PDR

70-754

GENERAL ELECTRIC

NUCLEAR ENERGY
ENGINEERING
DIVISION

GENERAL ELECTRIC COMPANY, P.O. BOX 460, PLEASANTON, CALIFORNIA 94566

July 24, 1979

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Office of the Director
Office of Nuclear Material Safety & Safeguards
U.S. Nuclear Regulatory Commission
Washington, D. C., 20555

Attention: Mr. R. T. Kratzke

Reference: 1) License SNM-960, Docket 70-754
2) Application for Renewal of License SNM-960, 8/20/71

Dear Mr. Kratzke:

Attached is a revised Section 13.0 (exempt for Addendum C) to Vallecitos Nuclear Center's application for renewal of License SNM-960. Section 10 to the proposed Appendix A to License SNM-960 has also been reissued.

Sincerely,

G. E. Cunningham
Sr. Licensing Engineer

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Attachment

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# 13. QUALITY ASSURANCE

## 13.1 INTRODUCTION

A quality assurance program is provided by General Electric Company, Vallecitos Nuclear Center (VNC) to assure compliance with requirements of 10CFR70.22(f) for the plutonium processing facility. This program is applicable to the design, fabrication, construction, testing and operation of designated structures, systems, and components of the Advanced Fuels Laboratory (AFL) which prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public.

The physical facility covered by this plan is that designated as the AFL Fuels Laboratory in Addendum C of this application and its associated ventilation exhaust equipment.

## 13.2 DISCUSSION

The plutonium processing facility at the VNC has been in operation for over 16 years. There are no present plans to build new structures for plutonium processing. This program, therefore, is limited to the operation and/or significant modification of the existing facility.

The plutonium processing facility is operated primarily for the purpose of conducting laboratory scale research and development program activities for the Department of Energy (DoE).

Determination of the safety related structures, systems, and components and the activities affecting safety is influenced by the effects of natural phenomena on the facility. A preliminary seismic evaluation by the Commission indicates that the plutonium processing facility is well within the limits for plutonium release as established by the NRC. Primary protection to the public health and safety is provided by the structural containment in conjunction with the exhaust ventilation system.

Modifications to the existing facility are implemented by the Change Authorization procedure (see Section 2.10). This establishes review and approval of any addition, alteration, deletion, modification, or substitution which results in a different position, course or direction not previously analyzed, or adds a new capability, performs a different function, modifies a performance characteristic, or introduces a hazard not previously analyzed for facilities, equipment, testing or operation.

The Change Authorization procedure is also applicable to structures, systems and components whether or not they are classified as items which prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public.

Additional safety and quality assurance type activities are provided in support of this Quality Assurance program. These activities include:

1. Safety and quality audits conducted by the Product and Quality Assurance Operation of the Nuclear Energy Business Group of General Electric.

2. Application of AFL functional procedures for the handling and processing of plutonium which are approved by the Advanced Reactor Systems Department (ARSD) Product Assurance.

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3. Application of ARSD Policies and Instructions to AFL activities.

4. Application of ARSD Engineering Procedures to AFL activities.

## 13.3 ORGANIZATION

The Advanced Fuels Laboratory (AFL) located at the Vallecitos Nuclear Center (VNC) is an operational component of the Advanced Reactor Systems Department (ARSD). Physical and chemical processing of plutonium is conducted in the AFL Fuels Laboratory.

An organization chart for VNC is shown in Figure 2.1 of this application.

### 13.3.1 Delegation of Responsibility

The Manager, Nuclear Energy Business Group and the Manager, ARSD, have delegated to the Manager, Irradiation Processing Operation (IPO) over-all responsibility for safety of the VNC site. Nuclear Safety and Quality Assurance (NS&QA), a component of IPO, is chartered with the responsibility to ensure implementation of this QA program. NS&QA is organizationally independent of the AFL and has the responsibility and authority to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions. An organization chart for NS&QA is shown in Figure 2.2 of this application.

In addition, a Quality Assurance Engineer is assigned to the AFL by the Manager, Technology and Projects Product Assurance. The QA Engineer is organizationally independent of AFL operations and has the authority and responsibility to approve AFL Policy and Operations Instructions (POI's) and to perform surveillance activities for compliance with quality requirements in support of the VNC Quality Assurance program.

### 13.3.2 Service Organizations

Other organizations at VNC which provide services in support of the AFL include Purchasing, Shipping and Receiving, Facilities and Drafting. These organizations and the services provided are governed by this QA program.

### 13.3.3 Personnel Qualifications

The responsibilities, education and experience requirements of individuals assigned to quality assurance related managerial and individual contributor positions are formally documented in position guides which are approved and periodically reviewed by designated levels of management. Qualification requirements for key personnel responsible for quality assurance activities governed by this program are shown below:

1. **Manager, Nuclear Safety and Quality Assurance - VNC.** B.S. degree or equivalent in a technical discipline with ten years experience in such functional work areas as engineering, health physics, and interaction with regulatory agencies.

2. **Manager, Quality Assurance - IPO.** B.S. degree or equivalent plus five years experience in managerial or project type assignments involving a combination of engineering, manufacturing and quality assurance.

3. **Supervisor, Quality Control Inspection - IPO.** Five years experience or science degree plus three years experience in quality control.

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4. **Quality Assurance Engineer - ARSD (Assigned to AFL).** B.S. degree, Professional Quality Engineer Certification, or equivalent qualification with five years experience in quality assurance.

## 13.4 QUALITY ASSURANCE PROGRAM

A quality assurance program is maintained to meet the requirements of 10CFR70.22(f) for the plutonium processing facility. The plan describes the means for controlling activities affecting the quality of safety related structures, systems and components of the AFL Fuels Laboratory. The program is implemented on a graded approach and provides control over activities affecting quality to an extent consistent with their importance to safety.

The program provides for indoctrination and training of personnel performing activities affecting quality in order to provide assurance that appropriate proficiency is achieved and maintained. This indoctrination and training is carried out through documented procedures, personnel contacts and meetings.

New - and modification to existing - safety related structures, systems, and components to be covered by this quality assurance program (see Addendum C) are identified as:

1. The structure which houses the plutonium processing facility (specifically, the walls, ceiling, and floor of the AFL Fuels Laboratory).

2. The ventilation exhaust system associated with the plutonium processing facility.

3. The HEPA filters and associated connecting lines between the components of the ventilation exhaust system for the AFL Fuels Laboratory.

The quality assurance program is limited to the above components as the structure which houses the facility and the associated exhaust ventilation system and filters are considered to be the primary barriers. The laboratory facility is located wholly within the basement of Building 102. Failure of any wall or ceiling would, at worst, permit a pathway for material release into Building 102. However, as Building 102 is maintained at a pressure negative to the atmosphere, there is no pathway to the environment. Similarly, the ventilation exhaust system serving the laboratory area acts as a primary barrier. This exhaust system joins the Building 102 ventilation exhaust system after leaving the laboratory. Failure of the laboratory exhaust system could not result in a direct pathway for release of material to the environment as failure of the filters would only provide a pathway for material to the Building 102 exhaust whose filters would prevent material from reaching the environment.

This plan is not considered to apply to the emergency power system for Building 102. In the event of failure of the building exhaust fans and the emergency power supply, the walls, doors, and ceiling of the laboratory and the walls and roof of Building 102 would provide two barriers between any material and the environment.

The automatic fire supression sprinkler system was also not included in this program. This system was installed primarily to satisfy insurance requirements. Since all laboratory walls and ceilings are poured concrete or concrete block, there is no danger of a fire in the laboratory breaching the walls or ceiling.

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## 13.5 DESIGN CONTROL

### 13.5.1 Design Standards

The responsible design engineer identifies the required codes and standards and practices that provide the basis for design methods, material evaluation and process controls in the design drawings and specifications.

### 13.5.2 Design Verification

Design reviews, alternate calculations or prototype qualification tests are required for all new designs or significant changes to existing designs. These are independent in the sense that the reviewers have no direct responsibility for the design but are technically competent and may be from the same organization that prepared the design. Design verification is documented and records are maintained.

### 13.5.3 Engineering Changes

Changes to engineering drawings and specifications are implemented and recorded in accordance with each organizational component's procedures.

## 13.6 PROCUREMENT DOCUMENT CONTROL

Procurement from outside suppliers is requested on a Material Request (MR). The MR references the specification (applicable codes and standards, as appropriate) and/or drawings including the revision number for the procurement of material, equipment and/or services. NS&QA approves Material Requests (MR's) prior to submittal to Purchasing to ensure quality requirements are specified.

## 13.7 INSTRUCTIONS, PROCEDURES, AND SPECIFICATIONS

Organizations performing quality related activities within the scope of this program are responsible for establishment and maintenance of documented systems and procedures for the performance of that work. Changes to these documents must be approved by the same function that authorized their issuance and use unless otherwise specified within the document or by governing standard operating procedures. Addendum B is a list of typical procedures for implementing this program.

Planning and/or implementing documents:

1. Provide, when warranted, space for sign-off by the person who performs the work to show that he has followed the prescribed instructions.

2. Call out essential controls and hold points as required which provide an independent assessment that the work was performed as prescribed and that the results meet specifications.

3. Include, as necessary, special instructions for handling and transportation.

## 13.8 DOCUMENT CONTROL



Organizations performing work within the scope of this program generate documents such as standard operating procedures, drawings, specifications, and work instructions. Procedures are established describing the document control system in each organization.

The document control system assures the proper review, approval, distribution, and control of documents and their revisions. Obsolete or superseded documents are controlled to prevent inadvertent use.

## 13.9 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

As stated in Section 13.6, NS&QA approves Material Requests prior to submittal to Purchasing. Each MR contains supplier qualification requirements and source and receiving inspection requirements, as appropriate. Upon receipt of purchased material at the VNC site, receiving inspection is performed for conformance to the requirements of the procurement documents.

NS&QA audits inspection activities, as necessary, to verify that the materials are properly inspected, approved, identified, and documented according to appropriate specifications and procedures.

## 13.10 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS

Procedures and systems are established for the identification, inventory, and traceability of raw materials, in-process materials, and finished components. Identification methods and requirements are specified in appropriate instructions and procedures. The system provides measures to assure the use of correct materials; maintain traceability of materials; and clearly identify and dispose of discrepant material. When appropriate, items having a limited calendar or operating life or cycle are controlled to preclude use of out-of-limit materials.

## 13.11 CONTROL OF PROCESSES

### 13.11.1 General Processes

Processes are performed under a system of instructions, procedures, drawings, checklists, travelers, or other appropriate means.

### 13.11.2 Special Processes

When required by drawings or specifications, special processes are accomplished under controlled conditions in accordance with applicable codes, standards, specifications, or other engineering criteria using appropriately qualified personnel and procedures. Special processes as a minimum include welding, heat treating, and nondestructive testing.

**13.11.2.1 Procedure Qualification.** Qualification of a special process may be achieved by performing the process under controlled conditions on samples and then analyzing the output to determine acceptability. When the process can be duplicated on a repetitive basis by holding essential variables constant, the process is considered qualified. Qualifications are performed to written instructions (or an appropriately issued standard operating procedure) based upon engineering specifications, applicable standards and codes and include essential variables. Procedures derived from qualification specifications may then be issued for routine use. Appropriately issued standard operating procedures are considered to be qualified.

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**13.11.2.2 Personnel Qualification.** The management of each organization ensures that personnel capabilities in each specific organization are adequate to perform special processes as required. Where personnel qualification includes quality-related activities and specialities, each organization maintains current, auditable records of such qualifications.

## 13.12 INSPECTION

### 13.12.1 Inspector Qualification

Personnel must be qualified to perform inspection tasks. Documentation pertaining to personnel qualification are maintained on file by the performing organization.

### 13.12.2 Inspection Planning

Inspection is performed for each work operation where it is necessary to assure quality and shall be performed to written plans or procedures. Inspection and approval points are identified as appropriate throughout design, fabrication, special processing and assembly. Inspection plans are incorporated into the detail planning documents of the performing components.

### 13.12.3 Inspection Requirements

The accept/reject criteria are specified in appropriate engineering definition documents; such as drawings, fabrication specifications, material specifications, etc. Inspection results are documented.

### 13.12.4 Hold Points - Approvals

Hold points are stages beyond which work cannot proceed until the preceding work has been evaluated and approved. Hold points and approval authority for hold point removal are determined by project requirements.

## 13.13 TEST CONTROL

The responsible design engineer identifies the need for development testing and/or for establishing test criteria for items not proven in design standards, mathematical analyses or in "state-of-the-art" practices. Tests are aimed toward evaluation of performance capability under various conditions required by the design. Tests are conducted in accordance with written procedures, the test results are documented and evaluated to assure that the test requirements have been satisfied.

## 13.14 CONTROL OF MEASURING AND TEST EQUIPMENT

Each organization component or subcontractor responsible for measuring quality parameters is responsible for the inventory, identification, and calibration of all gages and instruments used for such inspections. Inspection gages and instruments are calibrated traceable to nationally recognized standards. If no national standards exist, the basis for calibration is documented. Only equipment which has been calibrated within the prescribed interval is used. Records are maintained or equipment suitably marked to indicate calibration status.

## 13.15 HANDLING, STORAGE, AND SHIPPING



Each organization provides and utilizes documented instructions and procedures, as appropriate for their area, for the control of handling, storage, cleaning, packaging and preservation of materials to prevent damage or loss.

Storage areas are provided by each organizational component that are secure from unauthorized access, and if necessary, sheltered from natural elements, and protected in

special environments. Materials held in storage are properly identified, adequately protected to preclude damage and segregated to prevent the use of incorrect or defective parts. Specific storage requirements are documented on applicable drawings, specifications, or detailed work instructions by the responsible engineer.

## 13.16 INSPECTION, TEST, AND OPERATING STATUS

The inspection, test, and operating status are indicated by the use of markings such as stamps, tags, labels, routing cards, or other suitable means. The method utilized is in accordance with written procedures.

## 13.17 NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

Items found to deviate from the engineering definition provided by drawings and specifications are identified, segregated (where practical), and described in a deviation/nonconformance report. Disposition of such items is documented. As a minimum, the cognizant QA representative and the responsible engineer resolve their disposition.

## 13.18 CORRECTIVE ACTION

Corrective actions are identified, documented, and implemented in a manner appropriate to the cause and importance of the deficient condition. Documentation may be formal letters, audit reports, or special forms such as a Corrective Action Request form. The cause and corrective action for adverse quality conditions is reported to appropriate management and, when warranted, to regulatory agencies. Followup on committed corrective action is performed and documented.

## 13.19 QUALITY ASSURANCE RECORDS

Copies of documents generated by the performing organizations are retained by that organization and/or NA&QA. These documents include all revisions, specifications, reports, procedures, and project communications which are quality related. Duplicate records are maintained, one copy at two different locations, to provide for replacement in the event of loss or damage to one set. Addendum A provides a typical listing of lifetime records.

## 13.20 AUDITS

NS&QA conducts audits in accordance with established procedures to verify compliance with the various elements of this quality assurance program. Audits are conducted commensurate with the importance to safety of the item or activity. Audit personnel are independent of any direct responsibility for performance of the activities which they audit. Audit reports and Corrective Action Requests are distributed to responsible management for resolution.

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# ADDENDUM A

# TO

# SECTION 13

## TYPICAL LIFETIME QUALITY ASSURANCE RECORDS LIST

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## ADDENDUM A TO SECTION 13

## TYPICAL LIFETIME QUALITY ASSURANCE RECORDS LIST

1. DESIGN RECORDS

   Codes
   Standards
   Practices
   Design Descriptions
   Specifications
   Drawings
   Design Data and Studies
   Design Reviews
   Development Plans
   Procedures
   Test Reports
   Failure Reports

2. PROCUREMENT RECORDS

   Material Requests
   Purchase Orders
   Supplier Surveillance Reports
   Receiving Inspection Reports
   Nonconformance Reports

3. CONSTRUCTION AND INSTALLATION RECORDS

   Material Certifications
   Special Process Certifications
   Personnel Certifications
   Test Reports
   Inspection Reports
   Nonconformance Reports

4. OPERATION, MAINTENANCE, AND MODIFICATION

   As-Built Drawings
   Operating Logs
   Personnel Certifications
   Calibration History
   Operational Reviews
   Maintenance Data
   Inspection and Test Reports
   Incident Reports
   Quality Audits and Corrective Action Reports

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# ADDENDUM B

# TO

# SECTION 13

## PROCEDURE LIST

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## ADDENDUM B TO SECTION 13

## PROCEDURE LIST

### NUCLEAR SAFETY AND QUALITY ASSURANCE

#### ADMINISTRATIVE

| | |
|---|---|
| 150 | Document Control |
| 155 | Corrective Action System |

#### QUALITY ASSURANCE PROCEDURES

| | |
|---|---|
| 2.2 | Quality Assurance Audit System |
| 2.3 | Management Quality Reviews |
| 2.5 | Project Design Reviews |
| 3.0 | Quality Assurance Instructions |
| 5.0 | Engineering Change Notice |
| 8.1 | Quality Control of Purchased Material |
| 8.2 | Vendor Quality Capability |
| 9.1 | Nonconformance |

#### QUALITY ASSURANCE INSTRUCTIONS

| | |
|---|---|
| 1010 | Quality Assurance Instruction Manual |
| 1055 | Inspection Reporting |
| 1056 | Receiving Inspection |
| 1150 | Technician Training |
| 2010 | Qualification of Nondestructive Test and Inspection Personnel |
| 2015 | Gage and Instrument Control |
| 2020 | Radiographic Inspection |
| 2025 | Helium Leak Detecting and Maintenance of Equipment |
| 2030 | Dye Penetrant Inspection |
| 2035 | Weld Inspection |
| 2045 | Metallography Practices |
| 2050 | General Sample Control |
| 2060 | Cleaning Inspection |
| 2070 | Machining Inspection |

#### VALLECITOS NUCLEAR CENTER (VNC) SAFETY STANDARDS

| | |
|---|---|
| 1.1 | Charter - Vallecitos Technological Safety Council |
| 1.2 | VNC Nuclear Safety Function Charter |
| 2.0 | Change Authorizations |
| 2.5.2 | Use of HEPA Filters |
| 7.2.2 | Inspection, On-Site Handling, Storage and Disposal of HEPA Filters |

#### NUCLEAR SAFETY PROCEDURES

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| | |
|---|---|
| 1100 | Nuclear Safety Program |
| 6000 | Requirements for Auditing Nuclear Safety Programs at VNC |
| 6100 | Nuclear Safety Reviews and Audits |
| 7100 | Change Authorization |

| | |
|---|---|
| 1.1.2 | AFL Inspection Report Procedure |
| 1.1.8 | Receiving Inspection |
| 1.5.2 | Document Control |
| 1.5.15 | Record Control |
| 1.6.1 | Material Procurement - General Procedures |
| 5.0.0 | AFL Quality Assurance Plan |
| 5.0.2 | Nonconforming Item Procedure |
| 5.0.3 | Personnel Qualification |
| 5.0.4 | PFDL (AFL) Hold Points |
| 5.3.12 | Measuring and Test Equipment Calibration and Control |
| 5.3.12.1 | Measuring and Test Equipment Calibration Procedures |

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ADDENDUM C

TO

SECTION 13

FUELS LABORATORY

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# 10. QUALITY ASSURANCE

## 10.1 SCOPE

A quality assurance program shall be provided to assure compliance with requirements of 10CFR70.22(f) for the plutonium processing facility. This program shall be applicable to the design, fabrication, procurement, construction, testing, operation, and decommissioning of designated structures, systems, and components of the plutonium processing facility which prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public.

The specific facility covered by this plan is the plutonium processing laboratory located in the Building 102 basement and the exhaust ventilation system associated with that facility.

## 10.2 ORGANIZATION

The quality assurance component is defined as that component of the Nuclear Energy Operations with designated responsibility to generate and ensure implementation of the quality assurance program (see Section 4.8).

10.2.1 Functions. The functions of the quality assurance component shall exclude direct responsibility for operations involving plutonium processing. The quality assurance component shall be responsible for generating the quality assurance program, providing advice on quality assurance, testing, and inspection to operating management, and performing necessary audits to ensure implementation of the quality assurance program.

10.2.2 The minimum qualifications of personnel assigned functional responsibilities in the quality assurance component shall be:

1. Manager. B.S. degree or equivalent qualifications plus five years experience in managerial or project type assignments involving a combination of such fields as engineering, manufacturing, and quality assurance.

2. Inspection Supervisor. B.S. degree plus three years experience in quality control or five years experience in quality control.

## 10.3 QUALITY ASSURANCE PROGRAM

The program shall describe the means for controlling activities affecting the quality of safety related structures, systems and components of the plutonium processing facility. The program shall be implemented on a graded approach and provides control over activities affecting quality to an extent consistent with their importance to safety.

The program shall provide for indoctrination and training of personnel performing activities affecting quality in order to provide assurance that appropriate proficiency is achieved and maintained.

New - or modifications to existing - safety related structures, systems, and components subject to the quality assurance program are identified as:

1. The structure which houses the plutonium processing facility (specifically the walls, ceiling, and floor of the basement plutonium processing laboratory).

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2. The exhaust ventilation system associated with the facility.

3. The HEPA filters and associated connecting lines between the components of the ventilation exhaust system for the facility.

The program shall include provisions for: design control; control of procurement and other documents; control of purchased materials, equipment, and services including supplier qualification requirements; the identification, inventory, and traceability of raw materials, in-process materials, and finished components; and audits and inspections.

## 10.4 PROCEDURES

Organizations performing quality related activities within the scope of the quality assurance program are responsible for establishment and maintenance of documented and approved systems and procedures for the performance of that work. Changes in procedures shall be approved by the same function that authorized their issuance and use unless otherwise specified within the document or by governing standard operating procedures.

## 10.5 INSPECTION, TEST, OPERATING STATUS, AND CALIBRATION

The inspection, test, and operating status shall be indicated by the use of markings such as stamps, tags, labels, routing cards, or other suitable means. The method utilized shall be in accordance with written procedures.

Each organization component or supplier responsible for measuring quality parameters shall be responsible for the inventory, identification, and calibration of all measuring and test equipment used for such inspections. Measuring and test equipment shall be calibrated traceable to nationally recognized standards. If no national standards exist, the basis for calibration shall be documented. Only equipment which has been calibrated within the prescribed interval shall be used. Records shall be maintained or equipment suitably marked to indicate calibration status.

## 10.6 INSPECTION AND TESTING

Inspection shall be performed for each work operation where it is necessary to assure quality and shall be performed to written plans or procedures. Inspection and approval points shall be identified as appropriate throughout design, fabrication, special processing and assembly. Inspection plans shall be incorporated into the detail planning documents of the performing components.

Tests shall be conducted in accordance with written procedures. Test results shall be documented and evaluated to assure that test requirements have been satisfied.

Modification, repair, or replacement of items performed subsequent to final inspection shall require reinspection or testing as appropriate for reacceptance.

The quality assurance component shall audit the inspection and testing system, as necessary to assure compliance with the appropriate procedures.

## 10.7 DESIGN CONTROL

Design reviews, alternate calculations, or prototype qualification tests shall be required for all new designs or for significant changes to existing designs. Reviewers shall have no direct responsibility for the initial design.

## 10.8 DOCUMENT CONTROL

Each organization performing work within the scope of the quality assurance program shall establish a document control system to assure proper review, approval, distribution, and control of documents and their revisions.

Procurement documents shall be reviewed and approved by the quality assurance component prior to submittal to the purchasing component.

## 10.9 CONTROL OF PURCHASED MATERIAL

Upon receipt of purchased material receiving inspection shall be performed for conformance to the requirements of the procurement documents.

Storage areas shall be provided that provide adequate protection for materials and equipment. Materials shall be handled and stored in accordance with procedures and/or instructions established to prevent loss or damage.

Items found to deviate from specifications shall be identified, segregated (where practical), and described in a deviation/nonconformance report. Disposition of such items shall be documented.

## 10.10 CONTROL OF SPECIAL PROCESSES

Special processes shall be accomplished under controlled conditions in accordance with applicable codes, standards, specifications, or other engineering criteria using appropriately qualified personnel and procedures.

## 10.11 CORRECTIVE ACTION

Corrective actions shall be identified, documented, and implemented in a manner appropriate to the cause and importance of the deficient condition. Necessary followup on committed corrective action shall be performed and documented.

## 10.12 AUDITS

The quality assurance component shall conduct audits in accordance with established procedures and/or checklists to verify compliance with the various elements of this quality assurance program. Audits shall be conducted commensurate with the importance to safety or work history of the item or activity. Audit personnel shall be independent of any direct responsibility for performance of the activities which they audit.

Audit reports and corrective action requests shall be documented and distributed to responsible management for resolution. Necessary followup action shall be taken to confirm proper implementation of the corrective action.

## 10.13 RECORDS

Quality assurance documents are retained by the performing organization and/or by the quality assurance component.

Duplicate records shall be maintained, one copy at two different locations, to provide for replacement in the event of loss or damage to one set. The second location shall not be on the VNC site.

The following records (when such records are required for implementation) shall be maintained for the lifetime of the components or the facility:

A. DESIGN RECORDS

Applicable Codes and Standards Used In Design
As-Constructed Drawings
Design Calculations and Record of Checks
Design Deviations
Design Reports
Purchase and Design Specifications and Amendments
Safety Analysis Report
Stress Reports
Systems Descriptions
Systems Process and Instrumentation Diagrams
Technical Analysis, Evaluations, and Reports

B. PROCUREMENT RECORDS

Procurement Specification

C. INSTALLATION-CONSTRUCTION RECORDS

Nonconformance Reports
"As-Built" Drawings and Records
Final Inspection Reports and Releases

D. PRE-OPERATIONAL AND STARTUP TEST RECORDS

Hydrostatic Pressure Test Procedures and Results
Pre-Operational Test Procedures and Results
Startup Test Procedures and Results

E. OPERATION PHASE ACTIVITY RECORDS

Records and Drawing Changes Reflecting Plant Design Modification Made To Systems and Equipment Described In The Final Safety Analysis Report

Current Individual Plant Staff Member Qualifications, Experience, Training and Retraining Records

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