

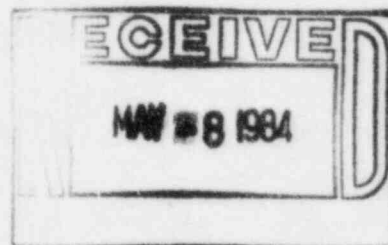


# Public Service Company of Colorado

16805 WCR 19 1/2, Platteville, Colorado 80651

May 1, 1984  
Fort St. Vrain  
Unit #1  
P-84127

John T. Collins, Regional Administrator  
U. S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, TX 76011



ATTN: Mr. Dick Brickly

SUBJECT: FSAR APPENDIX B

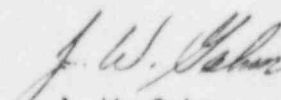
Dear Mr. Collins:

As discussed by telephone with Mr. Dick Brickly of your staff, enclosed for your consideration (attachment I) are our proposals to resolve NRC comments concerning the Fort St. Vrain Quality Assurance Program as described in Appendix B of the FSAR. Where appropriate, we have indicated how we will proceed to implement our proposals; pending NRC approval.

Also enclosed (attachment II) is a marked up copy of Appendix B of the FSAR which details the proposed revisions. Upon approval, these Appendix B revisions will be included in the annual FSAR update submitted by PSC Nuclear Engineering Division in accordance with 10CFR50.71 in July, 1984.

If you have any questions concerning this matter, please contact me at (303) 785-2225, extension 350.

Sincerely,

  
J. W. Gahm

JWG:dr

Enclosures

50-267  
8405140286 840501  
PDR ADOCK 05000267  
P PDR

4005  
11

## NRC COMMENTS/QA PROPOSALS ON QA PLAN

1. NRC Comment - Appendix B contains too many generalities. Needs to be specific. Words such as "periodic", "suitable", "reasonable", "generally", are used liberally throughout the plan.
- QA Proposal - To the extent possible, generalities will be removed from Appendix B.
2. NRC Comment - Procedures subordinate to the Administrative Procedures shall be reviewed by QA.
- QA Proposal - Permanent procedures involving safety related activities will be reviewed and concurred with by the QA Department to verify conformance to applicable quality related requirements.

Upon approval of the proposal; implementation of QA review and concurrence will proceed in the following manner:

- 1) Commencing immediately, QA will conduct a review of the FSV procedure system (currently - 1950 procedures) to determine those procedures which involve safety-related activities. Concurrently, QA will develop guidelines to verify conformance of those procedures to applicable quality requirements.
- 2) Upon completion of 1) above, QA will undertake a review of all procedures determined to involve safety-related activities. The schedule for initial QA review will be concurrent with the PORC review of plant procedures, which reviews all applicable plant procedures on an annual basis. Procedures not reviewed by PORC will be scheduled for QA review on a systematic basis. Findings as a result of this review will be submitted to the responsible organization for resolution prior to QA concurrence with the procedure.

- 3) New or revised procedures involving safety-related activities are to be routed through the QA Department as they are submitted for review and concurrence. Facility administrative procedures will be revised accordingly to permit QA review and concurrence of applicable procedures.

The QA procedure review and concurrence process is expected to be fully implemented by January 1, 1986.

3. NRC Comment - Maintenance QC inspections do not include Electrical or Results organizations
- QA Proposal - Provisions for MQC inspection of Electrical and Results activities will be added to Appendix B.
4. NRC Comment - Appendix B does not have provisions for audits of the MQC group by QA.
- QA Proposal - Confirmation of this audit activity will be added to Appendix B.
5. NRC Comment - Work procedures (Section B.5.2.10) have no provisions for QA review.
- QA Proposal - See NRC Comment #2.
6. NRC Comment - NRC "concurrence" needs to be changed to NRC "approval" in Section B.5.2.11.
- QA Proposal - Changed to "approval".
7. NRC Comment - Per Reg. Guide 1.64, design verifiers shall not be supervisors of the original designer.
- QA Proposal - Provisions will be added to Appendix B stating that the original designer's supervisor cannot perform verification of the original design. Engineering procedures currently reflect this requirement.

8. NRC Comment - Appendix B has no provisions for review and analysis of design errors.
- QA Proposal - Provisions will be added to Appendix B for corrective action in the event of significant or recurring design errors.
9. NRC Comment - Visual exams in B.5.19.7 were changed from biannual to annual. This is a reduction in commitment.
- QA Proposal - This change was made with the original FSAR update in July, 1982 and it should have been included in the June, 1983 report to NRC and identified as a change from the original QA program per 10CFR50.54. The requirements of 10CFR50.54 did not specify determination of reductions of commitment for those changes made prior to March 11, 1983.
- The biannual visual exams were found to be burdensome and unnecessary and the annual requirement of ANSI N45.2.6 was implemented with the original FSAR update.



## 10. NRC Comment -

The provisions in B.5.19.12 to hold a post audit meeting two weeks after issuance of the audit report and to obtain corrective action responses within 30 days after this meeting were deleted. This is a reduction in commitment.

## QA Proposal -

This change also was made with the original FSAR update in July 1982 and was described in the report of changes submitted in June 1983 per the requirements of 10CFR50.54. The requirement of 10CFR50.54 did not specify determination of reductions of commitment for those changes made prior to March 11, 1983.

We do not feel deletion of items D.2)b)i and ii are reductions in commitment in that audit findings are discussed in the course of the audit, addressed at the post-audit conference, included in the audit report and documented on CAAR's, which must be responded to within 15 days after issuance. Procedures addressing the above are addressed in APM G-3, Q-16, Q-18, and QAAP-1. Based on these requirements, the conditions noted in D.2)b)i and ii are met or exceeded so those provisions may be deleted without reducing the commitment in the FSAR and still meet the intent of sections 4.3.3 and 4.5.1 of ANSI N45.2.12 - 1974.

ATTACHMENT II

## B.5. QUALITY ASSURANCE PROGRAM FOR PLANT OPERATION

It is the policy of Public Service Company of Colorado to use its best efforts to insure that the Fort St. Vrain Generating Station is maintained and operated in a manner that assures the highest practical degree of safety to the public and to its employees.

The Vice President, Electric Production is assigned the authority and responsibility within PSCo for all activities associated with engineering, procurement, operation, maintenance, modification and quality assurance of the Fort St. Vrain Generating Station. To ensure that all of these activities are performed in a manner consistent with the policy of PSCo, the Company has established and implemented a Quality Assurance Program to meet the requirements of 10CFR50, Appendix B and the applicable regulatory requirements (Ref. 5).

All personnel performing duties affecting quality including those of contractors, suppliers, and any other organization performing quality activities associated with the nuclear project are responsible for compliance with the directives established within the Quality Assurance Program.

The Public Service Company of Colorado policies and guidelines for Electric Production nuclear activities sets forth the commitment that the Company has made to quality assurance for operation of the Fort St. Vrain Nuclear Station. The organizational structure for accomplishing the quality assurance functions is defined, as are individual responsibilities of persons involved in quality assurance activities and management. The PSCo policy document provides for development of procedures and instructions which will define in detail the nature and extent of quality assurance effort to be carried out in each segment of plant operation, throughout the life of the plant. The policy document provides for indoctrination and training of personnel performing activities affecting quality, and for ~~regular~~ review of the effectiveness of the program by management and intermediate supervisory levels. The policy document commits the management of PSCo to compliance with the intent of 10CFR50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and other applicable regulations, codes and standards.

Policies require that the various aspects of plant operation are to be defined and controlled by written procedures which include the Technical Specifications issued with the operating license. Policies also require that all safety-related maintenance and repair of the nuclear power plant is to be controlled to avoid violation of the conditions of the license and to preserve margins of safety provided in the original design and construction.

Modifications to the safety-related portions of the plant are required to be controlled in accordance with written procedures which prescribe the responsibilities of the Production, Engineering and Quality Assurance personnel; which provide measures to control interfaces between those organizations involved in plant modifications and design control; and which define the methods to be

#### B.5.1.3. Quality Assurance Related Responsibilities

In addition to responsibilities assigned by organization charters, and as discussed in Section 12.1.1, the management personnel indicated herein are also responsible for the following:

##### a) Vice President, Electric Production

The Vice President, Electric Production has overall responsibility for the Quality Assurance Program applicable to the FSV Generating Station with direct responsibilities for the Program delegated to the Quality Assurance Manager. The Vice President maintains cognizance of the Program and ~~periodically~~ evaluates its status and adequacy.

Disputes, arising from differences of opinion between departments, which are not resolved by the responsible administrators, are referred to the Vice President for resolution.

##### b) Quality Assurance Manager

The Quality Assurance Manager reports to the Vice President, Electric Production. The Manager is assigned overall responsibility for the FSV Quality Assurance Program adequacy, and implementation effectiveness. The QA Manager has been assigned the necessary authority, resources and organizational freedom to manage the Quality Assurance Program; identify quality problems; initiate, recommend and provide solutions; and to verify implementation of solutions.

The Quality Assurance Manager, or his designated alternate, has the authority to order that work be stopped; when, in his opinion, maintenance, repair or modification work does not comply with the approved controlling documents. For operating activities, the Quality Assurance Manager, or his designated alternate has the authority to recommend that work stop. However, authority to stop work on operating activities remains with the Superintendent, Operations or the Senior Licensed Operator present, who will determine whether such stoppage would cause any violation of the Technical Specifications or other approved documents governing plant operations, or whether there are overriding considerations of safety involved.

Minimum qualifications required for the Quality Assurance Manager are as shown in Table B.5-2. The Quality Assurance Manager is responsible for:

- 1) The adequacy of the Quality Assurance Program and its implementing procedures, interpretation of Quality Assurance requirements and effectiveness of the Program's implementation.

## B.5. QUALITY ASSURANCE PROGRAM FOR PLANT OPERATION

It is the policy of Public Service Company of Colorado to use its best efforts to insure that the Fort St. Vrain Generating Station is maintained and operated in a manner that assures the highest practical degree of safety to the public and to its employees.

The Vice President, Electric Production is assigned the authority and responsibility within PSCo for all activities associated with engineering, procurement, operation, maintenance, modification and quality assurance of the Fort St. Vrain Generating Station. To ensure that all of these activities are performed in a manner consistent with the policy of PSCo, the Company has established and implemented a Quality Assurance Program to meet the requirements of 10CFR50, Appendix B and the applicable regulatory requirements (Ref. 5).

All personnel performing duties affecting quality including those of contractors, suppliers, and any other organization performing quality activities associated with the nuclear project are responsible for compliance with the directives established within the Quality Assurance Program.

The Public Service Company of Colorado policies and guidelines for Electric Production nuclear activities sets forth the commitment that the Company has made to quality assurance for operation of the Fort St. Vrain Nuclear Station. The organizational structure for accomplishing the quality assurance functions is defined, as are individual responsibilities of persons involved in quality assurance activities and management. The PSCo policy document provides for development of procedures and instructions which will define in detail the nature and extent of quality assurance effort to be carried out in each segment of plant operation, throughout the life of the plant. The policy document provides for indoctrination and training of personnel performing activities affecting quality, and for ~~regular~~ review of the effectiveness of the program by management and intermediate supervisory levels. The policy document commits the management of PSCo to compliance with the intent of 10CFR50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and other applicable regulations, codes and standards.

Policies require that the various aspects of plant operation are to be defined and controlled by written procedures which include the Technical Specifications issued with the operating license. Policies also require that all safety-related maintenance and repair of the nuclear power plant is to be controlled to avoid violation of the conditions of the license and to preserve margins of safety provided in the original design and construction.

Modifications to the safety-related portions of the plant are required to be controlled in accordance with written procedures which prescribe the responsibilities of the Production, Engineering and Quality Assurance personnel; which provide measures to control interfaces between those organizations involved in plant modifications and design control; and which define the methods to be



followed to initiate, design, analyze, review, approve, install, inspect, test, and accept modifications to the plant.

In addition to specific policies and guidelines for organization, operation, training, maintenance and modifications, other policies and guidelines deal with procurement, construction, nuclear fuel, radiation protection, safety, security, emergency planning, fire prevention, startup and testing, environmental protection, and nuclear plant procedures. A listing of the current policies and guidelines is given in Table B.5-1.

Although extensive changes have been made to the QA Program for operation as presented in Amendment 32 of the original FSAR (see Refs. 6 and 16), the PSCo Quality Assurance program for Plant Operation is responsive to the scope and requirements of 10CFR50, Appendix B. The manner of compliance with each of the NRC QA Criteria is discussed in detail in the following paragraphs.

#### B.5.1. ORGANIZATION

##### B.5.1.1. Quality Assurance Program Responsibility

The Public Service Company of Colorado (PSCo) Vice President, Electric Production, has executive level responsibility for all FSV Generating Station engineering, operations, maintenance, modifications and quality assurance activities. Direct responsibility for Quality Assurance Program definition, implementation and effectiveness has been delegated to the Quality Assurance Manager, who reports to the Vice President, Electric Production.

##### B.5.1.2. Organizational Arrangements

The management structure for the FSV Project is divided among three organizations as follows:

- a) Nuclear Engineering Division, provides technical, engineering and licensing services for capital improvements, long term projects, and fuel management services in support of operation and maintenance of the plant.
- b) Nuclear Production Division, is responsible for the operation and maintenance of the Fort St. Vrain Facility.
- c) Quality Assurance Department, verifies implementation of the QA program responsibilities as discussed in Section B.5.1.3.

The corporate organization chart is shown in Figure B.5-1. The organization charts for the Nuclear Production and Nuclear Engineering Divisions are shown in Figures 12.1-2 and 12.1-3 respectively. The organization chart for the Quality Assurance Department is shown in Figure B.5-2.



#### B.5.1.3. Quality Assurance Related Responsibilities

In addition to responsibilities assigned by organization charters, and as discussed in Section 12.1.1, the management personnel indicated herein are also responsible for the following:

a) Vice President, Electric Production

The Vice President, Electric Production has overall responsibility for the Quality Assurance Program applicable to the FSV Generating Station with direct responsibilities for the Program delegated to the Quality Assurance Manager. The Vice President maintains cognizance of the Program and ~~periodically~~ evaluates its status and adequacy.

Disputes, arising from differences of opinion between departments, which are not resolved by the responsible administrators, are referred to the Vice President for resolution.

b) Quality Assurance Manager

The Quality Assurance Manager reports to the Vice President, Electric Production. The Manager is assigned overall responsibility for the FSV Quality Assurance Program adequacy, and implementation effectiveness. The QA Manager has been assigned the necessary authority, resources and organizational freedom to manage the Quality Assurance Program; identify quality problems; initiate, recommend and provide solutions; and to verify implementation of solutions.

The Quality Assurance Manager, or his designated alternate, has the authority to order that work be stopped; when, in his opinion, maintenance, repair or modification work does not comply with the approved controlling documents. For operating activities, the Quality Assurance Manager, or his designated alternate has the authority to recommend that work stop. However, authority to stop work on operating activities remains with the Superintendent, Operations or the Senior Licensed Operator present, who will determine whether such stoppage would cause any violation of the Technical Specifications or other approved documents governing plant operations, or whether there are overriding considerations of safety involved.

Minimum qualifications required for the Quality Assurance Manager are as shown in Table B.5-2. The Quality Assurance Manager is responsible for:

- 1) The adequacy of the Quality Assurance Program and its implementing procedures, interpretation of Quality Assurance requirements and effectiveness of the Program's implementation.

- 2) The use of appropriate techniques to assure conformance of all activities affecting quality to the Program's requirements.
- 3) The adequacy, clarity and appropriateness of all PSCo Quality Assurance related communications and commitments directed to Regulatory Agencies, Contractors and Suppliers.
- 4) Appropriate exercising of the authority vested in the Quality Assurance organization to cause the acceptance or rejection of work, materials and equipment based on conformance or nonconformance to approved engineering or Code requirements.
- 5) Apprising management of the Station's quality status by ~~periodic~~ reporting on quality activities, trends and problems.
- 6) Assuring that effectiveness evaluation actions such as QA Program reviews, monitoring and audit techniques are employed to verify conformance to requirements of activities affecting quality, including activities involving contractors and suppliers.
- 7) Coordinating applicable activities of regulatory agencies such as audits, inspections or investigations with the affected organization manager(s).

c) Superintendent, QA Services

The Superintendent, QA Services (SQAS) reports to the Quality Assurance Manager and is responsible for quality engineering, inspection activities, and quality-related records management. His organization is responsible for:

- 1) Preparation, coordination with affected organizations, submittal for required approval, and maintenance of "Q" Procedures in the Fort St. Vrain Administrative Procedures, and quality assurance services procedures necessary to implement the Quality Assurance Program.
- 2) Review of design Change Notices and Specifications for Station modifications to verify the appropriateness and conformance of specified requirements to applicable quality and code requirements.
- 3) Review of PSCo generated procurement documents for safety-related items to verify appropriateness of quality provisions.
- 4) Evaluation of supplier/contractor capabilities/data to verify qualification adequacy and maintaining an "Approved Supplier Listing".

- 5) Preparation, review and approval of special process procedures required for specific applications.
- 6) Preparation, coordination with affected organizations, review and approval of QA inspection/monitoring plans and procedures to assure their adequacy, appropriateness and conformance to applicable requirements.
- 7) Assuring performance of inspections <sup>accuracy</sup> ~~as required~~, to verify conformance of procured items to prescribed requirements.
- 8) Review of Nonconformance Reports to verify that appropriate quality considerations are applied to dispositions and resolution of identified deficiencies.
- 9) Assuring that required inspections are performed by adequately trained and qualified personnel.
- 10) Assuring that all required inspection records resulting from performed inspections are properly completed, legible and authenticated to qualify as objective evidence records.
- 11) Assuring review of modification, technical and work control documents for appropriateness of QA provisions and the performance of inspections <sup>accuracy</sup> ~~as required~~, to verify conformance of completed work to specified requirements.
- 12) Managing FSV quality-related records files to assure accountability and retrievability of stored records.

d) Superintendent, QA Operations

The Superintendent, QA Operations (SQA0) reports to the Quality Assurance Manager and is responsible for quality assurance monitoring and audit-related activities. He is responsible for:

- 1) Preparation, coordination with affected organizations, submittal for required approval, and maintenance of quality assurance operations procedures necessary to implement assigned Quality Assurance Program responsibilities.
- 2) Scheduling, coordinating and performing audits and monitoring actions ~~as required~~ to verify that FSV systems provided to assure conformance of work and activities to prescribed requirements are adequate and effective.

- 3) Coordinating NRC inspection activities and follow-up to assure appropriate resolutions and timely closeout of any inspection findings.
- 4) Auditing of supplier Quality Assurance activities to verify adequacy and effectiveness when requested by the Superintendent, QA Services.
- 5) Providing training assistance ~~as required~~ to assure indoctrination of quality assurance and interface organization personnel in the use and comprehension of quality-related procedures.

e) Manager, Nuclear Production

The Manager, Nuclear Production reports to the Vice President, Electric Production and is responsible for management of all Station operations. In quality-related areas, the Manager, Nuclear Production is responsible for:

- 1) Assuring Station operations, maintenance and modification installation activities conform to applicable FSAR, Technical Specification, Regulatory Code and Quality Assurance Program requirements.
- 2) Assuring that new or revised Station procedures affecting quality are compatible with the FSV Administrative Procedures Manual as described in Para. B.5.5.1. *Procedures involving safety-related activities are provided to QA Department for review and concurrence in regards to quality related aspects.*
- 3) Assuring that Quality Assurance Department personnel have access to Station facilities, personnel and records as necessary for the performance of quality-related assignments.
- 4) Assuring that Managers in Nuclear Production provide timely responses to deficiency notifications and corrective actions ~~as required~~ to permit prompt close out of deficiency reports.

f) Station Manager

The Station Manager reports to the Manager, Nuclear Production and is responsible for the management of all production operations and maintenance activities.

g) Superintendent, Operations

The Superintendent, Operations reports to the Station Manager and is responsible for plant operation.



h) Superintendent, Maintenance

The Superintendent, Maintenance reports to the Station Manager and is responsible for all mechanical and electrical maintenance activities.

i) Training Supervisor

The Training Supervisor reports to the Station Manager and is responsible for coordinating training activities as required by ANSI 18.1 - 1971 and 10CFR55 Appendix A.

j) Results Engineering Supervisor

The Results Engineering Supervisor reports to the Station Manager and is responsible for instrument maintenance and testing.

k) Technical/Administrative Services Manager

The Technical/Administrative Services Manager reports to the Manager, Nuclear Production and is responsible for plant security, all administrative services, maintenance quality control, plant engineering, nuclear material management, plant licensing activities, controlled work procedure coordination and the shift technical advisors.

l) Security Supervisor

The Security Supervisor reports to the Technical/Administrative Services Manager and is responsible for performance of all actions required to assure security of the plant.

m) Maintenance Quality Control Supervisor

The Maintenance QC Supervisor reports to the Technical/Administrative Services Manager and is responsible for maintaining and supervising maintenance QC activities.

n) Technical Services Engineering Supervisor

The Technical Services Engineering Supervisor reports to the Technical/Administrative Services Manager and is responsible for plant engineering, nuclear materials management, plant licensing activities, controlled work procedure review and computer services.

o) Radiation Protection Manager

The Radiation Protection Manager reports to the Manager, Nuclear Production and is responsible for management of the radiation protection program, including health physics and radiochemistry.

p) Manager, Nuclear Engineering

The Manager, Nuclear Engineering reports to the Vice President, Electric Production and is responsible for FSV Project Engineering and Licensing activities. In quality-related areas, he is responsible for:

- 1) Assuring implementation of design control measures, including independent reviews as required by the FSV Quality Assurance Program.
- 2) Assuring prior Engineering review and approval of all safety-related Plant modifications.
- 3) Assuring that Engineering procedures concerning activities affecting quality are compatible with the FSV Administrative Procedures Manual as described in Para. B.5.5.1. *Procedures involving safety related activities are provided to the QA Department for review and concurrence in regards to quality related aspects.*
- 4) Assuring that Quality Assurance Department personnel have access to Engineering facilities, personnel and records as necessary for performance of quality-related assignments.
- 5) Assuring timely response to notifications of quality-related deficiencies and problems; and implementation of prompt corrective action to permit closeout of deficiency reports.
- 6) Assuring that plant items and equipment are classified according to safety-related and Code requirements.

q) Nuclear Design Manager

The Nuclear Design Manager reports to the Manager, Nuclear Engineering and is responsible for electrical, mechanical and civil engineering activities related to nuclear projects including conceptual, preliminary and final design. He prepares cost estimates and preliminary and final design. He prepares equipment specifications and administers design contracts and procures material. The Nuclear Design Manager performs design, transient and system analysis related to plant modifications and performs document updating activities.



r) Nuclear Services Manager

The Nuclear Services Manager reports to the Manager, Nuclear Engineering and is responsible for administering the Nuclear Fuel Management Program and nuclear fuel procurement activities. He performs reactor core design and analysis activities of plant transients and system performance. The Nuclear Services Manager performs nuclear licensing and safety activities which include maintaining the accuracy of the FSAR and preparation of Nuclear Engineering Division procedures, standards and reports.

s) Nuclear Site Engineering Manager

The Nuclear Site Engineering Manager reports to the Manager, Nuclear Engineering and is responsible for coordination of construction, erection and startup activities. He prepares cost estimates and preliminary and final design. The Nuclear Site Engineering Manager provides on-site engineering functions in support of plant operational needs.

t) Other PSCo Organizations

Other PSCo organizations, including Purchasing and Stores, which are involved in quality-related functions, are required to comply with the FSV Quality Assurance Program requirements that apply to their activities. This includes providing access for Quality Assurance Department personnel to their facilities, personnel and records, as necessary for performance of quality-related assignments.

u) Other Outside Organizations

Work performed by other organizations outside PSCo must conform to PSCo Quality Assurance Program requirements as specified by procurement or contract documents.

B.5.2. QUALITY ASSURANCE PROGRAMS

B.5.2.1. Program Description

The Quality Assurance Program for Plant Operations applies to those plant structures, systems and components which prevent or mitigate the consequences of postulated accidents which could cause undue risk to the health and safety of the public. The requirements of this program apply to activities which affect the safety-related functions of those structures, systems and components. Tables 1.4-1, 1.4-2 and 1.4-3 identify the Class I and Safe Shutdown items ~~generally~~ covered by the QA Program. The systems, equipment and components are identified in more detail on special lists and drawings for safety-related equipment maintained by the Nuclear Engineering Division (see Subsection B.5.2.7).

In addition to safety-related equipment, PSCo is also committed to apply portions of the QA Program for operation to the Alternate

| Cooling Method (ACM) equipment, the fire protection system, and the  
| plant security system.

The QA Program for operation is structured with three levels: first level, quality control and inspection; second level, quality assurance monitoring; and third level, quality assurance auditing. A comparison of the functions for operational QA with those for Engineering and Construction QA is shown in Table B.5-3.

The Quality Assurance Program requires that the Quality Assurance Department identify and perform all quality assurance and/or quality control actions required to verify conformance of activities affecting quality to applicable requirements, except inspections of routine maintenance. Inspections of maintenance work is performed by the Maintenance Quality Control group, which reports to the Supervisor of Maintenance Quality Control. The arrangement assures the necessary freedom and independence required to perform that function effectively. *Audits are employed to verify the conformance of the Maintenance Quality Control group activities to applicable requirements.*

*including  
mechanical,  
electrical  
and results*

#### B.5.2.2. Program Procedures

Procedures ~~fully~~ describing the Quality Assurance Program are maintained in the FSV Administrative Procedures Manual. The "Q"-series procedures serve as the Quality Assurance Manual and conform to the requirements of 10CFR50, Appendix B by providing an individual procedure to describe the FSV program for each of the 18 Criteria. Compliance with the FSV Administrative Procedures Manual is mandatory for all personnel assigned to nuclear project activities affecting quality of safety-related items. Detailed procedures are provided, where required, by procedures subordinate to the FSV Administrative Procedures Manual (see Subsection B.5.2.10).

#### B.5.2.3. Program Monitoring and Evaluation

~~Periodic~~ Evaluation of the adequacy of the Quality Assurance Program, its conformance to requirements and the effectiveness of its implementation is performed by the Vice President, Electric Production. The evaluations are based on information provided by internal audits by Quality Assurance Department, audits performed by the Nuclear Facility Safety Committee, audits performed by consultants and data provided by the Quality Assurance Manager.

#### B.5.2.4. Design Controls

Design controls are implemented in accordance with those parts of the FSV Administrative Procedures Manual governing PSCo Engineering actions. A design control system is employed to authorize the creation and issuance of design documents and ~~if required~~ to reflect as-built installations. Subcontracted design actions are controlled by procurement document provisions and follow-through verification actions. All design outputs, whether internal or external, are reviewed by the Quality Assurance Department to verify and assure the inclusion of appropriate quality requirements. Audits are ~~periodically~~ employed to verify and document conformance of design controls to applicable requirements.

#### B.5.2.5. Quality Assurance Standards, Codes and Regulatory Requirements

Applicable requirements, codes and standards to which the Quality Assurance Program conforms are listed in Table B.5-4.

#### B.5.2.6. Supply and Support Services

Procurement documents developed to authorize the purchase of materials, parts, equipment or services are required to include applicable and appropriate quality requirements. All documents involving safety-related items are reviewed by the Quality Assurance Department to verify adequacy and appropriateness of the quality requirements. Inspections are performed at source or on the delivered items, or contractor actions are monitored by qualified PSCo personnel to verify conformance to the purchase order requirements.

#### B.5.2.7. FSV Safety-Related Items

Safety-related items to which the quality Assurance Program applies are those Plant systems, structures, equipment and components which are identified by the FSAR, and as detailed and supplemented by applicable P&I, IB and IC drawings, and SR-6-2 and SR-6-8 lists.

- | a) Class I per FSAR Table 1.4-1. and 1.4-3.
- | b) Safe shutdown components per FSAR Table 1.4-2 and 1.4-3.

#### B.5.2.8. Training Programs

The PSCo Training Program Administrative Manual specifies the training policies, procedures and documentation methods for Plant management, operations, maintenance and technical personnel. The Program conforms to the applicable requirements of 10CFR19, 20, 50-Appendix B, 50-Appendix E, 55, 55-Appendix A, 73 (Ref. 5) and ANSI N18.1-1971 (see Section B.5.19.14 and Table B.5-4). The training is the responsibility of the Training Supervisor. Records documenting the scope, objectives and methods employed for each training session conducted are maintained on file.

#### B.5.2.9. Quality Assurance Training

In addition to training required for specific assignments, Plant supervisory and other key personnel responsible for operating or maintaining quality-related systems and equipment receive indoctrination and instruction in Quality Assurance. The training includes basic principles, 10CFR50 Appendix B, policy, and specific Quality Assurance procedures required to implement the QA Program.

The Superintendent of QA Operations is responsible for providing required quality assurance training to Station personnel involved in nuclear activities.

The QA Program requires that:

- a) Indoctrination and training is provided to assure that personnel are instructed as to the purpose, scope and use of manuals, instructions, and procedures which pertain to safety related equipment or activities; and to assure that they are trained in the principles and techniques for the activity being performed.
- b) Contractors and Suppliers are made responsible for developing and implementing training programs for their personnel in accordance with procurement document requirements. The training programs must include QA indoctrination and training on technical aspects included in their scope of work. Training required to qualify their personnel to perform activities affecting quality must be conducted and documented.
- c) Training in PSCo procedures is provided for Contractors who perform activities affecting quality, and for personnel who augment permanent PSCo Project staffs.
- d) Personnel performing tasks for which certifications are required are so certified on the basis of the results of written examinations or ~~suitable~~ demonstration of required proficiencies. Retraining and requalification are performed as required.
- e) Records required to provide evidence of training and certifications are retained and maintained on file. The records indicate training session content, attendees, dates and results of the training sessions.

#### B.5.2.10 Work Procedures

All work involving safety-related activities is performed in accordance with approved procedures that prescribe the work to be performed. The procedures also indicate, as appropriate, the requirements for the use of special tools or equipment, certification requirements for personnel or equipment, required environments, prerequisites, tests, inspections, data and documentation requirements.

#### B.5.2.11. FSAR Quality Assurance Program Changes

The Quality Assurance Manager is responsible for initiating appropriate action to document and submit any identified revisions that may be required to assure that the FSAR accurately reflects the Quality Program specifics currently being applied. Those changes to the QA program that do not reduce commitments in the program may be made without prior NRC approval. However, those changes must be submitted to the NRC at least annually. Those changes that do reduce program commitments must be submitted to the NRC and be approved by the NRC before the changes may be implemented. The proposed revisions are submitted to the Vice President, Electric Production



| for approval prior to submittal to the NRC for review and  
| ~~concurrent approval.~~

### B.5.3. DESIGN CONTROLS

#### B.5.3.1 Description of Design Activities

Design activities during the operational phase of the plant consist primarily of those actions required to change existing designs as necessary to accommodate required modifications.

#### B.5.3.2. Design Control Responsibility

All PSCo design actions are performed within, and are the responsibility of, the Nuclear Engineering Division, and are governed by Nuclear Engineering Division procedures. Subcontracted design tasks are authorized by procurement documents, in which requirements are included for compliance by the subcontractor, that are compatible with Nuclear Engineering Division procedures. Procurement document reviews by the Quality Assurance Department assures the inclusion of appropriate design control and other appropriate quality provisions.

#### B.5.3.3. Design Control System

All design tasks for FSV to be performed by PSCo are authorized and controlled by use of a Change Notice system. This system assures that required reviews and approvals are obtained prior to and on completion of the design task. The Change Notice system includes provisions to ensure that the required research is performed to identify applicable codes, standards, or other requirements and assure their inclusion in the generated design documents; that required design interface coordination and verifications occur; and that the required reviews and approvals are obtained prior to release and distribution of the Change Notice.

#### B.5.3.4. Design Control Procedures

Nuclear Engineering Division Procedures prescribe in detail the methods and control measures to be applied to control of design modifications. The Procedures include measures which provide assurance that:

- a) Applicable regulatory requirements, FSAR design bases, codes, standards and quality requirements are correctly incorporated into the drawings, specifications and other controlling documents.
- b) Materials, parts, equipment and processes are reviewed and evaluated for compatibility and suitability for use in safety-related structures, systems, equipment and components.
- c) Design control measures required by 10CFR50, Appendix B, are applied to activities such as reactor physics; stress

analysis; thermal and hydraulic design and analysis; accident analysis; material selection and compatibility evaluation; evaluation of accessibility for in-service inspection, maintenance and repair; delineation of acceptance criteria for inspections and tests.

- d) Adequacy of the design will be ~~suitably~~ checked by design review; alternate analytical methods; or performance of tests.
- e) Where performance test programs are used instead of other verification or checking process, to verify adequacy of a particular design or design feature, such testing shall include qualification testing of a prototype unit under the most adverse conditions expected in actual service.
- f) Individuals or groups verifying adequacy of design are not those who performed the original design.
- g) Design changes, including emergency changes, are reviewed and approved by the same organizations that performed the original design or by organizations duly designated by PSCo having the necessary technical capabilities for the particular type of work involved.
- h) Safety review or analysis is performed and documented.

or supervised

#### B.5.3.5. Verification of Design

Design outputs are subjected to a design verification process performed by individuals other than the original designers. If appropriate, the services of qualified consultants are employed.

and other than the original designers supervised

#### B.5.3.6. Design Quality Assurance Provisions

Design documents are required by Nuclear Engineering Division procedures to include applicable quality assurance requirements including acceptance criteria. Design outputs are reviewed by the Quality Assurance Department to verify the inclusion of appropriate quality requirements.

#### B.5.3.7. Design Document Changes

The Change Notice System is employed to authorize changes to new or existing design documents and requires the same processing and approvals as required for original design documents or changes processed by PSCo.



#### B.5.3.8. Materials, Parts and Component Selections

Nuclear Engineering Division procedures require the selection of materials, parts and components required for modification applications to conform to requirements equal to, or more stringent than, the original design requirements for the intended FSV application.

#### B.5.3.9. Identification and Processing of Design Errors

Any design errors identified after release of the Change Notice package are corrected by reissuing the affected Change Notice and affected design documents. ↑

#### B.5.4. PROCUREMENT DOCUMENT CONTROL

##### B.5.4.1. Description of Procurement Activity

The FSV Administrative Procedures Manual identifies quality requirements applicable to procurement actions and provides guidance in selection and inclusion of appropriate requirements on Purchase Requisitions. Quality requirements which are appropriate, but not included in the technical documents referenced by or included in the Purchase Requisition package, are added to the Purchase Requisition by use of Standard Quality Assurance Clauses specified by the Nuclear Engineering Division.

##### B.5.4.2. Purchase Requisition Review

Safety-related Purchase Requisitions are reviewed by the Quality Assurance Department to verify the adequacy and appropriateness of specified quality requirements. The reviews are performed to assure, as applicable, that:

- a) Technical requirements are adequately defined and include acceptance and rejection criteria.
- b) The specific 10CFR50, Appendix B, requirements are identified which must be described in the supplier's QA program.
- c) The supplier's QA program is to be reviewed and approved by purchaser in advance.
- d) Procurement documents:
  - 1) Contain or reference ~~sufficient~~ identification and definition of the design basis technical requirements.
  - 2) Identify the documentation to be prepared, and the requirements for submittal for review and approval, retention, or submittal to purchaser for permanent record.

In addition to correcting a design error, corrective action for significant or recurring design errors also includes determining the cause and instituting changes in the design process or procedures to prevent similar types of errors from recurring.

- 3) Contain the purchaser's right of access to supplier's facilities and records for source inspection and audits.
- 4) Provide for spare or replacement parts of safety-related structures, systems and components to be subject to controls at least equivalent to those used for the original equipment.
- 5) Provide for any required hold, witness or source inspection points.

#### B.5.4.3. Purchase Order Review

Purchase Orders are prepared by the Purchasing Department when negotiation/coordination with the potential supplier has been completed. The final Purchase Order is reviewed and approved by the Quality Assurance Department to assure that the quality provisions, as approved on the Purchase Requisition, have not been compromised. A copy of the Purchase Order is retained for record purposes.

#### B.5.4.4. Purchase Order Changes

Any revisions to issued Purchase Orders require the same processing and approvals as the original document.

### B.5.5. INSTRUCTION, PROCEDURES AND DRAWINGS

#### B.5.5.1. FSV Procedures System

The FSV Administrative Procedures Manual establishes the requirements for procedures affecting personnel assigned to work on nuclear project activities. Requirements are included for the procedure formats, content, authorized procedure types, reviews, approvals, distribution, change controls, revisions and precedence in the event of conflict. The FSV Administrative Procedures Manual is reviewed and <sup>concurrent with</sup> ~~approved~~ by the Quality Assurance Department to verify conformance to applicable quality requirements. The procedure system conforms to the intent of Regulatory Guide 1.33 (Ref. 7) and ANSI N18.7 (see Section B.5.19.15).

*and subordinate procedures involving safety related activities are*

Figure B.5-3 shows procedures and groups of procedures, along with their overall relationships to the licensing documents. Further explanation of the operating procedures and emergency procedures is given in Section 12.3.

#### B.5.5.2. Work Control Procedures

Each Change Notice package authorizing a modification or selected non-routine maintenance to the Plant, or any part thereof, requires the development of a Controlled Work Procedure. The Controlled Work Procedure details and sequences the work operations required to clearly instruct installation personnel how to proceed. Inspection points are included and appropriate acceptance criteria are either specified or referenced. The procedures require review by the

Quality Assurance Department to verify the appropriateness of quality provisions prior to their release.

All maintenance, inspection and surveillance activities are performed to procedures authorized under controls imposed by the FSV Administrative Procedures Manual.

#### B.5.5.3. Technical Documents

Controls assuring the conformance of design documents to applicable requirements, appropriate reviews and approvals are addressed by Section B.5.3.

#### B.5.6. DOCUMENT CONTROL

The description of document controls for FSV documents subject to control is provided by Subsections B.5.2, B.5.3, B.5.4 and B.5.5.

#### B.5.7. CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

##### B.5.7.1. Supplier Selection

Procedures require the evaluation of potential suppliers of safety-related items before the purchase order is approved. The evaluations are performed by Quality Assurance Department personnel or by consultants. The evaluations serve to establish whether the supplier is capable of performing to the requirements of the pending procurement by reviewing records of recent past performance or by performing an on-site survey at the supplier's facility, or as specified in Section B.5.19.13. Such evaluations are documented and retained for record purposes. A listing is maintained of approved suppliers.

##### B.5.7.2. Supplier Control

Procurement documents identify any required hold, witness or inspection points, appropriate for the procurement, that are to be performed by the buyer. Quality Assurance personnel may perform monitoring actions or audits during the supplier's period of performance, if such action is deemed appropriate. Any such actions require the preparation and use of prescribed instructions or checklists, and documentation of the results of the action. Such actions are normally employed if verification of the conformance of important characteristics or tests cannot be accomplished after delivery of the item to the plant.

##### B.5.7.3. Receiving Inspection

FSV Administrative Procedures require the performance of a receiving inspection by the Quality Assurance Department for all safety-related items. The inspection involves the examination of the delivered item(s), and documents specified for delivery by the Purchase Order, to the extent necessary to determine that requirements of the Purchase Order have been satisfied. Pre-prepared

checklists are employed to supplement Receiving Report checks, when appropriate. Nonconforming items are documented and processed on nonconformance reports. Physical and Chemical Properties Reports and other technical documents are reviewed by qualified personnel to verify conformance to specified requirements.

#### B.5.8. IDENTIFICATION OF MATERIALS, PARTS AND COMPONENTS

##### B.5.8.1. Existing Items

All installed materials, parts and components were identified by the responsible contractors and accepted prior to initiation of plant operations.

##### B.5.8.2. Modification and Replacement Items

All items procured as spares or for modification use are identified on receipt by tagging or other appropriate method by which traceability to the purchase order is maintained. Change Notice packages specify the identification designations for any assemblies created by the modification. A copy of the identification tag or Direct Charge Requisition identifying the item is included in the maintenance or modification work records package.

#### B.5.9. CONTROL OF SPECIAL PROCESSES

##### B.5.9.1. Procedures

Procedures require that special processes be performed in accordance with qualified procedures by qualified personnel using qualified equipment. Procedures developed to satisfy needs identified to date for maintenance and modification activities are contained in the Quality Assurance Inspection, Welding and Maintenance Manuals. The procedures apply to welding, post-weld heat treat, cleaning, weld filler material control and nondestructive examinations. When required, procedures and equipment are qualified to requirements specified by applicable codes, standards and specifications. Nondestructive examination personnel are qualified to the requirements of SNT-TC-1A, American Society for Nondestructive Testing Recommended Practices (Ref. 8).

##### B.5.9.2. Records

A master file of qualified welder documents is maintained by the Quality Assurance Department. Nondestructive examination qualifications records are maintained by the Quality Assurance Department.

#### B.5.10. INSPECTION

##### B.5.10.1. Maintenance Inspections

Inspections to verify the conformance of work performed by the Maintenance Department to applicable requirements is performed by Maintenance Quality Control personnel who report to the Supervisor of

*(including mechanical, electrical and Results)*



Maintenance Quality Control. The group is assured the necessary independence and freedom to perform their assigned tasks. All safety-related inspections are performed to approved written procedures. Inspection personnel are qualified to the requirements of applicable regulatory requirements.

#### B.5.10.2. Inspections Other Than Maintenance

Procedures require that all inspections, other than maintenance type inspections, are performed by the Quality Assurance Department. All personnel are qualified as required by applicable regulatory requirements. Inspections are performed to written requirements, reviewed and approved by qualified personnel. The documents include standardized forms, procurement document instructions, receiving report checklists, pre-prepared checklists contained in the Quality Control Inspection Manual, or checklists included in work control or operations procedures. The checklists are required to provide for, as appropriate:

- a) Identification of the characteristics to be inspected,
- b) Identification of personnel responsible for performing the inspection,
- c) Acceptance-rejection criteria,
- d) Description of the method of inspection,
- e) Evidence of completion and verification of the inspection or test operation,
- f) Signature or stamp of the inspector or data recorder, and the results of the inspection operation,
- g) Reference to use of applicable drawings or specifications, when required to perform the inspection.

#### B.5.11. TEST CONTROL

##### B.5.11.1. Test Activities

Testing activities are conducted on a continuing basis ~~as~~ required to satisfy Technical Specification requirements and, as appropriate, following modifications when specified by the Change Notice package, or following certain maintenance activities.

B.5.11.2. Test Procedures

All testing is performed in accordance with approved procedures. The procedures are required to incorporate or reference:

- a) The requirements and acceptance limits contained in the applicable design or procurement documents,
- b) Instructions for performing the test,
- c) Test prerequisites such as:
  - 1) Instrumentation calibration requirements
  - 2) Equipment requirements
  - 3) Personnel qualification, certification or License requirements
  - 4) Completeness of item to be tested
  - 5) Requirements pertaining to environmental or other conditions
  - 6) Data documentation requirements
- d) Inspections or inspection hold points,
- e) Acceptance or rejections criteria,
- f) Method for documenting or recording test data and results,
- g) Provisions for indication by a qualified individual as to acceptability of the evaluated results.

B.5.12. CONTROL OF MEASURING AND TEST EQUIPMENT

B.5.12.1. Identification of Items Requiring Calibration

Items requiring calibration are specified by the Technical Specification or by the FSV Administrative Procedures Manual. Each instrument, tool, measuring device, and associated standard used with safety-related items is uniquely identified and placed on a scheduled program of inspection, test and recalibration.

B.5.12.2. Calibration Procedures

Calibration and/or maintenance is performed to procedures provided by the item manufacturer; or when not available or applicable, to procedures developed and approved by the department responsible for the specific calibrations. Calibration procedures are required to provide the calibration technique to be employed, specific standards required, labeling or tagging requirements, provisions for recording calibration data and identification of the individual verifying the acceptability of the calibration results.

B.5.12.3. Traceability of Standards

Procedures authorize the use of secondary and transfer standards traceable to the National Bureau of Standards; and, where not



available, the use of standards not traceable to the National Bureau of Standards if the basis of calibration is otherwise acceptably documented by qualified individuals.

#### B.5.12.4. Calibration Accuracy

Calibration data cards for safety-related instruments identify the accuracy requirements and the specific equipment or standard used for its calibration. Monitoring of calibration records verifies that instruments used for calibrations display sufficiently greater accuracy than the instruments being calibrated to assure compliance with accuracy requirements. Where instruments are found to be out of calibration by more than the allowable tolerances, an investigation is required to determine the effect, if any, on the validity of previously made measurements or test data.

#### B.5.13. HANDLING STORAGE AND SHIPPING

The FSV Administrative Procedures Manual includes requirements for the necessary controls during procurement, receiving, handling, storing maintenance and issuance of safety-related spares, replacements, modification materials and items to prevent their deterioration. Quality Assurance monitoring actions serve to verify compliance with the procedures.

#### B.5.14. INSPECTION, TEST AND OPERATING STATUS

##### B.5.14.1. Status Identification Systems

The FSV Administrative Procedures Manual establishes administratively, and operations and maintenance procedures establish specifically, the requirements for tagging, logging and displaying the status of plant equipment and systems. The system of status tagging serves to prevent operation or unauthorized adjustments which could endanger the safety of personnel or invalidate the results of tests already performed.

##### B.5.14.2. Status Identification of Materials, Parts, Components and Equipment

Controls for identification of parts, components and equipment are prescribed in the detailed procedures for those activities described by Subsections B.5.8, B.5.9, B.5.10, B.5.12 and B.5.15.

##### B.5.14.3. Procedure Requirements for Operational Items

The FSV Administrative Procedures Manual requires that the affected equipment or item(s) withdrawn from operational status be tagged; and also that the associated power supplies, starters, switches and controls on the main control panel(s) be tagged to warn against operation. If appropriate, the power supplies are disconnected and so identified, to prevent inadvertent operation. The tagging is controlled by the Shift Supervisor by requiring that the serially numbered Clearance Cards, obtained only from the Control Room, be used for all tagging purposes. Records maintained in the

Control Room enable the Reactor Operators and Shift Supervisor to determine, at any time, what equipment is currently on Clearance Cards.

Persons requiring clearances to perform work are required to sign the clearance before starting work. On completion of the work, the Shift Supervisor signs the clearance to acknowledge the work completion and removal of the status tags. Transfers of responsibilities for clearances from one individual to another are documented by written sign-offs. Work conformance to applicable requirements is verified by Maintenance Quality Control or by the Quality Assurance Department.

| In compliance with NUREG-0737 (See Ref. 18), the operating  
| condition/position of critical equipment is independently verified  
| upon return to service following clearance conditions. Although  
| critical equipment includes all safe shutdown equipment (Table 1.4-  
| 2), or equipment involved in the flow path for establishing emergency  
| core cooling, independent verification is not necessary for most of  
| this equipment since most of it is verified to be in the proper  
| position by virtue of normal plant operation. However, a list of  
| critical equipment items which do not fall into this category is  
| available in the control room and use of this list is prescribed in  
| the clearance procedures. These procedures require independent  
| verification by qualified persons before returning the listed  
| equipment to service following clearance conditions.

#### B.5.15. NONCONFORMING MATERIALS, PARTS OR COMPONENTS

##### B.5.15.1. Documenting Nonconforming Items

The FSV Administrative Procedures Manual requires that nonconformances affecting safety-related hardware items be documented on Nonconformance Reports. Nonconforming items are tagged and, if practical, the items are placed in a segregated area pending processing and dispositioning of the report.

##### B.5.15.2. Processing of Nonconforming Items

Nonconforming Material processing assures that "use-as-is" or "repair" dispositions, whether proposed by Maintenance or Engineering, are properly evaluated and approved by Quality Assurance and qualified engineering disciplines, and that the approvals are documented. The practice also assures the accomplishment of any required inspections to verify conformance of repairs to the prescribed dispositions.

#### B.5.16. CORRECTIVE ACTION

##### B.5.16.1. FSV Corrective Action Systems

The FSV Administrative Procedures Manual requires that conditions adverse to quality, or causes for recurrent nonconformances are identified, and corrected in a timely manner. Corrective action requests are documented and processed on Action Request (AR) Forms.

Recipients of ARs responsible for action are required to respond to corrective action requests within specified times. The Quality Assurance Department maintains a follow-up system to assure that corrective actions involving quality considerations are effective and successfully resolved within ~~reasonable~~ <sup>specified</sup> times. Unresolved items are referred to successively higher levels of management until resolved.

#### B.5.16.2. Quality Trends Analysis and Reporting

The Quality Assurance Department is responsible for accumulation of data and for the use of ~~appropriate~~ analytical techniques to identify and report FSV quality trends to Plant management. Data employed includes nonconformance reports (NCRs), Action Requests (ARs), monitoring and audit reports, and NRC I&E reports. The reports to management serve to indicate where trends are improving, indicating successful corrective actions, and where trends indicate deterioration and the need for additional or more effective efforts.

#### B.5.16.3. Reporting

Any person identifying what may be an apparent violation of NRC regulations or significant potential safety hazard may document the condition and promptly submit a report to the appropriate Department. Such reports may take the form of Plant Trouble Reports, Action Requests, or other nonconformance reports. The reports are promptly evaluated and appropriate action is initiated. A report may be made to the NRC if the condition is deemed reportable in accordance with the Regulations. In any case, the necessary corrective action is documented and followed up until completed.

### B.5.17. RECORDS

#### B.5.17.1. FSV Operational Records System

The FSV Administrative Procedures Manual requires that record requirements be established when procurement documents, work control, test and inspection procedures are developed and approved. QA reviews the documents to verify the adequacy and appropriateness of record provisions.

#### B.5.17.2. Records Content

Except in the case of record documents such as recorder charts, computer printouts, radiographs and similar documents, records generated and retained to provide objective evidence of conformance to specified requirements are required to contain the following information when applicable:

- a) A description of the type of observation.
- b) Evidence of completing and verifying an inspection, or test operation.
- c) The date and results of the inspection or test.

- d) Information related to conditions adverse to quality.
- e) Inspector or data recorder identification.
- f) Evidence as to the acceptability of the results.

#### B.5.17.3. Records Accumulation, Identification and Retention

Organizations generating records are responsible for verifying records completeness and accuracy, and for accumulation, organization, identification and transmittal to the Records Center in accordance with requirements specified by the FSV Administrative Procedures Manual. Received records are acknowledged, logged, indexed and the documents filed. Records Center controls assure records security from loss or deterioration and assure retrievability of retained documents for their prescribed retention periods.

### B.5.18. AUDITS AND MONITORING ACTIVITIES

#### B.5.18.1. FSV Audit and Monitoring System

The FSV Administrative Procedures Manual requires the implementation of a comprehensive system of audits of all activities, procedures and instructions affecting quality of the Plant and its performance, including key suppliers and contractors, at least once each two years. The system of formal audits is supplemented by monitoring actions conducted on a continuing basis to verify conformance of on-going work activities to applicable requirements. The monitoring system provides greater flexibility and earlier identification of situations which may be adverse to quality. Monitoring results are evaluated and considered when developing audit plans and checklists.

#### B.5.18.2. Audits

Audits are performed by the Quality Assurance Department using pre-established procedures and checklists and are conducted by trained lead auditors with no direct responsibility for the areas audited. Audits are also performed by the Nuclear Facility Safety Committee in accordance with Technical Specification requirements (also see Section 12.5.3.3).

Auditors and Lead Auditors are selected and qualified in accordance with ANSI N45.2.23-1978 (Refs. 12, 13 and 17).

#### B.5.18.3. Audit Results

Audits are formally documented and distributed to affected management, including the Vice President, Electric Production. Audit findings are documented and reviewed with managers responsible for initiation of corrective action. Processing and follow through on any required corrective actions is accomplished through the corrective action system described by Subsection B.5.16. Follow-up audits are performed as deemed appropriate for evaluation of completed QA audits and QA monitoring results.



#### B.5.18.4. Monitoring Activities

Quality Assurance personnel monitor compliance with the requirements of the documents which control plant operation, such as the NRC licenses, FSAR, Technical Specifications, Administrative Procedures Manual, Operating Procedures, and other controlling documents. The monitoring functions are defined in the Quality Assurance Monitoring Manual which describes the pre-planned instructions and checklists used in QA monitoring procedures.

Conditions adverse to quality identified by monitoring actions are processed by the corrective action system as described by Subsection B.5.16. Formal audit type summary reports are not issued for each monitoring action performed.

#### B.5.19. IMPLEMENTATION, WASH-1283, -1284 and -1309

Except as modified in the sections which follow, the PSCo QA Program for Plant Operations utilizes the guidance provided by NRC publications WASH-1283 (5-24-74), WASH-1284 (10-26-73) and WASH-1309 (5-10-74) ("rainbow" series) to the extent that these documents provide practical guidelines for safety-related activities occurring during the operational phase of plant life (Refs. 9, 10 and 11).

The existing Operational QA Program does not address all of the detailed requirements set forth by the "rainbow books", considering the fact that information normally developed in the design and construction phase for present-day plants was not readily available for Fort St. Vrain Unit No. 1.

With respect to the applicability of the "rainbow books" and the associated standards, it is impracticable to apply all of the requirements set forth by these documents to a plant for which important, and (in some respects) irreversible commitments were made several years before the current requirements were formulated. In this respect, the following sections summarize the scope and applicability of the various standards as well as specific exceptions that will be taken in the application of the guidance of these documents to the Operational QA Program at Fort St. Vrain (see Table B.5-4).

##### B.5.19.1. ANSI N45.2-1971 Quality Assurance Program Requirements for Nuclear Power Plants

###### (a) Scope and Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.28 shall be applied in the Operational QA Program to those activities affecting the safety-related aspects of operation of Fort St. Vrain Unit No. 1.

Where codes or standards are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments as set forth in the applicable codes and standards may be invoked specifically by the design requirements where deemed



appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

(b) Specific Exceptions

Quality Assurance Program (Section 2)

The Quality Assurance Program describes the extent to which ANSI and other recognized standards will be recognized and applied to Fort St. Vrain Unit No. 1.

Inspection (Section 11)

First Level inspection of routine preventive maintenance activities has been assigned to plant personnel in Maintenance Quality Control. Inspections for work other than routine maintenance are performed by QA Department personnel. In any case, the program requires that inspection activities to verify quality of work shall be performed by persons other than those who performed the activity being inspected.

Handling, Storage and Shipping (Section 14)

For the most part, all items purchased for use during the operation of Fort St. Vrain Unit No. 1 will be stored indoors under normal (heated) warehouse conditions. For these items in general, no specific storage requirements are necessary. Those items which require special consideration are handled on an individual basis and requirements are established as a part of the procurement document requirements.

B.5.19.2. ANSI N45.2.1-1973 Cleaning of Fluid Systems and Associated Components During the Construction Phase of Nuclear Power Plants

(a) Scope and General Applicability

Insofar as the requirements of N45.2.1 are directed primarily at contractor activity during construction, this standard cannot be applied directly to operational requirements.

The guidance provided by this standard and the associated Regulatory Guide 1.37 shall be applied to safety-related maintenance, repair, and modification activities occurring during the operational phase of Fort St. Vrain Unit No. 1 to the extent that such activities are comparable in nature and degree to similar activities occurring during the design and construction phase.

Where the scope of safety-related plant modification, maintenance or repair work is such as to make the guidelines contained in this standard practicable, the work shall be performed with consideration to the guidance provided.

Where codes, standards and specific design requirements are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments as set forth in the FSAR, the FSAR commitments shall govern. Later revisions of applicable codes and standards may be invoked specifically by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

(b) Specific Exceptions

General Requirements (Section 2)

unless specified

Cleaning requirements for almost all maintenance, repair and modification work will be included as a part of the overall job requirements. In this respect, detailed cleaning procedures ~~generally~~ will not be prepared as separate documents. Necessary requirements, consistent with the scope of the work, will be included as a part of the overall work instructions.

Criteria for Cleaning (Section 3)

For cleanliness classifications where the scope of plant modification work is such as to make application of the guidance provided by Section 3 of this standard practicable, the cleanliness classifications and requirements thereof shall be evaluated and applied, as appropriate, as a part of the overall work requirements. For most modification or maintenance work, however, involving only small portions or individual components of larger systems, it is not considered practicable to conduct ASTM E11-70 cleanliness tests. Appropriate cleanliness will be maintained during the work and appropriate preoperational flushing will be conducted, consistent with the scope of the work performed and the original design requirements.

It should be noted that the cleanliness requirements and tests for cleanliness as specified by Classes A, B, C and D are not applicable directly to gas cooled reactors and primary coolant systems especially with reference to helium systems. In this respect, cleanliness requirements necessarily must be dictated by specific design requirements rather than the general criteria set forth by N45.2.1, Section 3. General cleanliness requirements will be defined by system and included in appropriate procedures by reference.

Maintenance of Installation Cleanliness (Section 6)

Access control requirements are established in accordance with N45.2.3. Access control into radiation areas is controlled by radiation work permits. Cleanroom requirements and associated access control are established as dictated by specific job requirements.

#### Pre-Operational Cleaning (Section 7)

For work which requires specific cleanliness levels, acceptance criteria for flushing shall be established as a part of the overall work requirements. ~~In general,~~ Most modifications and maintenance work will involve only small portions of various systems and will be done under controlled conditions. As such, requirements for extensive cleaning and flushing will not be required.

#### Records (Section 9)

For normal repair, maintenance and modification work, cleaning requirements will be performed as a normal part of the overall work. Applicable records will be retained with the overall work records. Typically, such records as personnel qualification, calibration records, etc., are kept in ~~general~~ files and will not be included as a part of specific job work records.

#### B.5.19.3. ANSI N45.2.2-1972 Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants (During the Construction Phase)

##### (a) Scope and Applicability

The guidance provided by this standard shall be applied to those packaging, shipping, receiving, storage and handling activities associated with safety-related items, to the extent that such activities are comparable in nature and degree to similar activities occurring during the construction phase.

Where codes, standards and specific design requirements are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments as set forth in the FSAR, the FSAR commitments shall govern. Later revisions of applicable codes and standards may be invoked specifically by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

##### (b) Specific Exceptions

The Operational QA Program is not structured to meet the general requirements set forth by this standard. The program is structured to identify safety-related equipment and to associate that equipment with the various levels set forth by this standard. This classification, however, cannot be applied directly to individual spare parts or subassemblies of the parent equipment. Due to difference in volume, complexity, inspectability, etc., the packaging, shipping, handling and storage requirements of spare parts and subassemblies will necessarily be different from the requirements which may be imposed on the entire component or piece of parent equipment.

The majority of items purchased for an operating plant consist of components, subassemblies and individual spare parts which could be used in a multitude of different applications. Such items are purchased to the highest requirement of intended use, but it is not considered practicable to pre-classify or categorize individual parts by levels as required by Section 2.7 of this standard. The volume and characteristics of purchases during the operational phase differ significantly from those purchases made during the design and construction phase, and storage facilities are considerably different. Almost all parts and components purchased in the operational phase will be stored indoors under normal warehouse conditions. Items that require special storage protection measures will be identified as a part of the purchasing document review requirements. Items that must be stored outdoors (equivalent of Level D) or items that must be stored in covered but unheated conditions (equivalent of Level C) will be evaluated on an individual case basis. Shipping and packaging requirements for such items likewise will be handled in the purchase order documents, as appropriate.

B.5.19.4. ANSI N45.2.3-1973 Housekeeping During the Construction Phase of Nuclear Power Plants

(a) Scope and General Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.39 for control of housekeeping requirements shall be applied to work conditions and other applicable activities which could affect quality of important operational aspects of Fort St. Vrain Unit No. 1, to the extent that such activities are comparable in nature and degree to similar activities occurring during the design and construction phase.

Where codes, standards and specific design requirements are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments as set forth in the FSAR, the FSAR commitments shall govern. Later revisions of applicable codes and standards may be invoked specifically by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

(b) Specific Exceptions

General Requirements (Section 2)

The specified zone requirements contained in Section 2.1 generally will be adhered to, with the exception that the reactor building generally will be controlled per Zone III requirements except for material accountability. There will be no specific material accountability for reactor building access unless specifically required by Health Physics.



### Requirements (Section 3)

Fire protection and prevention equipment will be provided as set forth in the FSAR and as supplemented by requirements set forth by response to NRC Branch Technical Position 9.5-1 (Refs. 14 and 15). General housekeeping requirements are set forth by various zone designations. Specific requirements will be included as a part of the overall work instructions, as appropriate.

#### B.5.19.5 ANSI N45.2.4-1972 Installation, Inspection and Testing Requirements for Instrumentation and Electric Equipment During the Construction Phase of Nuclear Power Generating Stations

##### (a) Scope and Applicability

This standard was written for construction efforts of nuclear plants and, as such, the requirements set forth and the feasibility, both from an economical viewpoint and a practical viewpoint, are based on initial construction. As such, implementation of all the requirements of this standard for operating plants, considering the scale of plant modification versus initial construction, is not practicable.

The guidance provided by this standard and the associated Regulatory Guide 1.30 shall be applied to installation, inspection and testing of electrical equipment and systems associated with on-site safety-related modification work occurring during the operational phase of Fort St. Vrain Unit No. 1, to the extent that such work is comparable in nature and degree to similar work occurring during the design and construction phase.

Where codes or standards are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments as set forth in the FSAR, the codes and standards may be invoked specifically by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

Where specific design requirements included in this standard or referenced codes and standards are in conflict with original design requirements set forth in the FSAR and other appropriate design documents, the original design requirements shall govern.

##### (b) Specific Exceptions

#### Definitions (Section 1.4)

The definition of Class I and Class IE electrical equipment set forth by this standard does not conform to the equipment categories of Fort St. Vrain Unit No. 1. Essential electrical items and Class I equipment lists upon which the Operational QA Program is based are described in



the FSAR, and the scope and applicability of this standard necessarily shall be limited to these defined areas.

#### Procedures and Instructions (Section 2.3)

Appropriate requirements for installation, inspection and tests will be set forth by job specifications and work instructions developed as a part of the modification work package. It is not intended that separate procedures be established which specifically address the various areas of this standard. However, in the development of the work package, consideration will be given to the areas outlined in Section 2.3, as appropriate.

#### Physical and Chemical Tests (Section 5.2.3)

Application of the guidance provided by the additional codes and standards listed in Appendix B will be considered to the extent that such codes and standards provide useful and practicable guidance for the work being performed. Commitment to the guidance of N45.2.4 shall not include commitment to the guidance of referenced standards.

#### Installation, Verification and Test (Sections 4.0, 5.0 and 6.0)

The requirements for installation and the associated inspections, verifications and tests are included in the work instructions as appropriate, consistent with the scope of the work and the importance to quality. In the development of the work instructions, consideration will be given to the guidance provided by Sections 4.0, 5.0 and 6.0 of this standard, and appropriate requirements will be incorporated into the instructions. It is not intended that separate procedures be established which specifically address all of the areas referenced.

#### Applicable Codes, Standards and Guides (Section 9.0)

See Regulatory Guide 1.30 (Safety Guide 30).

#### B.5.19.6. ANSI N45.2.5-1974 Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants

##### (a) Scope and Applicability

This standard was written for construction efforts of nuclear plants and, as such, the requirements set forth and the feasibility, both from an economical viewpoint and a practical viewpoint, are based on the construction situation. As such, implementation of all the requirements of this standard for operating plants, considering the scale of plant modification versus initial construction, is not practicable.

The guidance provided by this standard and the associated Regulatory Guide 1.94 shall be applied to activities involving safety-related concrete and structural steel work occurring during the operational phase of Fort St. Vrain Unit No. 1, to the extent that such activities are comparable in nature and degree to similar activities occurring during the design and construction phase.

Where codes and standards are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments as set forth in the applicable codes and standards may be invoked specifically by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

Where specific design requirements included in this standard or referenced codes and standards are in conflict with original design requirements set forth in the FSAR and other appropriate design documents, the original design requirements shall govern.

(b) Specific Exceptions

Procedures and Instructions (Section 2.2)

Appropriate requirements for installation, inspection and tests will be set forth by job specifications and work instructions developed as a part of the modification work package. It is not intended that separate procedures be established which address specifically the various areas of this standard. However, in the development of the work package, consideration will be given to the areas outlined in Section 2.2, as appropriate.

Calibration and Control (Section 2.5.2)

The requirements of control and calibration of measuring and test equipment set forth by this standard shall be applied to all measuring and test equipment used by PSCo or their agents, test laboratories and contractors. Such requirements, however, will not be imposed on commercial batch plant facilities. Instrumentation at commercial batch plant facilities will be evaluated to determine that sufficient accuracy can be obtained.

Qualification Tests (Section 3.2.1)

For small quantities of concrete involved in modification work, all concrete must be purchased from commercial concrete batch plants. For small quantities of concrete, it is unreasonable to expect commercial facilities to shut down normal operations to provide certified aggregate, cement, admixtures, fly ash, water, etc. In this respect, the qualification tests required by Table A for aggregate, cement, admixtures, fly ash and pozzolans, water and ice will not be required. Appropriate evaluations will be made

to determine that good quality and generally acceptable materials are used. This evaluation, coupled with slump tests, air entrainment tests and concrete cylinder strengths, will provide adequate control and qualification of the concrete.

Design mixes consistent with, or equivalent to, original requirements will be specified and the results of the cylinder tests will be evaluated based on the acceptance criteria associated with the original design mix requirements.

|  
|  
|  
|  
|  
ASTM A-36 steel will not require certifications except for that which is used in the building's main structural steel. Main structural steel is that steel which is required in order for the building to maintain its integrity during design conditions.

#### Protection of Materials (Section 4.2)

*unless specified,*

The inspection requirements of Section 4.2 ~~generally~~ will not be performed, as the small quantities of concrete involved in modification work no doubt will be mixed using materials already in the batch plant bins. Control of storage of materials would not be practicable.

#### Measuring, Mixing and Transporting (Section 4.3)

If available, appropriate certifications shall be obtained from the concrete supplier which verify the adequacy of truck mixers per the requirements of ACI-304 and ASTM C-94. Where certifications are not available, two concrete test cylinders representing the first and last one-third of truck mixer contents shall be taken for evaluation of the mixer truck, over and above the normal concrete cylinders taken to evaluate the in-place concrete. The concrete batch plant facility shall be inspected to assure that ~~reasonable~~ *appropriate* controls are being exercised with reference to the inspection guidelines set forth by Section 4.3(1) and (2).

#### Preplacement Preparation (Section 4.4)

Inspection of soils and earthwork will meet the general requirements set forth, with the qualification that the extent to which individual inspection requirements are met will depend upon the nature and scope of the work to be performed.

#### In-Process Tests on Concrete and Reinforcing Steel (Section 4.8)

Except for normal batch qualification tests (slump, air content, temperature and compressive strength) and initial reinforcing steel certifications, the in-process tests required by Table B are generally applicable to the periodic

control which must be exercised with reference to long-term construction type programs. The in-process test requirements of Table B are not considered applicable to short-term modification work as would be required under our Operational QA Program.

B.5.19.7. ANSI N45.2.6-1973 Qualification of Inspection, Examination and Testing Personnel for the Construction Phase of Nuclear Power Plants

(a) Scope and Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.58 shall be applied to inspection, examination and testing activities associated with safety-related modification work accomplished during the operational phase of Fort St. Vrain Unit No. 1, to the extent that such activities are comparable in nature and degree to similar activities that occurred during the design and construction phase. For maintenance and repair activities, it is intended that the on-site operating organization be qualified in accordance with the provisions of ANSI N18.1-1971. Personnel performing inspection, examinations and testing activities during the operational phase would be qualified to ANSI N18.1-1971 or ANSI N45.2.6-1973 and QA experience for levels I, II and III should be interpreted to mean equivalent experience in construction, manufacturing, operation or installation activities.

Where codes, standards and specific design requirements are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments as set forth in the FSAR, the FSAR commitments shall govern. Later revisions of applicable codes and standards may be invoked specifically by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

(b) Specific Exceptions

This standard was written primarily for construction activities, and in this respect cannot be applied directly to operational activities in its entirety.

Qualifications (Section 3)

The following levels of capability for persons performing inspection or testing work are consistent with the requirements of the standard but have been revised slightly to reflect operational conditions.



### Level I

To be considered for certification, a candidate must satisfy the following requirements:

High school graduate or equivalent, plus:

- (1) One (1) year of experience in quality assurance or engineering, design, operations, maintenance, inspection or testing of manufacturing, construction, operations and installation activities; OR
- (2) Demonstration of proficiency in the inspection discipline based on past performance, testing or job-related technical capabilities; AND
- (3) In addition to (a) or (b), successful completion of the basic Quality Assurance Indoctrination Program or equivalent specific training.

### Level II

To be considered for certification, a candidate must satisfy one of the following requirements:

- (1) Graduate of a four-year accredited engineering or science college or university, plus:
  - (a) Two (2) years experience in quality assurance or engineering, design, operations, maintenance, inspection or testing of power plants, or equivalent manufacturing, construction, operations or installation activities; OR
  - (b) One (1) year experience and demonstration of proficiency by past performance, testing or job-related technical capabilities.
- (2) High school graduate, or equivalent, plus:
  - (a) Four (4) years of experience in quality assurance or engineering, design, operations, maintenance, inspection or testing of power plant or equivalent manufacturing, construction, installation or operational activities; AND
  - (b) Successful completion of the basic Quality Assurance Indoctrination Program or equivalent specific training.



Level III

To be considered for certification, a candidate must satisfy one of the following requirements:

- (1) Graduate of a four-year accredited engineering or science college or university, plus five (5) years experience in quality assurance or engineering, design, operations, maintenance, inspection, testing or supervision thereof of power plants, or equivalent manufacturing, design, construction, operation or installation activities. At least two (2) years of this experience should be associated with nuclear facilities; or, if not, the individual shall have training sufficient to acquaint him thoroughly with the safety aspects and general quality assurance requirements of a nuclear facility; OR
- (2) High school graduate, or equivalent, plus ten (10) years experience in general quality assurance or engineering, design, operations, maintenance, inspection, testing or supervision thereof of power plant, or equivalent manufacturing, design, construction, operation or installation activities. At least two (2) years of this experience should be associated with nuclear facilities; or, if not, the individual shall have training sufficient to acquaint him thoroughly with the safety aspects and general quality assurance requirements of a nuclear facility.

Specific Required Capabilities for Inspection, Examination and Testing Personnel (Section 3.2)

Each person certified to perform under the Levels designated herein shall meet the following physical requirements:

- (1) Natural or corrected near-distance visual acuity such that the applicant is capable of reading J-1 letters on standard Jaeger's test type chart for near-vision or equivalent test type;
- (2) Color vision; and
- (3) Other medical requirements for the physical demands of performing the required activities (such as heart and circulatory conditions).

Items (1), (2) and (3) will be met at the time of initial certification. Items (1) and (2) will be verified at least annually consistent with the recertification requirements. The initial physical examination (Item (3)) will not be reverified unless there is an apparent need.

Quality Assurance and Quality Control Department personnel involved in non-destructive examination functions will be

qualified to the requirements of SNT-TC 1A as appropriate. For work where the QA/QC Department does not have properly qualified NDE personnel, personnel with proper qualifications will be obtained from outside sources.

B.5.19.8. ANSI N45.2.8 - Draft 3, Rev. 3, Apr. 1974 Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants

(a) Scope and Applicability

This standard was written for construction efforts of nuclear plants and, as such, the requirements set forth and the feasibility, both from an economical viewpoint and a practical viewpoint, are based on the construction situation. As such, implementation of all the requirements of this standard for operating plants, considering the scale of plant modifications versus initial construction, is not practicable.

The guidance provided by this standard shall be applied to installation, inspection and testing of mechanical equipment and systems associated with on-site safety-related modification work occurring during the operational phase of Fort St. Vrain Unit No. 1, to the extent that such work is comparable in nature and degree to similar work occurring during the design and construction phase.

Where codes or standards are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments set forth in the FSAR, the FSAR commitments shall govern. Later revisions of applicable codes and standards may be invoked specifically by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

Where specific design requirements included in this standard or referenced codes and standards are in conflict with original design requirements set forth in the FSAR and other appropriate design documents, the original design requirements shall govern.

(b) Specific Exceptions

Procedures and Instructions (Section 2.2)

Appropriate requirements for installation, inspection and tests will be set forth by job specification and work instructions developed as a part of the modification work package. It is not intended that separate procedures be established which specifically address the various areas of this standard. However, in the development of the work package, consideration will be given to the areas outlined in Section 2.2, as appropriate.

Cleaning (Section 2.4)

Implementation of ANSI N45.2.1 is specified by separate documentation. (See B.5.19.2)

Receiving, Storage and Handling (Section 2.5)

Implementation of ANSI N45.2.2 is specified by separate documentation. (See B.5.19.3)

Housekeeping (Section 2.6)

Implementation of ANSI N45.2.3 is specified by separate documentation. (See B.5.19.4)

Personnel Qualification (Section 2.7)

Implementation of ANSI N45.2.6 is specified by separate documentation. (See B.5.19.7)

B.5.19.9. ANSI N45.2.9-1974 Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants

(a) Scope and Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.88 shall be applied to quality assurance records associated with operation of Fort St. Vrain Unit No. 1.

Those design, manufacturing, construction and operating records generated prior to implementation of this standard are not backfitted to the detailed requirements of this standard. All such records, however, are designated initially for lifetime storage. Until specific review dictates otherwise, they will be stored in the permanent record storage facility. Appropriate record indexes and filing systems permit reasonable identification and retrieval. The records are stored and preserved per the requirements of Section 5.0 of this standard.

(b) Specific Comments

Safekeeping (Section 5.5)

The Records Storage Building is located at the plant site within the site access control fence. During off-duty hours the facility is kept locked and is monitored by regular guard patrols under the auspices of the plant security program.

Facility (Section 5.6)

A records storage building has been constructed on-site to provide for storage of records. This facility was

constructed to provide adequate record protection to prevent destruction by fire, theft, flooding and vandalism.

B.5.19.10. ANSI N45.2.10-1973 Quality Assurance Terms and Definitions

The quality assurance terms and definitions contained in this standard shall be used as guidance and applied as appropriate to the Operational QA Program for Fort St. Vrain Unit No. 1.

There may be instances where existing procedures contain definitions that may not be in strict accordance with those provided by this standard. As existing procedures are revised, however, such definitions shall be evaluated to determine if the intent of definitions meets the intent of those provided by this standard.

B.5.19.11. ANSI N45.2.11-1974 Quality Assurance Requirements for Design of Nuclear Power Plants

The guidance provided by this standard and the associated Regulatory Guide 1.64 shall be applied to design activities involving safety-related modification work and the revision or development of plant design documents occurring during operation of Fort St. Vrain Unit No. 1.

Where codes, standards or design requirements are referenced, or are incorporated into the standard by references, which are in conflict with original design commitments as set forth in the FSAR, the FSAR commitments shall govern. Later revisions of applicable codes and standards may be invoked specifically by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

Appropriate design controls have been implemented to control modification work and associated design activities to assure that all modification work meets, or exceeds, original design requirements.

B.5.19.12. ANSI N45.2.12-1974 Requirements for Auditing of Quality Assurance Programs for Nuclear Plants

(a) Scope and Applicability

Except as expressly modified below, the guidance provided by this standard shall be applied to the audit program identified by the Operational QA Program for Fort St. Vrain Unit No. 1.

(b) Specific Exceptions

Audit Schedule (Section 3.4.2)

Due to the large scope of our QA Program and the audit areas defined, it is not practicable to audit the entire program on an annual basis. Our scheduling provides for applicable elements of the QA Program to be audited at least once every



two (2) years. QA monitoring activities serve to identify problem areas, and results of QA monitoring may be used to increase audit frequency or change audit schedules.

#### Audit Process (Section 4.3.2)

For Third Level audits conducted by direction, and under the auspices of the Quality Assurance Department, the pre-audit conference is held with the Superintendent of Quality Assurance Operations. It is the responsibility of the Superintendent of Quality Assurance Operations to review the audit scope and audit plan. He also provides for the necessary liaison between the auditor and the organization being audited.

#### Post-Audit Conference and Follow-up (Sections 4.3.3 and 4.5.1)

At the conclusion of the audit, a meeting is held with appropriate personnel of the audited organization to discuss audit findings. This meeting provides for presentation of audit findings and for discussion of these findings by the audited organization.

Within thirty (30) days after this post audit conference, an audit report is issued to the Quality Assurance Manager for approval and forwarding to the audited organization and to the Vice President, Electric Production.

B.5.19.13. ANSI N45.2.13 - Draft 3 Rev. 3 June 1975 Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants

#### (a) Scope and Applicability

To the extent that the information set forth by this standard provides useful and practical guidelines for purchasing activities associated with nuclear safety-related equipment, components, parts, materials and services, the guidance provided will be applied to such activities associated with the Fort St. Vrain Unit No. 1 Operational QA Program.

It must be recognized, however, that equipment and components purchased during the design and construction phase were not purchased on the basis of present-day standards, especially with reference to Seller qualification and Seller quality assurance programs. In this respect, replacement parts and spare parts for existing equipment often are limited to sole-source suppliers, some of whom may not meet present-day qualification standards. Such replacement parts or spare parts are purchased to appropriate quality standards to maintain an equal to, or better than, condition but it is not considered practicable to backfit the requirements of the standards to all such sellers.



(b) Specific Exceptions

Selection Measures (Section 4.2)

In addition to the methods outlined by subparagraphs 4.2.a., 4.2.b. and 4.2.c., consideration must be given to products in which quality can be verified by receiving inspection, test or other means. Evaluation of procurement sources for such items may be made on the basis of subparagraph 4.2.a., but on a much less restrictive basis.

Sole-source replacement part or spare part suppliers may have to be evaluated based on product performance and maintenance of an equal to, or better than, condition.

Conformance to Procurement Documents (Section 5.2)

Measures shall be established to assure the successful bid conforms to procurement document requirements. There will be no requirement, however, to document the bid evaluations.

Preaward Evaluation (Section 5.3)

The requirement and extent to which preaward evaluations are performed will be subject to the conditions of Section 6.2.

Certificate of Conformance (Section 10.2)

The minimum criteria set forth are much too restrictive for general application of certification of conformance involving off-the-shelf items and many applications involving the purchase of simple spare parts. The requirements set forth by this section will be considered in purchasing activities to the extent that the guidance provided is useful and can be applied practicably to our purchasing activities.

B.5.19.14. ANSI N18.1-1971 Selection and Training of Nuclear Power Plant Personnel

The Fort St. Vrain Technical Specifications require that American National Standards Institute N18.1-1971, "Selection and Training of Personnel for Nuclear Power Plants", shall be used as a guide for selecting and training replacement plant personnel and for retraining requirements for those persons on the staff.

B.5.19.15. ANSI N18.7-1972 Administrative Controls for Nuclear Power Plants

The Operational QA Program for Fort St. Vrain Unit No. 1 is intended to be responsive to the guidance provided by this standard.

Where codes or standards are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments as set forth in the FSAR, the FSAR commitments shall

FSAR UPDATE  
Revision 1  
B.5-42

govern. Later revisions of applicable codes and standards may be invoked specifically by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition. Specific requirements of the Fort St. Vrain Technical Specifications differ in some respects from the requirements of this standard. Where differences do occur, the Technical Specifications shall govern.