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October 3, 1973

GUIDANCE FOR SUBMITTAL OF QUALITY ASSURANCE PROGRAM DESCRIPTION

SECTION 17 OF PSAR

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# QUALITY ASSURANCE GUIDANCE FOR PSAR SUBMITTAL

## PURPOSE

This document provides guidance relative to the information requirements of Section 17 of the PSAR, Quality Assurance During Design and Construction. This guidance supplements the information presented under 17.1 of the Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants, Revision 1, dated October 1972.

According to Regulation 50.34 "Contents of Application, Technical Information", the applicant is required to include in its PSAR a description of how the applicable requirements of Appendix B will be satisfied.

This document applies to the applicant and its principal contractors such as the architect-engineer, the nuclear steam system supplier, the constructor, construction manager (if different from the constructor) and involves all quality related activities during design, construction, purchase, fabrication, handling, shipment, storage, cleaning, erection, installation, inspection, and preoperational testing which affect safety related structures, systems, and components.

To fulfill the requirements of 50.34 and 10 CFR 50 Appendix B the information and guidelines described herein, or acceptable alternatives, should be included in the PSAR to provide an adequate basis for the findings required for the issuance of a construction permit. PSAR's which do not contain the information described in this document may require a longer review time and may be considered by the staff as incomplete.

I. Organization

1. The organization structure of individuals or groups performing QA related activities in engineering. design, procurement, source and construction inspection, testing, and auditing should be identified and described in the PSAR with a clear delineation of their responsibility, authority, and relationship to corporate management.

2. A clear delineation of those QA functions which are implemented within the applicant's QA organizations and those which are delegated to other organizations should be provided in the PSAR.

3. The authority and independence of the individual responsible for managing the QA Program should be described in the PSAR. The individual's organizational location should be such that he: (a) can direct and control the organization's QA/QC program; (b) can effectively assure the organization's conformance to quality requirements; (c) has corporate authority to perform designated QA functions in the Engineering, Design, Procurement, Construction and Testing organizations performing quality affecting activities; and (d) is independent of influences and responsibilities for schedules and costs. An acceptable organizational structure would have this individual report to at least the same organizational level as the highest line manager directly responsible for performing quality affecting activities.

4. Those QA interfaces which demonstrate clear and effective lines of communication between the QA organizations of the applicant and the applicant's principal contractors should be identified and described in the PSAR.

5. The PSAR should describe those measures which assure:

   a. verification of conformance to established quality requirements on safety related structures, systems, and components is accomplished by those individuals or groups who do not have direct responsibility for performing the work being verified.

   b. designated QA individuals have the delegated responsibility and authority to stop unsatisfactory work or stop further processing of unsatisfactory material and that this authority is delineated in writing.

   c. persons and organizations performing quality assurance functions have sufficient authority and organizational freedom to:

      (1) identify quality problems

      (2) initiate, recommend, or provide solutions through designated channels.

      (3) verify implementation of solutions.

      (4) control further processing, delivery or installation of a nonconforming item, until the proper disposition of the deficiency or unsatisfactory condition has been approved.

6. The qualification requirements for the position responsible for directing and managing the QA Program should be described in the PSAR.

II. Quality Assurance Program

1. Those measures implemented by the applicant and principal contractors to assure the preparation of a QA Program which meets 10 CFR 50 Appendix B and the intent and scope of this document should be described in the PSAR.
2. Those provisions which require management to regularly assess the scope, implementation and effectiveness of the QA Program to assure that they are meaningful and effectively complying with the corporate policy and with 10 CFR 50 Appendix B criteria should be described in the PSAR.
3. Those positions or groups responsible for defining the QA Program content and changes thereto, and the management level responsible for the final review and approval of the QA Program should be identified.
4. Those provisions established for communicating to all responsible organizations and individuals that quality policies, manuals, and procedures are mandatory requirements which must be implemented and enforced should be described in the PSAR.
5. To demonstrate the framework for the implementation of 10 CFR 50 Appendix B criteria, a listing of the QA Program procedures which describe the implementation of each of the 10 CFR Part 50 Appendix B criteria, should be provided in the PSAR and identified to the applicable corresponding criterion. In the event that certain required procedures are not established a schedule for their preparation should be provided in the PSAR.

6. The safety related structures, systems, and components controlled by the QA Program and the respective organization executing QA related functions on these items during the engineering, design, procurement inspection, and testing phases should be identified in the PSAR.

7. The PSAR should describe those measures which assure:

   a. the applicant will review and formally concur with its principal contractor's QA Program and conduct, or delegate the responsibility to conduct audits of the program activities.

   b. an adequate indoctrination and training program is established for those personnel performing quality related activities to assure they are knowledgeable of the QA procedures and requirements and become proficient in implementing these procedures. The indoctrination and training program should include:

      (1) personnel responsible for performing quality activities are instructed as to the purpose, scope, and implementation of the quality related manuals, instructions, and procedures.

      (2) personnel performing quality related activities are trained and qualified in the principles and techniques of the activity being performed.

      (3) appropriate training procedures are established.

8. Those quality related activities initiated prior to the submittal of the PSAR, such as design and procurement, should be identified, in the PSAR. The QA Program which controls these activities and satisfies the requirements of 10 CFR Part 50 Appendix B and the Guidance on QA Requirements During Design and Procurement (Grey Book) should also be

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9. Those provisions which control the transfer of QA responsibilities, duties, and records from the constructors and the nuclear steam system suppliers to the applicant during the preoperational testing phase up to fuel loading should be described in the PSAR. This description should include:

   a. the participation of both the applicant's corporate and operating plant QA personnel in the transfer.

   b. the mechanism of tagging and identifying systems, structures, and components which denotes the inspection and test status.

   c. the types of procedures that should be established and invoked to assure the effective transfer, storage and control of records.

10. Those provisions which assure that quality related activities such as inspection and test will be done with appropriate equipment and under suitable environmental conditions should be described in the PSAR.

11. Describe those provisions of the QA Program which assure that the applicable Regulatory Guide requirements are considered and that these requirements, or acceptable alternatives, are adequately implemented.

12. Within the PSAR the utility and principal contractors should commit to structuring the QA Program in accordance with the following AEC Regulatory Guides and ANSI Standards or describe acceptable alternatives.

   a. AEC Regulatory Guide 1.28 "Quality Assurance Program Requirements for Design and Construction".

   b. AEC Regulatory Guide 1.30 "Quality Assurance Requirements for the Installation, Inspection and Testing of Instrumentation and Electric Equipment".

   c. AEC Regulatory Guide 1.31 "Control of Stainless Steel Welding".

   d. AEC Regulatory Guide 1.37 "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants".

e. AEC Regulatory Guide 1.38 "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants".

f. ANSI N45.2-1971 "Quality Assurance Program Requirements for Nuclear Power Plants", Regulatory staff comments supplementary guidance, Section D of "Grey Book" (Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants).

g. ANSI N45.2.9 (Draft 11, Rev. 0 - January 17, 1973) "Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants", including Regulatory staff comments supplementary guidance, Section D of "Grey Book" (Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants).

h. ANSI N45.2.11 (Draft 2, Rev. 2 - May 1973) "Quality Assurance Requirements for Design of Nuclear Power Plants".

i. ANSI N45.2.12 (Draft 3, Rev. 0 - May 2, 1973) "Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants", including Regulatory staff comments supplementary guidance, Section D of "Grey Book" (Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants).

j. ANSI N45.2.13 (Draft May 31, 1972) as modified by AEC in "Grey Book"; "Supplementary Quality Assurance Requirements for Control of Procurement of Equipment, Materials and Services for Nuclear Power Plants" including Regulatory staff comments supplementary guidance, Section D of "Grey Book" (Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants).

III. Design Control

1. The PSAR should describe those measures which assure:

   a. procedures are established to carry out design activities in a planned, controlled, and orderly manner.

   b. the applicable regulatory requirements and design bases are correctly translated into specifications, drawings, written procedures and instructions.

   c. appropriate quality standards are specified and included in the design documents and that deviations and changes from such standards are controlled.

   d. suitable design controls are applied to items such as: reactor physics, stress, thermal, hydraulic, radiation, and accident analysis; compatibility of materials; accessibility for in-service inspection, maintenance, repair; and specifying criteria for inspection and test.

   e. interface controls, both external and internal, are procedurally described and controlled for all participating organizations.

   f. proper selection and accomplishment of design verification or checking method such as design reviews, alternate calculations, or qualification testing is performed. Where a test program is used to verify the adequacy of a design, a qualification test of a prototype unit under the most adverse design conditions will be used.

   g. individuals or groups responsible for design verification or checking are other than those who performed the original design.

h. design and specification changes, including field changes, are subject to the same design controls that were applicable to the original design.

i. design documents and revisions thereto are distributed to responsible individuals in a timely manner and controlled to prevent inadvertent use of superseded material.

j. errors and deficiencies which adversely affect safety related structures, systems and components in the design process are documented and that appropriate corrective action has been taken.

k. design documents, design reviews, records, and changes thereto are collected, stored, and maintained in a systematic and controlled manner.

l. standard "off the shelf" commercial or previously approved materials, parts, and equipment (that are essential to the safety related functions of the structures, systems, and components) are selected and reviewed for suitability of application.

2. The positions or groups responsible for design reviews and design verification activities and their authority and responsibilities should be identified and described in the PSAR.

IV. Procurement Document Control

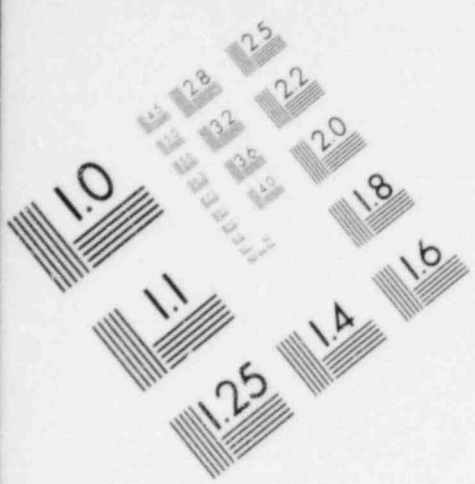
1. The PSAR should describe those measures which assure:

   a. procedures are established clearly delineating the sequence of actions to be accomplished in the preparation, review, approval, and control of procurement documents.

   b. a review and concurrence of the adequacy of quality requirements stated in procurement documents is performed by qualified personnel knowledgeable in the QA requirements. This review is to determine that all quality requirements are correctly stated, they can be inspected and controlled, there are adequate acceptance and rejection criteria, and the procurement document has been prepared in accordance with QA Program requirements.

   c. documented evidence of the review and approval of procurement documents is provided and available for verification.

   d. procurement documents identify those 10 CFR Part 50 Appendix B requirements that must be complied with and described in the supplier's QA Program. This QA Program or portions thereof should be reviewed and concurred with by the buyer and qualified personnel knowledgeable in QA prior to implementation of activities affected by the manual.



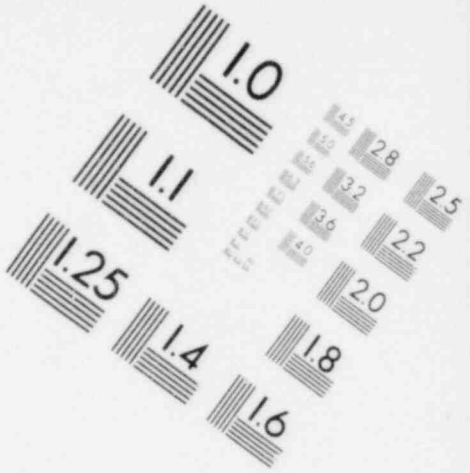




**IMAGE EVALUATION**
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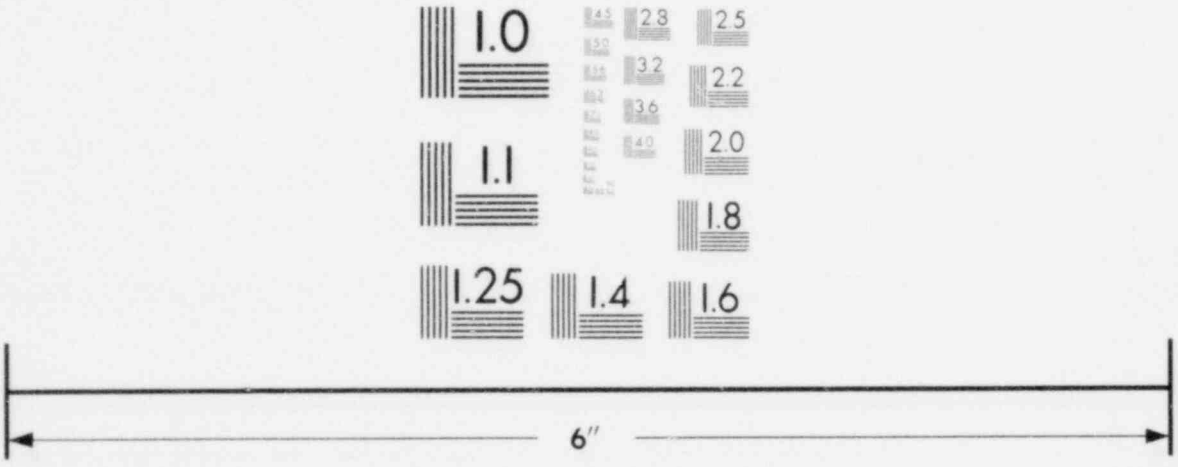


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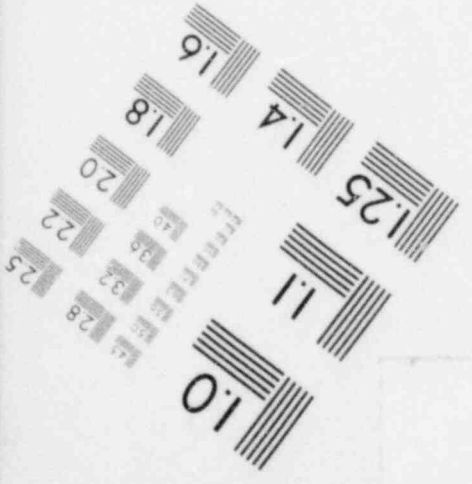
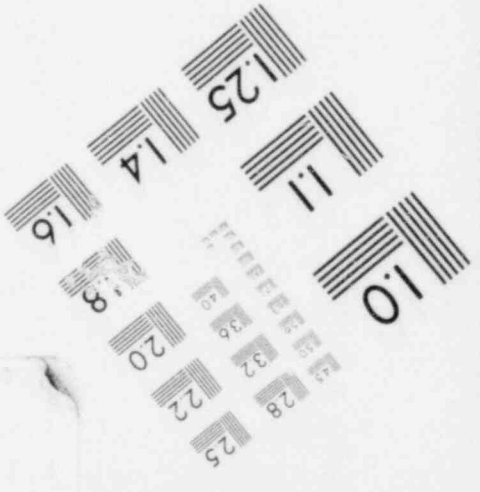
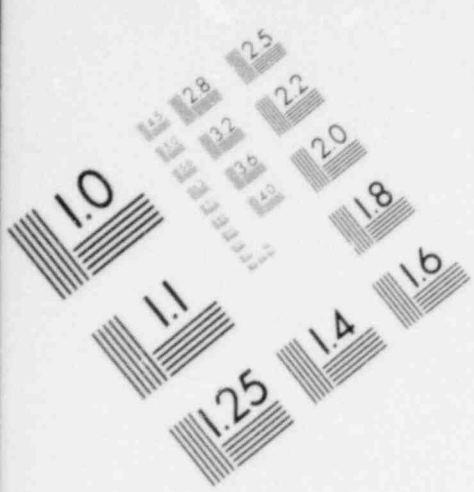




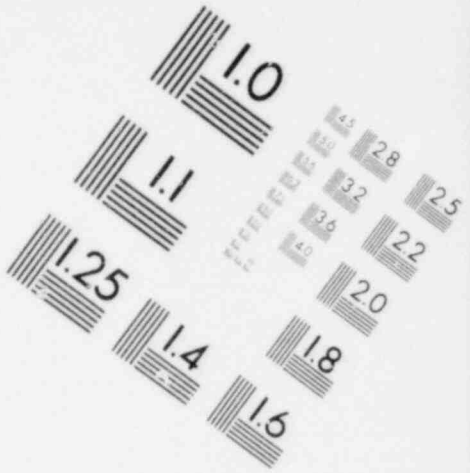
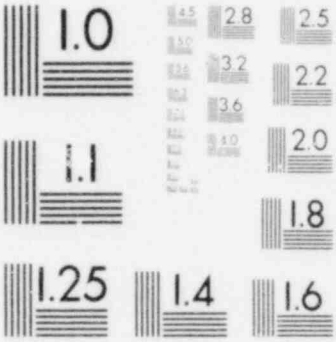
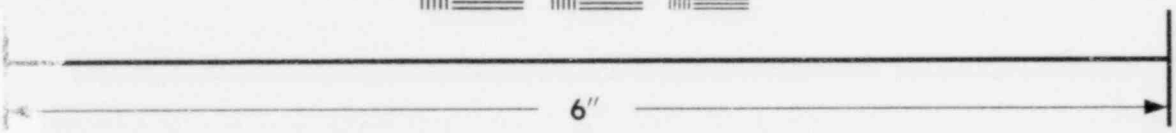




**IMAGE EVALUATION**
**TEST TARGET (MT-3)**

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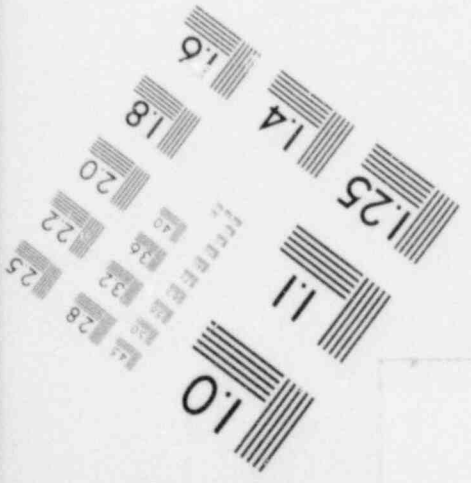


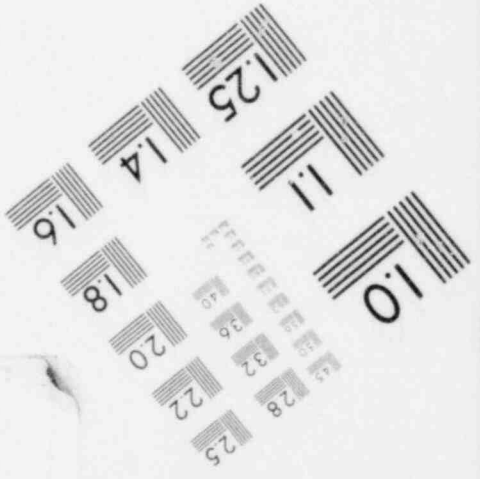

e. procurement documents contain or reference applicable design basis technical requirements including regulatory requirements, component and material identification, drawings, specifications, codes and industrial standards, including their revision status, tests and inspection requirements, and special process instructions, for such activities as fabrication, cleaning, erecting, packaging, handling, shipping, storing, and inspecting.

f. procurement documents contain as applicable, requirements which identify the documentation to be prepared, maintained, submitted, and made available to the buying agent for review and/or approval, such as drawings, specifications, procedures, inspection and fabrication plans, inspection and test records, personnel and procedure qualifications, materials, chemical, and physical test results.

g. procurement documents contain the requirements for the retention, control, and maintenance of records.

h. procurement documents contain the procuring agency's right of access to vendor's facilities and records for source inspection and audit.

i. changes and/or revisions to procurement documents are subject to at least the same review and approval requirements as the original document.

j. purchase documents for spare or replacement parts of safety related structures, systems, and components are reviewed for adequacy of quality requirements by qualified personnel knowledgeable in QA. The review is to determine similarity, compatibility, and inclusion of the quality assurance requirements and acceptance criteria of the

V. Instructions, Procedures, and Drawings

1. The PSAR should describe provisions which assure:

   a. methods of complying with each of the 18 criteria within 10 CFR Part 50 Appendix B are delineated, accomplished, and controlled by documented instructions, procedures and drawings and made part of the QA Program.

   b. the instructions, procedures, and drawings for activities affecting quality include appropriate quantitative (such as dimensions, tolerances, and operating limits) and qualitative (such as workmanship samples) acceptance criteria for determining that important activities have been satisfactorily accomplished.

VI. Document Control

1. The PSAR should describe those measures which assure:

   a. control of the issue of documents, such as instructions, procedures and drawings and the review of the documents and changes thereto, prior to release, to assure they are adequate and that the quality requirements are clearly and accurately stated, and authorized.

   b. individuals or groups responsible for reviewing, approving, and issuing documents and revisions thereto are identified.

   c. changes to documents are reviewed and approved by the same organizations that performed the original review and approval unless delegated by the applicant to a qualified responsible organization.

   d. approved changes are promptly included where applicable into instructions, procedures, drawings, and other appropriate documents associated with the change.

   e. that obsolete or superseded documents are controlled to prevent inadvertent use.

   f. documents are available at the onset of the work for which they are needed.

   g. master list(s) which identifies the current revision number of instructions, procedures, drawings, and procurement documents is established and implemented. This list(s) should be updated and distributed to predetermined responsible personnel on a timely basis.

2. The PSAR should identify those types of documents controlled under this section. As a minimum they should include:

   a. design specifications.

   b. design, manufacturing, construction, and installation drawings.

   c. procurement documents.

   d. QA Program manual and operating procedures.

   e. manufacturing inspection and testing instructions.

   f. test procedures.

VII. Control of Purchased Material, Equipment, and Services

1. The PSAR should describe those measures which assure:

   a. the evaluation of suppliers* is determined by personnel qualified in evaluating the ability of suppliers to provide acceptable quality products. The QA and Engineering organization should participate in the evaluation of those suppliers providing critical components.

   b. the evaluation of suppliers is based on one or more of the following:

      (1) the ability of the supplier to currently comply with those elements of 10 CFR Part 50 Appendix B that are applicable to the type of material, equipment, and services being procured.

      (2) a review of previous records and performance of suppliers which have supplied similar articles of the type being procured.

      (3) a survey and evaluation of the supplier's facilities and quality assurance program, when no previous quality records are available, to determine the capability to supply a product which meets all required design, manufacturing, and quality requirements. Results of these surveys should be documented and filed at the buyer's facility. Where surveys or audits cannot be conducted, acceptable alternatives should be provided.

*Supplier, as used in this document refers to the A/E, the nuclear steam system supplier, the constructor, consultants performing quality related services, and those contractors, subcontractors, and vendors providing safety related structures, systems, components, and services.

c. surveillance of suppliers during fabrication, inspection, testing, and shipment of materials, equipment and components is planned and performed in accordance with written procedures which assure conformance to the purchase order requirements. These procedures should provide for:

(1) instructions which specify those characteristics or processes to be witnessed, inspected or verified, and accepted; which describe the method of surveillance and the extent of documentation required; and which specify those responsible for implementing these instructions.

(2) audits or surveillance which assure that the supplier complies with all quality requirements. Surveillance should be performed on those items where verification of procurement requirements cannot be determined upon receipt.

d. receiving inspection, of the supplier furnished material, equipment and services is performed in accordance with the following:

(1) the material, equipment, or component is properly identified and corresponds with the receiving documentation.

(2) inspection of the material, component, or equipment and acceptance records is performed and judged acceptable, in accordance with predetermined inspection instructions, prior to installation or use. These inspection records should be available at the nuclear power plant prior to installation and use.

(3) items accepted and released are identified as to their inspection status and forwarded to a controlled storage area or released for installation or further work.

(4) nonconforming items are held in a segregated controlled area and clearly identified until proper disposition is made.

VIII. Identification and Control of Materials, Parts, and Components

1. The PSAR should describe those measures which assure:

   a. procedures are established which describe identification and control of materials, parts, and components including partially fabricated subassemblies.

   b. identification requirements are determined during the initial planning stages (i.e., during generation of specification and design drawings).

   c. identification requirements are such that the item identified can be traced to the associated documentation, such as drawings, specifications, purchase orders, manufacturing and inspection documents, deviation reports, or physical and chemical mill test reports.

   d. consideration is given to assure that the location and the method of identification do not affect the function or quality of the item being identified.

   e. the verification of correct identification of material, parts, and components is required prior to release for assembling, shipping, and installation.

IX. Control of Special Processes

1. The PSAR should describe the measures which assure:

   a. adequate performance and control of special processes such as welding, heat treating, nondestructive testing, and cleaning.

   b. procedures, equipment, and personnel connected with special processes are qualified in accordance with applicable codes, standards, specifications or, where necessary, supplementary procedures.

   c. special processes are performed by qualified personnel and accomplished with written process sheets, shop procedures, check lists, travelers or equivalent and provide adequate spaces for recording evidence of verification.

   d. an active file is kept current on qualification records of all special processes, procedures, equipment and personnel performing special processes.

X. Inspection

1. The PSAR should describe those measures which assure:

   a. inspection personnel are independent from the individual or group performing the activity being inspected.

   b. inspection procedures, instructions and/or check lists are provided and contain the following:

      (1) identification of quality characteristics to be inspected.

      (2) identification of those individuals or the organization responsible for performing the inspectio operation.

      (3) accept and reject criteria.

      (4) a description of the method of inspection.

      (5) evidence of completion and certification of inspection operation.

      (6) record of the results of the inspection operation.

   c. inspection procedures or instructions are available with necessary drawi ıgs and specifications for use prior to performing the inspection operation.

   d. the qualification of inspectors and that each inspector's qualification is kept current.

   e. inspection equipment is within calibration prior to performing an inspection operation.

   f. inspection of modifications, repairs, and replacement items, which are made after initial inspection, is performed in accordance with the o·iginal design and inspection requirements or acceptable alternatives, to verify acceptability.

g. required quality when inspection is not possible or disadvantageous.

XI. Test Control

1. The PSAR should describe the measures which assure:

   a. a test program to demonstrate that the item will perform satisfactorily in-service is identified, documented, and accomplished in accordance with written controlled procedures.

   b. written test procedures incorporate or reference the requirements and acceptance limits contained in applicable design and procurement documents.

   c. written test procedures include:

      (1) instructions for testing method, and test equipment instrumentation.

      (2) test prerequisites which include, but are not limited to, the following:

         (a) calibrated instrumentation.

         (b) adequate and appropriate equipment.

         (c) trained, qualified, and as appropriate, licensed and/or certified personnel.

         (d) preparation, condition, and completeness of item to be tested.

         (e) suitable and, if required, controlled environmental conditions.

         (f) mandatory inspection hold points where applicable, for witness by owner, contractor, or authorized inspector.

(g) provisions for data collection and storage.

(h) acceptance and rejection criteria.

(i) methods of documenting or recording test data results.

d. test results are documented, evaluated, and acceptance status identified by a qualified, responsible individual or group.

XII. Control of Measuring and Test Equipment

1. The PSAR should describe those measures which assure:

   a. procedures describe the calibration technique, calibration frequency, maintenance and control of all measuring and test instruments, tools, gages, fixtures, reference standards, transfer standards, and nondestructive test equipment which are to be used in the measurement, inspection, and monitoring of safety related components, systems, and structures.

   b. measuring and test equipment are uniquely identified and have traceability to the calibration test data.

   c. measuring and test instruments are calibrated and maintained at specified intervals based on the required accuracy, purpose, the degree of usage, stability characteristics, and other conditions affecting the measurement.

   d. an investigation will be conducted and documented to determine the validity of previous inspections performed when measuring and test equipment are found to be out of calibration.

   e. calibrating standards have an uncertainty (error) requirement of no more than 1/10th of the uncertainty of the equipment being calibrated. Greater calibrating standards uncertainty may be acceptable when limited by the "state of the art".

   f. records are maintained which indicate the complete status of all items under the calibration system.

   g. reference and transfer standards are traceable to nationally recognized standards or where national standards do not exist provisions are established to document the basis for calibration.

XIII. Handling, Storage, and Shipping

1. The PSAR should describe the measures which assure:

   a. special handling, preservation, storage, cleaning, and shipping requirements are determined and accomplished by qualified individuals in accordance with predetermined work and inspection instructions.

   b. procedures are prepared in accordance with design and specification requirements which control the cleaning, handling, storage, shipping, and preservation of materials, components and systems, to preclude damage, loss or deterioration from environments such as moisture and temperature.

XIV. Inspection, Test, and Operating Status

1. The PSAR should describe those measures which assure:

   a. identification of the inspection, test, and operating status of structures, systems and components is known throughout manufacturing and installation.

   b. control of the use of inspection and welding stamps and status indicators including the authority for application and removal of tags, markings, labels, and stamps.

   c. that any bypassing of required inspection, tests, and other critical operations is controlled through documented measures.

   d. the status of nonconforming, inoperative or malfunctioning structures, systems, or components are clearly identified to prevent inadvertent use.

XV. Nonconforming Materials, Parts or Components

1. The PSAR should describe the measures which assure:

   a. control of the identification, documentation, segregation, review, disposition, and notification of affected organization of nonconformance of materials, parts, components, or services.

   b. documentation identifies the nonconforming item, describes the nonconformance, the disposition of the nonconformance, the inspection requirements and includes signature approval of the disposition.

   c. identification of the responsibility and authority for determining and approving the disposition of nonconforming items.

   d. nonconforming items are segregated from acceptable items and identified as discrepant until properly dispositioned for use.

   e. acceptability of rework or repair of materials, parts, components, systems, and structures is verified by reinspecting the item as originally inspected or by a method which is at least equal to the original inspection method and that inspection rework and repair procedures are documented.

   f. nonconformances concerning departures from design specifications and drawing requirements, which are dispositioned "use as is" and "repair" are formally reported to the utility management.

   g. periodic analysis of these reports is performed and forwarded to management to show quality trends.

h. the nonconformance reports dispositioned "accept as is" or "repair" are made part of the inspection records and forwarded with the hardware to the utility's file.

XVI. Corrective Action

1. The PSAR should describe those measures which assure:

   a. evaluation of nonconformance and determination of the need for corrective action is in accordance with established procedures.

   b. the cause of the nonconformance is determined and that prompt corrective action to preclude the recurrance of those significant conditions adverse to quality is intended.

   c. followup on corrective actions to verify proper implementation and to close out the corrective action documentation.

   d. documented reporting to appropriate levels of management of significant conditions adverse to quality, the cause of the conditions, and the corrective action taken.

XVII. Quality Assurance Records

1. The PSAR should describe the measures which assure:

   a. records are maintained to provide documentary evidence of the quality of items and of activities affecting quality.

   b. these records include the operating logs, results of review, inspections, tests, audits, and monitoring of work performance and material analysis; the qualification of personnel, procedures, and equipment; other documentation such as drawings, specifications, procurement documents, calibration procedures, calibration reports, and nonconforming and corrective action reports.

   c. records will be identifiable and retrievable.

   d. requirements and responsibilities for record transmittals, retention and maintenance subsequent to completion of work are consistent with applicable codes, standards, and procurement documents.

   e. the inspection and test records contain the following:

      (1) a description of the type of operation.

      (2) evidence of completing and/or verifying a manufacturing, inspection or test operation.

      (3) the results of the inspection or test.

      (4) information related to nonconformances.

      (5) inspector or data recorder.

      (6) acceptability.

f. storage facilities are constructed, located, and secured, to prevent destruction of the records through fire, flooding, theft, and deterioration by temperature or humidity conditions.

XVIII. Audits

1. The FSAR should describe those measures which assure:

   a. the performance of audits is in accordance with preestablished written procedures or check lists and conducted by appropriately trained personnel not having direct responsibilities in the areas being audited.

   b. the audit results are documented and reviewed by management having responsibility in the area audited.

   c. responsible management takes the necessary action to correct the deficiencies revealed by the audit.

   d. deficient areas are promptly reaudited until corrections have been accomplished.

   e. audits include an objective evaluation of quality related practices, procedures, and instructions; the effectiveness of implementation; and the conformance with policy directives.

   f. the audits include the evaluation of work areas, activities, processes, and items, and the review of documents and records.

   g. the following types of audits are performed:

      (1) audits by the QA organization to provide a comprehensive independent verification and evaluation of quality related procedures and activities to assure that they are meaningful and are effectively complying with the QA Program requirements.

(2) external audits performed by the applicant and principal contractors on their suppliers performing activities or safety related structures, systems, and components. These audits must include verification and evaluation of their QA Program, procedures, and activities to assure that they are meaningful and are effectively complying with all aspects of the QA Program and procurement requirements.

(3) audits performed by major contractors, subcontractors, and vendors to verify and evaluate their suppliers QA Program, procedures, and activities to assure they are meaningful and are effectively complying with the QA Program and procurement requirements.

h. audits are regularly scheduled on the basis of the status and safety importance of the activities being performed, and that they are initiated early enough to assure effective quality assurance during the design, procurement, and contracting activities.

i. analysis of audit data be performed and reports provided to management which indicate quality trends and the effectiveness of the QA Program.

# Crystal River Units 3 & 4 Nuclear Generating Plant

**P**RELIMINARY

**S**AFETY

**A**NALYSIS

**R**EPORT

## VOLUME 5

The Power To Please!

FPC FLORIDA POWER CORPORATION

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