required by paragraph II.C.4 of this procedure, the contractors shall establish and implement nonconformance procedures requiring prompt reporting of SD's to the YAEC Project Manager. C/S contractors shall report SD's to the FS-QA who shall in turn report them via the Resident Construction Manager (RCM) to the YAEC Project Manager. Contractors other than C/S shall report SD's to the YAEC Project Manager via the RCM.

2. SD's found by UE&C shall be reported promptly by the FS-QA to the YAEK Project Manager via the RCM. NRB action shall be required on all SD's found by UE&C.
3. SD's shall be reported at each level in person or by telephone as soon as they are discovered, without waiting for reviews or resolutions, and later confirmed by written report. It shall be the responsibility of YAEK and the Owner to report these deficiencies to the NRC.

G. Analysis of Nonconformance Reports

1. Monthly, the QAS-R&DS shall review the status of the NCR's issued by UE&C during the period and continuously evaluate them for quality trends and conditions. The Nonconformance Classification Codes defined in Appendix A and indicated on the NCR (Step C4) aid in defining major quality problem areas and establishing quality trends.
2. A summary of NCR's shall be published by the FS-QA advising management personnel of conditions adverse to quality. This summary shall include a cover letter highlighting quality trends and conditions followed by a compilation showing the status of each open UE&C NCR. Copies of this report shall be distributed in accordance with Table 1 - NCR Summary.

SEABROOK
NEP 1 & 2
MNPS
QA-15
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12/7/79



FORM 4542 - 9763
REV. 11/79

NONCONFORMANCE REPORT NO. _____

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

PAGE _____ OF _____
ASME, SECT. III CODE RELATED:

☐ YES ☐ NO
DIV. 1 ☐ DIV. 2 ☐

SR ☐ NSR ☐

A
SUPPLIER _____

ITEM NAME / IDENTITY _____ RIR NO. _____

QUANTITY AFFECTED _____ SPEC. / DWG. (incl. rev.) _____ PO / CONT. _____ CO _____

NONCONFORMANCE _____

REPORTED BY _____

QA DEPT. REPRESENTATIVE - TITLE _____

DATE _____

B
RESPONSIBILITY FOR NONCONFORMING CONDITION _____ NC CLASS CODE _____

DISPOSITION TO BE MADE BY _____ 10 CFR 50, PARA. 50.55(b) SIGNIFICANT DEFICIENCY. YES ☐ NO ☐

DATE DISPOSITION REQUIRED _____ FIELD SUPT. - QA _____

SIGNATURE _____

DATE _____

C
DISPOSITION ☐ ACCEPT AS-IS ☐ REWORK ☐ REPAIR ☐ REJECT ☐ RETURN TO SUPPLIER

TECHNICAL JUSTIFICATION _____

ACTION TO BE TAKEN _____

DISPOSITION BY _____ SIGNATURE - TITLE _____ DATE _____

ACTION TO BE TAKEN BY _____ DEPARTMENT OR ORGANIZATION _____ BY _____ DATE _____

DISPOSITION APPROVED _____ FSQA _____ DATE _____ DISPOSITION CONCURRENCE - ANI (ASME ONLY) _____ DATE _____

DISPOSITION	UE&C ENGINEERING	DATE	UE&C QUALITY ASSURANCE	DATE	AUTHORIZED INSPECTOR	DATE
BY NRB	APPROVAL		CONCURRENCE		CONCURRENCE	
	UE&C CONSTRUCTION	DATE	Y&EC	DATE		DATE
ACTION	CONCURRENCE		CONCURRENCE		CONCURRENCE	

E
ACTION COMPLETED _____ SIGNATURE - TITLE _____ DATE _____

REINSPECTED AND ACCEPTED BY _____ QA DEPARTMENT REPRESENTATIVE - TITLE _____ DATE _____

TABLE 1
NONCONFORMANCE REPORT DISTRIBUTION

<u>RECIPIENT</u>	<u>INITIAL</u>	<u>AFTER DISPOSITION</u>	<u>ON COMPLETION</u>	<u>NCR SUMMARY</u>
YAEC PROJECT MANAGER	X	X	X	X
YAEC FLD. QA & AUDIT MANAGER	X	X	X	X
PROJECT MANAGER	X	X	X	X
RESIDENT CONSTRUCTION MGR.	X	X	X	X
SITE PROJECT ENGR.	X	X	X	X
LIAISON ENGR.	X	X	X	X
FSQA	X	X	X	X
PROJECT QAE	X	X	X	X
PERSON MAKING DISPOSITION	X	X	X	--
AUTHORIZED INSPECTOR	X	X	X	X
WESTINGHOUSE REPRESENTATIVE	A	A	A	--
SITE QA FILES	X	X	X	X
PROJECT DOCUMENT CONTROL CENTER	X	X	X	X
VENDORS		B		

DISTRIBUTION CODE

- X. ALL NCR's
- A. Only NCR's Covering NSSS Items.
- B. Only NCR's Coded Return to Vendor

APPENDIX A
NONCONFORMANCE CLASSIFICATION CODE

<u>NONCONFORMING CONDITION</u>	<u>AFFECTED ACTIVITY</u>		<u>ORGANIZATION</u>
1. Procedural	A. Mechanical	L. NDE	U - Utility
2. Design	B. Electrical	M. Handling & Storage	E - Arch/Engr.
3. Lack of Timely Response	C. I & C	N. Housekeeping	C - Constructor/ Constr. Mgr.
4. Physical Defect	D. Structural	O. Material Control	V - Vendor
5. Workmanship	E. Civil	P. Document Control	S - Site Contractor
6. Inadequate Documentation	F. Concrete	Q. Inspection & Test	N - NSSS Supplier
7. Lack of Corrective Action	G. Piping	R. Surveillance	Q - Quality Assurance
8. Code/Specification/Standard Requirement	H. Welding	S. Calibration	
9. Test Failure	J. Cadwelding	T. Personnel Certification/ Training	
0. Misfabrication	K. Painting	U. Management	
		V. Rebar	
		W. Storage & PM	

This code shall be used to classify the nonconformance covered by each UE&C NCR as an aid in defining major quality problems and establishing quality trends. To determine the correct code to assign to a UE&C NCR, select the classification based on the following:

- A. Nonconforming Condition - The Classification which best defines the nature of the nonconformance.
- B. Activity - The Affected Activity responsible for the nonconformance.
- C. Organization - The Organization responsible for the nonconformance. For example, a physical defect in welds made by a subcontractor would be coded 4 HS. Documentation missing from a NDE test performed by a supplier would be coded 5 IV.

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QA/QC PROCEDURE ADVANCE CHANGE NOTICE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

 PROCEDURE TITLE Corrective Action

 PREPARED BY B. E. O'Connor DATE 12/2/81
CHANGE

Para. IV.C.3; 2nd line - Revise as follows:

that a UE&C or contractor's operations compromise . . .

Para. IV.C.3d; 1st sentence - Revise as follows:

For Site Contractor CARs, prepare a

Para. IV.C.3 - Add new sub-paragraph as follows:

 e. For CARs issued on UF&C activities, the CAR shall be transmitted
to the RCM for his action.

Para. IV.C.e - Change to IV.C.f and add after f5 (as required) and f6 (as required):

Para. IV.C.4 - Revise as follows:

 The RCM will return the original CAR to the FSQA with Section B of the CAR
completed, stating the corrective action to be implemented and the date by
which it will be accomplished. For CARs issued against the contractor, the
RCM will consult with the contractor, as required prior to returning the
CAR to the FSQA.

 REASON FOR CHANGE To include procedural requirements for issuance of CARs against
UE&C Construction activities.

 CHG. NO. 57
 EFFECTIVE DATE 12/9/81
 QA 16-1
 QCP N/A
 REV. 6
 DATE 11/16/78

REVIEWED BY FSQA	DATE	REVIEWED BY PROJECT QAE	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
<i>D. Chamberlain</i>	<i>12/4/81</i>	<i>D. M. Hannon</i>	<i>12/4/81</i>	<i>D. R. Brown</i>	<i>12/16/81</i>	<i>R. B. Silverman</i>	<i>12/19/81</i>	<i>R. D. Smyth</i>	<i>12/19/81</i>

QUALITY ASSURANCE PROCEDURE QA - 16-1

CORRECTIVE ACTION

FOR

INFORMATION ONLY

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

January 11, 1974

No.	Date	Prep. By	QA/Rev.	Appr. By
	4/10/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
2	9/18/74	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
3	3/3/75	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
4	10/24/75	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

Prepared by:

Robert C. Holzwarth
R. C. Holzwarth
Quality Assurance Engineer

Approved by:

G. F. Cole
G. F. Cole, Project Manager

Approved by:

J. B. Silverwood
J. B. Silverwood, Manager
Reliability & Quality Assurance

Revision

Approval

No.	Date	Page Nos. Revised	Prepared by	Project Manager	Manager R&QA
5	2/9/78	1, 11, 4, 6, 7, 8 Table I	<i>HA Shuman</i>	<i>[Signature]</i>	<i>[Signature]</i>
6	11/16/78	1, 11, 5, 6	<i>FA [Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

QA-16-1 CURRENT PAGE LISTING

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Table	5

IDENTIFICATION OF CHANGES

<u>Section</u>	<u>Page</u>	<u>Reason</u>
IV-C-3 ^{rev. b.}	5	Field requested clarification.
IV-C-3-d.	5	Field requested clarification.
IV-C-3-e.	5	Field requested clarification.
IV-C-4	6	Field requested clarification.



& constructors inc.

QUALITY ASSURANCE PROCEDURE

QA - 16-1

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - NMPS

SUBJECT:

REV: 4

DATE: 10/24/75

PAGE 1 of 8

I. SCOPE

This procedure applies to the actions taken within the scope of the Quality Assurance Program to assure that conditions adverse to quality are promptly identified, documented and corrected to preclude recurrence on items identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERALA. Purpose

1. To impose the applicable portions of Standard XVI in the Quality Assurance Manual - Corporate Standards of this project.
2. To establish methods to assure that significant conditions adverse to quality are identified and documented, and the implementation of timely corrective action is verified.

B. Reference Documents

QA-4 Procurement Document Control
QA-7-2 Control of Purchased Material - Vendor Surveillance
QA-16-2 Work Stoppage
QA-18 Quality Assurance Audits

C. Definition

1. Significant Conditions Adverse to Quality - May include either of the following:
 - a. Repetition of previously reported deficiencies which represent violations of procedural or technical contractual requirements.
 - b. An initial condition, which if left uncorrected would result in defective or sub-standard equipment or services, or in errors in quality-related documents.

III. RESPONSIBILITIESA. Reliability & Quality Assurance Department

1. The Supervising Engineer - Vendor Surveillance through his Vendor Surveillance Representatives is responsible for identifying and reporting significant conditions adverse to quality at the facilities of UE&C suppliers. He is also responsible for verifying on subsequent visits that such conditions are corrected. Vendor Surveillance is performed in accordance with procedure QA-7-2.
2. The Manager - Audits is responsible for the performance of audits, both within the UE&C organization and at supplier's

III. RESPONSIBILITIES (Continued)

facilities, to identify significant conditions adverse to quality and to verify that such conditions are promptly corrected. Audits are conducted in accordance with procedure QA-18.

3. The Quality Assurance Engineer (QAE) is responsible for reviewing Vendor Surveillance reports and discrepancies reported by the Vendor Surveillance representatives. He is also responsible reviewing results of audits on suppliers and the UE&C organization. When significant conditions adverse to quality are identified, the QAE is responsible for assuring that the appropriate action is taken to implement timely corrective action.
4. The Field Superintendent - Quality Assurance (FS-QA) is responsible for assuring that significant site conditions adverse to quality are identified, the cause of the conditions and corrective action are documented and reported to appropriate UE&C and Y&EC management.

IV. PROCEDURE

A. Corrective Action - Supplier Facility

1. When a condition adverse to quality is identified at a supplier's facility by the Vendor Surveillance Representative, he shall immediately report the condition to the Supervising Engineer-Vendor Surveillance by telephone and by his subsequent report. The Supervising Engineer shall notify the QAE.
2. When so advised, the QAE shall assure that the appropriate action is promptly taken by one or more of the following:
 - a. Requesting supplier action to eliminate the condition by initiating a Corrective Action Request (CAR), see Figure 1, through the Purchasing Department as follows:
 - 1) Assign both a consecutive number and a control number to the form and circle the word "Home Office" and date.
 - a) The control number consists of the Specification Number, the ANSI Nuclear Plant Reliability Data System (NPRD) Vendor Reference Number (see Table I) and a followup number; Example 9763.006-201-1C470-1.
 - b) The consecutive number will consist of the letters SS-followed by numbers in ascending sequence starting with 001.

IV. PROCEDURE (Continued)

8. When the corrective action has been implemented, the QAE will:

- a. Verify satisfactory implementation
- b. Describe the actual action taken
- c. Date and sign
- d. File the original form and distribute copies per IV.B.2.e.

C. Corrective Action - Field Site

1. Field Quality Assurance, within UE&C's QA scope, reviews and approves each contractor's procedure for an effective corrective action system.
2. As a part of its Surveillance actions, Field Quality Assurance monitors the implementation of these procedures.
3. Should the Field Superintendent - Quality Assurance determine that a contractor's operations compromise quality, he will process a CAR as follows:

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dtd 12/9/81
KEP

- a. Assign a consecutive number to the form, circle the word "site" and fill in the date.
- b. Completely and clearly describe the adverse condition and its cause.
- c. Suggest a course of corrective action and indicate a date by which a reply is requested.

For Site Contractor CAR's,
ACN#57
d. Prepare a transmittal letter for the UE&C Resident Construction Manager's signature and forward same with the original copy of the CAR to the UE&C Resident Construction Manager (RCM).

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(e) f. Distribute copies of the CAR as follows:

- 1) UE&C Resident Construction Manager
- 2) UE&C QAE
- 3) YAEF Field Quality Assurance Manager
- 4) YAEF Project Manager
- 5) Contractor Construction Superintendent (AS REQUIRED)
- 6) Contractor QA Representative (AS REQUIRED)
- 7) UE&C Construction Manager
- 8) UE&C FSQA

New Rule
ACN#57
12/9/81
KEP
e. For CAR's issued on UE&C activities, the CAR shall be transmitted to the RCM for his action.

IV. PROCEDURE (Continued)

- b. The implementation of corrective action shall be verified by the Manager-Audits and a copy of the Verification Audit Report shall be forwarded to the QAE for his use.
 2. When the QAE uncovers practices which indicate that repetitive violations of technical contractual commitments or QA Program elements are occurring, he will process a CAR as follows:
 - a. Assign a consecutive number described in IV.A.2.a.1).b), circle the word "Home Office" and fill in the date.
 - b. Completely and clearly describe the adverse condition and its cause.
 - c. Recommend the correction action required.
 - d. Forward the original copy of the CAR Form to the Manager of the effected Home Office Group, indicating the date by which a reply is requested.
 - e. Distribute as follows:
 - 1) Project Manager
 - 2) Manager - R&QA
 - 3) Manager - Quality Engineering
 - 4) Supervising Discipline Engineer
 - 5) Manager - Audits
 3. The Manager of the affected group will describe the corrective action to be implemented, specify the date by which it will be accomplished and return the form to the QAE. Action for Project response to CARS is described in GEDP0034.
 4. If corrective action specified is inadequate or fails to meet the intent of the request, the QAE will contact the Manager of the affected group to discuss corrective action.
 5. If agreement cannot be reached, the disagreement will be referred to the next management level for resolution.
 6. When acceptable action has been specified by the responsible party, the QAE will sign for his concurrence and forward copies as per IV.B.2.e.
 7. The QAE monitors the implementation of the approved corrective action requested.

IV. PROCEDURE (Continued)

- 2) Completely and clearly describe the adverse condition and its cause.
 - 3) Recommend a course of corrective action acceptable to UE&C QA.
 - 4) Forward the original copy of the CAR form to the responsible contractor, through Purchasing, indicating the date by which a reply is required.
 - 5) Distribution will be as follows:
 - a) Project Manager
 - b) Project Engineering Manager
 - c) Supervising Engineer - Vendor Surveillance
 - d) Purchasing Manager
 - e) Supervising Discipline Engineer
 - f) Construction Manager
- b. Arranging for a vendor audit to better define the extent of the problem.
3. The QAE, and Supervising Discipline Engineer if appropriate, shall review and approve the supplier's proposed corrective action and schedule for implementation.
 4. The implementation of the corrective action shall be verified through one of the following:
 - a. Acceptance of responses which may present evidence that original finding was inappropriate.
 - b. Acceptance of responses which present evidence of corrective action.
 - c. Verification of the effectiveness of corrective action through subsequent vendor surveillance or by an audit.

B. Corrective Action - UE&C

1. When conditions adverse to quality are identified within the UE&C Home Office organization through the Audit System, the Manager - Audits shall make these results available to the QAE in accordance with procedure QA-18.
 - a. After receiving the audit results, the QAE shall contact the cognizant management of the audited organization to review the Audit Findings, the proposed corrective action and implementation schedule.

IV. PROCEDURE (Continued)

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12/9/81
KEP

4. The RCM, ~~after consultation with the Contractor~~, will return the original CAR to the FS-QA with Section B of the CAR completed, stating the corrective action to be implemented and the date by which it will be accomplished.

ADDITIONAL SENTENCE →

5. If corrective action specified is not adequate or fails to meet the intent of the request, the FS-QA will contact the Resident Construction Manager to discuss corrective action.
6. If agreement cannot be reached, the disagreement shall be referred to UE&C Project Management.
7. When acceptable action has been specified, the FS-QA will sign for his concurrence and forward copies in accordance with paragraph IV.C.3.e.
8. Field Quality Assurance monitors the implementation of the approved corrective action.
9. When the corrective action has been implemented, the QAE will:
- a. Verify satisfactory implementation
 - b. Describe the actual action taken
 - c. Date and sign
 - d. File the completed form and distribute copies per IV.C.3.e.
- D. In the event that corrective action procedures described herein are inconclusive or unsatisfactory, Work Stoppage may be implemented in accordance with procedure QA-16-2.
- E. The requirements of this procedure are imposed upon individual vendors and contractors through the Quality Assurance section of the specification or through standard quality assurance specification attachments in accordance with procedure QA-4.
- F. Nonconformance Reports and Corrective Action Requests are periodically analyzed by the QAE for repetitive violations. The QAE assures that the Vendors corrective action system also specifies this review. The FSQA is responsible for the site nonconformance analysis. The results of these analyses, when adverse, will be forwarded to appropriate management for corrective action which could include:
1. system or procedure changes
 2. consideration of work stoppage

V. DOCUMENTATION

A. The FSQA (for site CARs only) and the QAE (for Home Office CARs) shall accomplish the following:

1. Maintain a file of Corrective Action Request forms initiated and completed for use in evaluating repetitive violations.
2. Maintain a log of Corrective Action Request forms initiated, indicating:
 - a) CAR Number
 - b) Addressee
 - c) Date issued
 - d) Date reply is required
 - e) Date by which action must be implemented
 - f) Date reply received
 - g) Date action is implemented

H.O. NO. _____
SITE NO. _____
DATE _____

CORRECTIVE ACTION REQUEST
Control No. _____ Spec. No. _____ (Vendor No) Seq. No. _____

TO (Addressee):	<input type="checkbox"/> NONCONFORMING MATERIAL NCR _____
FROM:	<input type="checkbox"/> DISCREPANCY IN PROCESS
	<input type="checkbox"/> QUALITY ASSURANCE AUDIT
	<input type="checkbox"/> OTHER _____

THE ADVERSE CONDITION DESCRIBED BELOW REQUIRES IMMEDIATE CORRECTIVE ACTION. PLEASE INDICATE THE CAUSE AND CORRECTIVE ACTION TO BE TAKEN IN SPACE (S) BELOW, INCLUDING THE IMPLEMENTATION DATE. SIGN AND DATE THE CORRECTIVE ACTION STATEMENT AND RETURN THIS FORM TO THE SENDER BY _____

A DESCRIPTION OF DISCREPANT CONDITION:

RECOMMEND CORRECTIVE ACTION:

SIGNATURE _____

FIELD SUPERINTENDENT QA OR PROJECT QAE

B CORRECTIVE ACTION:

CAUSE AND ACTION TO BE TAKEN TO PREVENT RECURRENCE

CORRECTIVE ACTION WILL BE IMPLEMENTED BY _____ DATE _____ SIGNATURE _____ (ADDRESSEE) _____ DATE _____

C CONCURRENCE: QUALITY ASSURANCE REVIEW ☐ APPROVED ☐ DISAPPROVED
SIGNATURE _____ FIELD SUPERINTENDENT QA OR PROJECT QAE _____ DATE _____

D ACTION VERIFIED: THE CORRECTIVE ACTION DESCRIBED HAS BEEN IMPLEMENTED, AND SATISFACTORILY MEETS THE INTENT OF THE REQUEST:

SIGNATURE _____ FIELD SUPERINTENDENT QA OR PROJECT QAE _____ DATE _____

COPIES:

CORRECTIVE ACTION REQUEST

VENDOR LIST AND REFERENCE NUMBERS

A06CC			A54C	ATLAS CAR & MANUFACTURING CO.	OH,CLEVELAND
U98X			A551X	ATLAS VALVE CO	NJ,NEWARK
S15			A585	ATWOOD & MORRILL CO., INC.	MA,SALEM
A026	ACCO-BRISTO DIVISION	DE,WILMINGTON	A61C	AUTOMATIC SWITCH CO. (ASCO)	NJ,FLORENCE PARK
A027X	ACECO-AMER. CRANE & EQUIP. CORP.	PA,DOUGLASSVILLE	A61C	AUTOMATIC SWITCH CO. (ASCO)	NJ,FLORENCE PARK
A034X	ACME/CENTRAL PRE-MIX	WA,SPOKANE	A62C	AUTOCLAVE ENGINEERS, INC	PA,ERIE
A039X	ACRES AMERICAN	NY,BUFFALO	B01C	BALCOCK & WILCOX CANADA LTD	CANADA GALT ONTARIO
A04C	ACTION ENVIRONMENTAL TESTING CORP.		B01C	BALCOCK & WILCOX CANADA LTD	CANADA,CAMBRIDGE,ONT
A06C	ADAMS, R.P. CO., INC.	NY,TONAWANDA	B01C	BALCOCK & WILCOX CANADA LTD	ONTARIO,CAMBRIDGE
A072	ADSCO DIV		B01S	BALCOCK & WILCOX CO	NC,WILMINGTON
A085	AEROFIN CORP.	VA,LYNCHBURG	B01S	BALCOCK & WILCOX CO	PA,HEAVY FALLS
A12C	AIR PRODUCTS & CHEMICALS INC.	PA,ALLENTOWN	B01S	BALCOCK & WILCOX CO	VA,LYNCHBURG
A12C	AIR PRODUCTS & CHEMICALS INC.	PA,WILKES-BARRE	B02C	BALCOCK & WILCOX TUBULAR PRODUCTS	NC,WILMINGTON
A12CX	AIRWORK SERVICE DIVISION	NJ,MILLVILLE	B037	BAHNSON SERVICE CO.	NC,WINSTON-SALEM
A149X	AJAX FORGING AND CASTING CO.	MI,FERNDALE	B056X	B.H. BAKER & SON	
A152X	ALCOA	PA,CRESSONA	B063X	BANCROFT & MARTIN	ME,S PORTLAND
A152X	ALDEN FERRACOR LABS		B066	BARNER COLMAN CC	IL,ROCKFORD
A155	ALLEGHENY-LUDLOW	PA,DRACKENRIDGE	B067X	BARKSDALE CONTROL DIV DELAVAL	CA,LOS ANGELES
A159X	ALFAH INC.	AL,ENTERPRISE	B086X	BASIC ENGINEERS DIV OF NAVCO	PA,PITTSBURGH
A16C	ALLEN-ERADLEY COMPANY	WI,MILWAUKEE	B101X	BATTELLE PACIFIC NW LABORATORIES	WA,RICHLAND
A169X	ALLIED-CAPITAL JOINT VENTURE	IL,CHICAGO	B135	BECKMAN INSTRUMENTS, INC	CA,FULLERTON
A169X	ALLIED-CAPITAL JOINT VENTURE	IL,CHICAGO HEIGHTS	B18C	BELMONT IRON	PA,EDDYSTONE
A12C	ALLIS CHALMERS	GERMANY MUELHEIM	921C	BERGEN PATTERSON	NH,LACONIA
A12C	ALLIS CHALMERS	OH,NORWOOD	B217	BERLIN CHAPMAN	WI,DEPLIN
A18C	ALLIS CHALMERS	PA,YORK	B235	BETHLEHEM STEEL CORP.	CT,NEW HAVEN
A19C	ALLIS CHALMERS	WI,WEST ALLIS	B235	BETHLEHEM STEEL CORP.	MA,CAMBRIDGE
A12C	ALLOY FLANGE & FITTING CO	NY,LONG ISLAND CITY	H235	BETHLEHEM STEEL CORP.	NY,ALBANY
A185	ALLOY STAINLESS PRODUCTS CO.	NJ,TOTOWA	B235	BETHLEHEM STEEL CORP.	PA,PHILADELPHIA
A19C	ALLOY STEEL PRODUCTS CO.	NJ,LINDEN	B235	BETHLEHEM STEEL CORP.	PA,STEELTON
A22C	AMERICAN AIR FILTER CO INC	KY,LOUISVILLE	B25C	BIF	RI,PROVIDENCE
A245	AMERICAN CHAIN & CABLE CO	PA,WILKES-BARRE	B265	BINGHAM-WILLAMETTE	OR,PORTLAND
A25C	ALL AMERICAN ENGINEERING		B278X	BIRMINGHAM TANK CO	AL,BIRMINGHAM
A27C	AMERICAN INSTRUMENT CO.	MO,SILVER SPRINGS)	B28C	BISHOPRIC PRODUCTS CO	OH,CINCINNATI
A285	AMERICAN MACHINE & FOUNDRY BEARD	CT,KENSINGTON	9295	BLACK SIVALLS & BRYSON	OK,TULSA
A285	AMERICAN MACHINE & FOUNDRY BEARD	CT,MONTVILLE	9322X		
A285	AMERICAN MACHINE & FOUNDRY BEARD	LA,SHREVEPORT	B326X	BLUE RIDGE STEEL CO	VA,ROANOKE
A285	AMERICAN MACHINE & FOUNDRY BEARD	PA,YORK	9332X	BCECON CORP	WA,BENTON
A31C	AMERICAN STANDARD INDUSTRIES	NY,CHEEKTOWAGA	B339X	BOEING ENGINEERING & CONST(DIV NPS)	WA,SEATTLE
A395	ANCHOR DARLING VALVE CO.	CA,HAYWARD	B341	BOEING CORP NPS DIVISION	WA,SEATTLE
A395	ANCHOR DARLING VALVE CO.	PA,WILLIAMSPORT	B345	BOLNEY FORGE DIV	PA,ALLENTOWN
A415	ANDERSON GREENWOOD & CO	TX,HOUSTON	B35C	BORG-WARNER CORP.	CA,VAN NUYS
A426X			B35C	BORG-WARNER CORP.	PA,YORK
A446X	APPLIED ENGINEERING CO	SC,ORANGERBURG	B365	BOSTON INSULATED WIRE & CABLE CO	MA,BOSTON
A47CX	AQUATEC	VT,S.BURLINGTON	B375	BOWSER INC	TN,COOKESVILLE
A476X	ARCARO, A & SONS		B415	BRISTOL STEEL & IRON	VA,BRISTOL
A50C	ASEA ELECTRIC INC.	NY,WHITEPLAINS	B415	BRISTOL STEEL & IRON	VA,BRISTOL
A507	ASSOCIATED CONTROL EQUIPMENT	PA,CORAOPOLIS	B415	BRISTOL STEEL & IRON	VA,RICHMOND
A51C	ASSOCIATED PIPING & ENGINEERING CORP	CA,COMPTON	B44C	BROOKS INSTRUMENT CO	PA,HATFIELD
A535X	ATLANTIC STEEL CASTINGS CO.	PA,CHESTER	B455	BROWN COVER	

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B435	BRUCE GM DIESEL INC	NC, ROCKY MOUNT	C496X	COMMERCIAL SHEARING INC.	
B486X	BRUSH ELECTRIC CORP	ENGLAND, LOUGHBOROUGH	C512X	CITY CONCRETE COMPANY, INC.	NH, DOVER
B515	BUFFALO FORGE CO.	NY, BUFFALO	C512X	CITY CONCRETE COMPANY, INC.	NH, EXETER
B520	BUFFALO TANK	MD, BALTIMORE	C560	CONSOLIDATED CONTROLS CORP.	CT, BETHEL
B580	BYRON JACKSON PUMPS INC	CA, LOS ANGELES	C565X	CONSOLIDATED X-RAY SERVICE CORP.	TX, DALLAS
C026X	CAJON COMPANY	OH, SOLON	C573X	CONSTRUCTION SPECIALTIES INC.	
C034X	CALSPAN	NY, BUFFALO	C587	CONTINENTAL EQUIPMENT CO	
C054X	CAM-INDUSTRIES	WA, KENT	C591X	CONTINENTAL VALVE CO	PA, CORAOPOLIS
C055	CANCO FITTINGS CO	CT, HAMDEN	C595	CONTINENTAL WIRE & CABLE	PA, YORK
C056X	CANDEN ALLOY FABRICATORS	NJ, CAMDEN	C600	CONTROL COMPONENTS INC.	
C057X	CANDEN IRON WORKS	NJ, CAMDEN	C630	CONTROPATICS CORP.	CT, E HARTFORD
C060	CAMERON IRON WORKS INC	TX, HOUSTON	C630	CONTROPATICS CORP.	CT, E. HARTFORD
C075X	CANNON, OLIVER & SONS	PA, GATH	C632	COOPER BENJAX	
C077X	CAN-TEX		C635	COPE-S-VULCAN, INC	PA, LAKE CITY
C086X	CAPITOL CITY IPCH WORKS	VA, RICHMOND	C636	COPPERWELD STEEL INC.	
C090	CAPITOL MANUFACTURING	OH, COLUMBUS	C638X	COOPER BESSEMER	PA, GROVE CITY
C121X	CANDION ELECTRONICS	NY, WOODBURY	C642X	CORNELL CO	NJ, WESTVILLE
C125	CARDON DIV OF CHEMETRON	IL, MOHET	C643X	CORNELL & UNDERHILL	NJ, HOBOKEN
C135	CARLSON, INC GO	PA, THORNDALE	C650	CCSMODYNE CORP	CA, TOPRANCE
C139	CAROLINA INDUSTRIAL PIPING	NC, KOERNERSVILLE	C652X	CCYNE SAFETY EQUIP. CO.	PA, ROSELYN
C141	CARPENTER STEEL CO	NJ, UNION	C665	CRANE CO, CHAPMAN DIVISION	IA, WASHINGTON
C150	CARRIEF CORP.		C665	CRANE CO, CHAPMAN DIVISION	IL, CHICAGO
C162	CATCHING ENGINEERING CO	IL, CHICAGO	C665	CRANE CO, CHAPMAN DIVISION	MA, INDIAN ORCHARD
C171X	CAYUGA AEROMETRIC MONITORING NETWORK	NY, LUDLOWVILLE	C665	CRANE CO, CHAPMAN DIVISION	PA, WARRINGTON
C172	C&D BATTERIES	GA, CONYERS	C665	CRANE CO, CHAPMAN DIVISION	TN, CHATTANOOGA
C173	C&D BATTERIES	PA, CONSHOHOCKEN	C666	CRANE BEARING PUMPS	OH, SALEM
C173	C&D BATTERIES	PA, FISHBOCH	C675	CRANE MIDWEST FITTING CORP	MO, ST. LOUIS
C191X	CELTITE INC.		C680	CRANE FLOWATICS DIV	CA, FOLSOM
C193X	CENTRAL IPCH MANUFACTURING CO	NY, LONG ISLAND CITY	C685	CRAWFORD FITTING CO	OH, SOLON
C217	CERAMIC COOLING TOWER CO	TX, FORT WORTH	C690	CREUSOT-LOIRE CO.	FRANCE, LECREUSOT
C222	CERNO WIRE & CABLE CO	CT, NEW HAVEN	C691X	CRESCENT IRON WORKS	PA, PHILADELPHIA
C226X	CERTIFIED STEEL CO.		C695	CROLL REYNOLDS ENGINEERING CO INC	CT, SOUTH NORWALK
C257	CHASE BRASS & COPPER CO INC	CT, WATERBURY	C695	CROLL REYNOLDS ENGINEERING CO INC	NY, HAWTHORNE
C265	CHATTANOOGA ROILER & TANK CO	TN, CHATTANOOGA	C710	CROSBY VALVE & GAGE CO.	MA, WRENTHAM
C284X	CHARLES COUNTY STEEL	MD, WILDOFF	C730	CYROGENIC TECHNOLOGY INC	MA, WALTHAM
C285	CHEMTRON CORP. FIRE SYS. DIVISION	MD, JARRETSVILLE	C732X	CTI CORP	MA, WALTHAM
C306X	CHESTER MACHINE WORKS INC.	PA, CHESTER	C736X	CUMBERLAND BRIDGE DIV OF AYCOCK	PA, CAMP HILL
C310	CHICAGO BRIDGE IRON CO	AL, BIRMINGHAM	C747	CURTISS WRIGHT CORP	NJ, WOODBRIDGE
C315	CHICAGO HEATER CO		C770	CUTLER HAMMER INC	GA, DORAVILLE
C316X	CHICAGO PNEUMATIC TOOL CO	PA, FRANKLIN	C770	CUTLER HAMMER INC	KY, BOWLING GREEN
C338	CIVES CORP	NY, CONKLIN	C770	CUTLER HAMMER INC	PA, BETHLEHEM
C356X	CLARK CONTROL DIV, AO SMITH CORP	OH, CLEVELAND	C780	CVI CORP-DIV OF PENN WALT	OH, COLUMBUS
C356X	CLARK CONTROL DIV, AO SMITH CORP	SC, LANCASTER	C780	CVI CORP-DIV OF PENN WALT	OH, HILLIARD
C418	CLON CORP.		C781X	CYBEREX INC	OH, WILLOUGHBY
C430	COCHRANE CORP	PA, KING OF PRUSSIA	D010	DAMES & MOORE	MD, BETHESDA
C438X	COGENEL INC.		D010	DAMES & MOORE	NJ, CRAWFORD
C470	COLT IND. FAIR BANK MORSE ENGINE DIV	WI, DFOLOIT	D025		
C490	COMBUSTION ENGINEERING INC.	CT, WINDSOR	D039X	DAVIS H.N. & SONS	NJ, BRIDGEFORD
C490	COMBUSTION ENGINEERING INC.	TN, CHATTANOOGA	D049X	DELAVAL ENTERPRISE	CA, OAKLAND

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0050 DELAVAL SEPARATOR CO	NY, Poughkeepsie	F130 FISHER CONTROL CO.	PA, PITTSBURGH
0055 DELAVAL TURBINE INC.	CA, OAKLAND	F135 FISHER GOVERNOR CO	IA, MARSHALLTOWN
0055 DELAVAL TURBINE INC.	NJ, TRENTON	F160X FLO-LOK INC	TX, HOUSTON
0061X DEAN PRODUCTS INC	NY, BROOKLYN	F164 FLOWLINE CORP	PA, NEW CASTLE
0066X DEARBORN ENG & FAB CO	IN, MISHAWAKA	F171 FLUOROCARBON CO	NJ, PINE BROOK
0107X DELTECH ENGINEERING		F172 FMC CORP	IN, INDIANAPOLIS
0169X W.J. DILLNER TRANS. & STORAGE CO.	PA, WEST ELIZABETH	F173X FORDEES CORP	OH, LEETONIA
0184X DCRCON INC	PA, WARREN	F173X FORDEES CORP	PA, RED LION
0221X DOWNTOWN STEEL PRODUCTS	PA, DOWNTOWN	F174 ICSTER, L.H. CO	
0231 CCYLE & BATH MANUFACTURING CO	PA, SIMPSON	F174X FORT PITT BRIDGE WORKS	PA, CAMMONSBURG
0232 DRAGON VALVE	CA, NORWALK	F175 FOSTER WHEELER CO	AL, BIRMINGHAM
0240 DRAVO INC.	OH, TARIETTA	F175 FOSTER WHEELER CO	NJ, NEWARK
0240 DRAVO INC.	OH, MARIETTA	F175 FOSTER WHEELER CO	PA, RT TOP
0241 DRESSER GAUGE DIV	CT, STRATFORD	F175X P.D. FOSTER ELECTRIC CO.	
0245 DRESSER INDUSTRIES INC	LA, ALEXANDRIA	F177X FORNIT STEEL-SUPPLIER FOR RYERSON CO	PA, PHILADELPHIA
0255 DU PONT DE NEMOURS & CO	NJ, POMPTON LAKES	F180 FOXBORO CO, THE	MA, FOXBORO
0270X DUNN GEOSCIEENCE	NY, ALBANY	F180 FOXBORO CO, THE	MA, MALDEN
0276X DYCKERHOFF & WIDMANN INC.		F191X FRANK ELECTRIC CORP	PA, YORK
0280 DWIGHT FORTI INC	CT, NEWINGTON	F195 FRANKLIN INSTITUTE RESEARCH LAB	PA, PHILADELPHIA
0291X DYSON, JOS. & SONS	OH, PAINESVILLE	G08C GENERAL ELECTRIC	CA, SAN JOSE
E005 E.D.V. SYSTEMS CO.	RI, WARWICK	G08C GENERAL ELECTRIC	GA, CHARLIE
E055X EATON CORP	OH, CLEVELAND	G08C GENERAL ELECTRIC	MA, FITCHBURG
E065 EPASCO SERVICES INC	NY, NEWYORK	G08C GENERAL ELECTRIC	MA, PITTSFIELD
E071X EBY SYSTEMS DIVISON	RI, WARWICK	G08C GENERAL ELECTRIC	NC, WERBIE
E080 ECDYNE COOLING PRODUCTS CO		G08C GENERAL ELECTRIC	NC, WILMINGTON
E081X ECOLOGICAL ANALYSTS	MD, BALTIMORE	G08C GENERAL ELECTRIC	NY, SCHENECTADY
E082X EDERER CO.		G08C GENERAL ELECTRIC	VA, SALEM
E095 EDWARDS VALVE DIV	TX, SULPHUR SPRINGS	G08C GENERAL ELECTRIC	VA, WAYNESBORO
E120 ELECTRIC MACHINERY MANUF CO	MN, MINNEAPOLIS	G09C	
E130 ELECTRIC PRODUCTS CO DIV. OF PORTEC	OH, CLEVELAND	G10C GENERAL MOTORS CORP	IL, LAGRANGE
E140 ELECTRIC-MECHANICS	CT, STRATFORD	G12EX GENERAL RUBBER CO	NJ, S. HACKENSACK
E225X EPA SERVICES	NJ, THOPFARE	G131X GEORGETOWN CONSTRUCTION COMPANY	MA, NEWBURYPORT
E232X EMPIRE SOILS INVESTIGATIONS INC	NY, ROCHESTER	G135 GEOSCIEENCE, LTD	
E250 ENERGY CONTROL CORP.	PA, BROOKHALL	G140 GEOTECH ENGINEERS INC.	MA, WINCHESTER
E254X ENVIREX		G152X GILMORE STEEL CORP.	WA, VANCOUVER
E290 ENVIRONMENTAL ANALYSIS INC	NY, WOODHURY	G151 GIMPEL MACHINE WORKS	PA, LANGHORN
E301X EQUITABLE ENVIRONMENTAL HEALTH INC	NY, WOODHURY	G181X GOSLIN BIRMINGHAM	AL, BIRMINGHAM
F311X EST	MA, CONCORD	G195 GULD INC. SWITCH GEAR DIV.	PA, SPRING HOUSE
E314X ERLIN-FIMES ASSOC	IL, NORTHBROOK	G200 GULD PUMPS INC.	NY, SCHENCK FALLS
E345 EX-CELLO CORP	OH, LIMA	G215 GRAVER TANK & MANUFACTURING CO.	IN, EAST CHICAGO
E356X EXIDE POWER SYSTEMS-DIV-ESB INC	PA, PHILADELPHIA	G220 GRAVER WATER CONDITIONING CO	NJ, UNION
F01C FAIRBANKS HORSE	KA, KANSAS CITY	G230 SQUARE D COMPANY-GRAYBAR ELECT. INC.	PA, PHILADELPHIA
F01C FAIRBANKS HORSE	WI, DELOIT	G255 GRINNELL CORP	KY, PRINCETON
F016X FALON DIV	OH, CLEVELAND	G255 GRINNELL CORP	NC, KERNERSVILLE
F03C FARR CO	CA, EL SEGUNDO	G255 GRINNELL CORP	OH, WARREN
F071X FICK FOUNDRY	WA, TACOMA	G255 GRINNELL CORP	PA, WRIGHTSVILLE
F072X FICK METAL PRODUCTS	MI, BLUE SPRINGS	G307X GULF SOUTH RESEARCH INSTITUTE	LA, NEW ORLEANS
F130 FISHER CONTROL CO.	IA, MARSHALLTOWN	G321X GUYON INC, CHAS F	NJ, HARRISON
F130 FISHER CONTROL CO.	PA, COPPOLIS	G452X GILMORE STEEL	

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H043X HARRIDGE HOUSE	MA, BOSTON	I202 ITE-GOULD INDUSTRIES-CIRCUIT BREAKERS	PA, PHILADELPHIA
H044X HARCO CORP.		I202 ITE-GOULD INDUSTRIES-CIRCUIT BREAKERS	TX, HOUSTON
H045 HARLO CORP.		I202X ITT BARTON INSTRUMENT CORP	CA, MONTEREY PARK
H046X HARTSCHERGER CORP.	WI, MILWAUKEE	I207 ITT GRINNELL CORP.	OH, WARREN
H074X HARTMAN WALSH PAINTING CO	MO, ST LOUIS	I215X CLIFFORD B IVES	IA, MARSHALLTOWN
H095X HATCH DRILLING		J001 JACOBY-TARBOX	
H100 HATHAWAY INSTRUMENT		J010 JAMESBURY CORP	MA, WORCESTER
H120 HITMAN NUCLEAR & DEVELOPMENT CORP.		J016X JAPAN CASTING & FORGING CORP TOBATA	JAPAN, KU/KITCKYUSHU
H121X HAYDON BOLT INC	PA, PHILADELPHIA	J040 JERGUSON GAGE & VALVE	MA, BURLINGTON
H125 HAYS CORP		J046X JERSEY BOLT DIV	NJ, DAYTON
H143X HETZEL STEEL FORM & IRON	OH, WARREN	J050 JOHNS MANVILLE CO.	
H171X HILL PROCESS EQUIP. CO.		J090 JOHNSON SERVICE CO	WI, MILWAUKEE
H152X HERSENT OFFSHORE INC.		J105 JOHNSTON PUMP CO	CA, GLENDORA
H154X HIGH STEEL STRUCTURES INC	PA, LANCASTER	J111X JONES & HUNT	PA, DEWIGSBURG
H194X H. HILLMAN CO.		K043 KEELER & LONG INC.	CT, WATERBURY
H197X HIPATA VALVE INDUSTRY CO., LTD	JAPAN, KAWASAKI	K055 M W KELLOG	PA, WILLIAMSPORT
H210 HITMAN NUCLEAR DEVELOPMENT CORP.		K080 KERITE CO	CT, SEYFOUR
H212X HOFFMAN CONSTRUCTION CO	OR, PORTLAND	K118X KEYSTONE VALVE	TX, HOUSTON
H240 HONEYWELL INC	IL, ARLINGTON HTGS	K119X KEYSTONE ELECTRIC CO	MD, BALTIMORE
H240 HONEYWELL INC	IN, INDIANAPOLIS	K130 KINEMATICS INC.	
H271 HOPAGE T POTS	PA, PHILADELPHIA	K133X JOHN KING CO	OR, PORTLAND
H296X HUDSON PRODUCTS CORP	TX, HOUSTON	K149X KIRCHNER, GASPER & SON	NJ, KENILWORTH
H305 HUICO, INC.		K181X KLINGER STEEL CO	CA, STOCKTON
H342 HYDRATION FILTER COMPANY		K200X KRAFTWERT UNION	GERMANY, WULFHEIM
I005 I-T-E CIRCUIT BREAKER		L016X LA FAVORITE RUBBER	NJ, HARTHOFF
I012 IDEAL FORGING CO	CT, SOUTHTON	L020 LADOUR PUMP	IA, ELKHART
I034X INDUSTRIAL AIR INC	OR, APELIA	L025 LADISH CORP	TX, HOUSTON
I074X INDUSTRIAL DESIGN INC	VA, BLAND	L025 LADISH CORP	WI, CUDAHY
I040 INDUSTRIAL ELECTRIC	NC, ROCKY MOUNTAIN	L030 LAKE ERIE ELECTRIC CO	PA, ERIE
I045X INDUSTRIAL ENGINEERING WORKS	VJ, TRENTON	L035 LAKESIDE BRIDGE & STEEL CO	WI, MILWAUKEE
I049 INDUSTRIAL MECHANICS	PA, CHESTER	L036X LAKE SYSTEMS INC.	
I070 INGALLS IRON WORKS CO	AL, BIRMINGHAM	L081X LASKER BOILER & ENGINEERING CORP	IL, CHICAGO
I070 INGALLS IRON WORKS CO	DC, WASHINGTON	L087 RG LAURENCE INC	NJ, TENAFLY
I070 INGALLS IRON WORKS CO	MD, WILMINGTON	L088X LAWLER-MATUSKY & SKELLY	NY, TAPPAN-HYACK
I070 INGALLS IRON WORKS CO	PA, VERNON	L089 LAW ENGINEERING & TEST CO	GA, MARIETTA
I075 INGERSOLL RAND CO	VA, ROANOKE	L095 LAYNE & BOWLER PUMP CO	CA, INDUSTRY
I075 INGERSOLL RAND CO	NJ, PHILLIPSBURG	L137 LEHIGH STRUCTURAL STEEL	PA, ALLENTOWN
I075 INGERSOLL RAND CO	NY, PAINTER POST	L148X LENAPE FORGE & FOUNDRY	PA, WESTCHESTER
I075 INGERSOLL RAND CO	PA, EASTON	L225 LINK BELT	PA, COLMAR
I126X INTECO-INTERNATIONAL INSPECTION CO	JAPAN, TOKYO	L231X LITE AIR PRODUCTS INC.	
I129X INTERNATIONAL INSPECTION CO (ITECC)	JAPAN, TOKYO	L232 LITTON INDUSTRIES	
I134X INTERNATIONAL NUCLEAR SAFEGUARDS CORP	CT, BETHEL	L265 JE LONERGAN CO	PA, PHILADELPHIA
I152 INTERPACE CORP/PULSE FEEDER DIV	MO, PERRYMAN	L274X LCS ANGELES WATER CONDITIONING	CA, INDUSTRY
I182 ISHIKAWAJI-HARIMA IND INI-JAPAN	JAPAN, YOKOHAMA	L280 LOUIS ALLIS CO	WI, MILWAUKEE
I202 ITE-GOULD INDUSTRIES-CIRCUIT BREAKERS	CANADA, MISSISSAUGA	L284X LUTINK MFG CO	WI, MENOMONEE FALLS
I202 ITE-GOULD INDUSTRIES-CIRCUIT BREAKERS	GA, ATLANTA	L300 LUNKEHEIMER	OH, CINCINNATI
I204 ITE-GOULD INDUSTRIES-CIRCUIT BREAKERS	MD, WESTMINSTER	L300 LUNKEHEIMER	OH, CINCINNATI
I202 ITE-GOULD INDUSTRIES-CIRCUIT BREAKERS	PA, CHALFONT	L306X LYONS IRON WORKS	MA, MANCHESTER
I202 ITE-GOULD INDUSTRIES-CIRCUIT BREAKERS	PA, FORT WASHINGTON	L306X LYONS IRON WORKS	MA, MANCHESTER

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U310X LYNN FABRICATORS INC	MD, SEAT PLEASANT	0040 GKONITE CO	NJ, PASSAIC
U009X MACHINED METALS CO	PA, NORRISTOWN	0043X CLIVER B CANNON AND SON INC	PA, PHILADELPHIA
U040 MAGNETROL INC.	PA, BROOKHALL	0085 CTIS ELEVATOR	PA, PHILADELPHIA
U046X MALESON CO (AURORA PUMPS)	PA, PHILADELPHIA	0004 P.W. INDUSTRIES INCORP.	PA, PHILADELPHIA
U092X MARQUETTE CEMENT MFG CORP.	NY, CATSKILL	0005 F.X. ENGINEERING	MA, WOODBURY
U095X MARTIN MARLETTA CEMENT	ME, THOMASTON	0005 F.X. ENGINEERING	MA, WOODBURY
U111X MARYLAND SHIPBUILDING & DRYDOCK	MD, BALTIMORE	0005 F.X. ENGINEERING	MA, WOODBURY
U120 MASON/ILAN INTERN'L CORP.	MA, NORWOOD	0014 PACIFIC AIR PRODUCTS CO.	CA, SANTA ANA
U171X MCDOWELL WELLMAN ENGINEERING	MI, PORT HURON	0016 PACIFIC ENGR'G PRODUCTION CO.	NV, HENDERSON
U175X MCGRAW EDISON POWER	PA, CANONSBURG	0030X PACIFIC TESTING LABORATORY	WA, SEATTLE
U240 MERCURY CO OF NORWOOD INC	MA, NORWOOD	0033X PACIFIC TESTING LABORATORY	
U246 MERIAM INSTRUMENT CO.	OH, CLEVELAND	0050 PALL TRIMITY	NY, COGOLAND
U275X METAWEID INC	PA, PHILADELPHIA	0070 PARKER MANIFOLD	AL, HUNTSVILLE
U299X MICHIGAN SEAMLESS TUBE	MI, SOUTH LYONS	0083X PARKWAY FABRICATING	PA, CARNEGIE
U335 MINE SAFETY APPLIANCES CO.	PA, EVANS CITY	0131X PENNSYLVANIA FORGE CO	PA, PHILADELPHIA
U358 MISSION MFG. CO. (TRW)		0155 PENNVALT CORP.	
U377X MITSUBI SHIPBUILDING & ENG. LTD		0155X PERFECTO CAST	CA, SAN DIEGO
U385X MITSUBI & CO.	JAPAN, TAMANO	0160 PERFEX INC	WI, BERLIN
U387X MODEL PARTS INC.		0177X PERINI CORP.	
U394X MOHAWK MFG. CO.	NJ, WHITEHOUSE STA.	0191 PHELPS DODGE CORP.	
U431X SAMUEL B. MOORE CO	OH, AURORA	0196X PHILADELPHIA TRAMRAIL CO	PA, PHILADELPHIA
U446X MORRIS WHEELER & CO	PA, PHILADELPHIA	0197X PHILADELPHIA IRON WORKS CORP	PA, PHILADELPHIA
U447X MORRISON STEEL CO	NJ, NEW BRUNSWICK	0212 PHILLIPS-GETSCHOW CO.	IL, CHICAGO
U448X MORRISON MUDGER		0223X FIERSON PIPE MFG CO	PA, OAKS
U449X MOSSER INDUSTRIES	PA, ALLENTOWN	0230X PICOR CORP	PA, WEST CONSHOHOCKEN
U469X MSA CORPORATION	PA, EVANS CITY	0231X PILGRIM STEEL CO	NJ, GLASSBORO
U475 MULLER STEEL SPECIALTY CO	NY, BROOKLYN	0242 PIPECO STEEL CORP	NJ, DOVER
U004X NALCO OCEAN ENGRG	NH, BEDFORD	0242 PIPECO STEEL CORP	DE, WILMINGTON
U005 NALCO CHEMICAL	IL, NORTHBROOK	0243X PIPING ENGINEERING CO	OK, TULSA
U010 NASH ENGINEERING CO	CT, SOUTH NORWALK	0251X PIPING SPECIALTIES	NJ, HOBOKEN
U020 NATIONAL ANNEALING BOX CO	PA, WASHINGTON	0260 PITTSBURGH BRIDGE & IRON	NY, ROCHESTER
U040 NATIONAL FORGE	PA, ERIE/IRVINE	0262 PITTSBURGH TESTING LABORATORY	NH, SEABROOK
U066X NAZARETH STEEL FABRICATORS INC	PA, NAZARETH	0262 PITTSBURGH TESTING LABORATORY	PA, PITTSBURGH
U080 NELSON ELECTRIC	OK, TULSA	0270 PITTSBURGH-DES MOINES STEEL CO.	CA, SANTA CLARA
U085 NELSON STUD WELDING DIV	PA, BROOKHALL	0270 PITTSBURGH-DES MOINES STEEL CO.	JAPAN, TOKYO
U121X NIAGARA BLOWER CO	NY, BUFFALO	0270 PITTSBURGH-DES MOINES STEEL CO.	JAPAN, YOKOHAMA
U141X E. HOLTE & SON	NJ, WHITEHOUSE	0270 PITTSBURGH-DES MOINES STEEL CO.	NH, SEABROOK (SITE)
U146X NORDBERG CO	WI, MILWAUKEE	0270 PITTSBURGH-DES MOINES STEEL CO.	PA, BRISTOL
U150 KOOTER CORP	MO, ST LOUIS	0270 PITTSBURGH-DES MOINES STEEL CO.	PA, PITTSBURGH
U164X NORMANDEAU ASSOCIATES INC	NH, BEDFORD	0270 PITTSBURGH-DES MOINES STEEL CO.	UT, PROVO
U175 NORTHERN STEEL CO.	NY, OSWEGO	0295 HK PORTER	IL, CHICAGO
U192 NORWALK FABRICATIONS INC.	CT, GRANFORD	0295 HK PORTER	MD, BALTIMORE
U305 NUCLEAR MEASUREMENTS CORP	IN, INDIANAPOLIS	0295 HK PORTER	NJ, ROSELLE
U345 NUCLEAR SERVICE & CONSTRUCTION CO	VA, NEWPORT NEWS	0303 POSEY IRON WORKS	PA, LANCASTER
U425 NUPPO CO	OH, CLEVELAND	0304 PSI-SEAL	CT, H. STONINGTON
U430 NUS CORPORATION	MD, ROCKVILLE	0305 FCWELL, W.L. CO.	
0005 DE CURTIS INC	MA, FRAMINGHAM	0313X	
0008X O'CONNELL INC.		0317 POWER PIPING CO	PA, PITTSBURGH
0015 JOSEPH OAT INC.	NJ, CAMDEN	0319 POWER CONVERSION PRODUCTS INC	IL, CRYSTAL LAKE

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P224X POWELL ELECTRICAL MGR	TX, HOUSTON	S224X DAVID SMITH STEEL CO	NJ, SOUTH PLAINFIELD
P235 PRATT WHITNEY AIRCRAFT		S24C SOUTHWESTERN ENGINEERING CO	CA, LOS ANGELES
P24C HENRY PRATT CO	IL, AURORA	S25C SCLIDSTATE CONTROLS INC	OH, COLUMBUS
P244X PRICE PROD	OH, DAYTON	S24C SCOUTWEST FABRICATING CO	TX, HOUSTON
P255 PROCESS ENGINEERING INC.	IN, PLAISTOW	S305 SPEEDWAY MACHINE & TOOL CO.	IN, INDIANAPOLIS
P40C PROCESS EQUIPMENT CO. INC.		S321 SPIRO USA INC	IL, WHEELING
P412 PROCESS EQUIPMENT CO	MA, BROCKTON	S325 SPRAY ENGINEERING CO.	MA, BURLINGTON
P415 PROGRAMED & REMOTE SYSTEMS CORP.	MA, ST. PAUL	S354X STACEY MANUFACTURING CO	OH, CINCINNATI
P406X PRODUCT RESEARCH & CHEMICAL CORP.	CA, GLENDALE	S366X STANDARD PIPE & SUPPLY	
P415 PROGRESSIVE FABRICATION CO	MO, ST LOUIS	S375 STATIC "O" RING PRESSURE SWITCH CO	MO, KANSAS CITY
P42C PROTECTIVE PACKAGING INC.	KY, JEFFERSONTOWN	S382X STATIC PRODUCTS INC	TX, GARLAND
P427 PYCO INC.	PA, PENNSDEL	S382X STATIC PRODUCTS INC	TX, MESQUITE
P427X P.W. INDUSTRIES INCOR.	PA, PHILADELPHIA	S39C STERNS-ROGERS MFG. DIV.	CO, DENVER
P43C PYLE NATIONAL CO	IL, CHICAGO	S397 STEEL FORGINS INC	LA, SHREVEPORT
P58C PUBLIC SERVICE ELECTRIC & GAS CO.		S408X PETER STEWART INC	NJ, PLEASANTVILLE
P58C		S41C STOCK EQUIPMENT COMPANY	OH, CLEVELAND
P602X QUAKER CITY IRON WORKS	PA, PHILADELPHIA	S424X STOVER TANKS	IL, FREEPORT
P614X QUAKER EXPORT PACKAGING CO	PA, PHILADELPHIA	S431X STRESSTEEL CORPORATION	PA, WILKES BARRE
P61C QUINDAY ELECTRIC INC	NJ, SPRINGFIELD	S445 STRUTHERS WELLS CORP.	PA, JARRET
P622X RAYCHEM CORP	NJ, BLOOMFIELD	S453 SUN SHIPBUILDING AND DRYDOCK CO	PA, CHESTER
P103X RAYMOND TECH. FACILITIES		S496 SWAN MANUFACTURING CORP	NJ, ROCKAWAY
P104X RAYMOND INT'L C/L DIVISON		S51C	
P115 RAYTHEON	RI, PORTSMOUTH	S525 SYSTEMS ENGINEERING LABS INC.	
P145 RELIANCE ELECTRIC CO	GA, STONE MOUNTAIN	SCPI1	
P235 REX CHAINBELT INC	WI, MILWAUKEE	T078X TECHNOCORPORATION	PA, ERIE
P26C RICHMOND ENGINEERING	VA, RICHMOND	T034X TELEDYNE-IRIX STEEL COMPANY	MS, GULFPORT
P325X ROCHESTER DRILLING CO	NY, ROCHESTER	T07C TELEDYNE BROWN ENGINEERING	AL, DECATUR
P335 ROCHESTER INSTRUMENT SYSTEMS CORP.		T155 TEXAS INSTRUMENT	TX, DALLAS
P335X ROCKAWAY TANK	NJ, DOVER	T164X THE RESEARCH CORP NTRCE	CT, WETHERSFIELD
P34C ROCKWELL MANUFACTURING CO	NC, NORTH CAROLINA	T165 THERMO ELECTRIC COMPANY	PA, FORT WASHINGTON
P361X ROLLS ROYCE	AUSTY, ENGLAND	T208X THREE "M" COMPANY	PA, PHILADELPHIA
P363X ROME IRON MILLS	NY, ROME	T217X TIOGA PIPE & SUPPLY	
P36C ROPER PUMP CO.	GA, COMMERCE	T22C TIMET DIV OF TITANIUM METALS	OH, TORONTO
P391X ROYAL INDENTITY & CO.	NJ, EAST ORANGE	T255 TOWER IRON WORKS INC.	MA, SEEKONK
P401 P.T.R.E. CORP.		T255 TOWER IRON WORKS INC.	RI, PROVIDENCE
P414X RYAN INDUSTRIES	KY, LOUISVILLE	T28C TRANSOC INC	IL, STREATOR
P415 J.T. RYERSON & SONS INC.	PA, PHILADELPHIA	T281X TRANSOC-PACIFIC CO	
P416 RYERSON	NJ, JERSEY CITY	T295 TRANTER MANUFACTURING INC	MI, LANSING
S004X SSP FITTING CORP	OH, REDFORD	T321X TRW MISSION MFG CO	TX, HOUSTON
S005 S & C ELECTRIC CO	IL, CHICAGO	T33C TUBE TURNS	KY, LOUISVILLE
S03C SANDVIK STEEL INC	PA, WAVERLY	T34C TUFLINE CO	OH, CINCINNATI
S03C SANDVIK STEEL INC	SWEDEN, SANDVIKEN	T345 TLRCO PRODUCTS	
S054 SCAN INSTRUMENT CORP	IL, SKOKIE	T351X TYLOK INTERNATIONAL	OH, EUCLID
S075 SCHUTTE AND KOFERTING	PA, CORNWELLS HEIGHTS	U005 U.S. ELECTRIC	
S135 SENTRY EQUIPMENT CORP		U057 UNION SPRING AND MFG CO	PA, NEW KENSINGTON
S144X SHANNON & WILSON	WA, SEATTLE	U067 UNITECH DIV. OF ECODYNE CORP.	
S15C SHARPSVILLE STEEL FAB INC	PA, SHARPSVILLE	U074X UNITED CONTAMINATION CONTROL INC	PA, PHILADELPHIA
S152 S F SHAW	SC, LAURENS	U091X UNITED SCALE NOEL	
S181X SIEMENS CORP		U092X UNITED SHEET METAL CO	PA, PHILADELPHIA

VENDOR LIST AND REFERENCE NUMBERS

0091X	UNITED STATES FILTER			W27C	WOLVERINE TUBE	AL, DECATUR
0094X	UNITED STATES ELEVATOR CORP.	CA, SPRING VALLEY		W289X	WOODWARD-CLYDE CORP	MA, BOSTON
U105	UNITED STATES STEEL CORP	OH, LORAIN		W315	WORTHINGTON CORP	WJ, HARRISON
U105	UNITED STATES STEEL CORP	PA, FLWOOD CITY		W315	WORTHINGTON CORP	PA, WELLSVILLE
U105	UNITED STATES STEEL CORP	PA, MCKEESPORT		X002	XOMOX CORP.	OH, CINCINNATI
U119X	UNIVERSAL ATLAS CEMENT CORP	NY, HUDSON		Y01C	YARWAY CORP	PA, BLUE BELL
UECB	UNITED ENGR. & CONSTR. BOSTON OFFICE			Y02C	YCRK	CT, STANFORD
UECH	UNITED ENGR. & CONSTR. HOME OFFICE			Y025	YOUNGSTOWN STEEL TANK	OH, YOUNGSTOWN
UECS	UNITED ENGR. & CONSTR. PROJECT SITE			Y027	YOUNGSTOWN WELDING	OH, YOUNGSTOWN
U01C	VACCO INDUSTRIES			Y03C	YUBA HEAT TRANSFER CORP	OK, TULSA
V040	VALCON SALES ENGINEERING CO	MO, KANSAS CITY		Z01C	ZURN INDUSTRIES INC.	
V035	VALVE & PRIMER CORP.					
V045	VELAY CORP	MONTREAL, QUEBEC				
V075	VELAY CORP	NY, PLATTSBURG				
V115	VICTORSEN INSTRUMENT DIV	OH, CLEVELAND				
V135	HENRY VOGT CO	KY, LOUISVILLE				
W03C	WALWORTH CO-ALCOYCO PLANT	NJ, LINDEN				
W03C	WALWORTH CO-ALCOYCO PLANT	PA, GREENSBURG				
W054X	WATUNG INDUSTRIES	IL, CHICAGO				
W071X	FRANK WEAVER INC	PA, LANSDALE				
W072X	WECO DIVISION FMC CORP	TX, HOUSTON				
W073X	WEILER ASSOCIATES	NY, HORSEHEADS				
W082X	WEHR CO, JERVIS, N.	PA, POTTSTOWN				
W082X	WEHR CO, JERVIS, N.	WA, SPOKANE				
W083X	WELDING ENGINEERS INC.	PA, KING OF PRUSSIA				
W091X	WEST END IRON WORKS	MA, CAMBRIDGE				
W094	WESTERN CONCRETE STRUCTURES					
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	IL, CHICAGO				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	IN, MUNCIE				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	MA, HYDE PARK				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	MD, BALTIMORE				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	NY, ELmira				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	NY, HORSEHEADS				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	OH, CINCINNATI				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	PA, EAST PITTSBURGH				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	PA, LESTER				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	PA, PITTSBURGH				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	PA, SHARON				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	PA, SWISSVALE				
W12C	WESTINGHOUSE NUCLEAR ENERGY SYSTEMS	VA, SOUTH BOSTON				
W124X	WESTERN CONCRETE STRUCTURE	CA, GARDENA				
W126	WESTON GEOPHYSICAL RESEARCH INC.	MA, WESTBORO				
W126	WESTON GEOPHYSICAL RESEARCH INC.	MA, WESTON				
W131X	WESTSTEEL INC	NJ, WESTVILLE				
W142X	WHEELER PAINTS	PA, PITTSBURGH				
W156	WHITE R.H. CONSTRUCTION CO					
W17C	WHITING CORP.	IL, HARVEY				
W19C	WHITLOCK MFG CO, THE	CT, WEST HARTFORD				
W249	WISS, JANNEY, ELSTNER AND ASSOCIATES	IL, NORTHBROOK				

QA/QC PROCEDURE ADVANCE CHANGE NOTICE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

PROCEDURE TITLE Work Stoppage

PREPARED BY T. P. Vassallo Jr.

DATE 6/3/80

CHANGE

CHG. NO. 28
EFFECTIVE
DATE 6/3/80

QA 16-2

QCP N/A

REV. 02

DATE 10/24/75

1.0) Page 4 of 8 - Paragraph V.A.1.. Sentence 2

Revise to read "Copies of the Stop Work Order shall be forwarded to the YAEC Site OA representative, UE&C Project Manager, UE&C Construction Manager and the effected Contractor's Construction Manager."

2.0) Page 5 of 8 - Paragraph V.8.

Add the following:

"7. Contractor's Construction Manager"

REASON FOR CHANGE To provide pertinent information to Contractor's Construction Manager

REVIEWED BY FSQA	DATE	REVIEWED BY PROJECT GAE	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
<i>R.J. Phipps</i>	<i>6/5/80</i>	<i>S. Phipps</i>	<i>6/14/80</i>	<i>B. J. L.</i>	<i>6/17/80</i>	<i>J.B. SILVERMAN</i>	<i>6/17/80</i>	<i>J.R. Knight</i>	<i>6/19/80</i>



QUALITY ASSURANCE PROCEDURE ^{QA} ~~WORK STOPPAGE~~ INFORMATION ONLY

FOR

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

October 3, 1974

No.	Date	Prep. By	QA/Rev.	Appr. By
1	12/6/74	<i>R. H. Leonard</i>	<i>JB</i>	<i>JB</i>
2	10/24/75	<i>R. H. Leonard</i>	<i>JB</i>	<i>JB</i>

Prepared by:

R. H. Leonard
R. H. Leonard
Quality Assurance Engineer

Approved by:

G. F. Cole
G. F. Cole, Project Manager

Approved by:

J. B. Silverwood
J. B. Silverwood, Manager
Reliability & Quality Assurance



QUALITY ASSURANCE PROCEDURE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

QA - 16-2

SUBJECT:

WORK STOPPAGE

REV: 2

DATE: 10/24/75

PAGE 1 of 8

I. SCOPE

This procedure applies to activities within the scope of UE&C responsibility for Quality Assurance, Construction Management and Architect-Engineering for the Project and identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR.

II. GENERALA. Purpose

1. To impose the applicable portions of Standard XVI in the Quality Assurance Manual - Corporate Standards on the project.
2. This procedure provides the steps to be taken to stop work on any operation or activity on the project within the scope of responsibilities of R&QA.

B. Reference Documents

QA-15 Nonconforming Materials, Parts and Components
QA-16-1 Corrective Action

C. Definitions

1. The following definitions or clarifications apply to this procedure.
 - a. "Activity" refers to site discipline operation such as cadwelding, concrete placement, containment liner construction, etc., or a specifically defined portion thereof.
 - b. "Operation" refers to areas of work and activities in the Home Office such as Quality Assurance, Vendor Surveillance, Engineering, Expediting, Project Management, etc. or a specifically defined portion thereof.
 - c. "Effort" refers to the entire Vendor work scope in accordance with UE&C-purchased equipment technical contractual obligations.

III. RESPONSIBILITIESA. Engineering Department

1. The UE&C Project Engineering Manager is responsible for issuing the order to stop and resume work on a Vendor effort for the project, based on recommendations made by the Quality Assurance Engineer (QAE).

III. RESPONSIBILITIES (Continued)

B. Construction Management

1. The UE&C Resident Construction Manager (RCM) has the sole responsibility for issuing the order to stop and resume work on a site activity, based on consultation with and recommendations made by the Field Superintendent-Quality Assurance.

C. Home Office Operations

1. The UE&C Manager of a Home Office operation found deficient is responsible for issuing the order to stop and resume work based on recommendations made by the QAE.

D. Reliability & Quality Assurance

1. The Quality Assurance Engineer is responsible for:
 - a. Informing the UE&C Project Engineering Manager and UE&C Manager-Purchasing and Client when conditions warrant Vendor effort work stoppage on UE&C purchased equipment through initiation of a STOP WORK ORDER (SWO).
 - b. Informing the UE&C Project Manager and UE&C Manager-Reliability and Quality Assurance when conditions warrant work stoppage in the Home Office through initiation of a STOP WORK ORDER.
 - c. Recommending Home Office and Vendor corrective action.
 - d. Following all recommendation for Home Office and Vendor work stoppage to a satisfactory resolution.
2. The Field Superintendent-Quality Assurance is responsible for:
 - a. Informing the Resident Construction Manager when conditions warrant work stoppage at the site and initiating a STOP WORK ORDER.
 - b. Coordinating with the Resident Construction Manager and the YAEQ Field Quality Assurance Manager on matters concerning site work stoppage and resumption whether initiated by UE&C or by YAEQ Quality Assurance organizations.
 - c. Recommending site corrective action.
 - d. Assuring that satisfactory resolution to recommendations for site work stoppage are being implemented.
 - e. Concurring with the Resident Construction Manager that the conditions leading to the issuance of the STOP WORK ORDER have been resolved and that work can be resumed.

IV. REQUIREMENTS

- A. This procedure may be used to stop work on operations or activities which are in direct violation of the requirements of:
 - 1. The PSAR
 - 2. Engineering, construction and material specifications and drawings.
 - 3. Applicable codes and standards
 - 4. UE&C written quality assurance, quality control and construction procedures
 - 5. Other written YAEC and UE&C instructions
 - 6. Generally accepted goods construction practice
 - 7. Contractors' or Vendors' procedures previously approved by UE&C or YAEC
- B. The procedure for work stoppage shall be initiated under the following conditions:
 - 1. When the quality of work on an operation or activity degrades to the point that it cannot be permitted to continue until the situation has been corrected.
 - 2. When all methods of correction have been attempted unsuccessfully, leaving no further choice, and the RCM has been advised in writing that unless immediate corrective action is initiated for the deficient condition, a STOP WORK ORDER will be issued. Methods of correction may include:
 - a. Resolution with the responsible craft or contractor's Quality Control Supervisor and the UE&C Resident Construction Manager.
 - b. Use of Correction Action requests in accordance with procedure QA-16-1.
 - c. Use of nonconformance reports in accordance with procedure QA-15.
 - d. Inspection, surveillance and audits.
 - e. Resolution with the affected home office manager and the UE&C Project Manager.

IV. REQUIREMENTS (Continued)

- f. Resolution with the Project Engineering Manager, the UE&C Manager of Purchasing and the Supervising Engineer-Vendor Surveillance pertaining to Vendor effort.
3. When no resolution has been received for conditions recorded on nonconformance reports or audit reports and the same conditions continue to occur.

V. PROCEDURE

A. Site

1. When the Field Superintendent-Quality Assurance, determines that an activity must be stopped, and the requirements of Paragraph IV of this document have been met, he shall inform the UE&C Resident Construction Manager with a copy to the Quality Assurance Engineer, by written STOP WORK ORDER (see Figure 1). Copies of the STOP WORK ORDER shall be forwarded to the YAEC Site QA Representative, UE&C Project Manager and UE&C Construction Manager.

A description of the specific violation, the reference document violated, and any deficiency, audit, inspection or test report involved, will be included.

2. When the YAEC Site Manager determines that an activity must be stopped he will communicate the STOP WORK ORDER to the UE&C Resident Construction Manager.
3. Upon receipt of a STOP WORK ORDER, the Resident Construction Manager must immediately issue an order to stop work in the area involved, unless corrective action acceptable to the Field Superintendent-Quality Assurance, or the YAEC Site Manager, if applicable, is immediately implemented.
4. The Resident Construction Manager will describe the corrective action to be implemented, specify the date by which it will be accomplished and return the original form to the Field Superintendent-Quality Assurance. The Resident Construction Manager may take the responsibility to proceed with his planned corrective action prior to return of the STOP WORK ORDER to the FS-QA for verification.
5. If corrective action specified is not adequate or fails to meet the intent of the request, the FS-QA will contact the Resident Construction Manager to discuss corrective action.

V. PROCEDURE (Continued)

6. If agreement cannot be reached, the disagreement shall be referred to UE&C Project Manager.
7. Work may be resumed only after action has been taken to eliminate the cause of the adverse condition, the Resident Construction Manager has satisfactorily replied to the STOP WORK ORDER and the release section has been signed by the FS-QA.
8. After action has been completed and the STOP WORK ORDER has been released, a copy of the completed, signed form (Figure 1) shall be delivered to the Resident Construction Manager. Additional copies shall be distributed to:
 1. UE&C Project Manager
 2. UE&C Construction Manager
 3. UE&C Field Superintendent-Quality Assurance
 4. UE&C Quality Assurance Engineer
 5. YAEC Field Quality Assurance Manager
 6. YAEC Site Manager
9. All requests to stop work for technical reasons initiated by UE&C personnel must be made through the Field Superintendent-Quality Assurance and the Resident Construction Manager.

B. Home Office

1. When the QAE determines that work in a particular Home Office or Vendor operation must be stopped and the applicable requirements of Section IV have been met, he shall inform the manager of the affected operation by a written STOP WORK ORDER, Form 4677 (see Figure 2). Copies of the STOP WORK ORDER shall be distributed to the UE&C Project Manager, Construction Manager, R&QA Manager, Supervising Discipline Engineer (if involved), and Manager of Purchasing (if involved)
2. Upon receipt of a STOP WORK ORDER, the manager will immediately issue an order to stop work in the activity involved, unless corrective action acceptable to the QAE is immediately implemented.
3. Work may be restarted only after corrective action has been taken similar to Section V.A.4 through 7, the manager of the affected operation has satisfactorily completed the STOP WORK ORDER and the QAE has signed the release section.
4. After action has been completed and the STOP WORK ORDER has been released, copies of the completed signed form (Figure 2) shall be distributed to:

V.A. PROCEDURE (SITE) (Continued)

- a. UE&C Project Manager
- b. UE&C Manager of Reliability & Quality Assurance
- c. UE&C Construction Manager
- d. UE&C Project Engineering Manager
- e. UE&C Vendor Surveillance
- f. Vendor Management
- g. UE&C Manager-Purchasing
- h. YAE&C Quality Control & Audit Manager
- i. YAE&C Project Manager
- j. UE&C Resident Construction Manager

VI. DOCUMENTATION

- A. The FSQA (for site SWO's only) and the QAE (for all SWO's) shall accomplish the following:
 - 1. Maintain a file of completed SWO's.
 - 2. Maintain a log of SWO's initiated and completed.
- B. Copies of completed Vendor SWO's shall also be maintained by Vendor Surveillance in their working files.

FORM 4575 10/75

SITE / VENDOR STOP WORK ORDER

NO. _____

DATE _____

 Resident Construction Manager ☐
 Proj. Engr. Mgr. ☐

CONTRACT NO. _____ C/O

ITEMS: _____

DRAWING-SPEC: _____ Rev.

THE DEFICIENT CONDITION(S) LISTED BELOW REQUIRE IMMEDIATE CORRECTIVE ACTION. WORK IS TO BE STOPPED UNTIL RELEASE IS GRANTED.

DEFICIENCY INFORMATION	(Resident Construction Mgr.) or (Proj. Engineering Mgr)
TYPE: STRUCTURAL <input type="checkbox"/> INST. & CONTROLS <input type="checkbox"/> NUCLEAR <input type="checkbox"/> MECHANICAL <input type="checkbox"/> ELECTRICAL <input type="checkbox"/>	ACTION:
DEFICIENCY:	
(Field Sup't. QA) or (QAE)	
Signature _____ Date _____	
(Resident Const. Mgr.) or (Engineering Mgr.) ACKNOWLEDGEMENT	(Construction) or (Engineering) Authorized Representative
Signature _____ Date _____	Signature _____ Date _____
RELEASE: ACTION COMPLETED IS SATISFACTORY, WORK MAY PROCEED.	
(Field Sup't QA) or (QAE)	Signature _____ DATE _____

FORM 4677 10/75

"HOME OFFICE ACTIVITY"
STOP WORK ORDER

TO: "HOME OFFICE ACTIVITY" MANAGER

CONTRACT NO. _____ C/O

ITEMS: _____

DRAWING -SPEC: _____ Rev.

THE DEFICIENT CONDITION(S) LISTED BELOW REQUIRE IMMEDIATE CORRECTIVE ACTION. WORK IS TO BE STOPPED UNTIL RELEASE IS GRANTED.

DEFICIENCY INFORMATION

TYPE: STRUCTURAL ☐ INST. & CONTROLS ☐
NUCLEAR ☐ MECHANICAL ☐ ELECTRICAL ☐

DEFICIENCY:

"HOME OFFICE ACTIVITY" REPLY

ACTION:

QA ENGINEER

Signature _____

Date _____

"HOME OFFICE ACTIVITY" ACKNOWLEDGEMENT

Signature _____

Date _____

"HOME OFFICE ACTIVITY" AUTHORIZED REPRESENTATIVE

Signature _____

Date _____

RELEASE: ACTION COMPLETED IS SATISFACTORY, WORK MAY PROCEED.

QA ENGINEER

Signature _____ DATE _____

QA/QC PROCEDURE ADVANCE CHANGE NOTICE

PUBLIC SERVICE CO. OF NEW HAMPSHIRE - SEABROOK STATION

PROCEDURE TITLE Quality Assurance Records

PREPARED BY B. E. O'Connor

DATE 12/22/81

CHANGE

Paragraph IV.E.1.b - Add a new sentence to read:

"Records sent to inactive storage shall be placed in cardboard boxes."

CHG. NO. 60
EFFECTIVE DATE 11/30/81
QA 17
QCP N/A
REV. 8
DATE 1/24/80

REASON FOR CHANGE Response to NRC Audit 81-03

REVIEWED BY FSGA	DATE	REVIEWED BY PROJECT GAE	DATE	APPROVED PM	DATE	APPROVED MGR. R & QA	DATE	APPROVED	DATE
<i>Al Lambert</i>	<i>12/22/81</i>	<i>F. M. [unclear]</i>	<i>12/21/81</i>	<i>W. B. [unclear]</i>	<i>12/22/81</i>	<i>J. B. [unclear]</i>	<i>12/22/81</i>	<i>N/A</i>	<i>12/22/81</i>

QUALITY ASSURANCE PROCEDURE QA - 17

QUALITY ASSURANCE PROCEDURE

FOR

INFORMATION ONLY

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

January 14, 1974

No.	Date	Prep. By	QA/Rev.	Appr. By
1	4/18/74	W. Stevens	GBS	472-
2	11/1/74	W. Stevens	GBS	572-
3	12/6/74	W. Stevens	GBS	572-
4	10/27/75	W. Stevens	GBS	572-

Prepared by:

Robert C. Holzwarth
 R. C. Holzwarth
 Quality Assurance Engineer

Approved by:

G. F. Cole
 G. F. Cole, Project Manager

Approved by:

J. B. Silverwood
 J. B. Silverwood, Manager
 Reliability & Quality Assurance

Revision				Approval	
No.	Date	Page Nos. Revised	Prep. By	Project Manager	Manager R&QA
5	5/10/78	i, ii, 2 & 8 of App. A	De Man	572	GBS
6	3/1/79	Figure 1 (Page 7)	W. Stevens	572	GBS
7	11/2/79	P. 6 of App. A	W. Stevens	572	GBS
8	1/24/80	App. A-Pgs. 2 thru 14	W. Stevens	572	GBS

1/24/80
Rev. 8

QA-17 CURRENT PAGE LISTING

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Appendix A	
1	10/27/75
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10	"
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Rev. 8

QUALITY ASSURANCE PROCEDURE

QA-17
REVISION 8

<u>SECTION</u>	<u>PAGE</u>	<u>REASON</u>
Appendix A:	2 thru 14	Deleted all YAEC designations
List C	6	1. Added "/DCC" and "/microfiche". To clarify records requirements. 2. Added bottom line.
List E <u>Civil</u>	9	1. Added new "Admixture Test Reports" line. 2. Substituted "DCC" and "micro- fiche" on lines 2,3 & 6; to clarify records requirements.
List E	10	1. Added "and ice", "/DCC" & "/microfiche" to line 9. 2. Added a new line 10.
List E	11	Deleted line 6.



& constructors inc

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

QUALITY ASSURANCE RECORDS

REV: 1 Reissue

DATE: 10/27/75

PAGE 1 of 6

I. SCOPE

This procedure describes the control system maintained by UE&C for Quality Assurance Records.

II. GENERAL

A. Purpose

1. To impose the applicable portions of Standard XVII in the Quality Assurance Manual-Corporate Standards and ANSI N45.2.9 on the project.
2. To define records and documents which are generated or maintained, by UE&C for substantiating conformance to applicable standards, codes, agency or Client requirements. The document sources are shown in Figure 1 along with the controlling record procedures.
3. To establish the measures necessary for control, retention and retrieval of QA records.

B. References

1. Project Administrative Procedures.
2. ANSI N45.2.9 Requirements for Collection, Storage and Maintenance of Quality Assurance Records.
3. QA-7-2 - Control of Purchased Material-Vendor Surveillance.
4. QA-18 - Quality Assurance Audits.
5. QCP-17-1 - Records Review.
6. QCP-17-2 - Quality Assurance Records.
7. Construction Division Standard Guideline Procedure GGCP-2 Drawing Specification & Document Control.
8. General Administrative Procedure GAP 0014 Document Control Center.
9. General Administrative Procedure GAP 0005 Identification, Filing and Retrieval System.
10. YAEF Field Quality Control and Audit Group - Record Center Manual.

II. GENERAL (Continued)

C. Record Requirements

1. Records shall be identifiable and retrievable, and shall be made available to YAEC or their designated representative, regulatory agency representatives and to the Authorized Inspector, as appropriate.
2. The program is designed to provide for the accumulation and retrieval of the documents contained in the seven part Documentation Requirement List included in Appendix A of ANSI N45.2.9. UE&C has input into only the first five of the seven sections.
 - a. Design Records
 - b. Vendor Pre-Manufacturing Records
 - c. Vendors Manufacturing Records
 - d. Procurement Records
 - e. Construction Records
 - f. Preoperations and Startup Test Records
 - g. Maintenance, modification and Test Records.

D. Definitions

1. QA Records - Those records which furnish documentary evidence of the quality of items and of activities affecting quality.
2. Working Files - Uncontrolled documents maintained by the individual or groups so that they can perform their task. Any of these documents which become QA records will be transmitted to the point of access by the originator or responsible engineer.

III. RESPONSIBILITIES

A. Engineering

1. The Project Manager is responsible for the establishment and maintenance of Project Engineering Records in the Project Document Control Center (DCC).
2. The Project Administrator is responsible for supervising the overall operation of the DCC in accordance with GAP-0014 and Project's Administrative Procedures.

III. RESPONSIBILITIES (Continued)

3. Supervising Discipline Engineers are responsible for establishing and maintaining working files for all documentation applicable to their discipline.

B. Construction Manager

1. The Resident Construction Manager is responsible for the establishment and maintenance of all Project Construction Records.
2. The Resident Engineer is responsible for receipt, recording, distribution and recall of specifications, drawings, procedures and other documents for use at the project site in accordance with project procedures based on GGCP-2.

C. Reliability and Quality Assurance

1. R&QA is responsible for auditing the QA records in accordance with QA-18.
2. The Quality Assurance Engineer is responsible for establishing and maintaining working files for all documentation applicable as required by project QA procedures.
3. The Supervising Engineer-Vendor Surveillance is responsible for establishing and maintaining working files in accordance with QA-7-2.
4. The Field Superintendent-Quality Assurance is responsible for maintaining the site Quality Assurance Master File for receiving, storage, and civil/structural inspection/surveillance in accordance with QCP-17-2.
5. Manager of Audits is responsible for auditing the QA records program, establishing and maintaining working files for auditing in accordance with QA-18.

IV. PROCEDURE

A. Records Program

1. UE&C employs a records program which provides for data input, maintenance, updating and retrieval of QA records. The sources of the documents and the controlling procedures are shown in Figure 1.

IV. PROCEDURE (Continued)

2. A list of quality-related documents for safety-related activities that will be generated, collected and maintained by the Project is shown on Appendix A. This list:

- a. identifies documents by type
- b. identifies the originator
- c. designates the storage location
- d. designates the form and time for turnover
- e. identifies the document as "lifetime" or "nonpermanent"
- f. identifies YAEC's designation.

B. Record Categories

1. QA Records are categorized as "lifetime" or "nonpermanent" jointly by the originating organization and Reliability & Quality Assurance (See Appendix A).
 - a. Lifetime records are those which meeting one or more of following criteria and would be of significant value in:
 - 1) demonstrating capability for safe operation.
 - 2) maintaining, reworking, repairing, replacing or modifying the item.
 - 3) determining the cause of an accident or malfunction of the item.
 - 4) providing the required baseline data for in-service inspection.
 - b. Lifetime records shall be maintained (by UE&C up through Turnover and YAEC thereafter) for the life of the item while it is installed in the plant or stored for future use.
 - c. Nonpermanent records are those having no significant value in the areas noted above. Nonpermanent records shall provide evidence that an activity was performed in accordance with applicable requirements and will be retained as a minimum for periods as identified in Appendix A. The time period starts at the commercial operation of the plant.

IV. PROCEDURE (Continued)

C. Project Document Control Center

1. Power Division Standard GAP-0014 shall be followed in maintaining these QA records.
2. Project records of design and procurement activities shall be identifiable to the items covered and shall be retrievable. Design and procurement records typically include drawings, specifications, calculations, stress reports, evidence of design verification, vendor submittals (procedures and manufacturing records), procurement documents and related correspondence.
3. All "Final" (reviewed, approved and issued) hard copies of QA records shall be submitted for microfilming. Other QA records identified by Supervising Discipline Engineers as being sufficiently important to warrant copying shall also be microfilmed.
4. The disposition of hard copies of QA records after microfilming shall be dependent upon agreements reached with the Owner on the format of the permanent record files and other related considerations.

D. Construction Office Building

1. Construction Procedure for Drawing, Specification & Document Control and QCP-17-2 shall be followed for maintaining the records identified as COB in Appendix A.
2. QCP-17-2 shall be followed for maintaining the Civil/Structural records identified as Site QA/COB point of access in Appendix A.

E. Document Storage Requirements (Protective Measures)

1. Project Files

- a. UE&C Project records shall be maintained in duplicate files stored in separate locations. These records may be retained as microfilm or hard copy or a combination of these. Duplicates of the microfilm copies of records are maintained in the Record Retention Room of the Reproduction Department. Before microfilming, the documents shall be reviewed for completeness, legibility and identification in accordance with procedure GAP-004.

IV. PROCEDURE (Continued)

- b. Records shall be firmly attached in binders, or placed in folders or envelopes. To the greatest extent practicable steel file cabinets shall be used to store documents and microfilm.
- c. Special process records such as, photographs, negatives and microfilm shall be packaged and stored in accordance with manufacturer's recommended practices for these record forms.

2. Construction Site Permanent Record Facility

- a. The record facility used during construction shall be as provided by the Owner and shall meet the requirements of N45.2.9.
- b. The method for receipt, review, filing and access to the permanent site records including microfilm and radiographs are described in QCP-17-1 and QCP-17-2.
- c. Turnover of records to YAEC shall be in accordance with Appendix A and QCP-17-2.

3. Security

- a. Each organization responsible for generating, receiving and accumulating records shall also be responsible for preserving them by preventing the entry of unauthorized personnel into the files. The following personnel are authorized access to Project Engineering files:

- 1) Project Manager
- 2) Project Engineering Manager
- 3) Project Administrators
- 4) Project Supervising Discipline
- 5) Project Engineer and Engineer Design Supervisors
- 6) Project Clerks and Secretaries.

Access to records at construction site shall be controlled by Quality Control Procedure QCP-17-2.

- b. Provisions shall be provided for securing the records facility when it is left unattended.

DOCUMENT FLOW & DISPOSITION

ACTIVITY	UE&C CONSTRUCTION ENGINEERING		WESTINGHOUSE NSSS	YANKEE (SITE RECORD CENTER)	SUBCONTRACTORS	CONTROLLING RECORDS PROCEDURES
	ENGINEERING	MANAGER				
UE&C ENG. & DESIGN DOCUMENTS	ORIGINAL DOCUMENTS	HARD COPIES & MICROFILM (CONSTRUCTION FILE)	-----	HARD COPIES & MICROFILM (NORMAL PROJECT DIST.)	HARD COPIES NEEDED TO DO JOB	QAP-0014 QA-17
SITE DATA PACKAGE RECEIVED FOR EQUIPMENT	COPY FOR INFO	HARD COPIES FOR REVIEW & TURNOVER (MASTER QA FILE)	-----	HARD COPIES TURNED OVER BY C.M.	-----	QCP-17-2
WESTINGHOUSE QUALITY RELEASE FOR NSSS EQUIP.	-----	HARD COPY FOR REVIEW & TURNOVER (MASTER QA FILE)	ORIGINAL COPY	HARD COPY TURNED OVER BY C.M.	-----	QCP-17-2
WESTINGHOUSE DOCUMENT PACKAGE FOR NSSS EQUIP.	-----	-----	ORIGINAL COPY	HARD COPIES & MICROFILM TURNED OVER BY NSSS	-----	YAEC PROCEDURE (WESTINGHOUSE QA PROCEDURES)
SUBCONTRACTOR SITE CONSTRUCTION RECORDS-CIVIL/STRUCTURAL	SUBMITTALS REQUIRED BY SPECIFICATIONS	HARD COPIES FOR REVIEW AS REQUIRED FOR CONSTRUCTION REPORT	-----	HARD COPIES TURNED OVER BY SUBCONTRACTORS	ORIGINALS	QCP-17-2 (SITE CONTRACTOR QC PROCEDURES)
SUBCONTRACTOR SITE CONSTRUCTION RECORD - ALL OTHER	SUBMITTALS REQUIRED BY SPECIFICATIONS	SUBMITTALS REQUIRED BY SPECIFICATION	-----	HARD COPY TURNED OVER BY SUBCONTRACTORS	ORIGINALS	YAEC PROCEDURE (SITE CONTRACTOR QC PROCEDURES)

FIGURE 1

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QUALITY ASSURANCE RECORDS
RECORD STORAGE REQUIREMENTS AND CONTROLLING PROCEDURES

Records Storage Requirements (ANSI N45.2.9)	<u>Applicable Paragraphs in Controlling Procedures</u>						
	QA-17	QCP-17-1	QCP-17-2	GAP-0014	Administrative Procedures	Constr.* Procedure	YAEC Procedure
1. Description of the Storage Area	IV.E.1 IV.E.2	—	II.C	—	—	—	X
2. Filing System	—	IV.B	—	IV	AP #2 AP #7 AP #8 AP #29	X	—
3. Verifying Record Condition and Agreement with Transmittal	—	Figure 2	—	IV	AP #12 AP #29	X	—
4. Verifying Agreement with Pre-established Records List	—	IV.B Figure 1 Figure 2	—	—	—	—	—
5. Access to and Control of Files	IV.E.3	—	IV.A	—	—	—	—
6. Control and Accountability for Records	—	IV.F	—	IV	—	X	—
7. Filing Supplemental Information	—	—	—	IV	AP #23	X	—

* Construction Procedure for Drawing, Specification & Document Control to be issued in accordance with UE&C Procedure GGCP-2.

Figure 2

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FOOTNOTES

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1. Point of Access

DCC - Document Control Center
FP - Foreign Print Control Center
COB - Construction Office Building

2. Turnover to YAEC prior to commercial operation.
3. Turnover to YAEC is part of the normal distribution as the records are generated.
4. File requirements at site are lifetime storage(L) and 0, 1, 2, 6 years of storage after commercial operation.
5. Copies for permanent records to be supplied by YAEC.
6. Alpha-numeric designation from YAEC Field Quality Control and Audit Group-Record Center Manual.
7. These procedures will be submitted to engineering for review and comment; or approval as required by the UE&C specification. At the same time a copy of the procedures will be submitted to YAEC.

APPENDIX A

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DOCUMENT RETENTION REQUIREMENT

LIST A

<u>DESIGN RECORDS</u>	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u> (1)	<u>TURNOVER TO YAEC</u>	<u>FILE REQ'T</u> (4)
Applicable Codes and Standards Used in Design	Eng.	UE&C Library	Index List (2)	L (5)
Design Calculations and Record of Checks	Eng.	Proj. Files (by disciplines)	Microfiche (3)	L
Design Change Requests	Vendor	DCC	Microfiche (3)	1
Design Deviations	R&QA	DCC	Microfiche (3)	L
Design Procedures and Manuals	Eng.	DCC	Microfiche (3)	2
Design Reports	Eng.	DCC	Microfiche (3)	L
Design Review Reports	Eng.	DCC	Microfiche (3)	1
Drawings	Eng.	DCC Originals	Microfiche (3)	L
Drawing Control Procedures	Eng.	DCC	Microfiche (3)	2
Purchase and Design Specifications & Amendments	Eng.	DCC	Microfiche (3)	L
QA System Audit Reports	R&QA	DCC	Microfiche (3)	6
Safety Analysis Report	Safety Licensing Eng.	DCC	Hard Copies (3)	L

APPENDIX A (Cont'd.)

LIST A (Continued)

<u>DESIGN RECORDS</u>	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u> (1)	<u>TURNOVER TO YAEC</u>	<u>FILE REQ'T</u> (4)
Stress Reports	Eng.	DCC	Microfiche(3)	L
Systems Descriptions	Eng.	DCC	Microfiche(3)	L
Systems Process and Instrumentation Diagrams	Eng.	DCC	Microfiche(3)	L
Technical Analysis, Evaluations and Reports	Eng.	DCC	Microfiche(3)	L
Reconciliation of Drawings to Stress Reports	Eng.	DCC	Microfiche(3)	L

APPENDIX A (Cont'd.)

LIST b

<u>VENDOR PRE-MANUFACTURING RECORD REQUIREMENTS</u>	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u> (1)	<u>TURNOVER TO YAEC</u>	<u>FILE REQ'T</u> (4)
Supplier's QA Program Manual (and QC Procedures)	Vendor	FP	Hard Copies(2)	2
Cleaning Procedures	Vendor	FP	Microfiche(2)	0
Eddy-Current Test Procedures	Vendor	FP	Microfiche(2)	0
Ferrite Test Procedures	Vendor	FP	Microfiche(2)	0
Heat Treat Procedures	Vendor	FP	Microfiche(2)	0
Hot Bending Procedure	Vendor	FP	Microfiche(2)	0
Liquid Penetrant Inspection Procedure	Vendor	FP	Microfiche(2)	0
Magnetic Particle Inspection Procedure	Vendor	FP	Microfiche(2)	0
Packaging, Receiving, Storage Procedure	Vendor	FP	Microfiche(2)	0
Performance Test Procedure	Vendor	FP	Microfiche(2)	0
Pressure Test Procedure	Vendor	FP	Microfiche(2)	0
Test Equipment Calibration Procedure	Vendor	FP	Microfiche(2)	0
Radiographic Inspection Procedure	Vendor	FP	Microfiche(2)	0
Ultrasonic Inspection Procedure	Vendor	FP	Microfiche(2)	0

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LIST B (Continued)

VENDOR PRE-MANUFACTURING
RECORD REQUIREMENTS

	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u> (1)	<u>TURNOVER TO YAEC</u>	<u>FILE REQ'T</u> (4)	<u>YAEC DESIGNATION</u> (6)
Weld Material Control Procedure	Vendor	FP	Microfiche(2)	2	
Welding Procedures	Vendor	FP	Microfiche(2)	L	
Welding Procedure Qualification & Data Reports	Vendor	FP	Microfiche(2)	2	
Welding Personnel Qualifications	Vendor	Vendor	Microfiche(2)	2	
Detailed Inspection Plan	Vendor	FP	Microfiche(2)	L	
Certificate of Authorization	Vendor	FP	Microfiche(2)	L	

APPENDIX A (Cont'd.)

LIST C

<u>VENDORS MANUFACTURING RECORDS</u>	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u> (1)	<u>TURNOVER TO YAEC</u>	<u>FILE REQ'T</u> (4)
Applicable Code Data Reports	Vendor	COB	Hard Copies(3)	L
As-Built Drawings and Records	Vendor	FP	Aperture Cards(2)	L
Certificate of Inspection and Test Personnel Qualification	Vendor	Vendor	NA	0
Certificates of Compliance	Vendor	COB	Hard Copies(3)	L
Eddy-Current Examination Results	Vendor	COB	Hard Copies(3)	L
Electrical Control Verification & Test Results	Vendor	COB	Hard Copies(3)	L
Ferrite Test Results	Vendor	COB	Hard Copies(3)	L
Heat Treatment Records	Vendor	COB	Hard Copies(3)	L
Liquid Penetrant Examination Results	Vendor	COB	Hard Copies(3)	L
Magnetic Particle Examination Results	Vendor	COB	Hard Copies(3)	L
Major Defect Repair Records	Vendor	COB	Hard Copies(3)	L
Material Properties Records	Vendor	COB	Hard Copies(3)	L
Nonconformance to Procurement Documents	Vendor	COB/DCC	Hard Copies(3)/ Microfiche	L
Performance Test Records	Vendor	COB	Hard Copies(3)	L
Pipe and Fitting Location Report	Vendor	COB	Hard Copies(3)	L
User Tensile Test Reports or Reinforcing Steel	Vendor	COB	Hard Copies(2)	1

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LIST C (Continued)

<u>VENDORS MANUFACTURING RECORDS</u>	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u> (1)	<u>TURNOVER TO YAEC</u>	<u>FILE REQ'T</u> (4)
Pressure Test Results (including Hydrotest)	Vendor	COB	Hard Copies(3)	L
Test Equipment Calibration Records	Vendor	Vendor	NA	0
QA System Audit Report	R&QA	DCC	Microfiche(3)	6
Radiographs, Review Forms	Vendor	COB	Hard Copies(3)	L
Ultrasonic Examination Results	Vendor	COB	Hard Copies(3)	L
Welding Filler Metal Reports	Vendor	COB	Hard Copies(3)	L
Final Inspection Reports and Releases	Vendor	COB	Hard Copies(3)	L
Vendor QA Releases	Vendor	COB	Hard Copies(3)	L

APPENDIX A (Cont'd.)

LIST D

<u>PROCUREMENT RECORDS</u>	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u> (1)	<u>TURN OVER TO YAEC</u>	<u>FILE REQ'T</u> (4)
Purchaser's Pre-Award Quality Assurance Survey	R&QA	DCC	Microfiche(3)	2
Pre-Award Meeting Minutes	Purchasing	DCC	Microfiche(3)	2
Procurement Procedures	Purchasing	DCC	Microfiche(3)	0
Procurement Specification	Purchasing	DCC	Microfiche(3)	L
Purchase Order Including Amendments	Purchasing	Purchasing	Microfiche(3)	L
Audit Reports	R&QA	DCC	Microfiche(3)	6

APPENDIX A (Cont'd.)

LIST E (typical)

CONSTRUCTION RECORDS

Receiving and Storage

	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u>	(1) <u>TURNOVER TO YAEC</u>	(4) <u>FILE REQ'T</u>
Inspection Reports for Stored Items	Field QC	Site QA/COB	Hard Copies(2)	0
Nonconformance Reports	Field QC	Site QA/COB	Hard Copies(2)	L
Receipt Inspection Reports on Items	Field QC	Site QA/COB	Hard Copies(2)	1
Receiving and Storage Inspection Procedures	Field QC	Site QA/COB	Hard Copies(2)	2
Storage Inventory and Issuance Records	Field QC	Site QA/COB	Hard Copies(2)	0
Vendor Surveillance Releases	Vendor Surv.	Site QA/COB	Hard Copies(2)	0

Civil

Admixture Test Reports	Contractor	Site QA/COB	Hard Copies(2)	L
Aggregate Test Reports	Test Lab	DCC	Microfiche	1
Batch Plant Operation Reports	Contractor	Site QA/COB	Hard Copies(2)	1
Cement Grab Sample Reports	Test Lab.	DCC	Microfiche	0
Concrete Cylinder Test Reports and Charts	Test Lab.	Site QA/COB	Hard Copies(2)	L
Concrete Mix Design Reports	Test Lab.	DCC	Microfiche	L
Concrete Placement Records	Contractor	Site QA/COB	Hard Copies(2)	L
Inspection Reports for Channel Pressure Tests	Contractor	Site QA/COB	Hard Copies(2)	L

(4)

LIST E (Continued)CONSTRUCTION RECORDSCivil (Continued)

	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u>	(1) <u>TURNOVER TO YAEC</u>	<u>FILE REQ'T</u>
Material Property Reports on Containment Liner and Accessories	Vendor	Site QA/COB	Hard Copies(3)	L
Material Property Reports on Metal Containment Shell and Accessories	Vendor	Site QA/COB	Hard Copies(3)	L
Material Property Reports on Reinforcing Steel	Vendor	Site QA/COB	Hard Copies(3)	L
Material Property Reports on Reinforcing Steel Splice Sleeve Material	Vendor	Site QA/COB	Hard Copies(3)	L
Material Property Reports on Steel Embedments in Concrete	Vendor	Site QA/COB	Hard Copies(3)	L
Material Property Reports on Steel Piling	Vendor	Site QA/COB	Hard Copies(3)	1
Material Property Reports on Structural Steel and Bolting	Vendor	Site QA/COB	Hard Copies(3)	L
Material Property Reports on Tendon Fabrication Material	Vendor	Site QA/COB	Hard Copies(3)	L
Mix Water & Ice Chemical Analysis	Test Lab	Site QA/COB/DCC	Hard Copies(3)/ Microfiche	1
Mixer Uniformity Test Reports	Contractor	Site QA/COB	Hard Copies(3)	L
Pile Drive Log	Contractor	Site QA/COB	Hard Copies(3)	L
Pile Loading Test Reports	Contractor	Site QA/COB	Hard Copies(3)	L
Procedure for Containment Vessel Pressure- proof Test and Leak Rate Tests and Results	Contractor	Site QA/COB	Hard Copies(3)	L

APPENDIX A (Cont'd.)

LIST E (Continued)

CONSTRUCTION RECORDS

Civil (Continued)

	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u>	(1) <u>TURNOVER TO YAEC</u>	(4) <u>FILE REQ'T</u>
Reinforcing Steel Splice Operator Qualification Reports	Contractor	Site QA/COB	Hard Copies (2)	0
Releases to Place Concrete	Contractor	Site QA/COB	Hard Copies (2)	0
Reports of High-Strength Bolt Torque Testing	Contractor	Site QA/COB	Hard Copies (2)	1
Slump Test Results	Test Lab	Site QA/COB	Hard Copies (2)	0
Soil Compaction Test Reports	Test Lab	Site QA/COB	Hard Copies (2)	1
User's Tensile Test Reports on Reinforcing Steel Splices	Test Lab	Site QA/COB	Hard Copies (2)	1

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LIST E (Continued)

CONSTRUCTION RECORDS

Welding (7)

	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u> (1)	<u>TURNOVER TO YAEC</u>	<u>FILE REQ'T</u> (4)
Ferrite Test Procedure	Contractor	FP	Microfiche(2)	L
Heat Treatment Procedures	Contractor	FP	Microfiche(2)	0
Liquid Penetrant Test Procedures	Contractor	FP	Microfiche(2)	L
Magnetic Particle Test Procedures	Contractor	FP	Microfiche(2)	L
Major Weld Repair Procedures	Contractor	FP	Microfiche(2)	L
Radiographic Test Procedures	Contractor	FP	Microfiche(2)	L
Ultrasonic Test Procedures	Contractor	FP	Microfiche(2)	L
Weld Procedures	Contractor	FP	Microfiche(2)	L
Weld Procedures Qualifications and Results	Contractor	FP	Microfiche(2)	L
Welding Material Control Procedures	Contractor	FP	Microfiche(2)	L

Mechanical (7)

Cleaning Procedures	Contractor	FP	Microfiche(2)	1
Construction Lifting and Handling Equipment Test Procedures	Contractor	FP	Microfiche(2)	0

APPENDIX A (Cont'd.)

LIST E (Continued)

CONSTRUCTION RECORDS

Mechanical⁽⁷⁾ (Continued)

	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u> ⁽¹⁾	<u>TURNOVER TO YAEC</u>	<u>FILE REQ'T</u> ⁽⁴⁾
Erection Procedures for Mechanical Components	Contractor	FP	Microfiche(2)	1
Hydro-Test Procedures	Contractor	FP	Microfiche(2)	L
Installed Lifting and Handling Equipment Procedures	Contractor	FP	Microfiche(2)	L
Lubrication Procedures	Contractor	FP	Microfiche(2)	L
Safety Valve Response Test Procedures	Contractor	FP	Microfiche(2)	L

Electrical and I & C⁽⁷⁾

Cable Pulling Procedures	Contractor	FP	Microfiche(2)	0
Cable Splicing Procedures	Contractor	FP	Microfiche(2)	L
Relay Test Procedures	Contractor	FP	Microfiche(2)	L

APPENDIX A (Cont'd.)

LIST E (Continued)

CONSTRUCTION RECORDS

General

	<u>ORIGINATOR</u>	<u>PT. OF ACCESS</u> (1)	<u>TURNOVER TO YAEC</u>	<u>FILE REQ'T</u> (4)
As-Built Drawing and Record	Contractor/Eng.	DCC	Aperture Card(3)	L
Calibration of Measuring and Test (7) Equipment and Instruments Procedure	Contractor	FP	Microfiche(2)	0
Certificate of Inspection and Test Personnel Qualification	Contractor	FP	Microfiche(2)	1
Field Quality Assurance Manual	Contractor	FP	Microfiche(2)	2
UE&C Audit Reports	R&QA	DCC	Microfiche(2)	6

QUALITY ASSURANCE PROCEDURE QA - 18

QUALITY ASSURANCE AUDITS FOR INFORMATION ONLY

NEP-1 AND NEP-2

SEABROOK STATION

MAINE NUCLEAR POWER STATION

NEW ENGLAND POWER COMPANY

PUBLIC SERVICE COMPANY OF
 NEW HAMPSHIRE

CENTRAL MAINE POWER COMPANY

J.O. 6386

J.O. 9763

J.O. 6387

August 13, 1973

REV.	DATE	PREPARED BY	APPROVED	
			PROJECT	Q.A.
1	11/16/73	R. Holzworth	SFC	gbs
2	7/31/74	J. KRECHER	SFC	gbs
3	10/12/74	P. KRECHER	SFC	gbs
4	10/24/75	P. KRECHER	SFC	gbs

Prepared by: R. C. Holzworth
 R. C. Holzworth
 Quality Assurance Engineer

Approved by: G.F. Cole
 G.F. Cole
 Project Manager

Approved by: B. B. Silverwood
 B. B. Silverwood, Manager
 Reliability & Quality Assurance

REVISION				APPROVAL	
No.	Date	Page Nos. Revised	Prepared By	Project Manager	Manager R&QA
5	8/16/76	ALL	D. Mann	SFC	gbs
6	1/19/79	1,2,3,4,5,7,10,11,12 and Fig. 18-1	F. Long	SFC	gbs

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App. 18-B	1/19/79

ATTACHMENT 1 TO PROJECT QUALITY ASSURANCE PROCEDURE QA-18DESCRIPTION OF CHANGES

<u>SECTION</u>	<u>PAGE</u>	<u>REASON</u>
III	1,2	<ul style="list-style-type: none"> • Rearranged titles and consolidated contents in accordance with the latest revision to the QA Manual Corporate Standards.
IV.A	2,3	<ul style="list-style-type: none"> • Distinguished between Audit System Plan and Audit System Schedule.
IV.A.4	3	<ul style="list-style-type: none"> • An expression of the audit frequency has been prompted by NRC Audit Findings.
IV.B	4	<ul style="list-style-type: none"> • Deleted Management Check as it is being incorporated in QA-2-1 to avoid the necessity of qualifying top management personnel as auditors.
IV.B,C	4	<ul style="list-style-type: none"> • Incorporated expanded definitions previously in Section II.
IV.E	5	<ul style="list-style-type: none"> • Added responsibilities of the lead Auditor.
IV.F	5-10	<ul style="list-style-type: none"> • Changed format and upgraded to agree with Corporate Standards.
IV.F.4.b	8	<ul style="list-style-type: none"> • Added attestation by Manager of Audits in response to an audit finding.
V	10,11	<ul style="list-style-type: none"> • Minor revision in accordance with Corporate Standards.
Appendices A & B	12,13	<ul style="list-style-type: none"> • Minor revisions in accordance with Corporate Standards.
Figures 18-1, 2,3	14,15,16	<ul style="list-style-type: none"> • Renumbered and instructions expanded.
Figure 18-4	17	<ul style="list-style-type: none"> • Replaced "Audit Trip Report".
Figure 18-5	18	<ul style="list-style-type: none"> • New "Lead Auditor Record Form". "Audit Verification Report" was deleted.
Figure 18-6	19	<ul style="list-style-type: none"> • Distribution list changed to reflect project requirements and to delete need for distribution of "audit plan".

ATTACHMENT 1 TO PROJECT QUALITY ASSURANCE PROCEDURE QA-18IDENTIFICATION OF CHANGES: REVISION 6

<u>SECTION</u>	<u>PAGE</u>	<u>REASON</u>
II-B	1	• Added reference to ANSI N45.2.23.
IV-A-1	2,3	• Clarify "audit system plan". There is no form "Audit System Plan".
IV-A-4	3	• Delete ambiguous first sentence regarding frequency of audits.
IV-A-5 } IV-A-6 }	3,4	• Describe new procedure for annual evaluations in lieu of routine annual reaudits.
IV-A-7-b	4	• Clarify time for initiating first audit of suppliers.
IV-B-3	4 (Rev. 5)	• Deleted - redundant. See paragraph IV-E.
IV-C-2	5 (Rev. 5)	• Deleted reference to Summary Report - redundant, same as item above.
V-B-13	7	• Added to explain procedure for resolving conflicts.
V-C-5	10	• Added to describe procedure for examination of Lead Auditors.
V-F	11,12	• Section added to satisfy ANSI N45.2.23.
VI-A-1	12	• Delete "Audit System Plan" and add "Supplier Evaluation".
VI-B-2	12	• Added to satisfy ANSI N45.2.23.
Figure 1	13	• Substitute "Audit Log" for "Project Audit System Plan".



QUALITY ASSURANCE PROCEDURE

QAP - 18

PUBLIC SERVICE CO. OF NEW HAMPSHIRE-SEABROOK STATION
NEW ENGLAND POWER COMPANY - NEP 1 & NEP 2
CENTRAL MAINE POWER COMPANY - MNPS

SUBJECT:

QUALITY ASSURANCE AUDITS

REV: 6
DATE: 1/19/79
PAGE 1 of 19

I. SCOPE

This procedure defines the responsibilities and methods for conducting planned, periodic Quality Assurance Audits on the project and the requirements for qualification and certification of auditing personnel. It applies to all UE&C activities associated with design, procurement, manufacture and field construction and installation of nuclear safety-related items, identified as Seismic Category I, Safety Class 1, 2, 3 and Class 1E in Tables 3.2-1 and 3.2-2 of the PSAR, including UE&C audits of suppliers and contractors for conformance to UE&C contractual requirements.

II. PURPOSE

- A. Impose the applicable portions of Standard XVIII in the Quality Assurance Manual - Corporate Standard on the project.
- B. Describe UE&C's auditing activities which meet the requirements of Appendix B to 10CFR50 - Criterion XVIII, ANSI N45.2, Section 19, ANSI N45.2.12, ANSI N45.2.23 and ASME Section III.
- C. Define the authority and responsibilities of the audit section for conducting audits internally of UE&C project quality assurance programs and externally of consultant, supplier or subcontractor quality assurance programs.
- D. Provide direction in responding to outside organization audit findings on UE&C Project Operations.

III. GENERAL

- A. This procedure provides instructions for preparing and conducting an audit, and for reporting and following up audit findings.
- B. This procedure establishes an audit system which:
 - 1. Determines the adequacy of the QA programs which have been developed and documented in accordance with Project and UE&C requirements.
 - 2. Provides auditors who are familiar with the activity being audited but have no direct responsibility for the work under evaluation to verify, by examination and evaluation of objective evidence, that the QA programs have been effectively implemented.

3. Provides audit personnel reasonable and timely access to facilities, documents and personnel necessary in the planning and performance of the audits.
 4. Provides access by audit teams to levels of management of the auditing and audited organizations that have the responsibility and authority to assure corrective action.
 5. Identifies nonconformances to the established QA programs.
 6. Requires immediate corrective actions on audit findings by the responsible supervision of the activity under evaluation and verifies correction of the identified QA program deficiencies on a timely basis.
 7. Assesses the effectiveness of the QA programs and provides responsible management of both the auditing and audited organizations with current, factual data-or their evaluation of program effectiveness.
 8. Provides for reaudit of nonconformances until correction has been accomplished.
- C. The Manager-R&QA has delegated authority and provided suitable resources for the performance of UE&C's QA Audit function to the Manager-Audits. The Manager-Audits and the auditors are independent of the organizations and activities audited. The audit system provides periodic, impartial evaluations of the effectiveness of UE&C's QA Programs.
- D. The basic elements and forms utilized on the project are established by the Quality Assurance Manual - Corporate Standards to preserve a uniform, corporate approach across all projects. The QAE will coordinate with the Manager-Audits to identify the need for both scheduled and supplemental audits of appropriate activities.
- E. Audits of UE&C Suppliers and Contractors are considered part of external audit activities.

IV. PROCEDURE

A. Audit Planning and Scheduling

1. The audit system plan for the project consists of the detailed audit requirements established in this procedure and the schedule of audits prepared for the project. The Audit Section shall maintain an Audit Log (Figure 18-1) which lists the Audit Report Number, Audit Date, Team

Leader, Description of Audit, and close date of audit.
This information shall be recorded as audits are scheduled and performed.

2. Auditing shall be initiated as early in the life of the activity as practicable, consistent with the schedule for accomplishing the activity, to verify timely implementation of QA requirements. In any case, auditing is initiated early enough to assure effective QA during Design, Procurement and contracting activities.
3. On a quarterly basis, in coordination with the Supervising Engineer-Project Quality, the Manager-Audits shall review and revise the Project Audit Schedule to assure timely evaluations of the QA Program.
4. As a minimum, applicable elements of the internal QA Program shall be audited during the anniversary month following an initial audit or at least once during the life of the activity, whichever is shorter. In scheduling internal audits, it is understood that their performance any time up to thirteen months after the prior audit meets the intent of the annual requirement.
5. After an initial audit, a supplier's quality performance history shall be reevaluated annually to determine the need for conducting a reaudit. The evaluation shall be done when possible, by the Lead Auditor who last audited the supplier. Results of this evaluation shall be documented and recommended action concurred with by the R&QA Manager-Audits. The evaluation will consider:
 - a. Complexity of item(s)/service(s) furnished.
 - b. Degree of quality and process control required to manufacture item.
 - c. Status and results of previous audits.
 - d. History of performance of item(s)/service(s) purchased.
 - e. Status and results of the latest ASME Survey of the supplier.
 - f. Status and results of the latest CASE survey of the supplier.

- g. Results of the latest NRC survey of the supplier as reported in "Licensee, Contractor, and Vendor Inspection Status Report".
 - h. Effectiveness of implementation of the supplier's QA Program.
6. Suppliers requiring formal reaudits shall be identified in the documented evaluation and shall be scheduled for reaudit within a period not to exceed three months from the evaluation date. All suppliers regardless of evaluation results shall be reaudited at least every three years.
7. Supplemental audits shall be conducted as required on the basis of the following factors:
- a. When it is necessary to ascertain the potential Quality Assurance System capabilities of consultants, suppliers, or Subcontractors prior to awarding a contract or purchase order.
 - b. When, after award of a contract, sufficient time has elapsed for implementing the Quality Assurance Program and it is appropriate to determine that the organization is adequately performing the functions as defined in the Quality Assurance Program description, codes, standards, and other contract documents.
 - c. When work and activities have started in areas not scheduled for an audit.
 - d. When verbal or written complaints of significant quality deficiencies, nonconforming trends or discrepancies are received.
 - e. When previous audit of areas or activities indicates a need for additional auditing.
 - f. When significant changes are made in functional areas of the QA Program such as significant reorganization or procedure revision.
 - g. When it is suspected that the quality of the item is in jeopardy due to deficiencies in the QA Program.

- h. When a systematic, independent assessment of program effectiveness is considered necessary.

B. Internal Audits

1. Internal Audits shall be conducted on specific elements or activities of the UE&C Quality Assurance Program under its direct control and with its organizational structure. This includes site operations within the scope of UE&C responsibilities as Construction Manager or Constructor. Replicate activities are audited either independently or in conjunction with the base project.
2. The internal audit procedure is outlined on Flow Chart Appendix 18-A.

C. External Audits

1. External Audits shall be conducted on those portions of another organization's Quality Assurance Program not retained under direct control nor within UE&C's organizational structure. Consultants, suppliers, vendors, or subcontractors shall be audited to ascertain their compliance to contractual requirements. Conducting facility surveys prior to placement of a contract or purchase order is considered an external audit. External audits of activities for a replicate project, except for facility surveys, are not required on a scheduled basis until release for fabrication. These audits will be done on a multi-project basis depending on the number of orders a given contractor has.
2. The external audit procedure is outlined on Flow Chart Appendix 18-B.
3. YAEC will be notified during the planning stages, should they wish to have a representative as a participant or observer during the audit.

D. Responses to Outside Audits

The Flow Chart provided in Figure 18-2 outlines the procedure to be followed when replying to the findings contained in an audit report received from a Client, the NRC or other outside organization.

E. Audit Status Summary

A monthly Audit Status Summary shall be issued to the Manager-R&QA with copies to the President, Vice President-Project Support Operations and other interested parties (e.g. PM, QAE, etc.) by the Manager-Audits. The report shall reflect the status of audit findings and shall indicate any observed quality trends which might diminish the effectiveness of the Quality Program.

V. AUDIT PERSONNEL

A. Audit Team Selection

1. A Lead Auditor shall be appointed audit team leader by the Manager-Audits. One or more individuals comprise an audit team. Audit team members shall be selected from qualified personnel of the R&QA Department and other UE&C Departments or Divisions. Qualified personnel of the client's organization may serve on the project audit team at their option on external audits.
2. The selection of the audit team shall be based on the special abilities, specialized technical training, prior pertinent experience, personnel characteristics and education required to perform the audit. The audit team leader, prior to commencing the audit, shall concur that the audit team personnel collectively have the experience or training commensurate with the scope, complexity, or special nature of the activities to be audited.
3. The audit team members shall be familiar with, but independent of any direct responsibility for the performance of activities which they will audit.
4. Persons having direct responsibility for activities being audited shall not be involved in audit team selection.
5. On ASME Code work, at the request of the Authorized Inspection Agency, their representative may elect to participate on the audit team as an observer.

B. Audit Team Leader (Lead Auditor)

The audit team leader is responsible for the following:

1. Orientation of the team.
2. Providing timely written notification (Audit Plan) to the organization to be audited, including scope, schedule and audit team data.

3. Coordinating the audit process.
4. Establishing the pace of the audit.
5. Assuring communications with the audit team and with the responsible personnel of activities being audited.
6. Being familiar with pertinent documents relative to the specific audit.
7. Establishing an audit agenda and/or checklist.
8. Assuring that audit team is prepared prior to initiation of audit.
9. Participating in the audit performance, including checking Corrective Action implementation from previous audits.
10. Identifying the findings requiring immediate Corrective Action to responsible management of audited activities.
11. Preparing and issuing the audit reports, including recommendations for corrective measures that will improve the program.
12. Evaluating planned corrective action and providing subsequent verification actions to confirm implementations.
13. Resolving through the organizational chain of Manager-Audits, Manager-R&QA and Vice President-Project Support Operations, when effective corrective action by the audited activity or organization is not accomplished on a timely basis.

C. Qualification of Lead Auditors

An individual shall meet the requirements of the following paragraphs V.C.1.a through V.C.5. prior to being certified a Lead Auditor by the Manager-Audits.

1. Education and Experience - The prospective Lead Auditor shall have verifiable evidence that a minimum of ten (10) credits under the following scoring system have been accumulated.

a. Education (4 credits maximum)

Associate degree from an accredited institution score one (1) credit or if the degree is in engineering, physical sciences, mathematics, or quality assurance, score two (2) credits or, a bachelors degree from an accredited institution score two (2) credits or if the degree is in engineering, physical sciences, mathematics, or quality assurance, score three (3) credits; in addition score one (1) credit for a masters degree in engineering, physical sciences, business management or quality assurance from an accredited institution.

b. Experience (9 credits maximum)

Technical experience in engineering, manufacturing, construction, operation, or maintenance, score one (1) credit for each full year with a maximum of five (5) credits for this aspect of experience.

If two (2) or more years of this experience have been in the nuclear field, score one (1) additional credit, or if two (2) or more years of this experience have been in quality assurance, score two (2) additional credits, or two (2) or more years of this experience have been in auditing, score three (3) additional credits, or, if two (2) or more years of this experience have been in nuclear quality assurance, score three (3) additional credits, or, if two (2) or more years of this experience have been in nuclear quality assurance auditing, score four (4) additional credits.

c. Other Credential of Professional Competence (2 Credits Maximum)

Certification of competency on engineering, science or quality assurance specialties issued and approved by a State Agency, or National Professional Society, score two (2) credits.

d. Rights of Management (2 Credits Maximum)

The Manager-Audits or prospective Lead Auditor's Supervisor may grant up to two (2) credits for other performance factors applicable to auditing which may not be explicitly called out in this procedure. Examples of these factors are leadership, sound judgment, maturity, analytical ability, tenacity,

past performance and QA training courses. These factors shall be attested to in writing by the Manager-Audits or the prospective Lead Auditor's Supervisor.

2. Communications Skill

The prospective Lead Auditors shall have the capability to communicate effectively in the English language, both written and oral. These skills shall be attested to in writing by the Manager-Audits or the prospective Lead Auditor's Supervisor.

3. Training

Prospective Lead Auditors shall have training to the extent necessary to assure their competence in auditing skills. Training in the following areas shall be given based upon management evaluation of the particular needs of each prospective Lead Auditor.

- a. Knowledge and understanding of ANSI N45.2, its associated standards, particularly ANSI N45.2.12 and other nuclear-related codes, standards, regulations, regulatory guides, as applicable.
- b. General structure of quality assurance program as a whole and applicable elements such as organizational; design control; procurement document control; instructions; procedures and drawings; document control; control of purchased material, equipment and services; identification and control of materials, parts and components; control of special processes; inspection; test control; control of measuring and test equipment; handling, storage and shipping; inspection, test and operating status; nonconforming materials, parts, or components; corrective action; quality assurance records; audits; and quality information feedback.
- c. Auditing techniques of examining, questioning, evaluating and reporting; methods of identifying and following up on corrective action items; and closing out audit findings.
- d. Audit planning in the quality-related functions for the following activities: design, purchasing, fabrication, handling, shipping, storage, cleaning, erection, installation, inspection, testing, statistics,

nondestructive examination, maintenance, repair, operation, modification of nuclear facilities or associated components and safety aspects of the nuclear facility.

- e. On-the-job training to include the elements of audit activity as described in ANSI N45.2.12.

4. Audit Participation

The prospective Lead Auditor shall have participated in a minimum of five (5) quality assurance program audits within a period of time not to exceed three (3) years prior to the date of qualification, one audit of which shall be a nuclear quality assurance program audit within the year prior to his qualification.

5. Examination

The prospective Lead Auditor shall pass an examination which shall evaluate his comprehension of and ability to apply the body of knowledge identified in paragraph V.C.3. The test may be oral, or written. The development and administration of the examination shall be as follows:

- a. Pass-Fail criteria shall be established by the Manager-Audits based on the content of each examination and other factors that may influence evaluation of an individual's performance in the examination.
- b. The integrity of the examination shall be maintained by establishing the appropriate confidentiality of files and by the proctoring of written examinations.
- c. Copies of examinations administered shall be maintained for record purposes to indicate type and content.
- d. The certification record for each Lead Auditor shall indicate that the individual successfully passed the required examination.

D. Qualification of Auditors

Auditors shall have, or be given, appropriate training or orientation to develop their competence for performing required audits. Competence of personnel for performance of the various auditing functions shall be developed by one or more of the following methods:

1. Orientation to provide a working knowledge and understanding of ANSI N45.2, ANSI N45.2.12, ANSI N45.2.23 and Corporate Standards XVIII - 1 & 2.
2. Training programs to provide general and specialized training in audit performance. General training shall include fundamentals, objectives, characteristics, organization, performance and results of quality auditing. Specialized training shall include methods of examining, questioning, evaluating, and documenting specific audit items and methods of closing out audit findings.
3. On-the-job training, guidance, and counseling under the direct supervision of a Lead Auditor. Such training shall include planning, performing, reporting and follow-up action involved in conducting audits.

E. Maintenance of Lead Auditor Certification

1. Maintenance of Proficiency

Lead Auditors shall maintain their proficiency through one or more of the following: regular and active participation in the audit process; review and study of codes, standards, procedures, instructions and other documents related to quality assurance programs and program auditing; participation in training programs as described in paragraph V.D.2. above. Based on the Manager-Audits annual assessment, he may extend the certification, require retraining, or require recertification. These evaluations shall be documented on the Lead Auditor's Record Form, Figure 18-5.

2. Recertification

Lead Auditors who fail to participate in the quality assurance program auditing process for a period of two years or more shall require recertification. Recertification shall include retraining in accordance with the requirements of paragraph V.C.3, reexamination in accordance with paragraph V.C.5, and participation as an Auditor in at least one quality assurance program audit.

F. Qualification of Technical Specialists and Management Representatives

1. Technical Specialists and Management Representatives are selected to serve on an audit team when the need for their expertise is required to cover the technical or management aspects of the activity to be audited.

2. To qualify Technical Specialists or Management Representatives who participate in an audit, the audit team leader instructs them in those audit principles and procedures outside their expertise but essential to their effective participation in the audit.

VI. DOCUMENTATION

A. Corporate Audit File

1. The Manager-Audits shall maintain an audit file for the project. The file includes copies of the Project Audit Log, Supplier Evaluations, individual audit plans including Preplanned and Executed Checklists, Audit Reports (Figure 18-3), Audit Finding Reports (Figure 18-4), Audit Status Summaries and other documents associated with conducting audits and resolving audit findings.

B. Audit Personnel Files

1. Documentary evidence of the Qualifications and Training of Auditors is maintained by the Manager-Audits. This shall consist of:
 - a. Lead Auditor Records
 - b. Auditor Resumes.
2. Qualification records shall be retained and updated to be current at all times.

C. Record Collection, Storage and Maintenance

1. The Corporate Audit Files and the Audit Personnel Files are collected, stored and maintained in accordance with ANSI N45 2.9 and contract requirements.
2. The Corporate Audit Files and Audit Personnel Files shall be retained by UE&C for a minimum of six (6) years. The retention period begins on the date of commercial operation of the power plant.
3. After this period of retention, these records may be disposed of with concurrence of the Client.

D. Audit Report Distribution

The distribution of the audit reports is shown in Figure 18-6.

AUDIT LOG

FIGURE 18-1

PROJECT

SEABROOK

NEP 1 & 2

MNP S

QA-18

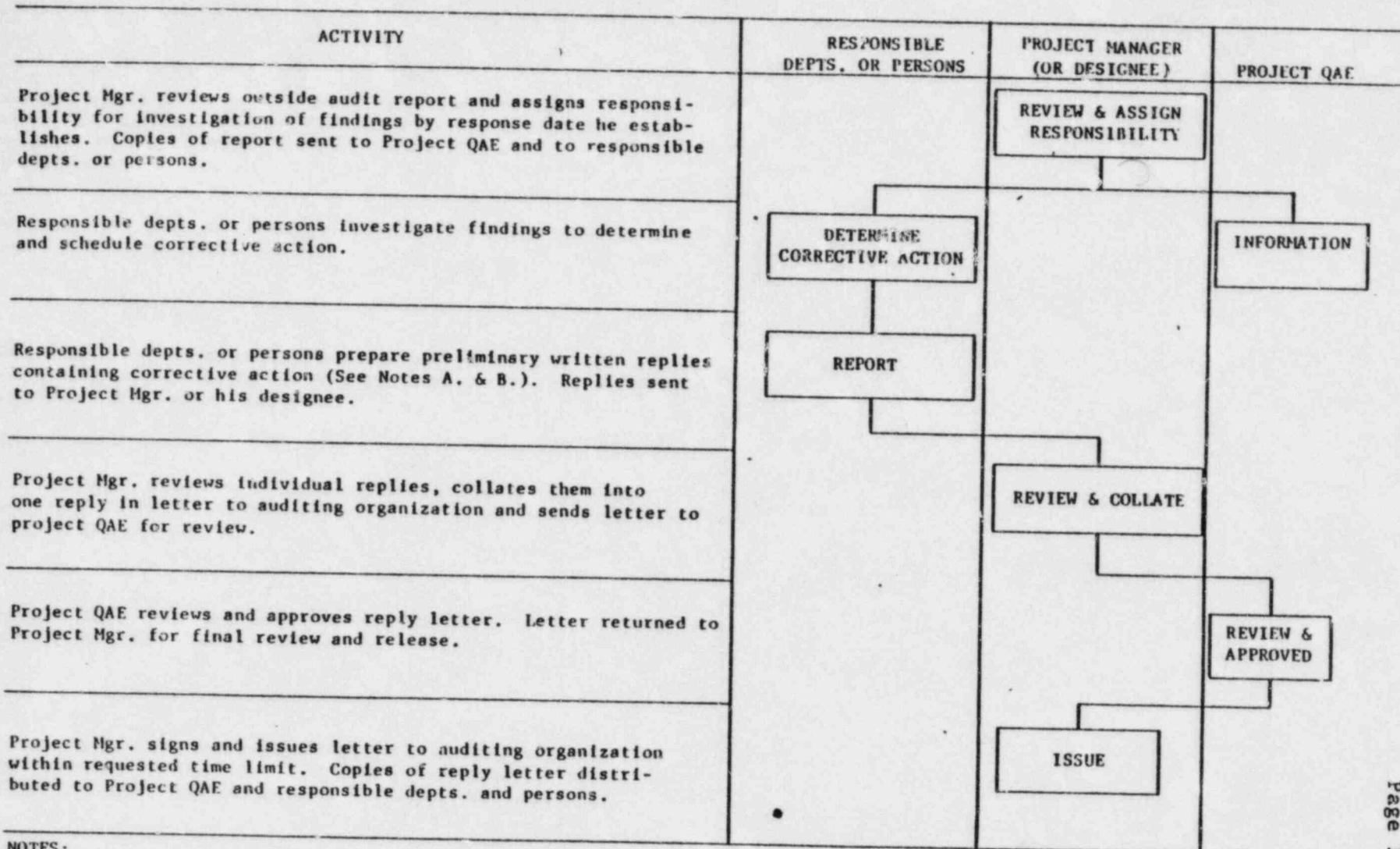
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[illegible]

FLOW CHART - RESPONSE TO OUTSIDE AUDITS



NOTES:

- As applicable, replies shall contain corrective action which (a) has been taken and results achieved, (b) will be taken to correct specific findings (c) will be taken to prevent repetition of nonconformance. A schedule will be provided indicating when full compliance will be achieved for each finding.
- Should it be impossible to complete the investigation and determination of corrective action in the time allotted, a reply shall be made by the required date indicating the present status of the investigation with an estimated date of completion. A reply must be made by the required date.

FIGURE 18-2

FIGURE 18-3

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FORM 7012 REV 7/76

AUDIT REPORTREPORT NO. ①AUDIT TYPE ②

DATE OF AUDIT _____

CLIENT _____
NAME PROJECT JOB NO - PO NO

ORGANIZATION/ACTIVITY AUDITED: _____
NAME LOCATION

AUDIT SCOPE _____

AUDIT TEAM (NAME AND TITLE): _____

PERSONS CONTACTED (NAME AND TITLE): ③

AUDIT SUMMARY AND EVALUATION. ④

- ① OBTAIN SEQUENTIAL REPORT NO. FROM PROJECT AUDIT LOG.
- ② SELECT PROPER AUDIT TYPE FROM: INTERNAL, EXTERNAL, FACILITY SURVEY, INTERNAL VERIFICATION OR EXTERNAL VERIFICATION.
- ③ IN ADDITION TO NAME & TITLE, INCLUDE COMPANY REPRESENTED IF OTHER THAN USAC. INDICATE WHEN PERSONS WERE CONTACTED I.E., DURING PRE-AUDIT, AUDIT OR POST-AUDIT ACTIVITIES. THIS MAY BE DONE BY SUPERSCRIPT AND FOOTNOTE.
- ④ THE BODY OF THE AUDIT REPORT SHALL INCLUDE:
 - a. SUMMARY OF AUDIT RESULTS.
 - b. EVALUATION STATEMENT REGARDING THE EFFECTIVENESS OF QA PROGRAM ELEMENTS WHICH WERE AUDITED.
 - c. STATUS OF ACTIVITIES UNDER AUDIT. E.G. DESIGN PHASE - SUBTIER PROCUREMENT PHASE, ETC.
 - d. PRE-AUDIT CONFERENCE - STATEMENT THAT A PRE-AUDIT CONFERENCE WAS HELD (DATE, LOCATION) WITH THE PERSONNEL LISTED UNDER "PERSONS CONTACTED" IN ATTENDANCE AT WHICH TIME THE AUDIT SCOPE AND PLAN WERE PRESENTED, AUDITORS & COUNTERPARTS INTRODUCED, AUDIT SEQUENCE AND PLANS FOR A POST-AUDIT CONFERENCE DISCUSSED AND CHANNELS OF COMMUNICATION ESTABLISHED. IN CERTAIN SITUATIONS E.G. WHEN AUDITOR-AUDITEE RELATIONSHIPS HAVE BEEN ESTABLISHED BY PRIOR CONTACT, A FORMAL PRE-AUDIT CONFERENCE MAY BE ABBREVIATED OR ELIMINATED. IF A FORMAL CONFERENCE IS NOT HELD, THIS SHALL BE SO INDICATED AND REASON OR ALTERNATE ACTION TAKEN, STATED.
 - e. POST-AUDIT CONFERENCE (EXIT CRITIQUE) - STATEMENT THAT A POST-AUDIT CONFERENCE WAS HELD ON (DATE, LOCATION) WITH THE PERSONNEL LISTED UNDER "PERSONS CONTACTED" IN ATTENDANCE AT WHICH TIME THE AUDIT FINDINGS/OBSERVATIONS WERE PRESENTED, IDENTIFIED AND CLARIFIED TO THE AUDITEE ORGANIZATION OR ACTIVITY. FOR A VERIFICATION AUDIT, THIS SHALL CONSIST OF A REVIEW OF THE STATUS OF THE AUDIT FINDINGS BEING VERIFIED.
 - f. FINDINGS/OBSERVATIONS - LIST SINGLY ON AUDIT FINDING REPORT - FORM 7011 FIG. VIII-3
 - g. CHECKLIST - INCLUDE A COPY OF THE EXECUTED CHECKLIST FOR FILE WITH REPORT. THE AUDITOR SHALL RECORD THE AREA(S), NAME(S) OF CONTRACT(S) - INCLUDING RESPONSIBILITY OR TITLE AND SPECIAL EVIDENCE (DOCUMENT NO. OR TITLE) EXAMINED FOR EACH PERFORMANCE, NONCONFORMANCE OR DEFICIENCY IDENTIFIED.
 - h. SUCCEEDING PAGES OF THE BODY OF THE AUDIT REPORT SHALL INDICATE THE AUDIT REPORT NO. AND PO. NO. AT THE TOP OF EACH PAGE. THE AUDIT FINDING REPORT PAGES AND CHECKLIST PAGES SHOULD NOT BE INCLUDED IN THE PAGE NUMBERING SEQUENCE USED FOR THE BODY OF THE REPORT.

AUDIT TEAM LEADER - DATE

PAGE 1 OF _____



FIGURE 18-4

AUDIT FINDING REPORT

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FORM 7011
REV. 9/78

REPORT NO. _____

DATE OF AUDIT _____

AUDITOR _____ FINDING/OBSERVATION NO. _____

FINDING/OBSERVATION DISCUSSED WITH _____

ORIGINAL SIGNED BY _____

PROMISED DATE OF CORRECTIVE ACTION _____

REQUIREMENT:

A short statement or quote from the requirement of the specification, procedure, standard, code or contract pertinent to the finding/observation made.

FINDING/OBSERVATION:

Finding - A nonconformance or program deficiency identified by the audit made in sufficient detail to assure that corrective action can be carried out effectively by the audited organization/activity. All Findings must be resolved.

Observation - A suggestion for an improvement in or a concern for a QA Program element which while meeting minimum requirements might be improved by the adoption of the suggestion or by heeding the concern. The audited organization/activity need not reply to an observation.

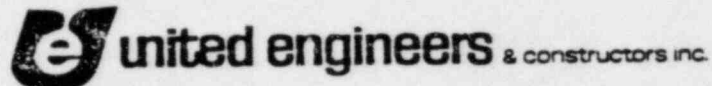
RECOMMENDATION BY AUDITOR:

The auditor may make a recommendation of corrective action to resolve the finding. It is not mandatory that recommendations be made.

CORRECTIVE ACTION REPLY: (When Applicable, Include C/A to Preclude Recurrence)

If possible, the audited organizations/activities corrective action should be obtained at the time of the audit. When the nature of the finding makes this impossible, the audited organization/activity must provide a reply within 30 days of receipt of audit report.

- * While not mandatory, the auditor should request the signature of a responsible individual of the audited organization/activity and the promised date for corrective action at the conclusion of the post-audit conference.


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LEAD AUDITOR RECORD

(ANSI N45.2.23)

NAME: _____ EMPLOYEE NO. _____
 DATE ASSIGNED _____ DATE CERTIFIED _____

QUALIFICATION BASIS

TOTAL POINTS

EDUCATION: ACCREDITED INSTITUTION/DEGREE/DATE

(4 POINTS MAX.)

1. ASSOCIATE LEVEL _____
2. UNDERGRADUATE LEVEL _____
3. GRADUATE LEVEL _____

EXPERIENCE: COMPANY/DATES OF EMPLOYMENT

(9 POINTS MAX.)

INDUSTRIAL, NUCLEAR, QUALITY ASSURANCE, AUDITING OR COMBINATIONS

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

PROFESSIONAL COMPETENCE: CREDENTIAL/DATE

(2 POINTS MAX.)

1. _____
2. _____
3. _____

MANAGEMENT EVALUATION:

(2 POINTS MAX.)

FACTORS CONSIDERED - LEADERSHIP, JUDGEMENT, MATURITY, ANALYTICAL ABILITY,
 TENACITY, PAST PERFORMANCE, ETC.

EVALUATED BY: (NAME/TITLE) _____ DATE: _____

AUDIT COMMUNICATION SKILL:

DEMONSTRATED BY PARTICIPATION IN AUDIT CONFERENCES & AUDIT REPORT WRITING
 AUDIT NO. _____

1. WRITTEN _____
2. ORAL _____

EVALUATED BY: (NAME/TITLE) _____ DATE: _____

FIGURE 18-5

SEABROOK
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AUDIT TRAINING: TOPIC OR COURSE TITLE/DATE

- | | |
|----------------------------------|-----------|
| 1. APP. B 10 CFR 50 _____ | 7. _____ |
| 2. ASME III (NA & CA 4000) _____ | 8. _____ |
| 3. ANSI-N 45.2 _____ | 9. _____ |
| 4. ANSI-N 45.2.12 _____ | 10. _____ |
| 5. IEEE-349 _____ | 11. _____ |
| 6. UE & C CORP. STD. XVIII _____ | 12. _____ |

AUDIT PARTICIPATION:

MINIMUM OF FIVE (5) NUCLEAR QA AUDITS WITHIN THREE (3) YEARS, ONE OF WHICH WITHIN THE YEAR PRIOR TO CERTIFICATION

	TYPE (EXT/INT)	ACTIVITY	REPORT NO.	DATE
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

AUDIT EXAMINATION:

DATE: _____

GRADE: _____

QUALIFICATION CERTIFIED BY: _____ NAME/TITLE _____ DATE _____

ATTESTED BY: _____ DEPARTMENTAL MANAGER _____ DATE _____

MAINTENANCE OF CERTIFICATION:

MANAGEMENT ANNUAL ASSESSMENT						
	NAME/TITLE	DATE	NAME/TITLE	DATE	NAME/TITLE	DATE
CERTIFICATION EXTENDED						
AUDIT PARTICIPATION	REPORT NO.		REPORT NO.		REPORT NO.	
REVIEW & STUDY OF CODES, STANDARDS, ETC.						
	NAME/TITLE	DATE	NAME/TITLE	DATE	NAME/TITLE	DATE
RETRAINING OR REQUALIFICATION REQUIRED						
RETRAINED						
REEXAMINED						
AUDIT PARTICIPATION	REPORT NO.		REPORT NO.		REPORT NO.	
RECERTIFICATION AFTER RETRAINING OR REQUALIFICATION	NAME/TITLE	DATE	NAME/TITLE	DATE	NAME/TITLE	DATE

FIGURE 18-6

SEABROOK
NEP 1 & 2
MNPS
QA-18
REV. 6
1/19/79
Page 19 of 19

AUDIT REPORT DISTRIBUTION - FIGURE 18-6

<u>NO.</u>	<u>TITLE</u>	<u>INTERNAL</u>		<u>EXTERNAL AUDITS & FACILITY SURVEYS</u>
		<u>Home Office</u>	<u>Site</u>	
1	Mgr. R&QA/Asst. MGR	x	x	x
2	Mgr. Quality Eng./SE-PQ	x	x	x
3	Mgr. Quality Services/SE-VS(2)	-	x	x
4	Supv. Engr.-Fld. QA	-	x	
5	Mgr. - Purchasing/Buyer	-	-	x
6	Project Manager	x	x	x
7	Mgt. of Audited Dept. or Org.	x	x	x
8	Project QAE (2)	x	x	x
9	Audit Team Leader	x	x	x
10	Project Eng. Mgr./SDE	x	-	x
11	Responsible Engineer	-	-	x
12	PCS or RCM	-	x	
13	General File	x	x	x
14	QA File	x	x	x
15	MGR. Audits [File (3)]	x	x	x
16	YAEC Project MGR/PSNH (7)	B	B	x
17	YAEC Project MGR/NEP (7)	B	B	x
18	YAEC Project MGR/CMP (10)	B	B	x
19	Vendor History File	-	-	x

NOTES: Audit memos transmitting internal audit reports addressed to Project Manager. Memos transmitting facilities surveys & QA Program audits addressed to Client & Supplier respectively.

- A. Executed Audit Checklists are on file in the R&QA Audit Section; copies are available upon request.
- B. Copies of Internal Audit Reports are submitted to the Client by Project QAE following completion of Project Response.

FOA man

UNITED ENGINEERS & CONSTRUCTORS INC.

QC Procedures

FIELD QUALITY ASSURANCE MANUAL

FOR
SEABROOK STATION
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

JOB ORDER 9763

INFORMATION ONLY

Binder No. _____

[illegible]

5

To:

JOHN CARR, CHIEF
FREEDOM OF INFORMATION AND
PRIVACY ACT BRANCH

FOIA 524

release



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

Conrad
Vanda
1-1-101

Docket Nos. 50-443
50-444

DEC 03 1981

Public Service Company of New Hampshire
ATTN: Mr. W. C. Tallman
Chairman and Chief Executive Officer
1000 Elm Street
Manchester, New Hampshire 03105



Gentlemen:

Subject: Inspection No. 50-443/81-12 and 50-444/81-10

This refers to the routine safety inspection conducted by Mr. A. Cerne of this office on October 5 - November 16, 1981 at the Seabrook Station, Units 1 and 2, Seabrook New Hampshire of activities authorized by NRC and to the discussions of our findings held by Mr. Cerne with Messrs. Herrin, Singleton, and others of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Based on the results of this inspection, it appears that one of your activities was not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Appendix A. This item of noncompliance has been categorized into the levels described in the Federal Register Notice (45 FR 66754) dated October 7, 1980. You are required to respond to this letter and in preparing your response, you should follow the instructions in Appendix A.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractors) believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you (a) notify this office by telephone within ten (10) days from the date of this letter of your intention to file a request for withholding; and (b) submit within 25 days from the date of this letter a written application to this office to withhold such information. Consistent with section 2.790(b)(1), any such application must be accompanied by an affidavit executed by the owner

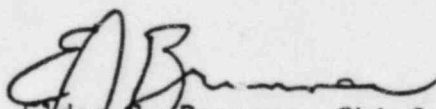
8112230168

DEC 03 1981

of the information which identifies the document or part sought to be withheld, and which contains a full statement of the reasons on the basis which it is claimed that the information should be withheld from public disclosure. This section further requires the statement to address with specificity the considerations listed in 10 CFR 2.790(b)(4). The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, the report will be placed in the Public Document Room. The telephone notification of your intent to request withholding, or any request for an extension of the 10 day period which you believe necessary, should be made to the Supervisor, Files, Mail and Records, USNRC Region I, at (215) 337-5223.

Your cooperation with us in this matter is appreciated.

Sincerely,



Eydor G. Brunner, Chief, Projects
Branch No. 1, Division of Resident
and Project Inspection

Enclosures:

1. Appendix A, Notice of Violation
2. Combined Office of Inspection and Enforcement Inspection
Report Numbers 50-443/81-12 and 50-444/81-10

cc w/encls:

John DeVincentis, Project Manager
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
State of New Hampshire
NRC Resident Inspector

bcc w/encl:

Region I Docket Room (with concurrences)
Chief, Operational Support Section (w/o encls)

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-443/81-12
50-444/81-10
50-443
Docket No. 50-444
CPR-135
License No. CPR-136

Priority --

Category A

Licensee: Public Service Company of New Hampshire
1000 Elm Street
Manchester, New Hampshire 03105

Facility Name: Seabrook Station, Units 1 and 2

Inspection at: Seabrook, New Hampshire

Inspection conducted: October 5-November 16, 1981

Inspectors: AC Cerne
A. C. Cerne, Sr. Resident Inspector

11/20/81

date signed

Samuel D Reynolds
S. D. Reynolds, Reactor Inspector

11/23/81

date signed

FOR: AC Cerne
R. D. Schulz, Reactor Inspector

11/20/81

date signed

for E. Lipp
A. A. Varela, Reactor Inspector

11/23/81

date signed

Approved by: Robert M Gallo
R. M. Gallo, Chief, Projects Section 1A,
Division of Resident and Project Inspection

11/25/81

date signed

Inspection Summary:

Unit 1 Inspection on October 5-November 16, 1981 (Report No. 50-443/81-12)

Areas Inspected: Routine inspection by the resident inspector and regional based inspectors of work activities relative to the piping QA program, pipe installation, welding, and supports; concrete placement preparation, cadweld splicing, site civil testing, and containment liner and concrete interfacing; component installation; instrumentation supports; and structural connections to include design control over the structural impact of combined loadings. The inspectors also reviewed licensee action on previously identified items and performed plant inspection-tours. The inspection involved 96 inspector-hours including five off-shift hours, by four NRC inspectors.

Results: Of the five areas inspected, one item of noncompliance was identified in one area-- failure to erect instrumentation supports in accordance with the controlling design document (paragraph 8).

Unit 2 Inspection on October 5-November 16, 1981 (Report No. 50-444/81-10)

Areas Inspected: Routine inspection by the resident inspector and two regional based inspectors of work activities relative to the piping QA program, concrete and cadweld installation, and plant inspection-tours. The inspection involved 17 inspector-hours by three NRC inspectors.

Results: No items of noncompliance were identified

DETAILS

1. Persons Contacted

Yankee Atomic Electric Company (YAEC)

W. Bean, Lead Electrical QA Engineer
F. X. Bellini, Site Geologist (PSNH)
D. L. Covill, Lead Civil QA Engineer
J. H. Herrin, Site Manager (PSNH)
D. A. Maidrand, Project Engineer (Framingham)
G. F. McDonald, Jr., QA Manager (Framingham)
J. F. Nay, Jr., Lead Mechanical QA Engineer
J. W. Singleton, Field QA Manager
R. Tucker, Engineer (Framingham)

United Engineers and Constructors (UE&C)

R. G. Blair, Civil Superintendent
G. Burriello, Welding Engineer (Philadelphia)
M. A. Edgar, Resident Construction Engineer
J. A. Grusetskie, Assistant Liaison Engineer
A. J. Hulshizer, Supervisory Structural Engineer (Philadelphia)
R. A. Kountz, Welding Superintendent
D. C. Lambert, Field Superintendent of QA
D. E. McGarrigan, Project QA Manager (Philadelphia)
R. A. Rebel, Resident Construction Manager
G. Shaw, Structural Steel Superintendent
R. D. Tancibok, QA Supervisor

Johnson Controls, Inc. (JCI)

A. O. Kennedy, QC Manager
R. G. Walter, Project Engineer

Perini Power Constructors (PPC)

S. M. Bednar, Chief Cadweld Inspector
K. B. Grandmont, Cadweld Superintendent
G. E. Myers, Assistant Site QA Manager
R. W. Narva, Supervising QA Engineer

Pittsburgh Testing Laboratory (PTL)

H. Ruffner, Site Manager

Pullman-Higgins (Pullman)

R. G. Davis, Field QA Manager
R. R. Donald, Field QA Supervisor
D. R. Geske, QC Supervisor
D. B. Hunt, QA Records Supervisor
C. Scannell, Chief Field Engineer

Royal Insurance

J. C. Anzivino, Authorized Nuclear Inspector
G. Voishnis, Authorized Nuclear Inspector

Westinghouse

J. Ellis, Welding Engineer
R. Powell, Project Manager
C. E. Walker, Liaison Engineer

Report

8203 8203

NRC Combined Inspection 443/81-03 and 444/81-03
(March 22-26, 1982)

NRC Inspectors: R. J. Paolino, A. A. Varela, E. H. Gray

Varela

Scope

1. Unit #2 Containment building interior slab EL. (-26):
 - a. post placement inspection
 - b. interior walls and columns rebar installation inspection
 - c. review of QC records/concrete placement
2. Unit #2 Containment building exterior wall:
 - a. observation of rebar installation and cadweld splicing and discussions on splice stagger
3. Unit 1 water leakage through concrete cracks attributed to incomplete membrane and potential Unit 2 leakage due to membrane damage:
 - a. review of information available in NCRs
4. Unit 1 and 2 cadweld splice test frequency/sister splice, conformance to Regulatory Guide 1.10

Findings

Relative to items 1 and 2 above,
No item of noncompliance was identified.

Relative to items 3 above, no item of noncompliance was identified.
However, the inspector will hold this for future follow-up because it appears to me there is need of an overall engineering program by UE&C to determine cause or causes for leakage and provide appropriate corrective action or actions.

Relative to item 4, no item of noncompliance was identified.
Further review and consultation will be undertaken at the regional office regarding the appropriateness of Perini interpretation of ASME III, Div. 2, Section CC4333.4.3(c). If this review/consultation results in a change of what I now feel is acceptable you will be notified within a week.

FRANK-Geologist-Turner (2019)

Paolino

Purpose

Familiarization with site/site personnel, responsibilities, QA program. Review of procedures, instructions applicable to installation of electrical components/systems. Observation of completed work, work in progress.

Findings

Three new unresolved items - one old item remains open

1. adequacy of program in identifying defective materials used in safety related systems. (cable trays) - may escalated to item of noncompliance.
2. qualifications data for cables does not include data on flammability/Fire Retarding of painted color coding material on cable.
3. qualifications documents for cable tray hardware inconsistent with P.O requirements and correspondence between UE&C/Vendor. Receiving inspections accepting material on c of c vs. required MTR.
4. qualification data on site for tray qualification inadequate for determining acceptability. (Cerne unresolved items 81-09-03)

Gray

Inspection Topics

- I. Reactor Coolant Piping (RCP) - O.D. Welding
- II. Reactor Coolant Piping (RCP) - ID Post Welding Grinding/Appearance
- III. Ferrite Measurements
- IV. Steam Generator Manway Bolting - Lubricants
- V. Turbine Building - Pipe Welding
- VI. Follow-up to S.Reynolds Report of 12/15/81 - UT - RCP
- VII. Pipe Shop (P-H)
- VIII. Weldor Qualification Areas
- IX. High Temp Bolt Lubricants

Comments - Items for follow-up

Topic

- I. Control of sidewall fusion - QA/QC scheduled attention is recommended for control beyond welders responsibility
- IV. Lube tracked only to point of receipt without certs, ¹⁹⁸² MTC shown as on hold. Field instruction for removal of manway cover was reviewed. Question is how will instructions/procedure for reinstallation be handled and controlled - application to similar information transfer from controlled procedures to uncontrolled instructions? Possible unresolved item.
- VI. SR 12/15/81 report indicated timely consideration of VT of RCP weldments. Question date of March-April 1983 for first VT of these weldments. Consideration of at least preliminary VT of portions of these welds in the near future is advised.

File Separation.

FBM CONF. RM

Inspection Type _____

ORGANIZATION

PSNH/YAEC