50-237 CEC DRESDEN 2

SUPPORTING DOCUMENTATION TO A FEBRUARY 23, 1994, MEETING BETWEEN CEC AND NRC RE QUALITY ASSURANCE.

REC'D W/MEMO DTD 03/02/94....9403170038

**Basis for Realignment**

Commonwealth Edison Company is constantly examining its organizational structure to capture those opportunities where work groups and individuals have the greatest amount of autonomy, authority, and flexibility to achieve high levels of quality and nuclear safety. To that end the Nuclear Operating Division instituted a two step realignment process to restructure the Nuclear Oversight Department with the expressed purposes of improving quality and the margin of safety.

Step one of the process took place in November of 1993 when the Company established the position of the Site Quality Verification Director. The Site QV Director is responsible for managing one of six Site Quality Verification Departments and is accountable for the performance of the quality verification program at their respective location. The SQV Directors integrate all aspects of the oversight function including; safety engineering, quality assurance, and performance analysis. The position is on a par with senior station management and the Director's office is located in near proximity to the plant and operating managers' offices. The SQV Directors assure the most efficient utilization of evaluative resources to provide a strategic overview of site activities. They have a strong tie to Corporate oversight and follow the policies and directives of senior Nuclear Oversight management. By being on site, they have the opportunity to model and encourage behavior that emphasizes quality. The six people chosen to fill the SQV Director positions were selected based upon a history of demonstrated performance, credibility, and influence.

Concurrent with the Company establishing the Site QV Director position, additional experienced personnel were assigned to augment the site groups. Their expertise enhances the value of the oversight function by assisting in the integration of the quality, safety, and monitoring processes. They apply their collective knowledge by participating in a program of aggressive oversight and plant presence.

The second, logical step of the realignment will occur as the Company changes the reporting relationship of the SQV Director and staff from the Nuclear Oversight Manager to the Site Vice President. This step establishes single point accountability with the Site Vice President (i.e. all major functions are under his management) and clearly strengthens SQV's role in implementing independent, self-assessment (not just audit) throughout the Nuclear Division. As part of the station organization, SQV and the station become team members in the discovery of problems and in the recommendation of actions for improvement.

The CECo. Quality Model emphasizes how the first two filters of quality (worker and supervisor self-assessment) are the most important in detecting and correcting problems. This realignment positively influences the self-assessment process by placing the third filter (critical self-assessment) directly within the site organization.

Even though the QV organization will be under the authority of the site organization, the SQV organization will retain sufficient organizational freedom, authority, and responsibility to provide an independent, onsite assessment of station line and support activities to ensure compliance with quality assurance and nuclear safety requirements. The SQV director will continue to have stop work authority.

A strong link between the site and corporate groups will be maintained through the leadership of the Nuclear Oversight Manager who maintains the authority and responsibility for quality assurance and nuclear safety policy. Should a significant nuclear safety or quality issue develop, requiring escalated action, the Site QV Director will direct the issue thorough the Nuclear Oversight Manager to the Chief Nuclear Officer. The Nuclear Oversight Manager will continue to submit a report on the status, adequacy, and implementation of the quality assurance program to the Chief Nuclear Officer.

**Section 1**

1. Changed the title of the **Vice President and Chief Nuclear Officer** to the Senior Vice President and Chief Nuclear Officer.

2. Clarified that the Nuclear Oversight Manager is responsible for corporate quality assurance policy and corporate nuclear safety policy.

3. Included the Site Quality Verification Director as one of those delegated to release a "stop work" action.

4. Changed all references to the Engineering and Construction Department to Nuclear Engineering and Technical Services where those changes were inadvertently left out of the approved revision 64 of the CECo. Topical Report.

5. Changed Department name from **Systems Material Analysis** to **System Materials Analysis**.

6. Included Site Quality Verification personnel with those who are responsible for notifying the Nuclear Oversight Manager of conditions which are adverse to quality that require prompt action when required corrective action cannot be agreed upon.

7. The Senior Vice President and Chief Nuclear Officer has assumed the responsibility to assure resolution of disagreements in accordance with the ASME Code and the Quality Assurance Program, if necessary.

8. The position of Vice **President, Nuclear Oversight and Regulatory Support** is no longer responsible for resolving disagreements. In addition, all reference to this title was changed to the **Vice President of nuclear Operations Support** where such changes were inadvertently left out of the approved revision 64 of the CECo. Topical Report.

9. Clarified the authority the Company may assign an Independent Inspection Agency to overview work occurring at offsite supplier's plants.

10. Replaced references to **Onsite Quality Verification** with **Site Quality Verification**.

11. Changed the responsibility for establishing a Site Quality Verification group from the **Nuclear Oversight Department** to the **Company** for new project construction.

12. Clarified and generalized the responsibility of the Chairman and Chief Executive Officer for overall corporate policy.

13. Added the position of the Senior Vice President and Chief Nuclear Officer to the staff of the Chairman and Chief Executive Officer.

14. Added the Senior Vice President (Fossil Generation and Fuel) to the staff of the Chairman and Chief Executive Officer.

15. Eliminated the position of the **Senior Vice President (Energy Facilities)**.

16. Clarified the responsibility of the Senior Vice President and Chief Nuclear Officer to include overall plant nuclear safety.

17. Added the position of Nuclear Oversight Manager to the staff of the Senior Vice President and Chief Nuclear Officer and removed it from the staff of the Vice President of Nuclear Operations Support.

18. Clarified the responsibility of the Site Vice President to include compliance with nuclear safety policies.

19. Added the newly created position of **Site Quality Verification Director** to the staff of the Site Vice President.

20. Changed the title of the **Outage Planning Director** to **Long-Range Work Control Superintendent**.

21. Assigned the responsibilities for onsite assessment to ensure compliance with Quality Assurance and Nuclear Safety requirements, onsite stop work authority, and escalation of significant quality and safety issues to the Site Quality Verification Director.

22. Added the newly created positions of **Independent Safety Engineering Group Supervisor** and **Integrated Analysis Administrator** to the staff of the Site Quality Verification Director.

23 Changed the title of the **Site Quality Verification Superintendent** to **Site Quality Verification Supervisor** and added the position to the staff of the Site Quality Verification Director.

24 The responsibilities of the Vice President of Nuclear Operations Support have been revised to eliminate those concerning nuclear oversight and quality assurance advisor activities.

25. The position of the **Performance Monitoring and Improvement Manager**, reporting to the Vice President of Nuclear operations Support, was eliminated.

26. The position of the Nuclear Oversight Manager, reporting to the Vice President operations Support, was changed to report to the Senior Vice President and Chief Nuclear Officer.

27. Changed the title of the **Director of Strategic Licensing Policies and Issues** to **Director of Strategic Licensing Policies and Regulatory Performance**.

28. Transferred the responsibilities of the **Regulatory Performance Director** to the **Director of Strategic Licensing Policies and Regulatory Performance.**

29. Eliminated the position of the **Regulatory Performance Director** .

30. Changed the title of the **Emergency Preparedness and State Programs Director** to **Emergency Preparedness Director**.

31. Changed references to the Nuclear Operations Division to the Nuclear Operations organization in several instances.

32. Changed the title of the **Electrical Instrumentation and Engineering Supervisor** to **Electrical Instrumentation and Control Engineering Superintendent**.

33. Changed the title of the **Engineering Performance and Improvement Director** to **Engineering Performance and Improvement Superintendent**.

34. Changed the title of the **Mechanical Structural Design Supervisor** to **Mechanical and Structural Engineering Superintendent**.

35. Changed the title of the **PRA and Reliabiiity Engineering Supervisor** to **PRA, Reliability Engineering and Design Administration Superintendent**.

36. Changed the title of the **Parts Stores Supervisor** to **Nuclear Stores Director**.

37. Changed the title of the **Nuclear Construction Supervisor** to **Nuclear Construction Superintendent**.

38. Changed the title of the **Off-Site Quality Verification Director** to **Corporate Quality Verification Director**.

39. Changed the title of the **Quality Assurance Policy Director** to **Director of Quality Assurance Policy & Support**.

40. Clarified the responsibilities of the Nuclear Oversight Manager to include; developing, maintaining, and interpreting nuclear safety policies, procedures and implementing directives; the vendor audit program; conducting audits of the Corporate organizations, responsible for nuclear functions, and the Site Quality Verification organization to verify that the Quality Assurance Program is being effectively implemented; and certifying audit personnel.

41. The staff of the Nuclear Oversight Manager was revised to; include the Corporate Quality Verification Director and the Director of Quality Assurance Policy and Support; and remove the Director of Quality Verification.

42. The position of the **Director of Quality Verification** and its staff positions of the **Independent Safety Engineering Group Superintendent** and **Quality Assurance Superintendent** were eliminated.

43. The responsibilities of the Director of Quality Assurance Policy & Support were revised to include establishing the requirements for auditor certification.

44. Revised the organization charts.

Section 2

45. Revised the minimum requirement for submitting changes in the Quality Assurance Program document (ie. the Topical Report) to the Nuclear Regulatory Commission for changes, editorial changes, reassignments which do not reduce commitments from annually to at least once every two years.

Note: **This revision is consistent with the revised 10CFR50.54(a)(3).**

Section 3

46 Included the Nuclear fuel Services Department in the Responsibilities paragraph.

Sections **4, 5, and 6.**

47 No substantial changes.

**Section 7**

48. Changed QA Organization to Site Quality Verification or Nuclear Oversight.

**Sections 8, 9, and 10**

49. No substantial changes.

**Section 11**

50. Changed the word siting to site selection.

**Section 12**

51. No substantial changes.

**Section 13**

52. Clarified the handling of items.

**Sections 14, 15, 16, and 17**

53. No substantial changes.

**Section 18**

54. The responsibilities of the Nuclear Oversight Manager were further clarified to include the responsibility for the performance of periodic audits to determine that Quality Assurance and Nuclear Safety Policy is being carried out.

55. The independence of the Site Quality Verification Director was clearly established.

56. The responsibilities of the Site Quality Verification Director were revised to include the approval of audit schedules for his location.

57. The responsibilities of the Site Quality Verification Director and the Corporate Quality Verification Director were revised to include approval of their respective agenda, checklist, findings, and report of each audit.

58. A listing of required audits and minimum frequency was included.

**NOTE: The listing is based upon a compilation of all the audits required by the Technical Specifications of the twelve, Commonwealth Edison Company, operating nuclear power plants. The frequency differs from Technical Specification requirements in several instances. The frequency included in this revision to the Topical Report will be include with a proposed amendment to the Company's many operating licenses.**

59. Added that all findings of noncompliance with NRC requirements and recommendations, and results of each audit shall be reported to the Station manager, the Nuclear Oversight Manager, and the appropriate Site Vice president.

60. Added that all copies of documentation, reports, and correspondence are kept on file at the appropriate location.

**NOTE: Items 58, 59, and 60 were included with this revision to the Topical Report to be consistent with a proposed amendment to the Company's many operating licenses that involves the relocation of a portion of some Technical Specification requirements to owner controlled documents.**

Section 19

61. Changed references to Radiation Protection to Health Physics.

62. Added new paragraphs concerning repairs and alterations subject to the Illinois Department of Nuclear Safety's jurisdiction.

**Section 20**

63. Added a new Section 20 concerning the Onsite and Offsite Review and Investigative Function.

**NOTE: The new Section is based upon a compilation of those parts of the Commonwealth Edison Company, twelve operating nuclear power plant's Technical Specifications that concern the Onsite and Offsite review and investigative function. Most of the text and intent was transferred directly with one exception. The Technical Specifications typically require that a compliment of more than one participant, whocollectively possess background and qualifications in the subject matter under review, provide comprehensive, interdisciplinary review coverage. This new Section would revise that requirement to assure that a cross disciplinary review determination is made for each item to be reviewed. This new Section was included with this revision to the Topical report to be consistent with a proposed amendment to the Company's many operating licenses that involves the relocation of a portion of someTechnical Specificatcn requirements to owner controlled documents.**

**Appendix A**

64. Changed the definition of Offsite Review from offsite review and approval function to offsite review and investigative function.

65. Changed the definition of Onsite Review from onsite review and approval function to onsite review and investigative function.

66. Removed the definition for the On-Site Quality Verification Engineer or Inspector and replaced it with a definition for the Site Quality Verification Engineer or Inspector.

**ASME Code Interface**

67. Specified that the Nuclear Oversight and Site Quality Verification Departments are empowered to assure compliance with the ASME Code.

68. Transferred the responsibility for stamping from the Onsite Quality Verification Superintendent to the Site Quality Verification Director.

69. Changed the title of the **Drawing and Document Control Center** to the **Central Drawing Facility**.

70. Changed Quality Verification to Corporate Quality Verification.

71. Changed all references to the Technical Staff Supervisor to the Systems Engineering Supervisor where those changes were inadvertently left out of the approved revision 64 of the CECo. Topical Report.

72. Changed all references to the System Operational Analysis Department to the T&D Operational Analysis Department where those changes were inadvertently left out of the approved revision 64 of the CECo. Topical Report.

**General**

73. Improved punctuation and readability where it had no effect on content, corrected insignificant typographical errors, and reorganized some sections.

These changes do no appear to reduce commitments in the previously accepted Quality Assurance Program. Revision 65 of the Commonwealth Edison Co. Topical Report is being submitted to the Office of Nuclear Reactor Regulation to assure compliance with the already implicit intent of 10CFR71 subpart H.

In those cases where Revision 65 of the CECo. Topical Report may be less restricting than the appropriate operating license, the requirements of the operating license shall apply until a revision to the license is approved.

Description and Bases of the Requested Revision

CECo proposes to revise several management titles to reflect changes to the Company's organization. CECo developed the new organization to support the objective of sustained excellent performance from each nuclear station. The new organization streamlines activities and provides better support to the nuclear stations. The change affects several of the titles in the Topical Report, as well as the assignment of some responsibilities to specific individuals and organizations.

**Impact of the Proposed Change**

The change in the management reporting relationships provides increased senior management attention and oversight of each affected functional area. The changes in the nuclear organization have a positive impact on nuclear safety by enhancing focus, managerial oversight, accountability. consistency, continuity and performance.

Individuals filling the new positions within the Nuclear Operations Division have satisfied the necessary educational and experience qualification commensurate with their position.

**Proposed Change to the Technical Specification Audit Frequencies**

Description and Bases of the Current Requirement

The Company's Technical Specifications describe the station audit function and provide audit frequencies for a variety of safety-related functions. The basis for the audit function is to provide an independent overview of safety-related activities in conformance with 10CFR50, Appendix B.

Description and Bases of the Requested Revision

The proposed change would relocate the required audit list from the Technical Specifications to Revision 65 of the Topical Report and assingn a maximum audit frequency of 24 months. The change is proposed based on a re-examination of the requirements for conducting quality assurance audits. The basis for conducting the audits is unchanged.

In addition to the relocation and frequecny changes, three other changes are proposed for the list itself. The first would delete the requirement to have an independent fire protection consultant perform an audit of fire protection equipment and program (or fire protection and loss prevention program) implementation at least every third year. The independent triennial audit is currently required in addition to annual audits performed by CECo. CECo's Site Quality Verification Department or Nuclear Oversight Department has sufficient resources, experience, and independence to perform credible, objective fire protection audits without outside assistance. CECo initially implemented the fire protection program audit frequencies based on the recommendations of Generic Letter 82-21, "Technical Specifications for Fire Protection Audits." The triennial audit is not mandated by any fire code or federal regulation, and the frequency is no longer specified in Standard Technical Specifications.

The second and third changes would remove the audit of the emergency and security plans and implementing procedures from the listing. This change is consistant with the guidance contained in Generic Letter 93-07 "Modification of the Technical Specification Administartive Control Requirements for Emergency and Security Plans."

Impact of the Proposed Change

The proposed change eliminates the audit frequencies with a resultant improvement in the effectiveness of the audit function. Audits would be scheduled based upon the performance of the program, organization or activity being audited. The revised audit program would continue to provide assurance that critical personnel and safety related systems will perform satisfactorily and not cause undue risk to the health and safety of the public.

10CFR50, Appendix B requires a comprehensive system of planned and periodic audits to verify compliance with all aspects of the Quality Assurance program and to determine the effectiveness of the program. Several other documents such as ASME NQA-1, Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants (NUREG-0800), NRC Instruction 2515/78, and NUREG/CR-5151 provide supporting guidance and recommendations to interpret the requirements of Appendix B.

In general, these documents require audits to be scheduled at frequencies commensurate with the status and safety significance of the activity being reviewed. Successful verification programs use a "living" schedule that permits important plant activities and events to be verified and documented as they are occurring, or shortly thereafter, to provide for the greatest impact and most effective follow-up. Scheduling is to be dynamic and resources are to be supplemented when Quality Assurance program effectiveness is in doubt.

While none of these documents address the use of rigid time schedules to verify quality, they do obligate the licensee to apply evaluative resources dynamically, so that important safety issues can be addressed effectively. By removing the required audit frequencies from the Technical Specifications and scheduling audits driven by demonstrated performance, CECo would better meet the intent of the regulatory guidance.

*It is worthy to note that CECo currently complies with Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operations)", which endorses ANSI N18.7-1976/ANS-3.2. Section C.4 of Regulatory Guide 1.33 states:*

*"Section 4.5, "Audit Program," of ANSI N18.7-1976/ANS-3.2. states that audits of selected aspects of operational phase activities shall be performed with a frequency commensurate with their safety significance and in such a manner as to ensure that an audit of all safety-related functions is completed within a period of 2 years. In amplification of this requirement, the following program elements should be audited at the indicated frequencies:*

*a. The results of actions taken to correct deficiencies that affect nuclear safety and occur in facility equipment, structures, systems, or method of operation - at least once per 6 months.*

*b. The conformance of facility operation to provisions contained within the technical specifications and applicable license conditions - at least once per 12 months.*

*c. The performance, training, and qualifications of the facility staff - at least once per 12 months."*

*CECo respectfully proposes to take exception to this provision of Regulatory Guide 1.33.*

In lieu of specifying audit frequencies in the Technical Specifications, audits would be conducted in accordance with the Commonwealth Edison Company Quality Assurance program, as described in Topical Report CE-1-A. Section 3.1.2 requires the Nuclear Oversight Manager or Site Quality Verification Director, as appropriate, to approve audit schedules that include the minimum audit areas and frequencies. Schedules are reviewed semiannually and revised as needed to assure that coverage is sufficient. Audits are initiated early to assure effective Quality Assurance. Additional unscheduled audits may also be performed at various stages of activities, based on the nature and safety significance of the work being done, to verify continued adherence to and effectiveness of the quality systems.

Several inputs are used for scheduling audits. The inputs include, but are not limited to, trends of plant performance parameters, trends of significant personnel performance inadequacies (including the use of preselected causal factors), an integrated database that tracks low level events, industry experience, INPO evaluation results, and NRC inspection reports. As a result, areas that demonstrate consistently high performance would typically be audited less frequently than other areas.

The proposed change will not exempt CECo from any requirements to comply with other applicable rules and regulations, such as those included in the Code of Federal Regulations. The proposed change is also consistent with the Standard Technical Specifications in that no specific audit schedules are cited.

Deleting the requirement to have an independent fire protection consultant perform an audit of fire protection equipment and program (or fire protection and loss prevention program) implementation at least every third year will not diminish the effectiveness of the fire protection audits. CECo's Quality Verification Department, which would perform fire protection audits based on regulatory requirements and performance, has sufficient resources, experience, and independence to perform credible, objective fire protection audits without outside assistance. CECo will retain the option of using an independent consultant to perform an audit, however, this specific triennial audit is not mandated by any fire code or federal regulation. The original requirements were based on the recommendations of Generic Letter 82-21 and Standard Technical Specifications.

The current Standard Technical Specifications for Byron, Braidwood, La Salle and Zion no longer include the requirements. Qualified individuals independent of CECo's staff will continue to critique a randomly unannounced fire drill every 3 years as specified in 10CFR50, Appendix R, I.3.d.

Removing the audit of the emergency and security plans and implementing procedures from the listing is consistant with the guidance contained in Generic Letter 93-07 "Modification of the Technical Specification Administartive Control Requirements for Emergency and Security Plans."

In summary, there would be a positive impact on plant safety with a change of audit frequencies. The positive impact is realized because the method used to achieve the objective of establishing adequate confidence that critical personnel and safety related systems will perform satisfactorily and not cause undue risk to the health and safety of the public, is improved upon. To provide enhanced confidence, the licensee must be allowed to shift resources, in a performance based manner, to more productive safety functions. When evaluative resources are allocated to competing risks, the overall safety of the plant is improved because available resources can be focused on weak areas to improve performance.

## Proposed Change to the Offsite Review Process

### Description and Bases of the Current Requirement

The plant Technical Specifications describe the Offsite Review and Investigative Function. The Offsite Review and Investigative Function includes reviews by at least three individuals. At least two individuals are required in the comprehensive interdisciplinary review. The Director of Safety Review must then independently review findings and recommendations developed by the previous review. This arrangement ensures that independent offsite reviews are conducted by personnel having appropriate qualifications and that any findings or recommendations are reviewed.

### Description and Bases of the Requested Revision

The proposed change eliminates the requirement for review of every item by at least three individuals (senior participant, participant, independent reviewer). Instead, a cross disciplinary review determination will be made for every matter under review. Cross disciplinary reviews, if deemed necessary, will be performed by personnel of the appropriate disciplines. The Director of Safety Review will approve and report all findings of noncompliance with NRC requirements only, rather than all findings and recommendations. The change is based on a review of relevant standards and the applicable Standard Technical Specifications for each station (NUREG-1431 for Byron, Braidwood, and Zion, and NUREG-1433 or 1434 for La Salle).

### Impact of the Proposed Change

CECo reviewed applicable regulatory documents and determined that no document or standard specifically requires the type of review that is currently being performed. The proposed change to the method used to perform offsite reviews is based on the requirements set forth in the regulatory documents. These documents include ANSI N18.7-1976/ANS-3.2 "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," ANSI/ANS-3.2-1988, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," Regulatory Guide 1.33, Revision 2, "Quality Assurance Program Requirements (Operations)," and Standard Technical Specifications.

None of the documents list specific requirements regarding the number of individuals who must participate in each review. The documents allow flexibility in the organizational structure for meeting the review and audit function. They require that the reviews be performed independently of the organization responsible for performing the activities to be reviewed.

Based on this review, CECo proposes to revise the offsite review method described in the Technical Specifications. The proposed change allows senior participants to perform reviews themselves or, as needed, to use a cross disciplinary review. Guidance would be provided in administrative procedures to ensure that the level of review is appropriate. The Director of Safety Review would continue to approve and report all findings of noncompliance with NRC requirements.

The proposed change clarifies the reviewer's role and improves individual accountability. Eliminating unnecessary multiple reviews allows reviewers to focus on areas in need of improvement and make recommendations to enhance nuclear safety and plant reliability. The proposed change meets applicable regulatory standards and are consistent with Standard Technical Specifications.

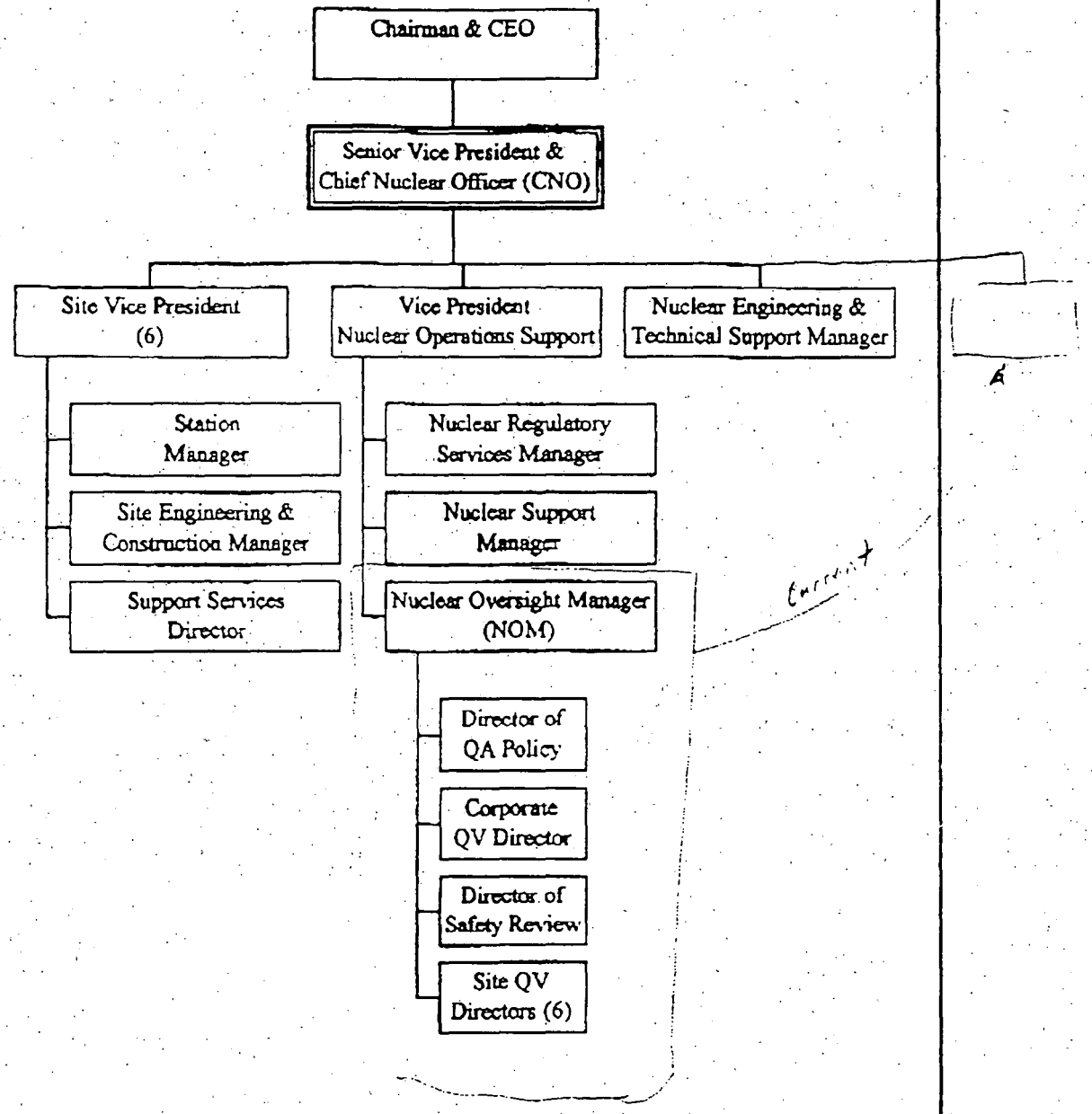
The Chief Nuclear Officer (CNO) sets direction and priorities for Commonwealth Edison's (CECo's) Nuclear Operations Division, allocates broad resources to the division, works with the Nuclear Operations Committee to oversee nuclear safety, reliability, and efficiency, and acts as CECo's chief nuclear spokesman to external constituencies. The CNO has the corporate responsibility for overall plant nuclear safety and is totally responsible and accountable for the operation and management of all six CECo nuclear stations.

The Site Vice President has overall responsibility and accountability for all aspects of the performance of the station assigned and will take the necessary actions to assure the station fulfills quality assurance and nuclear safety policy.

The Nuclear Oversight Manager (NOM) is responsible for establishing nuclear safety and quality assurance policy. The NOM has the authority to order a unit shutdown or request any other action which is deemed necessary to avoid unsafe plant conditions. The Nuclear Oversight Manager reports directly to the CNO.

DRAFT

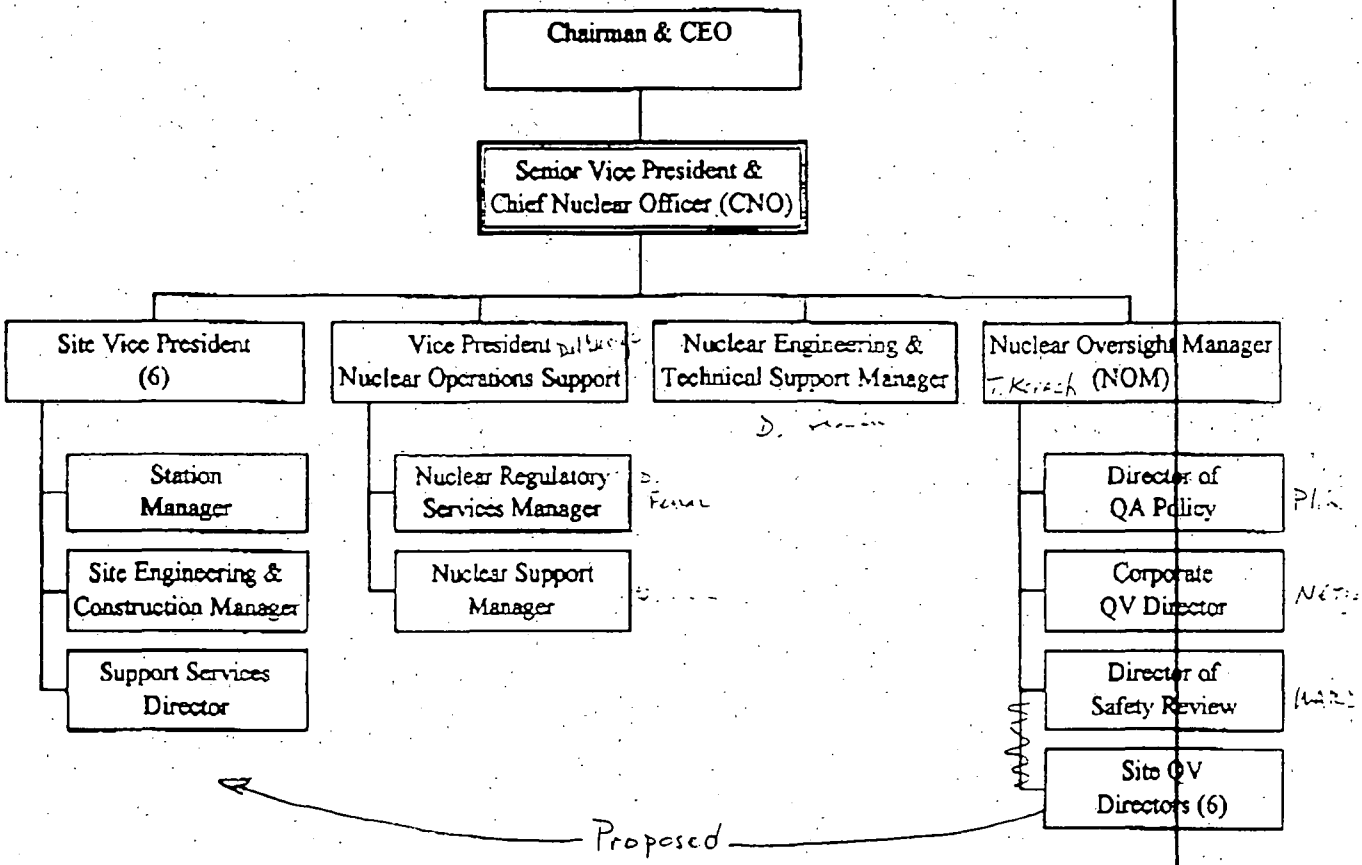
# Previous Quality Verification Organization (10/8/93)




DRAFT

DRAFT

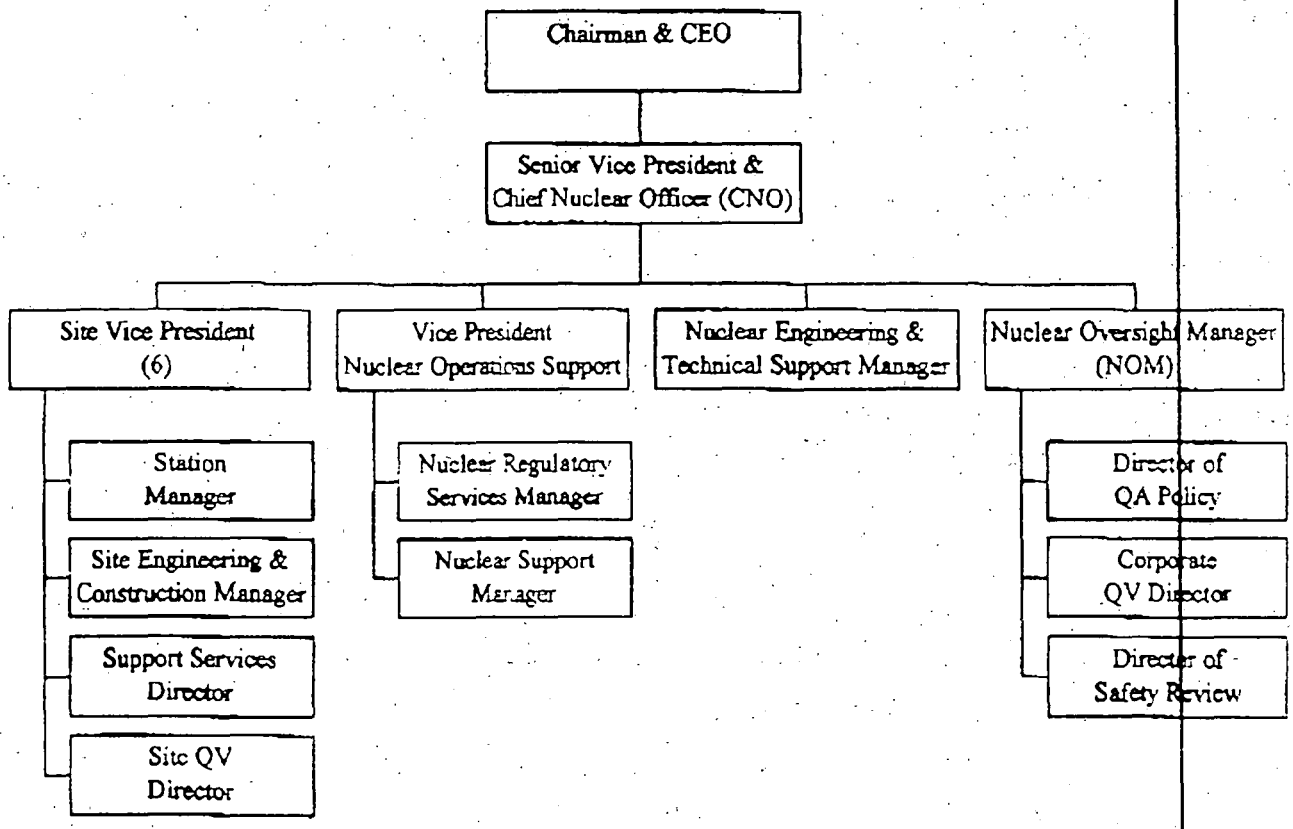
# Current Quality Verification Organization (1/10/94)




DRAFT

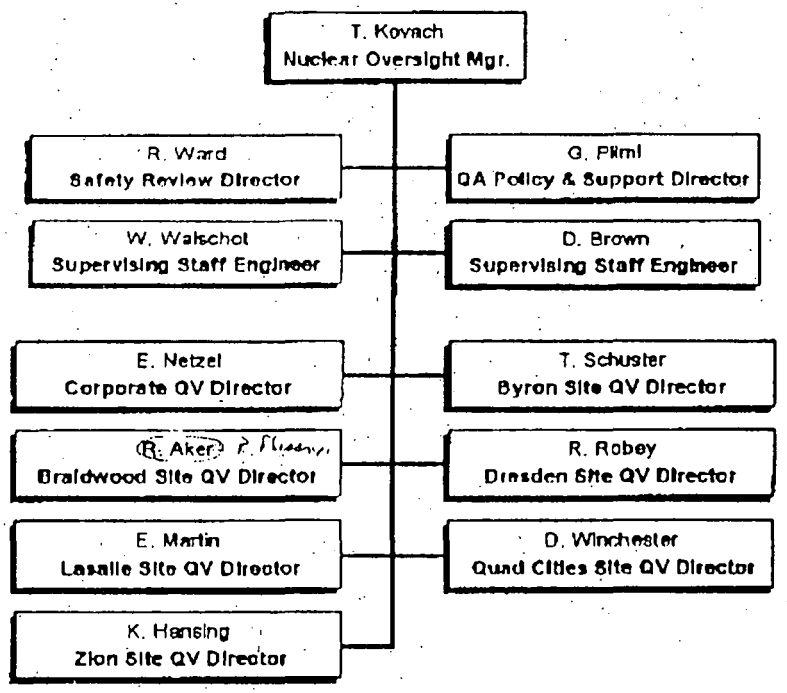
# Planned Quality Verification Organization (6/94)

DRAFT



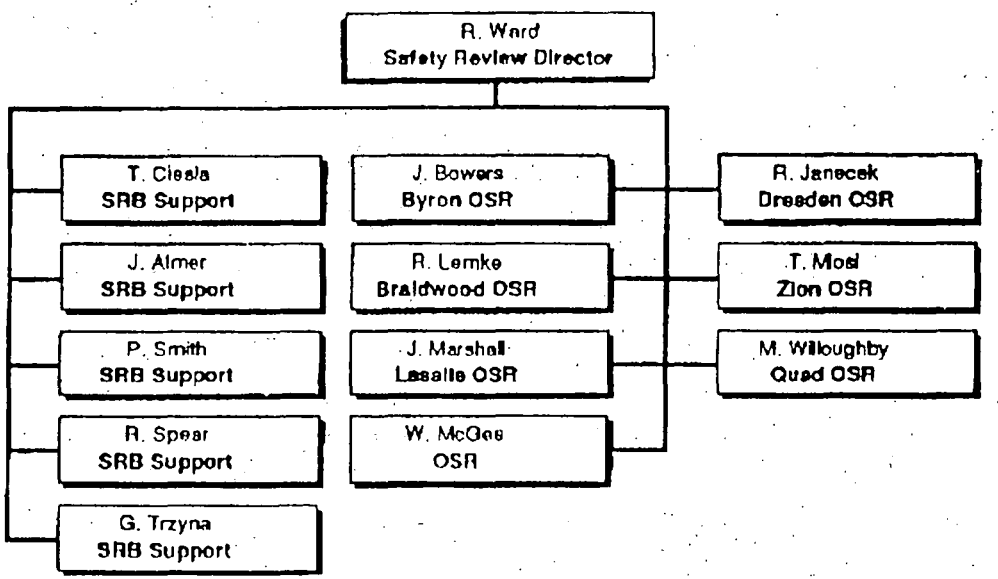

DRAFT

# ORGANIZATION CHART FOR NUCLEAR OVERSIGHT

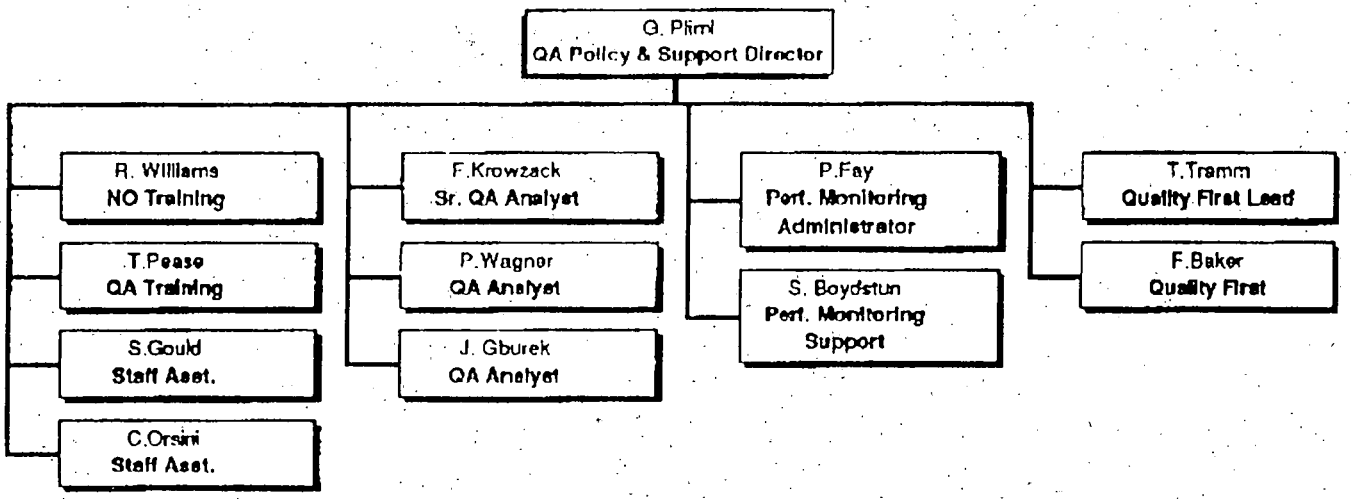



December 9, 1993

# ORGANIZATION CHART FOR NUCLEAR OVERSIGHT

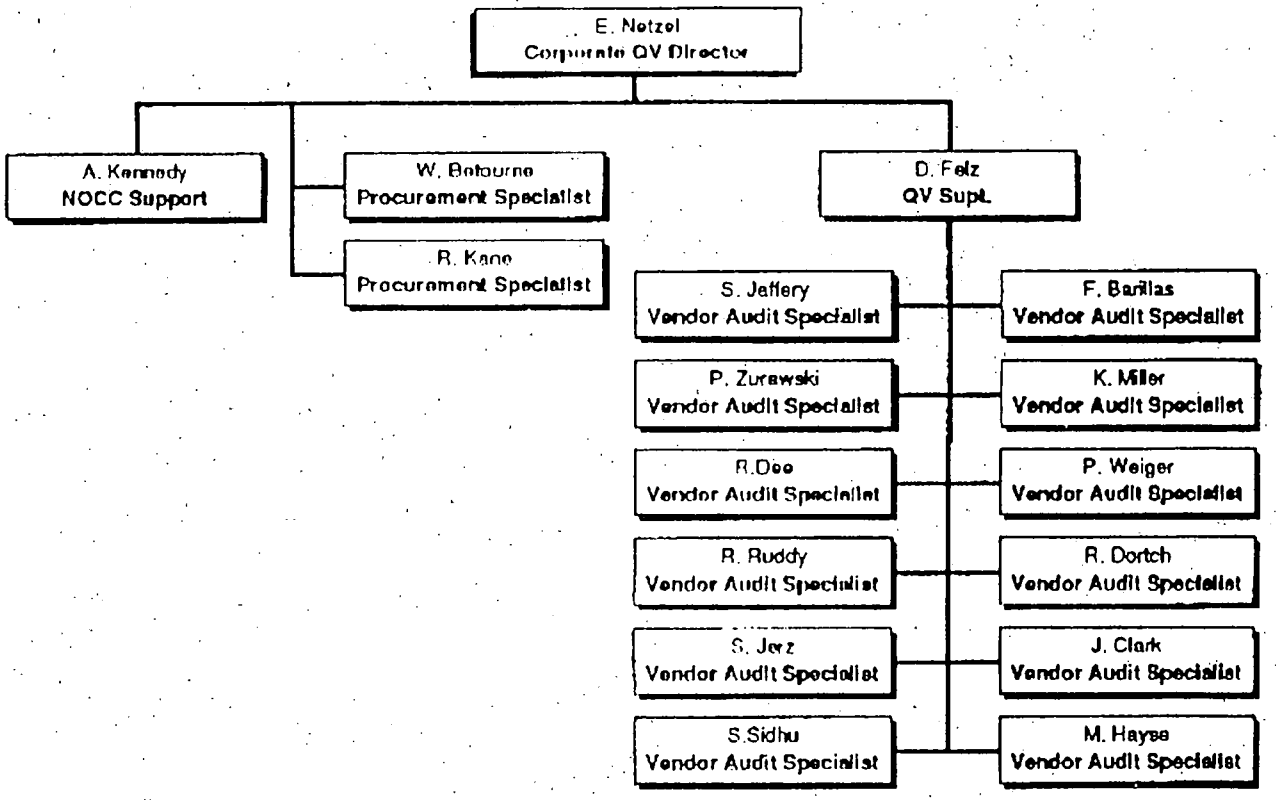


# ORGANIZATION CHART FOR NUCLEAR OVERSIGHT




December 9, 1993

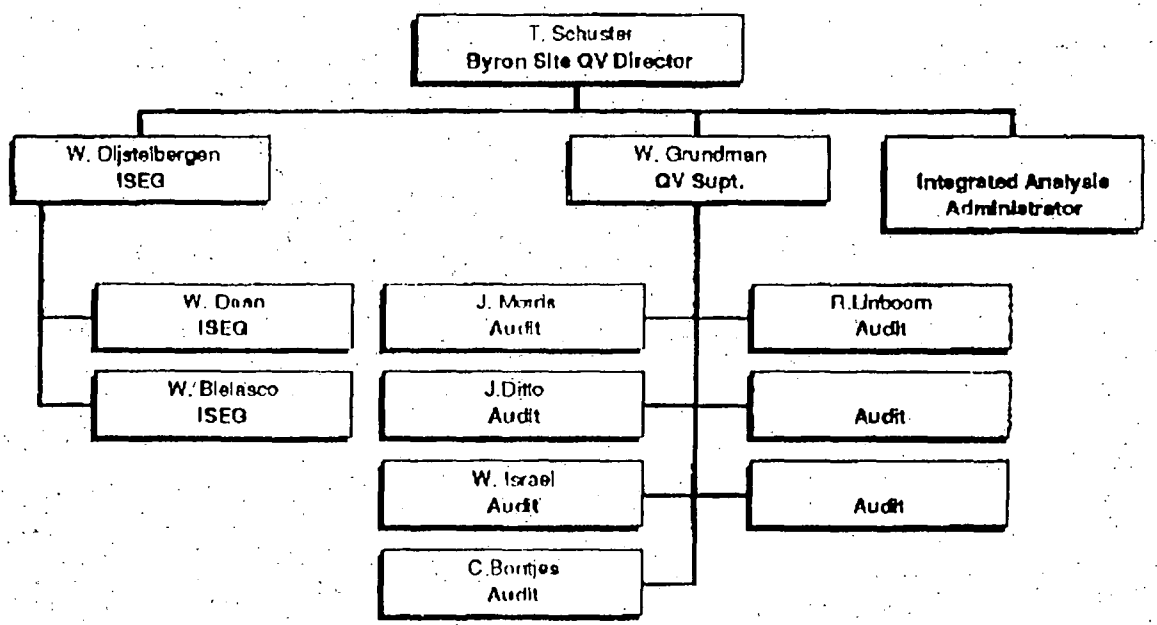
# ORGANIZATION CHART FOR NUCLEAR OVERSIGHT






DRAFT

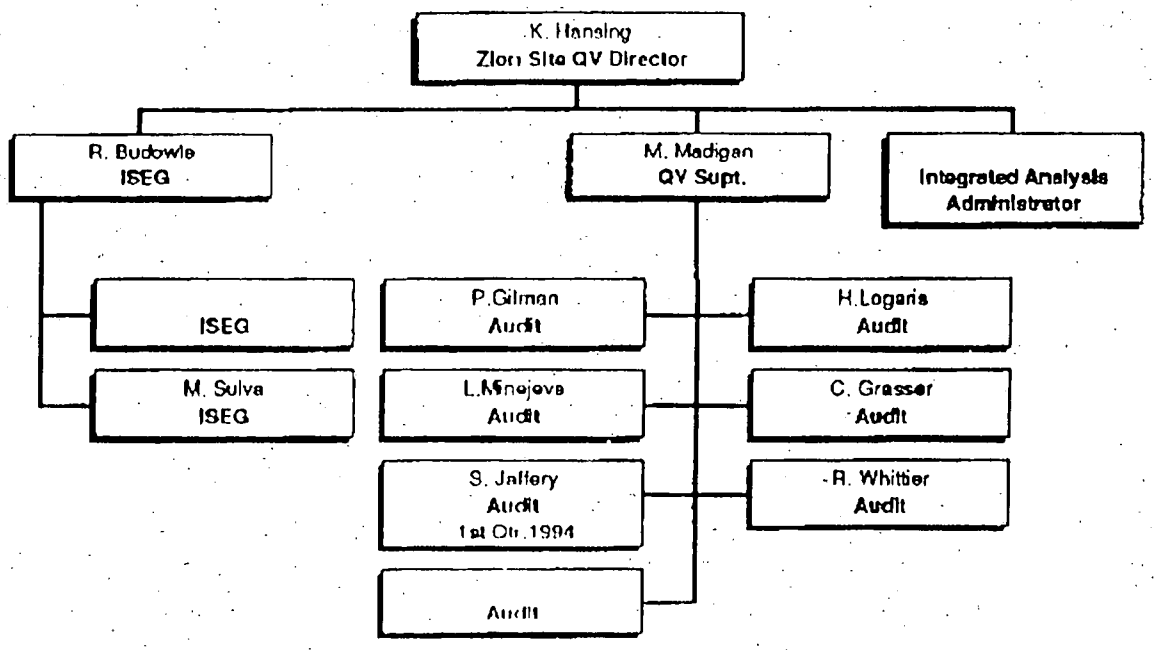
# ORGANIZATION CHART FOR NUCLEAR OVERSIGHT




December 9, 1993

Note: ISEG Groups (minimum 3 per site) will be augmented as necessary for management purposes

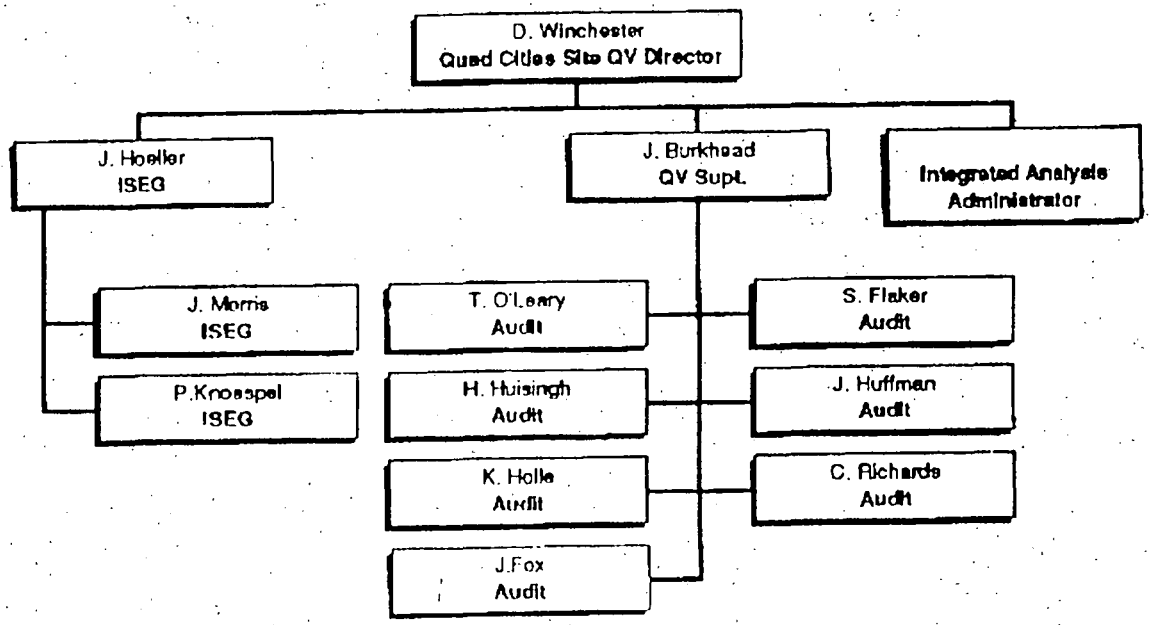
# ORGANIZATION CHART FOR NUCLEAR OVERSIGHT




December 9, 1993

Note: ISEG Groups (minimum 3 per site) will be augmented as necessary for management purposes

# ORGANIZATION CHART FOR NUCLEAR OVERSIGHT




December 9, 1993.

Note: ISEG Groups (minimum 3 per site) will be augmented as necessary for management purposes

Organizational Changes (6-Station) DRAFT



## 6.1 RESPONSIBILITY

6.1.1 The Station Manager, Byron Station, shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

6.1.2 The Shift Engineer (or during his absence from the control room, a designated individual) shall be responsible for the control room command function. A management directive to this effect, signed by the Vice President PWR Operations shall be reissued to all station personnel on an annual basis.

## 6.2 ORGANIZATION

### 6.2.1 ONSITE AND OFFSITE ORGANIZATIONS

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the Quality Assurance Manual, ~~or the Management Plan for Nuclear Operations, Section 3 Organizational Authority, Activities; Section 6 Interdepartmental Relationships.~~

b. The Station Manager shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.

c. The Chief Nuclear Officer (CNO) ~~Senior Vice President-Nuclear Operations~~ shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety.

d. The individuals who train the operating staff and those who carry out health physics and quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their independence from operating pressures.

DRAFT

6.2.2 UNIT STAFF

The unit staff shall be subject to the following:

a. Each on duty shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1; and

b. At least one licensed Operator shall be in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3, or 4, at least one licensed Senior Operator shall be in the control room;

c. A Radiation Protection Technician,* qualified in radiation protection procedures, shall be on site when fuel is in the reactor;

d. All CORE ALTERATIONS shall be observed and directly supervised by either a licensed Senior Operator or licensed Senior Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation;

e. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions; e.g., licensed Senior Operators, licensed Operators, health physics personnel, equipment operators, and key maintenance personnel.

The amount of overtime worked by Unit staff members performing safety-related functions shall be limited in accordance with the NRC Policy Statement on working hours (Generic Letter No. 82-12);

f. The ~~Assistant Superintendent Operating~~ Operations Manager or Shift Operations Supervisor shall hold a Senior Reactor Operator License.

6.2.3 ~~ONSITE NUCLEAR SAFETY GROUP (ONSG)~~ INDEPENDENT SAFETY ENGINEERING GROUP (ISEG)

FUNCTION

6.2.3.1 The ~~ONSG serves as an independent safety engineering group and~~ ISEG shall function to examine plant operating characteristics, NRC issuances, industry advisories, REPORTABLE EVENTS and other sources of plant design and operating experience information, including plants of similar design, which may indicate areas for improving plant safety. The ~~ONSG~~ shall make detailed recommendations for revised procedures, equipment modifications, maintenance activities, operations activities or other means of improving plant safety to the ~~Safety Assessment Manager,~~ Site Quality Verification Director and the Station Manager, Byron Station.

ISEG

COMPOSITION

6.2.3.2 The ~~ONSG~~ ISEG shall be composed of at least three, dedicated, full-time engineers located on site.

*The Radiation Protection Technician may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence provided immediate action is taken to fill the required positions.

6.2.3 ~~ONSITE NUCLEAR SAFETY GROUP (ONSG)~~ INDEPENDENT SAFETY ENGINEERING GROUP (ISEG) (Continued)

RESPONSIBILITIES

6.2.3.3 The ~~ONSG~~ ISEG shall be responsible for maintaining surveillance of plant activities to provide independent verification* that these activities are performed correctly and that human errors are reduced as much as practical.

RECORDS

6.2.3.4 Records of activities performed by the ~~ONSG~~ ISEG shall be prepared, maintained, and forwarded each calendar month to the ~~Safety Assessment Manager~~ Site Quality Verification Director, and the Station Manager, Byron Station.

6.2.4 SHIFT TECHNICAL ADVISOR

The Station Control Room Engineer (SCRE) may serve as the Shift Technical Advisor (STA) during abnormal operating or accident conditions. During these conditions the SCRE or other on duty STA shall provide technical support to the Shift Supervisor in the areas of thermal hydraulics, reactor engineering and plant analysis with regard to the safe operation of the unit.

To assure capability for performance of all STA functions:

(1) The shift foreman (SRO) shall participate in the SCRE shift relief turnover.

(2) During the shift, the shift engineer and the shift foreman (SRO) shall be made aware of any significant changes in plant status in a timely manner by the SCRE.

(3) During the shift, the shift engineer and the shift foreman (SRO) shall remain abreast of the current plant status. The shift foreman (SRO) shall return to the control room two or three times per shift, where practicable, to confer with the SCRE regarding plant status. Where not practicable to return to the control room, the shift foreman (SRO) shall periodically check with the SCRE for a plant status update. The shift foreman (SRO) shall not abandon duties original to reactor operation, unless specifically ordered by the shift engineer.

*Not responsible for sign-off function.

FIGURE 6.2-1
(THIS FIGURE NOT USED)

FIGURE 6.2-2
(THIS FIGURE NOT USED)



DRAFT

TABLE 6.2-1

MINIMUM SHIFT CREW COMPOSITION

| POSITION | NUMBER OF INDIVIDUALS REQUIRED TO FILL POSITION | | |
|---|---|---|---|
| | BOTH UNITS IN MODE 1, 2, 3, OR 4 | BOTH UNITS IN MODE 5 OR 6 OR DEFUELED | ONE UNIT IN MODE 1, 2, 3 OR 4 AND ONE UNIT IN MODE 5 OR 6 OR DEFUELED |
| SE | 1 | 1 | 1 |
| SF | 1 | None## | 1 |
| RO | 3# | 2# | 3# |
| AO | 3# | 3# | 3# |
| STA or SCRE | 1 | None | 1 |

SE - Shift Supervisor (Shift Engineer) with a Senior Operator license
SF - Shift Foreman with a Senior Operator license
RO - Individual with an Operator license
AO - Auxiliary Operator
STA - Shift Technical Advisor
SCRE - Station Control Room Engineer with a Senior Operator License

The Shift Crew Composition may be one less than the minimum requirements of Table 6.2-1 for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the Shift Crew Composition to within the minimum requirements of Table 6.2-1. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming shift crewman being late or absent.

During any absence of the Shift Supervisor from the control room while the Unit is in MODE 1, 2, 3 or 4, an individual with a valid Senior Operator license shall be designated to assume the control room command function. During any absence of the Shift Supervisor from the control room while the Unit is in MODE 5 or 6, an individual with a valid Operator license shall be designated to assume the control room command function.

#At least one of the required individuals must be assigned to the designated position for each unit.
##At least one licensed Senior Operator or licensed Senior Operator Limited to Fuel Handling must be present during Core Alterations on either unit, who has no other concurrent responsibilities.

## 6.3 UNIT STAFF QUALIFICATIONS

6.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971, except for the Health Physics Supervisor or Lead Health Physicist, who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, for a Radiation Protection Manager.

## 6.4 TRAINING

6.4.1 A retraining and replacement training program for the unit staff shall be maintained under the direction of the ~~Production~~ Training Department and shall meet or exceed the requirements and recommendations of Section 5 of ANSI/ANS 3.1-1978, and shall include familiarization with relevant industry operational experience. ~~from the program managed by Quality Programs and Assessment.~~

## 6.5 REVIEW INVESTIGATION AND AUDIT

The Review and Investigative Function and the Audit Function of activities affecting quality during facility operations shall be constituted and have the responsibilities and authorities outlined below.

### OFFSITE

6.5.1 The ~~Superintendent of the Offsite Review and Investigative Function~~ Director of Safety Review shall be appointed by the ~~Manager of Quality Assurance/Nuclear Safety (QA/NS)~~ Nuclear Oversight Manager responsible for nuclear activities. The corporate audit function shall be the responsibility of the Manager ~~of QA/NS~~ Nuclear Oversight and shall be independent of operations.

The Manager ~~of QA/NS~~ reports directly to the Chief ~~Executive~~ Nuclear Officer and has the responsibility to set Corporate Policy for both the areas of Quality Assurance and Nuclear Safety. ~~Policy is promulgated through a central policy committee directed by the Manager of QA/NS.~~ The Manager ~~of QA/NS~~ has the responsibility for the performance of periodic audits of each nuclear station and corporate department to determine that ~~QA/NS~~ Quality Assurance and Nuclear Safety policy is being carried out.

a. Offsite Review and Investigative Function

The ~~Superintendent of the Offsite Review and Investigative Function~~ Director of Safety Review shall: (1) provide directions for the review and investigative function and appoint a senior participant to provide appropriate direction, (2) select each participant for this function, (3) select a complement of more than one participant who collectively possess background and qualifications in the subject matter under review to provide comprehensive interdisciplinary review coverage under this function, (4) independently review and approve the findings and recommendations developed by personnel performing the review

OFFSITE (Continued)

Site

Nuclear Oversight

and investigative function, (5) approve and report in a timely manner all findings of non-compliance with NRC requirements to the Station Manager, Vice President ~~PWR Operations~~, Manager ~~of QA/NS~~, ~~General Manager Quality Programs and Assessment~~, and the ~~Senior Vice President - Nuclear Operations~~. During periods when the ~~Superintendent of Offsite Review and Investigative Function~~ is unavailable, he shall designate this responsibility to an established alternate, who satisfies the formal training and experience for the ~~Superintendent of the Offsite Review and Investigative Function~~. The responsibilities of the personnel performing this function are stated below. The Offsite Review and Investigative Function shall review:

Chief Nuclear Officer

Director of Safety Review

Director of Safety Review

1) The safety evaluations for: (1) changes to procedures, equipment, or systems as described in the safety analysis report, and (2) tests or experiments completed under the provision of 10 CFR 50.59 to verify that such actions did not constitute an unreviewed safety question. Proposed changes to the Quality Assurance Program description shall be reviewed and approved by the Manager ~~of QA/NS~~;

Nuclear Oversight

2) Proposed changes to procedures, equipment or systems which involve an unreviewed safety question as defined in 10 CFR 50.59;

3) Proposed tests or experiments which involve an unreviewed safety question as defined in 10 CFR 50.59;

4) Proposed changes in Technical Specifications or this Operating License;

5) Noncompliance with Codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures, or instructions having nuclear safety significance;

6) Significant operating abnormalities or deviation from normal and expected performance of plant equipment that affect nuclear safety as referred to it by the Onsite Review and Investigative Function;

7) All REPORTABLE EVENTS;

8) All recognized indications of an unanticipated deficiency in some aspect of design or operation of safety-related structures, systems, or components;

9) All changes to the Generating Stations Emergency Plan prior to implementation of such change; and

OFFSITE (Continued)

10) All items referred by the ~~Technical Staff~~ Systems Engineering Supervisor, Station Manager, Vice President ~~PWR Operations and General Manager Quality Programs and Assessment~~ or Nuclear Oversight Manager.

b. Station Audit Function

The station audit function shall be the responsibility of the ~~General Manager Quality Programs and Assessment~~ independent of ~~PWR~~ operations. ~~Such responsibility is delegated to the Nuclear Quality Programs Manager.~~ Site Quality Verification Director

The ~~Nuclear Quality Programs Manager~~, or designated ~~corporate~~ staff or supervision ~~approved by the General Manager Quality Programs and Assessment~~ shall approve the audit agenda and checklists, the findings and the report of each audit. Audits shall be performed in accordance with the Company Quality Assurance Program and Procedures. Audits shall be performed to assure that safety-related functions are covered within the period designated below:

1) The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 12 months;

2) The adherence to procedure, training, and qualification of the station staff at least once per 12 months;

3) The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems, or methods of operation that affect nuclear safety at least once per 6 months;

4) The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix B, 10 CFR Part 50, at least once per 24 months;

5) The Facility Emergency Plan and implementing procedures at least once per 12 months;

6) The Facility Security Plan and implementing procedures at least once per 12 months;

7) Onsite and offsite reviews;

8) The Facility Fire Protection programmatic controls including the implementing procedures at least once per 24 months by qualified QA personnel;

9) The fire protection equipment and program implementation at least once per 12 months utilizing either a qualified offsite licensee fire protection engineer or an outside independent fire protection consultant. An outside independent fire protection consultant shall be used at least every third year;

OFFSITE (Continued)

10) The Radiological Environmental Monitoring Program and the results thereof at least once per 12 months;

11) The OFFSITE DOSE CALCULATION MANUAL and implementing procedures at least once per 24 months;

12) The PROCESS CONTROL PROGRAM and implementing procedures for solidification of radioactive wastes at least once per 24 months; and

13) The performance of activities required by the Company Quality Assurance Program for effluent and environmental monitoring at least once per 12 months.

All findings of noncompliance with NRC requirements and recommendations and results of each audit shall be reported to the Station Manager, ~~Manager of QA/NS, the~~ Vice President, ~~PWR Operations, General Manager Quality Programs and Assessment, the Senior Vice President - Nuclear Operations,~~ and the Chief ~~Operating~~ Nuclear Officer.

Site

Nuclear Oversight Manager

c. Authority

The ~~Manager of QA/NS~~ Nuclear Oversight Manager reports to the Chief ~~Executive~~ Nuclear Officer. The Nuclear Oversight Manager ~~of QA/NS~~ has the authority to order unit shutdown or request any other action which he deems necessary to avoid unsafe plant conditions.

The ~~General Manager Quality Programs and Assessment~~ Site Quality Verification Director reports to the ~~Senior~~ Site Vice President ~~- Nuclear Operations~~. The ~~General Manager Quality Programs and Assessment~~ has the authority to ~~recommend~~ order unit shutdown or request any other action which he deems necessary to avoid unsafe plant conditions. ~~All such disagreements shall be reported immediately to the Manager of QA/NS and the Chief Operating Officer.~~ Significant safety or quality issues, requiring escalated action, will be directed through the Nuclear Oversight Manager to the Chief Nuclear Officer.

Site Quality Verification Director

OFFSITE (Continued)

d. Records

1) Reviews, audits, and recommendations shall be documented and distributed as covered in Specification 6.5.1a. and 6.5.1b.; and

2) Copies of documentation, reports, and correspondence shall be kept on file at the station.

e. Procedures

Written administrative procedures shall be prepared and maintained for the offsite reviews and investigative functions described in Specification 6.5.1a. and for the audit functions described in Specification 6.5.1b. Those procedures shall cover the following:

1) Content and method of submission of presentations to the ~~Superintendent of the Offsite Review and Investigative Function,~~ Director of Safety Review

2) Use of committees and consultants,

3) Review and approval,

4) Detailed listing of items to be reviewed,

5) Method of: (1) appointing personnel, (2) performing reviews, investigations, (3) reporting findings and recommendations of reviews and investigations, (4) approving reports, and (5) distributing reports, and

6) Determining satisfactory completion of action required based on approved findings and recommendations reported by personnel performing the review and investigative function.

f. Personnel

1) The persons, including consultants, performing the Offsite Review and Investigative Function, in addition to the ~~Superintendent of the Offsite Review and Investigative Function~~, shall have expertise in one or more of the following disciplines as appropriate for the subject or subjects being reviewed and investigated:

Director of Safety Review

a) Nuclear power plant technology,
b) Reactor operations,
c) Utility operations,
d) Power plant design,
e) Reactor engineering,
f) Radiological safety,
g) Reactor safety analysis,

OFFSITE (Continued)

h) Instrumentation and control,
i) Metallurgy, and
j) Any other appropriate disciplines required by unique characteristics of the facility.

2) Individuals performing the Offsite Review and Investigative Function shall possess a minimum formal training and experience as listed below for each discipline.

a) Nuclear Power Plant Technology

Engineering graduate or equivalent with 5 years experience in the nuclear power field design and/or operation.

b) Reactor Operations

Engineering graduate or equivalent with 5 years experience in nuclear power plant operations.

c) Utility Operations

Engineering graduate or equivalent with at least 5 years of experience in utility operation and/or engineering.

d) Power Plant Design -

Engineering graduate or equivalent with at least 5 years of experience in power plant design and/or operation.

e) Reactor Engineering

Engineering graduate or equivalent. In addition, at least 5 years of experience in nuclear plant engineering, operation, and/or graduate work in nuclear engineering or equivalent in reactor physics is required.

f) Radiological Safety

Engineering graduate or equivalent with at least 5 years of experience in radiation control and safety.

g) Reactor Safety Analysis

Engineering graduate or equivalent with at least 5 years of experience in nuclear engineering.

OFFSITE (Continued)

h) Instrumentation and Control

Engineering graduate or equivalent with at least 5 years of experience in instrumentation and control design and/or operation.

i) Metallurgy

Engineering graduate or equivalent with at least 5 years of experience in the metallurgical field.

3) The ~~Superintendent of the Offsite Review and Investigative Function~~ Director of Safety Review shall have experience and training which satisfy ANSI N18.1-1971 requirements for plant managers.

ONSITE

6.5.2 The Onsite Review and Investigative Function shall be supervised by the Station Manager.

a. Onsite Review and Investigative Function

The Station Manager shall: (1) provide directions for the Onsite Review and Investigative Function and appoint the ~~Technical Staff~~ Systems Engineering Supervisor, or other comparably qualified individual as the senior participant to provide appropriate directions; (2) approve participants for this function; (3) assure that at least two participants who collectively possess background and qualifications in the subject matter under review are selected to provide comprehensive interdisciplinary review coverage under this function; (4) independently review and approve the findings and recommendations developed by personnel performing the Onsite Review and Investigative Function; (5) report all findings of noncompliance with NRC requirements, and provide recommendations; and (6) submit to the Offsite Review and Investigative Function for concurrence in a timely manner, those items described in Specification 6.5.1a which have been approved by the Onsite Review and Investigative Function.

b. Responsibility

The Onsite Review and Investigative Function shall be responsible for conducting the following:

1) Review of all applicable Plant Administrative Procedures recommended in Appendix A of Reg Guide 1.33, Revision 2, February 1978 and changes thereto;

2) Review of Emergency Operating Procedures required to implement the requirements of NUREG-0737 and Supplement 1 to NUREG-0737 as stated in Section 7.1 of Generic Letter No. 82-33 and changes thereto;

ONSITE (Continued)

3) Review of all proposed tests and experiments that affect nuclear safety;

4) Review of all proposed changes or modifications to plant systems or equipment that affect nuclear safety;

5) Review of proposed changes to the Fire Protection Program;

6) Review of the Station Security Plan and submittal of recommended changes to the station Security Plan in accordance with station procedures;

7) Review of Emergency Plan and identification of recommended changes;

8) Review of changes to the PROCESS CONTROL PROGRAM and the OFFSITE DOSE CALCULATION MANUAL;

9) Review of all proposed changes to the Technical Specifications or Operating License, and any proposed change which involves an unreviewed safety question that is to be submitted to the Commission for approval;

10) Review of investigation results for all violations of the Technical Specifications, including the preparation and forwarding of reports covering evaluations and recommendation to prevent recurrence;

11) Review of investigation results for all REPORTABLE EVENTS and other significant operating abnormalities including the preparation and forwarding of reports covering evaluations and recommendation to prevent recurrence;

12) Review of investigation results for any accidental, unplanned, or uncontrolled radioactive release including the preparation and forwarding of reports covering evaluations and recommendations to prevent recurrence;

13) Review of Unit operations to detect potential hazards to nuclear safety;

14) Performance of special reviews and investigations and reports thereon as requested by the ~~Superintendent of the Offsite Review and Investigative Function.~~ Director of Safety Review

c. Authority

The Onsite Review and Investigative Function shall:

1) Advise the Station Manager on all matters related to Nuclear Safety;

ONSITE (Continued)

2) Recommend to the Station Manager the disposition of items considered under Specification 6.5.2.b.1) through 9) prior to their implementation;

3) Include among its review conclusions for each item considered under Specifications 6.5.2.b.1) through 4), a determination of whether or not the item involves an unreviewed safety question.

4) Provide prompt notification to the Site Vice President ~~PWR Operations~~ and the ~~Superintendent of the Offsite Review and Investigative Function~~ Director of Safety Review of disagreement between the Onsite Review and Investigative Function and the Station Manager. The Station Manager shall follow the recommendations of the Onsite Review and Investigative Function or select a course of action that is more conservative regarding safe operation of the facility.

d. Records

1) Reports, reviews, investigations, and recommendations prepared and performed for Specification 6.5.2b shall be documented and forwarded to the ~~Superintendent of the Offsite Review and Investigative Function~~ Director of Safety Review, unless otherwise specified.

2) Copies of all records and documentation shall be kept on file at the station.

e. Procedures

Written administrative procedures shall be prepared and maintained for conduct of the Onsite Review and Investigative Function. These procedures shall include the following:

1) Content and method of submission and presentation to the Station Manager, Site Vice President, ~~PWR Operations,~~ and the ~~Superintendent of the Offsite Review and Investigative Function,~~ Director of Safety Review;

2) Use of committees,

3) Review and approval,

4) Detailed listing of items to be reviewed,

5) Procedures for administration of the quality control activities, and

6) Assignment of responsibilities.

f. Personnel

1) The personnel, including consultants, performing the Onsite Review and Investigative Function, in addition to the Station Manager, shall have expertise in one or more of the following

ONSITE (Continued)

disciplines as appropriate for the subject or subjects being reviewed and investigated:

a) Nuclear power plant technology,
b) Reactor operations,
c) Reactor engineering,
d) Chemistry
e) Radiological controls,
f) Instrumentation and control, and
g) Mechanical and electrical systems.

2) Personnel performing the Onsite Review and Investigative Function shall meet minimum acceptable levels as described in ANSI N18.1-1971, Sections 4.2 and 4.4.

6.6 REPORTABLE EVENT ACTION

6.6.1 The following actions shall be taken for REPORTABLE EVENTS:

a. The Commission shall be notified and a report submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50, and

b. Each REPORTABLE EVENT shall be reviewed by the Onsite Review and Investigative Function and the results of this review shall be submitted to the Offsite Review and Investigative Function and the Site Vice President ~~PWR Operations~~.

6.7 SAFETY LIMIT VIOLATION

6.7.1 The following actions shall be taken in the event a Safety Limit is violated:

a. The NRC Operations Center shall be notified by telephone as soon as possible and in all cases within 1 hour. The Site Vice President ~~PWR Operations~~ and the Offsite Review and Investigative Function shall be notified within 24 hours;

b. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the Onsite Review and Investigative Function. This report shall describe: (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence;

c. The Safety Limit Violation Report shall be submitted to the Commission, the Offsite Review and Investigative Function and the Site Vice President ~~PWR Operations~~ within 14 days of the violation; and

d. Critical operation of the Unit shall not be resumed until authorized by the Commission.

## 6.8 PROCEDURES AND PROGRAMS

6.8.1 Written procedures shall be established, implemented, and maintained covering the activities referenced below:

a. The applicable procedures recommended in Appendix A, of Regulatory Guide 1.33, Revision 2, February 1978,

b. The emergency operating procedures required to implement the requirements of NUREG-0737 and Supplement 1 to NUREG-0737 as stated in Section 7.1 of Generic Letter No. 82-33;

c. Station Security Plan implementation,

d. Generating Station Emergency Response Plan implementation,

e. PROCESS CONTROL PROGRAM implementation,

f. OFFSITE DOSE CALCULATION MANUAL implementation, and

g. Fire Protection Program implementation.

6.8.2 Technical Review and Control

Procedures required by Specification 6.8.1 and other procedures which affect nuclear safety, as determined by the Station Manager, and changes thereto, other than editorial or typographical changes, shall be reviewed as follows prior to implementation except as noted in Specification 6.8.3:

a. Each procedure or procedure change shall be independently reviewed by a qualified individual knowledgeable in the area affected other than the individual who prepared the procedure or procedure change. This review shall include a determination of whether or not additional cross-disciplinary reviews are necessary. If deemed necessary, the reviews shall be performed by the qualified review personnel of the appropriate discipline(s).

b. Individuals performing these reviews shall meet the applicable experience requirements of ANSI N18.1-1971, Sections 4.2 and 4.4, and be approved by the Station Manager.

c. Applicable Administrative Procedures recommended by Regulatory Guide 1.33, Plant Emergency Operating Procedures, and changes thereto shall be submitted to the Onsite Review and Investigative Function for review and approval prior to implementation in accordance with Specification 6.5.2.

d. Review of the procedure or procedure change will include a determination of whether or not an unreviewed safety question is involved. This determination will be based on the review of a written safety evaluation prepared by a qualified individual, or documentation that a safety evaluation is not required. Onsite Review, Offsite Review and Commission approval of items involving unreviewed safety questions shall be obtained prior to Station approval for implementation.

e. The Department Head approval authority shall be as specified in station procedures.

PROCEDURES AND PROGRAMS (Continued)

f. Written records of reviews performed in accordance with this specification shall be prepared and maintained in accordance with Specification 6.10.

g. Editorial and Typographical changes shall be made in accordance with station procedures.

6.8.3 Temporary changes to procedures of Specificaiton 6.8.1 above, may be made provided:

a. The intent of the original procedure is not altered;

b. The change is approved by two members of the plant management staff, at least one of whom holds a Senior Operator license on the Unit affected; and

c. The change is documented, reviewed and approved in accordance with Specification 6.8.2 within 14 days of implementation.

6.8.4 The following programs shall be established, implemented, and maintained:

a. Reactor Coolant Sources Outside Containment

A program to reduce leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. The systems include the recirculation portion of the Containment Spray System, Safety Injection System, Chemical and Volume Control System, and RHR System. The program shall include the following:

1) Preventive maintenance and periodic visual inspection requirements, and

2) Integreated leak test requirements for each system at refueling cycle intervals or less.

b. In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following:

1) Training of personnel,

2) Procedures for monitoring, and

3) Provisions for maintenance of sampling and analysis equipment.

c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

1) Identification of a sampling schedule for the critical variables and control points for these variables,

PROCEDURES AND PROGRAMS (Continued)

2) Identification of the procedures used to measure the values of the critical variables,

3) Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,

4) Procedures for the recording and management of data,

5) Procedures defining corrective action for all off-control point chemistry conditions, and

6) A procedure identifying: (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective action.

d. Post-accident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

1) Training of personnel,

2) Procedures for sampling and analysis, and

3) Provisions for maintenance of sampling and analysis equipment.

e. Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by station procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM,

2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 times the concentration values in Appendix B, Table 2, Column 2 to 10 CFR 20.1001-20.2402,

3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM,

PROCEDURES AND PROGRAMS (Continued)

4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,

5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,

6) Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,

7) Limitations on the dose rate resulting from radioactive materials released in gaseous effluents from the site to areas at or beyond the SITE BOUNDARY shall be limited to the following:

a) For noble gases: less than or equal to a dose rate of 500 mrem/yr to the whole body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and

b) For Iodine-131, Iodine-133, tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: less than or equal to a dose rate of 1500 mrem/yr to any organ,

8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,

9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and

10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

f. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,

PROCEDURES AND PROGRAMS (Continued)

2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

## 6.9 REPORTING REQUIREMENTS

### ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the NRC Regional Office unless otherwise noted.

### STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following: (1) receipt of an Operating License, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant.

6.9.1.2 The Startup Report shall address each of the tests identified in the Final Safety Analysis Report FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup Reports shall be submitted within: (1) 90 days following completion of the Startup Test Program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of Startup Test Program, and resumption or commencement of commercial operation) supplementary reports shall be submitted at least every 3 months until all three events have been completed.

### ANNUAL REPORTS

6.9.1.4 Annual Reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

REPORTING REQUIREMENTS (Continued)

6.9.1.5 Reports required on an annual basis shall include:

a. Tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures greater than 100 mrems/yr and their associated man-rem exposure according to work and job functions,* e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignments to various duty functions may be estimated based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions.

b. The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.8. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.



*This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.

REPORTING REQUIREMENTS (Continued)

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT*

6.9.1.6 The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year. The report shall include summaries, interpretations, and analysis of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in (1) the ODCM and (2) Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT**

6.9.1.7 The Semiannual Radioactive Effluent Release Report covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

MONTHLY OPERATING REPORT

6.9.1.8 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the PORVs or RCS safety valves, shall be submitted on a monthly basis to the Director, Office of Resource Management, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Administrator of the NRC Regional Office, no later than the 15th of each month following the calendar month covered by the report.

OPERATING LIMITS REPORT

6.9.1.9 Operating limits shall be established and documented in the OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle. The analytical methods used to determine the operating limits shall be those previously reviewed and approved by the NRC in Topical Reports: 1) WCAP 9272-P-A "Westinghouse Reload Safety Evaluations Methodology" dated July 1985, 2) WCAP-8385 "Power Distribution Control and Load Following Procedures" dated September 1974, 3) NFSR-0016 "Benchmark of PWR Nuclear Design Methods" dated July 1983, and/or 4) NFSR-0081 "Benchmark of PWR Nuclear Design Methods Using the PHOENIX-P and ANC Computer Codes" dated July 1990. The operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met. The OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

*A single submittal may be made for a multi-unit station.
**A single submittal may be made for a multi-unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS

6.9.1.10 Fuel enrichment limits for storage shall be established and documented in the CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS. The analytical methods used to determine the maximum fuel enrichments shall be those previously reviewed and approved by the NRC in "CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS." The fuel enrichment limits for storage shall be determined so that all applicable limits (e.g., subcriticality) of the safety analysis are met.

The CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS report shall be provided upon issuance of any changes, to the NRC Document Control Desk, with copies to the Regional Administrator and the Resident Inspector.

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator of the NRC Regional Office within the time period specified for each report.

6.10 RECORD RETENTION

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.1 The following records shall be retained for at least 5 years:

a. Records and logs of unit operation covering time interval at each power level;

b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety;

c. All REPORTABLE EVENTS;

d. Records of surveillance activities, inspections, and calibrations required by these Technical Specifications;

e. Records of changes made to the procedures required by Specification 6.8;

f. Records of radioactive shipments;

g. Records of sealed source and fission detector leak tests and results; and

h. Records of annual physical inventory of all sealed source material of record.

6.10.2 The following records shall be retained for the duration of the unit Operating License:

a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report;

b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories;

RECORD RETENTION (Continued)

c. Records of radiation exposure for all individuals entering radiation control areas;

d. Records of gaseous and liquid radioactive material released to the environs;

e. Records of transient or operational cycles for those unit components identified in Table 5.7-1;

f. Records of reactor tests and experiments;

g. Records of training and qualification for current members of the unit staff;

h. Records of in-service inspections performed pursuant to these Technical Specifications;

i. Records of Quality Assurance activities required by the QA Program;

j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59;

k. Records of meetings and results of reviews and audits performed by the Offsite Review and Investigative Function and the Onsite Review and Investigative Function;

l. Records of the service lives of all hydraulic and mechanical snubbers required by Specification 3.7.8 including the date at which the service life commences and associated installation and maintenance records;

m. Records of secondary water sampling and water quality;

n. Records of analysis required by the Radiological Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at specified times and QA records showing that these procedures were followed, and

o. Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.

## 6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

6.12.1 Pursuant to Paragraph 20.203(c)(5) of 10 CFR Part 20, in lieu of the "control device" or "alarm signal" required by paragraph 20.203(c), each high radiation area, as defined in 10 CFR Part 20, in which the intensity of radiation is equal to or less than 1000 mR/hr at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates equal to or less than 1000 mR/h, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

a. A radiation monitoring device which continuously indicates the radiation dose rate in the area; or

b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel have been made knowledgeable of them; or

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified in the Radiation Work Permit.

6.12.2 In addition to the requirements of Specification 6.12.1, areas accessible to personnel with radiation levels greater than 1000 mR/h at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be provided with locked doors to prevent unauthorized entry, and the keys shall be maintained under the administrative control of the Shift Foreman on duty and/or health physics supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP which shall specify the dose rate levels in the immediate work areas and the maximum allowable stay time for individuals in that area. In lieu of the stay time specification of the RWP, direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area. During emergency situations which involve personnel injury or actions taken to prevent major equipment damage, continuous surveillance and radiation monitoring of the work area by a qualified individual may be substituted for the routine RWP procedure.

HIGH RADIATION AREA (Continued)

For individual high radiation areas accessible to personnel with radiation levels of greater than 1000 mR/h that are located within large areas, such as PWR containment, where no enclosure exists for purposes of locking, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded (by a more substantial obstacle than rope), conspicuously posted, and a flashing light shall be activated as a warning device.

## 6.13 PROCESS CONTROL PROGRAM (PCP)

6.13.1 Changes to the PCP:

a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2o. This documentation shall contain:

1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and,

2) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.

b. Shall become effective after review and acceptance by the Onsite Review and Investigative Function (Onsite Review) and the approval of the Station Manager.

## 6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.14.1 Changes to the ODCM:

a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2o. This documentation shall contain:

1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and,

2) A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.

b. Shall become effective after review and acceptance by the Onsite Review and Investigative Function and the approval of the Station Manager on the date specified by the Onsite Review and Investigative Function.

OFFSITE DOSE CALCULATION MANUAL (ODCM) (Continued)

c. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Semiannual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made effective. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.

Section 6.5 Relocation

DRAFT



## 6.1 RESPONSIBILITY

6.1.1 The Station Manager, Byron Station, shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

6.1.2 The Shift Engineer (or during his absence from the control room, a designated individual) shall be responsible for the control room command function. A management directive to this effect, signed by the Vice President PWR Operations shall be reissued to all station personnel on an annual basis.

## 6.2 ORGANIZATION

### 6.2.1 ONSITE AND OFFSITE ORGANIZATIONS

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the Quality Assurance Manual or the Management Plan for Nuclear Operations, Section 3 Organizational Authority, Activities; Section 6 Interdepartmental Relationships.

b. The Station Manager shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.

c. The Senior Vice President-Nuclear Operations shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety.

d. The individuals who train the operating staff and those who carry out health physics and quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their independence from operating pressures.



DRAFT

6.2.2 UNIT STAFF

The unit staff shall be subject to the following:

a. Each on duty shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1; and

b. At least one licensed Operator shall be in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3, or 4, at least one licensed Senior Operator shall be in the control room;

c. A Radiation Protection Technician,* qualified in radiation protection procedures, shall be on site when fuel is in the reactor;

d. All CORE ALTERATIONS shall be observed and directly supervised by either a licensed Senior Operator or licensed Senior Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation;

e. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions; e.g., licensed Senior Operators, licensed Operators, health physics personnel, equipment operators, and key maintenance personnel.

The amount of overtime worked by Unit staff members performing safety-related functions shall be limited in accordance with the NRC Policy Statement on working hours (Generic Letter No. 82-12);

f. The Assistant Superintendent Operating shall hold a Senior Reactor Operator License.

6.2.3 ONSITE NUCLEAR SAFETY GROUP (ONSG)

FUNCTION

6.2.3.1 The ONSG serves as an independent safety engineering group and shall function to examine plant operating characteristics, NRC issuances, industry advisories, REPORTABLE EVENTS and other sources of plant design and operating experience information, including plants of similar design, which may indicate areas for improving plant safety. The ONSG shall make detailed recommendations for revised procedures, equipment modifications, maintenance activities, operations activities or other means of improving plant safety to the Safety Assessment Manager, and the Station Manager, Byron Station.

COMPOSITION

6.2.3.2 The ONSG shall be composed of at least three, dedicated, full-time engineers located on site.

*The Radiation Protection Technician may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence provided immediate action is taken to fill the required positions.

6.2.3 ONSITE NUCLEAR SAFETY GROUP (ONSG) (Continued)

RESPONSIBILITIES

6.2.3.3 The ONSG shall be responsible for maintaining surveillance of plant activities to provide independent verification* that these activities are performed correctly and that human errors are reduced as much as practical.

RECORDS

6.2.3.4 Records of activities performed by the ONSG shall be prepared, maintained, and forwarded each calendar month to the Safety Assessment Manager, and the Station Manager, Byron Station.

6.2.4 SHIFT TECHNICAL ADVISOR

The Station Control Room Engineer (SCRE) may serve as the Shift Technical Advisor (STA) during abnormal operating or accident conditions. During these conditions the SCRE or other on duty STA shall provide technical support to the Shift Supervisor in the areas of thermal hydraulics, reactor engineering and plant analysis with regard to the safe operation of the unit.

To assure capability for performance of all STA functions:

(1) The shift foreman (SRO) shall participate in the SCRE shift relief turnover.

(2) During the shift, the shift engineer and the shift foreman (SRO) shall be made aware of any significant changes in plant status in a timely manner by the SCRE.

(3) During the shift, the shift engineer and the shift foreman (SRO) shall remain abreast of the current plant status. The shift foreman (SRO) shall return to the control room two or three times per shift, where practicable, to confer with the SCRE regarding plant status. Where not practicable to return to the control room, the shift foreman (SRO) shall periodically check with the SCRE for a plant status update. The shift foreman (SRO) shall not abandon duties original to reactor operation, unless specifically ordered by the shift engineer.

*Not responsible for sign-off function.

FIGURE 6.2-1
(THIS FIGURE NOT USED)

FIGURE 6.2-2
(THIS FIGURE NOT USED)

TABLE 6.2-1

MINIMUM SHIFT CREW COMPOSITION

| POSITION | NUMBER OF INDIVIDUALS REQUIRED TO FILL POSITION | | |
|---|---|---|---|
| | BOTH UNITS IN MODE 1, 2, 3, OR 4 | BOTH UNITS IN MODE 5 OR 6 OR DEFUELED | ONE UNIT IN MODE 1, 2, 3 OR 4 AND ONE UNIT IN MODE 5 OR 6 OR DEFUELED |
| SE | 1 | 1 | 1 |
| SF | 1 | None## | 1 |
| RO | 3# | 2# | 3# |
| AO | 3# | 3# | 3# |
| STA or SCRE | 1 | None | 1 |

SE - Shift Supervisor (Shift Engineer) with a Senior Operator license
SF - Shift Foreman with a Senior Operator license
RO - Individual with an Operator license
AO - Auxiliary Operator
STA - Shift Technical Advisor
SCRE - Station Control Room Engineer with a Senior Operator License

The Shift Crew Composition may be one less than the minimum requirements of Table 6.2-1 for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the Shift Crew Composition to within the minimum requirements of Table 6.2-1. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming shift crewman being late or absent.

During any absence of the Shift Supervisor from the control room while the Unit is in MODE 1, 2, 3 or 4, an individual with a valid Senior Operator license shall be designated to assume the control room command function. During any absence of the Shift Supervisor from the control room while the Unit is in MODE 5 or 6, an individual with a valid Operator license shall be designated to assume the control room command function.

#At least one of the required individuals must be assigned to the designated position for each unit.
##At least one licensed Senior Operator or licensed Senior Operator Limited to Fuel Handling must be present during Core Alterations on either unit, who has no other concurrent responsibilities.

6.3 UNIT STAFF QUALIFICATIONS

6.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971, except for the Health Physics Supervisor or Lead Health Physicist, who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, for a Radiation Protection Manager.

6.4 TRAINING

6.4.1 A retraining and replacement training program for the unit staff shall be maintained under the direction of the Production Training Department and shall meet or exceed the requirements and recommendations of Section 5 of ANSI/ANS 3.1-1978, and shall include familiarization with relevant industry operational experience from the program managed by Quality Programs and Assessment.

6.5 ~~REVIEW INVESTIGATION AND AUDIT~~ (THIS SECTION NOT USED)

The Review and Investigative Function and the Audit Function of activities affecting quality during facility operations shall be constituted and have the responsibilities and authorities outlined below.

OFFSITE

6.5.1 The Superintendent of the Offsite Review and Investigative Function shall be appointed by the Manager of Quality Assurance/Nuclear Safety (QA/NS) responsible for nuclear activities. The corporate audit function shall be the responsibility of the Manager of QA/NS and shall be independent of operations.

The Manager of QA/NS reports directly to the Chief Executive Officer and has the responsibility to set Corporate Policy for both the areas of Quality Assurance and Nuclear Safety. Policy is promulgated through a central policy committee directed by the Manager of QA/NS. The Manager of QA/NS has the responsibility for the performance of periodic audits of each nuclear station and corporate department to determine that QA/NS policy is being carried out.

a. Offsite Review and Investigative Function

The Superintendent of the Offsite Review and Investigative Function shall: (1) provide directions for the review and investigative function and appoint a senior participant to provide appropriate direction, (2) select each participant for this function, (3) select a complement of more than one participant who collectively possess background and qualifications in the subject matter under review to provide comprehensive interdisciplinary review coverage under this function, (4) independently review and approve the findings and recommendations developed by personnel performing the review

(THIS PAGE NOT USED)



OFFSITE (Continued)

and investigative function, (5) approve and report in a timely manner all findings of non-compliance with NRC requirements to the Station Manager, Vice President PWR Operations, Manager of QA/NS, General Manager Quality Programs and Assessment, and the Senior Vice President - Nuclear Operations. During periods when the Superintendent of Offsite Review and Investigative Function is unavailable, he shall designate this responsibility to an established alternate, who satisfies the formal training and experience for the Superintendent of the Offsite Review and Investigative Function. The responsibilities of the personnel performing this function are stated below. The Offsite Review and Investigative Function shall review:

1) The safety evaluations for: (1) changes to procedures, equipment, or systems as described in the safety analysis report, and (2) tests or experiments completed under the provision of 10 CFR 50.59 to verify that such actions did not constitute an unreviewed safety question. Proposed changes to the Quality Assurance Program description shall be reviewed and approved by the Manager of QA/NS;

2) Proposed changes to procedures, equipment or systems which involve an unreviewed safety question as defined in 10 CFR 50.59;

3) Proposed tests or experiments which involve an unreviewed safety question as defined in 10 CFR 50.59;

4) Proposed changes in Technical Specifications or this Operating License;

5) Noncompliance with Codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures, or instructions having nuclear safety significance;

6) Significant operating abnormalities or deviation from normal and expected performance of plant equipment that affect nuclear safety as referred to it by the Onsite Review and Investigative Function;

7) All REPORTABLE EVENTS;

8) All recognized indications of an unanticipated deficiency in some aspect of design or operation of safety-related structures, systems, or components;

9) All changes to the Generating Stations Emergency Plan prior to implementation of such change; and

OFFSITE (Continued)

10) All items referred by the Technical Staff Supervisor, Station Manager, Vice President PWR Operations and General Manager Quality Programs and Assessment.

b. Station Audit Function

The station audit function shall be the responsibility of the General Manager Quality Programs and Assessment independent of PWR operations. Such responsibility is delegated to the Nuclear Quality Programs Manager.

The Nuclear Quality Programs Manager, or designated corporate staff or supervision approved by the General Manager Quality Programs and Assessment shall approve the audit agenda and checklists, the findings and the report of each audit. Audits shall be performed in accordance with the Company Quality Assurance Program and Procedures. Audits shall be performed to assure that safety-related functions are covered within the period designated below:

1) The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 12 months;

2) The adherence to procedure, training, and qualification of the station staff at least once per 12 months;

3) The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems, or methods of operation that affect nuclear safety at least once per 6 months;

4) The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix B, 10 CFR Part 50, at least once per 24 months;

5) The Facility Emergency Plan and implementing procedures at least once per 12 months;

6) The Facility Security Plan and implementing procedures at least once per 12 months;

7) Onsite and offsite reviews;

8) The Facility Fire Protection programmatic controls including the implementing procedures at least once per 24 months by qualified QA personnel;

9) The fire protection equipment and program implementation at least once per 12 months utilizing either a qualified offsite licensee fire protection engineer or an outside independent fire protection consultant. An outside independent fire protection consultant shall be used at least every third year;

(THIS PAGE NOT USED)

DRAFT



OFFSITE (Continued)

10) The Radiological Environmental Monitoring Program and the results thereof at least once per 12 months;

11) The OFFSITE DOSE CALCULATION MANUAL and implementing procedures at least once per 24 months;

12) The PROCESS CONTROL PROGRAM and implementing procedures for solidification of radioactive wastes at least once per 24 months; and

13) The performance of activities required by the Company Quality Assurance Program for effluent and environmental monitoring at least once per 12 months.

All findings of noncompliance with NRC requirements and recommendations and results of each audit shall be reported to the Station Manager, Manager of QA/NS, the Vice President PWR Operations, General Manager Quality Programs and Assessment, the Senior Vice President - Nuclear Operations, and the Chief Operating Officer.

c. Authority

The Manager of QA/NS reports to the Chief Executive Officer. The Manager of QA/NS has the authority to order unit shutdown or request any other action which he deems necessary to avoid unsafe plant conditions.

The General Manager Quality Programs and Assessment reports to the Senior Vice President - Nuclear Operations. The General Manager Quality Programs and Assessment has the authority to recommend unit shutdown or request any other action which he deems necessary to avoid unsafe plant conditions. All such disagreements shall be reported immediately to the Manager of QA/NS and the Chief Operating Officer.

DRAFT

(THIS PAGE NOT USED)





OFFSITE (Continued)

d. Records

1) Reviews, audits, and recommendations shall be documented and distributed as covered in Specification 6.5.1a. and 6.5.1b.; and

2) Copies of documentation, reports, and correspondence shall be kept on file at the station.

e. Procedures

Written administrative procedures shall be prepared and maintained for the offsite reviews and investigative functions described in Specification 6.5.1a. and for the audit functions described in Specification 6.5.1b. Those procedures shall cover the following:

1) Content and method of submission of presentations to the Superintendent of the Offsite Review and Investigative Function,

2) Use of committees and consultants,

3) Review and approval,

4) Detailed listing of items to be reviewed,

5) Method of: (1) appointing personnel, (2) performing reviews, investigations, (3) reporting findings and recommendations of reviews and investigations, (4) approving reports, and (5) distributing reports, and

6) Determining satisfactory completion of action required based on approved findings and recommendations reported by personnel performing the review and investigative function.

f. Personnel

1) The persons, including consultants, performing the Offsite Review and Investigative Function, in addition to the Superintendent of the Offsite Review and Investigative Function, shall have expertise in one or more of the following disciplines as appropriate for the subject or subjects being reviewed and investigated:

a) Nuclear power plant technology,
b) Reactor operations,
c) Utility operations,
d) Power plant design,
e) Reactor engineering,
f) Radiological safety,
g) Reactor safety analysis,

OFFSITE (Continued)

h) Instrumentation and control,
i) Metallurgy, and
j) Any other appropriate disciplines required by unique characteristics of the facility.

2) Individuals performing the Offsite Review and Investigative Function shall possess a minimum formal training and experience as listed below for each discipline.

a) Nuclear Power Plant Technology

Engineering graduate or equivalent with 5 years experience in the nuclear power field design and/or operation.

b) Reactor Operations

Engineering graduate or equivalent with 5 years experience in nuclear power plant operations.

c) Utility Operations

Engineering graduate or equivalent with at least 5 years of experience in utility operation and/or engineering.

d) Power Plant Design

Engineering graduate or equivalent with at least 5 years of experience in power plant design and/or operation.

e) Reactor Engineering

Engineering graduate or equivalent. In addition, at least 5 years of experience in nuclear plant engineering, operation, and/or graduate work in nuclear engineering or equivalent in reactor physics is required.

f) Radiological Safety

Engineering graduate or equivalent with at least 5 years of experience in radiation control and safety.

g) Reactor Safety Analysis

Engineering graduate or equivalent with at least 5 years of experience in nuclear engineering.

OFFSITE (Continued)

h) Instrumentation and Control

Engineering graduate or equivalent with at least 5 years of experience in instrumentation and control design and/or operation.

i) Metallurgy

Engineering graduate or equivalent with at least 5 years of experience in the metallurgical field.

3) The Superintendent of the Offsite Review and Investigative Function shall have experience and training which satisfy ANSI N18.1-1971 requirements for plant managers.

ONSITE

6.5.2 The Onsite Review and Investigative Function shall be supervised by the Station Manager.

a. Onsite Review and Investigative Function

The Station Manager shall: (1) provide directions for the Onsite Review and Investigative Function and appoint the Technical Staff Supervisor, or other comparably qualified individual as the senior participant to provide appropriate directions; (2) approve participants for this function; (3) assure that at least two participants who collectively possess background and qualifications in the subject matter under review are selected to provide comprehensive interdisciplinary review coverage under this function; (4) independently review and approve the findings and recommendations developed by personnel performing the Onsite Review and Investigative Function; (5) report all findings of noncompliance with NRC requirements, and provide recommendations; and (6) submit to the Offsite Review and Investigative Function for concurrence in a timely manner, those items described in Specification 6.5.1a which have been approved by the Onsite Review and Investigative Function.

b. Responsibility

The Onsite Review and Investigative Function shall be responsible for conducting the following:

1) Review of all applicable Plant Administrative Procedures recommended in Appendix A of Reg Guide 1.33, Revision 2, February 1978 and changes thereto;

2) Review of Emergency Operating Procedures required to implement the requirements of NUREG-0737 and Supplement 1 to NUREG-0737 as stated in Section 7.1 of Generic Letter No. 82-33 and changes thereto;

(THIS PAGE NOT USED)

DRAFT



ONSITE (Continued)

3) Review of all proposed tests and experiments that affect nuclear safety;

4) Review of all proposed changes or modifications to plant systems or equipment that affect nuclear safety;

5) Review of proposed changes to the Fire Protection Program;

6) Review of the Station Security Plan and submittal of recommended changes to the station Security Plan in accordance with station procedures;

7) Review of Emergency Plan and identification of recommended changes;

8) Review of changes to the PROCESS CONTROL PROGRAM and the OFFSITE DOSE CALCULATION MANUAL;

9) Review of all proposed changes to the Technical Specifications or Operating License, and any proposed change which involves an unreviewed safety question that is to be submitted to the Commission for approval;

10) Review of investigation results for all violations of the Technical Specifications, including the preparation and forwarding of reports covering evaluations and recommendation to prevent recurrence;

11) Review of investigation results for all REPORTABLE EVENTS and other significant operating abnormalities including the preparation and forwarding of reports covering evaluations and recommendation to prevent recurrence;

12) Review of investigation results for any accidental, unplanned, or uncontrolled radioactive release including the preparation and forwarding of reports covering evaluations and recommendations to prevent recurrence;

13) Review of Unit operations to detect potential hazards to nuclear safety;

14) Performance of special reviews and investigations and reports thereon as requested by the Superintendent of the Offsite Review and Investigative Function.

c. Authority

The Onsite Review and Investigative Function shall:

1) Advise the Station Manager on all matters related to Nuclear Safety;

DRAFT

(THIS PAGE NOT USED)

DRAFT



ONSITE (Continued)

2) Recommend to the Station Manager the disposition of items considered under Specification 6.5.2.b.1) through 9) prior to their implementation;

3) Include among its review conclusions for each item considered under Specifications 6.5.2.b.1) through 4), a determination of whether or not the item involves an unreviewed safety question.

4) Provide prompt notification to the Vice-President PWR Operations and the Superintendent of the Offsite Review and Investigative Function of disagreement between the Onsite Review and Investigative Function and the Station Manager. The Station Manager shall follow the recommendations of the Onsite Review and Investigative Function or select a course of action that is more conservative regarding safe operation of the facility.

d. Records

1) Reports, reviews, investigations, and recommendations prepared and performed for Specification 6.5.2b shall be documented and forwarded to the Superintendent of the Offsite Review and Investigative Function, unless otherwise specified.

2) Copies of all records and documentation shall be kept on file at the station.

e. Procedures

Written administrative procedures shall be prepared and maintained for conduct of the Onsite Review and Investigative Function. These procedures shall include the following:

1) Content and method of submission and presentation to the Station Manager, Vice President PWR Operations, and the Superintendent of the Offsite Review and Investigative Function,

2) Use of committees,

3) Review and approval,

4) Detailed listing of items to be reviewed,

5) Procedures for administration of the quality control activities, and

6) Assignment of responsibilities.

f. Personnel

1) The personnel, including consultants, performing the Onsite Review and Investigative Function, in addition to the Station Manager, shall have expertise in one or more of the following

DRAFT

ONSITE (Continued)

disciplines as appropriate for the subject or subjects being reviewed and investigated:

a) Nuclear power plant technology,
b) Reactor operations,
c) Reactor engineering,
d) Chemistry
e) Radiological controls,
f) Instrumentation and control, and
g) Mechanical and electrical systems.

2) Personnel performing the Onsite Review and Investigative Function shall meet minimum acceptable levels as described in ANSI N18.1-1971, Sections 4.2 and 4.4.

6.6 REPORTABLE EVENT ACTION

6.6.1 The following actions shall be taken for REPORTABLE EVENTS:

a. The Commission shall be notified and a report submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50, and

b. Each REPORTABLE EVENT shall be reviewed by the Onsite Review and Investigative Function and the results of this review shall be submitted to the Offsite Review and Investigative Function and the Vice President PWR Operations.

6.7 SAFETY LIMIT VIOLATION

6.7.1 The following actions shall be taken in the event a Safety Limit is violated:

a. The NRC Operations Center shall be notified by telephone as soon as possible and in all cases within 1 hour. The Vice President PWR Operations and the Offsite Review and Investigative Function shall be notified within 24 hours;

b. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the Onsite Review and Investigative Function. This report shall describe: (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence;

c. The Safety Limit Violation Report shall be submitted to the Commission, the Offsite Review and Investigative Function and the Vice President PWR Operations within 14 days of the violation; and

d. Critical operation of the Unit shall not be resumed until authorized by the Commission.

## 6.8 PROCEDURES AND PROGRAMS

6.8.1 Written procedures shall be established, implemented, and maintained covering the activities referenced below:

a. The applicable procedures recommended in Appendix A, of Regulatory Guide 1.33, Revision 2, February 1978,

b. The emergency operating procedures required to implement the requirements of NUREG-0737 and Supplement 1 to NUREG-0737 as stated in Section 7.1 of Generic Letter No. 82-33;

c. Station Security Plan implementation,

d. Generating Station Emergency Response Plan implementation,

e. PROCESS CONTROL PROGRAM implementation,

f. OFFSITE DOSE CALCULATION MANUAL implementation, and

g. Fire Protection Program implementation.

6.8.2 Technical Review and Control

Procedures required by Specification 6.8.1 and other procedures which affect nuclear safety, as determined by the Station Manager, and changes thereto, other than editorial or typographical changes, shall be reviewed as follows prior to implementation except as noted in Specification 6.8.3:

a. Each procedure or procedure change shall be independently reviewed by a qualified individual knowledgeable in the area affected other than the individual who prepared the procedure or procedure change. This review shall include a determination of whether or not additional cross-disciplinary reviews are necessary. If deemed necessary, the reviews shall be performed by the qualified review personnel of the appropriate discipline(s).

b. Individuals performing these reviews shall meet the applicable experience requirements of ANSI N18.1-1971, Sections 4.2 and 4.4, and be approved by the Station Manager.

c. Applicable Administrative Procedures recommended by Regulatory Guide 1.33, Plant Emergency Operating Procedures, and changes thereto shall be submitted to the Onsite Review and Investigative Function for review and approval prior to implementation, ~~in accordance with Specification 6.5.2.~~

d. Review of the procedure or procedure change will include a determination of whether or not an unreviewed safety question is involved. This determination will be based on the review of a written safety evaluation prepared by a qualified individual, or documentation that a safety evaluation is not required. Onsite Review, Offsite Review and Commission approval of items involving unreviewed safety questions shall be obtained prior to Station approval for implementation.

e. The Department Head approval authority shall be as specified in station procedures.

PROCEDURES AND PROGRAMS (Continued)

f. Written records of reviews performed in accordance with this specification shall be prepared and maintained in accordance with Specification 6.10.

g. Editorial and Typographical changes shall be made in accordance with station procedures.

6.8.3 Temporary changes to procedures of Specificaiton 6.8.1 above, may be made provided:

a. The intent of the original procedure is not altered;

b. The change is approved by two members of the plant management staff, at least one of whom holds a Senior Operator license on the Unit affected; and

c. The change is documented, reviewed and approved in accordance with Specification 6.8.2 within 14 days of implementation.

6.8.4 The following programs shall be established, implemented, and maintained:

a. Reactor Coolant Sources Outside Containment

A program to reduce leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. The systems include the recirculation portion of the Containment Spray System, Safety Injection System, Chemical and Volume Control System, and RHR System. The program shall include the following:

1) Preventive maintenance and periodic visual inspection requirements, and

2) Integreated leak test requirements for each system at refueling cycle intervals or less.

b. In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following:

1) Training of personnel,

2) Procedures for monitoring, and

3) Provisions for maintenance of sampling and analysis equipment.

c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

1) Identification of a sampling schedule for the critical variables and control points for these variables,

PROCEDURES AND PROGRAMS (Continued)

2) Identification of the procedures used to measure the values of the critical variables,

3) Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,

4) Procedures for the recording and management of data,

5) Procedures defining corrective action for all off-control point chemistry conditions, and

6) A procedure identifying: (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective action.

d. Post-accident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

1) Training of personnel,

2) Procedures for sampling and analysis, and

3) Provisions for maintenance of sampling and analysis equipment.

e. Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by station procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM,

2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 times the concentration values in Appendix B, Table 2, Column 2 to 10 CFR 20.1001-20.2402,

3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM,

DRAFT

PROCEDURES AND PROGRAMS (Continued)

4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,

5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,

6) Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,

7) Limitations on the dose rate resulting from radioactive materials released in gaseous effluents from the site to areas at or beyond the SITE BOUNDARY shall be limited to the following:

a) For noble gases: less than or equal to a dose rate of 500 mrem/yr to the whole body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and

b) For Iodine-131, Iodine-133, tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: less than or equal to a dose rate of 1500 mrem/yr to any organ,

8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,

9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and

10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

f. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,

PROCEDURES AND PROGRAMS (Continued)

2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

## 6.9 REPORTING REQUIREMENTS

### ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the NRC Regional Office unless otherwise noted.

### STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following: (1) receipt of an Operating License, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant.

6.9.1.2 The Startup Report shall address each of the tests identified in the Final Safety Analysis Report FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup Reports shall be submitted within: (1) 90 days following completion of the Startup Test Program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of Startup Test Program, and resumption or commencement of commercial operation) supplementary reports shall be submitted at least every 3 months until all three events have been completed.

### ANNUAL REPORTS

6.9.1.4 Annual Reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

REPORTING REQUIREMENTS (Continued)

6.9.1.5 Reports required on an annual basis shall include:

a. Tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures greater than 100 mrems/yr and their associated man-rem exposure according to work and job functions,* e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignments to various duty functions may be estimated based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions.

b. The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.8. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.



*This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.

REPORTING REQUIREMENTS (Continued)

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT*

6.9.1.6 The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year. The report shall include summaries, interpretations, and analysis of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in (1) the ODCM and (2) Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT**

6.9.1.7 The Semiannual Radioactive Effluent Release Report covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

MONTHLY OPERATING REPORT

6.9.1.8 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the PORVs or RCS safety valves, shall be submitted on a monthly basis to the Director, Office of Resource Management, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Administrator of the NRC Regional Office, no later than the 15th of each month following the calendar month covered by the report.

OPERATING LIMITS REPORT

6.9.1.9 Operating limits shall be established and documented in the OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle. The analytical methods used to determine the operating limits shall be those previously reviewed and approved by the NRC in Topical Reports: 1) WCAP 9272-P-A "Westinghouse Reload Safety Evaluations Methodology" dated July 1985, 2) WCAP-8385 "Power Distribution Control and Load Following Procedures" dated September 1974, 3) NFSR-0016 "Benchmark of PWR Nuclear Design Methods" dated July 1983, and/or 4) NFSR-0081 "Benchmark of PWR Nuclear Design Methods Using the PHOENIX-P and ANC Computer Codes" dated July 1990. The operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met. The OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

*A single submittal may be made for a multi-unit station.
**A single submittal may be made for a multi-unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS

6.9.1.10 Fuel enrichment limits for storage shall be established and documented in the CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS. The analytical methods used to determine the maximum fuel enrichments shall be those previously reviewed and approved by the NRC in "CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS." The fuel enrichment limits for storage shall be determined so that all applicable limits (e.g., subcriticality) of the safety analysis are met.

The CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS report shall be provided upon issuance of any changes, to the NRC Document Control Desk, with copies to the Regional Administrator and the Resident Inspector.

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator of the NRC Regional Office within the time period specified for each report.

6.10 RECORD RETENTION

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.1 The following records shall be retained for at least 5 years:

a. Records and logs of unit operation covering time interval at each power level;

b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety;

c. All REPORTABLE EVENTS;

d. Records of surveillance activities, inspections, and calibrations required by these Technical Specifications;

e. Records of changes made to the procedures required by Specification 6.8;

f. Records of radioactive shipments;

g. Records of sealed source and fission detector leak tests and results; and

h. Records of annual physical inventory of all sealed source material of record.

6.10.2 The following records shall be retained for the duration of the unit Operating License:

a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report;

b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories;

RECORD RETENTION (Continued)

c. Records of radiation exposure for all individuals entering radiation control areas;

d. Records of gaseous and liquid radioactive material released to the environs;

e. Records of transient or operational cycles for those unit components identified in Table 5.7-1;

f. Records of reactor tests and experiments;

g. Records of training and qualification for current members of the unit staff;

h. Records of in-service inspections performed pursuant to these Technical Specifications;

i. Records of Quality Assurance activities required by the QA Program;

j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59;

k. Records of meetings and results of reviews and audits performed by the Offsite Review and Investigative Function and the Onsite Review and Investigative Function;

l. Records of the service lives of all hydraulic and mechanical snubbers required by Specification 3.7.8 including the date at which the service life commences and associated installation and maintenance records;

m. Records of secondary water sampling and water quality;

n. Records of analysis required by the Radiological Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at specified times and QA records showing that these procedures were followed, and

o. Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.

## 6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

6.12.1 Pursuant to Paragraph 20.203(c)(5) of 10 CFR Part 20, in lieu of the "control device" or "alarm signal" required by paragraph 20.203(c), each high radiation area, as defined in 10 CFR Part 20, in which the intensity of radiation is equal to or less than 1000 mR/hr at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates equal to or less than 1000 mR/h, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

a. A radiation monitoring device which continuously indicates the radiation dose rate in the area; or

b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel have been made knowledgeable of them; or

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified in the Radiation Work Permit.

6.12.2 In addition to the requirements of Specification 6.12.1, areas accessible to personnel with radiation levels greater than 1000 mR/h at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be provided with locked doors to prevent unauthorized entry, and the keys shall be maintained under the administrative control of the Shift Foreman on duty and/or health physics supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP which shall specify the dose rate levels in the immediate work areas and the maximum allowable stay time for individuals in that area. In lieu of the stay time specification of the RWP, direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area. During emergency situations which involve personnel injury or actions taken to prevent major equipment damage, continuous surveillance and radiation monitoring of the work area by a qualified individual may be substituted for the routine RWP procedure.

HIGH RADIATION AREA (Continued)

For individual high radiation areas accessible to personnel with radiation levels of greater than 1000 mR/h that are located within large areas, such as PWR containment, where no enclosure exists for purposes of locking, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded (by a more substantial obstacle than rope), conspicuously posted, and a flashing light shall be activated as a warning device.

6.13 PROCESS CONTROL PROGRAM (PCP)

6.13.1 Changes to the PCP:

a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2o. This documentation shall contain:

1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and,

2) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.

b. Shall become effective after review and acceptance by the Onsite Review and Investigative Function (Onsite Review) and the approval of the Station Manager.

6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.14.1 Changes to the ODCM:

a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2o. This documentation shall contain:

1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and,

2) A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.

b. Shall become effective after review and acceptance by the Onsite Review and Investigative Function and the approval of the Station Manager on the date specified by the Onsite Review and Investigative Function.

OFFSITE DOSE CALCULATION MANUAL (ODCM) (Continued)

c. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Semiannual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made effective. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.

# TABLE OF CONTENTS & INDEX (Rev. ~~64~~ 65 15 pages

## Preface & Policy (Rev. ~~64~~ 65) 1 page

## SECTION 1, ORGANIZATION (Rev. ~~64~~ 65) ~~26~~ 24 pages

page 1-3

1.2.5

1.2.5.1

1.2.5.2

1.2.5.3

(X) from page 1-2

## SECTION 2, QUALITY ASSURANCE PROGRAM (Rev. ~~64~~ 65) ~~10~~ 9 pages

## SECTION 4, PROCUREMENT DOCUMENT CONTROL (Rev. ~~64~~ 65) 5 pages



## SECTION 5, INSTRUCTIONS, PROCEDURES AND DRAWINGS (Rev. ~~64~~ 65) 3 pages

## SECTION 6, DOCUMENT CONTROL (Rev. ~~64~~ 65) 4 pages



## SECTION 7, CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES (Rev. ~~64~~ 65) ~~13~~ 14 pages

# SECTION 8, IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

(Rev. ~~64~~ 65) 3 pages



# SECTION 9, CONTROL OF SPECIAL PROCESSES

(Rev. ~~64~~ 65) 4 pages

DRAFT

## SECTION 10, INSPECTION (Rev. ~~64~~ 65) ~~5~~ 4 pages



## SECTION 11, TEST CONTROL (Rev. ~~64~~ 65) ~~16~~ 15 pages





DRAFT

## SECTION 12, CONTROL OF MEASURING AND TEST EQUIPMENT (Rev. ~~64~~ 65 4) ~~8~~ pages





DRAFT

## SECTION 13, HANDLING, STORAGE AND SHIPPING (Rev. ~~64~~ 65) 3 pages

DRAFT

## SECTION 14, INSPECTION, TEST AND OPERATING STATUS (Rev. ~~64~~ 65 6 pages



## SECTION 15, NONCONFORMING MATERIALS, PARTS OR COMPONENTS (Rev. ~~64~~ 65 ~~6~~ 5 pages





DRAFT

## SECTION 18, AUDITS (Rev. ~~64~~ 65) ~~4~~ 6 pages





DRAFT

## SECTION 19, AUGMENTED QUALITY (Rev. ~~64~~ 65) ~~8~~ 5 pages



## APPENDIX A, DEFINITIONS (Rev. ~~63b~~ 65) 21 pages

A

add new section 20 from following page

Approved By [signature] (acting) 8/17/93
Nuclear Oversight Manager Date

new (A), after Section 19

# SECTION 20, INDEPENDENT SAFETY REVIEWS

(Rev. 65) 10 pages

DRAFT

# COMMONWEALTH EDISON
# QUALITY ASSURANCE MANUAL

This Quality Assurance Manual has been prepared to delineate the requirements governing the Commonwealth Edison Company Quality Assurance Program for nuclear generating stations. Implementation of the program as described provides a degree of quality assurance commensurate with the requirements of ASME Code Section III (Division 1 & 2 for Concrete Containment), the Code of Federal Regulations and the requirements of the Nuclear Regulatory Commission governing design, procurement, construction, testing, operation, refueling, maintenance, repair, modification, and decommissioning of nuclear power generation facilities. The execution of the Quality Assurance Program will assure that the plants are built and operated to the requirements and with the reliability and safety to safeguard the general public and Company employees.

The Senior Vice President and Chief Nuclear Officer has overall responsibility for the Quality Assurance Program. Although specific positions and responsibilities are delineated in Section 1, the achievement of quality is the responsibility of each individual involved in Nuclear Operations.

The scope of this program covers the Quality Assurance Program for the life of all Commonwealth Edison nuclear generating plants except that the design, construction, testing and startup of Dresden, Quad Cities, and Zion was conducted in accordance with the quality assurance plans contained in the Dresden and Quad Cities FSARs and the Zion Quality Assurance Manual.

James J. O'Connor

James J. O'Connor

Chairman and Chief Executive Officer
Commonwealth Edison Company

REVISION ~~64~~ 65 2/15/94 ~~8/17/93~~

# 1. POLICY

This section identifies the Commonwealth Edison Company (the Company) organization as it applies to the Quality Assurance Program. This section also defines responsibility and authority for establishing, executing and verifying the implementation of the Quality Assurance Program.

Each Officer, Manager, Superintendent, or Director identified in this Section is responsible for implementing the quality assurance program in their assigned areas. They may delegate the performance of their duties to qualified personnel reporting to them. Although the individuals identified may be responsible for specific attributes, the achievement of quality in the performance of quality related activities is the responsibility of each individual involved in nuclear operations.

The Company may delegate the performance of work to Architect-Engineers, NSSS Suppliers, contractors, consultants or others, but Commonwealth Edison Company retains responsibility. The Nuclear Oversight Manager is responsible for corporate quality assurance policy, ~~on-site quality audits, off-site quality audits, training standards and certification of auditors,~~ and corporate nuclear safety policy. The manager is assigned this responsibility by the ~~Chairman and Chief Executive Officer~~ of the Company. The Nuclear Oversight Manager also verifies the implementation of the quality assurance program for the design, procurement, construction, and operation of the Company's nuclear power facilities. He is independent of production.

Senior Vice President and Chief Nuclear Officer

Organizational charts, functional descriptions of departmental responsibilities or descriptions of key quality assurance positions document lines of authority and responsibility for the Quality Assurance Program.

In general, the Quality Assurance Program provides that:

a. Activities are verified as being correctly performed.

b. Quality verification activities are performed independent of the individual or group directly responsible for performing the activity.

c. Quality ~~assurance~~ verification personnel have the responsibility, authority, and organizational freedom to:

1. Identify quality problems.
2. Initiate, recommend, or provide solutions to quality problems through designated channels.
3. Verify implementation of the solutions.
4. Assure that further processing, delivery, installation, or use is controlled until proper disposition of a nonconformance, deficiency, or unsatisfactory condition has occurred.
5. Stop work on an operation or installation when a violation of the applicable QA Program, procedure, specification or drawing is identified.

d. Following a Stop Work, work can resume only after verification of necessary corrective actions to bring the installation or operation into conformance.

e. Only the individual who places a Stop Work or a person of higher authority in his or her organization may release the stop work order. The Nuclear Oversight Manager ~~or his~~ designee must concur with the release.

or the Site Quality Verification Director, as appropriate, or their

NOTE: **The use of "he" and its derivatives throughout this document is not gender specific; all such usage refers to specified individuals regardless of gender.**

## 2. RESPONSIBILITIES

This entire section defines responsibilities for Company personnel.

## 3. REQUIREMENTS

### 3.1 Organization

Commonwealth Edison Company is responsible for the assurance of quality in all phases of the design, procurement, construction, modification, testing and operation of the Stations. Management assigns areas of responsibility to Commonwealth Edison organizational elements and individuals. The Company's Quality Assurance Program describes the policy and requirements to carry out this responsibility. This Quality Assurance Program description documents the Program and is approved by the Nuclear Oversight Manager.

### 3.2 Delegation

The Company may delegate certain phases of the work to contractors, Architect-Engineers, or an NSSS Supplier, who act as the Company's agents in the assigned areas. The Company also assigns the authority required to do this, including certification and stamping in accordance with the ASME Code.

The Company delegates these responsibilities in writing. Commonwealth Edison retains responsibility for procurement, design, construction, modifications, and operation of the plant including certification and stamping in accordance with the ASME Code.

## 3.3 Functional Responsibilities

### 3.3.1 NSSS Supplier

Responsibility for the Nuclear Steam Supply System is delegated to the NSSS Supplier. The NSSS Supplier shall:

a. Provide the mechanical, structural and electrical design of the NSSS plant to the ~~Engineering and Construction~~ Nuclear Engineering and Technology Services Department or the Site Engineering and Construction Department.

b. Review their own designs.

c. Evaluate the Architect-Engineers' designs and perform other independent evaluations as requested.

d. Document these reviews and evaluations and supply them to the Company.

e. Establish and maintain procurement control for NSSS components.

f. Furnish technical and quality control assistance for on-site activities relating to the NSSS.

g. Furnish rough draft test procedures to the Company.

h. Evaluate final draft test procedures when requested.

i. Work in accordance with a Commonwealth Edison accepted quality program.

### 3.3.2 Architect-Engineers

Responsibility for the design of structures, systems, and components not within the scope of the NSSS supplier may be delegated to an Architect-

Engineering firm. When delegated, the Architect-Engineer shall:

a. Provide the mechanical, structural and electrical design of the plant to the ~~Engineering and Construction~~ Nuclear Engineering and Technology Services Department or the Site Engineering and Construction Department for their scope of responsibility.

b. Review their own designs.

c. Independently evaluate the NSSS supplier's designs and perform other independent evaluations as requested.

d. Document these reviews and evaluations and supply them to the Company.

e. Evaluate the NSSS Supplier procurement specifications.

f. Provide specifications for procurement of non-NSSS components and services.

g. Furnish rough draft test procedures to the Company.

h. Evaluate final draft test procedures when requested.

i. Independently evaluate vendor proposals for equipment and services, designs, vendor and contractor procedures, test reports, and design reports.

j. Perform document distribution when directed.

k. Work in accordance with a Commonwealth Edison accepted quality program.

### 3.3.3 Construction Contractors

The Company hires contractors to supply labor and service for maintenance, modification, and new construction. These contractors shall work to a Commonwealth Edison accepted quality program. This program may be the contractor's or the contractor may work in

accordance with the Company's program. These contractors shall document their organization and any delegated responsibilities necessary to establish, execute, and verify the quality program.

### 3.3.4 Non-delegated Functional Requirements

The following description of the Company's non-delegated functional requirements are separated into two sections: establishment and execution of the quality program, and verification that the program has been implemented.

#### 3.3.4.1 Program Establishment and Execution

In order to establish and execute an effective Quality Assurance Program, Commonwealth Edison is organized to provide management services and administrative controls. These controls and services provide for effective management of all aspects of quality related activities. This includes design, procurement, construction and modification, testing, and operations. The Company administers contracts that affect quality.

##### 3.3.4.1.1 Design

Commonwealth Edison has engineering responsibility and design authority, makes final decisions on designs and implements engineering designs. The Company has the responsibility to properly translate the applicable Safety Analysis Report (SAR), regulatory requirements, ASME Code requirements, and design bases into specifications, drawings, procedures and instructions. This is accomplished by qualified personnel performing detailed design activities or reviewing and controlling the design work involving electrical, mechanical, structural and instrumentation and control designs of the NSSS Supplier and Architect-Engineer.

Commonwealth Edison is responsible for design changes.

The Company performs detailed design activities and issues design documents in accordance with approved procedures.

For operating plants, the Company supervises the electrical, mechanical, structural, instrumentation and control and nuclear engineering activities involved in nuclear station modifications and maintains a configuration management program.

In addition, the Site Engineering and Construction (SEC) organization oversees the Site Architect-Engineer field group at those locations where one is established.

Finally, the Company notifies jurisdictional authorities of the location of Code related permanent records.

3.3.4.1.2 Procurement

Commonwealth Edison performs technical evaluations of service contractors for placement on the Company's Quality Approved Bidders List. The Company directly controls procurement of non-NSSS components and services based on specifications prepared by the Company ~~or~~ and Architect-Engineers. The Company receives and furnishes necessary storage facilities for designated items.

For operating plants, the Company prepares and processes Safety-Related and Code specifications for the award of service contracts for maintenance or modification work.

3.3.4.1.3 Construction

The Company is responsible for construction quality assurance and manages all site construction activities.

The Company directs and manages contractors performing new station construction and maintenance and modification work at existing plants.

Further, the Company develops craft labor specifications and provides estimating and quality control services as required.

The Nuclear Support Department administers the Quality Control Inspector Qualification and Certification Program. They oversee Q.C. certification programs and direct Inspection Agency inspection and testing activities performed for the Company. They coordinate Non-Destructive Examination certification programs with the System Material Analysis Department.

For new plant construction, the Company has ASME Section III, Division 1 and 2, constructor responsibilities and maintains Level III personnel on staff. These individuals are responsible for personnel development, certification of inspectors and qualification of procedures, as required by rules established in ASME Section III.

Further, the Company is responsible for the Form N-3 Data Report and other Owner N-type Data Reports, including stamping responsibility for ASME Section III, Division 1 and Division 2.

3.3.4.1.4 Operations Program

Commonwealth Edison controls pre-service testing (preoperational and start-up testing) and writes the final draft of pre-service tests.

For operating plants, the Company plans the modification test programs and provides modification test acceptance criteria.

For operations, the program is planned and implemented to provide the Company with confidence that safety related systems, structures and components perform satisfactorily in service.

For new plants, the Company performs mechanical, electrical instrumentation and structural construction tests.

3.3.4.2 Verification

In order to verify and control the effectiveness of the Quality Assurance Program, the Company is organized to provide for audit, surveillance, review, inspection and testing. These verification methods assure that

activities performed are correct for all aspects of quality related activities which include design, procurement, construction and modification, testing, and operations.

or Site Quality Verification

If conditions which are adverse to quality and which require prompt action are found by Nuclear Oversight personnel at locations where work subject to this QA program is conducted and required corrective measures cannot be agreed upon, the Nuclear Oversight Manager will be promptly notified. If necessary, ~~the Vice President, Nuclear Oversight and Regulatory Services~~ the Senior Vice President and Chief Nuclear Officer will assure resolution in accordance with the ASME Code and this Program.

3.3.4.2.1 Design

Commonwealth Edison reviews and accepts the specifications and drawings for electrical, mechanical instrumentation, nuclear and structural material, equipment and erection work, prepared by the Architect-Engineer and NSSS Supplier. The purpose of these reviews is to verify inclusion of inspection, testing and acceptance criteria.

The Company reviews the Architect-Engineer's evaluation of fabricator and erector's detailed designs, drawings and work instructions for reasonableness and completeness.

The Company assures that personnel certifying ASME Section III design activities are qualified Registered Professional Engineers in accordance with ASME N626.3-1988.

Commonwealth Edison assures that Architect/Engineers and NSSS Suppliers maintain procedures to assure that their personnel certifying ASME Section III design activities are qualified Registered Professional Engineers in accordance with ASME N626.3-1988.

The Company provides qualified personnel to review and approve the resolution of nonconformances relating to electrical, mechanical instrumentation and structural portions of the plant and to evaluate discrepant modification test results for operating plants.

The Company audits the design review system of Architect-Engineers, Nuclear Fuel Vendors and NSSS Suppliers.

3.3.4.2.2 **Procurement**

Commonwealth Edison analyzes bids to assure that necessary quality requirements are included in purchase orders and contracts. The Company evaluates the NSSS Supplier procurement specifications and audits and inspects the NSSS Supplier's control measures.

Audits of off-site contractors are performed as required to assure quality functions.

overview

At times, the Company may assign an Independent Inspection Agency to work occurring at off-site supplier's plants to verify that the Company's Quality Assurance and technical requirements are implemented ~~for work occurring at off-site supplier's plants.~~

3.3.4.2.3 **Construction**

The Company provides new project construction quality assurance.

Organizational elements are assigned to:

a. Closely monitor the construction quality assurance activities of on-site contractors and others.

b. Independently evaluate site contractor quality assurance programs.

c. Verify that construction activities carried out by site contractors conform to procurement document requirements.

d. Verify conformance and completeness of contractor's installation or erection to specification requirements.

e. Review, comment, and approve on-site contractor quality instructions and procedures.

f. Prepare checklists for witnessing inspection notification points at vendor plants.

g. Inspect and designate status of incoming material at the site.

h. Review inspection procedures.

i. Monitor quality control activities of contractors at the site.

j. Initiate those actions which are required to ensure that the assigned work is completed, in accordance with technical and design requirements.

k. Provide performance assessments of contractor work.

l. Audit and survey the compliance of the contractors to their accepted quality assurance program.

The Company has the functional responsibility to perform inspections of site construction activities but may assign these responsibilities to an Independent Inspection Agency. If assigned, these activities shall include inspection and testing, and to determine and report whether items conform to design, test and specification requirements or to reject unsatisfactory materials, equipment or workmanship.

The Company shall take the necessary steps to assure repair, rework or processing of a nonconformance report based on rejection by an Independent Inspection Agency.

For new project construction only, the Company ~~Nuclear Oversight~~ will establish a Site Quality Verification group. They will provide independent verification of the program compliance by audit and surveillance. This group will be established similar to ~~On~~ Site Quality Verification Departments at operating sites. Sufficient qualified personnel are assigned to this group to assure program compliance but will average from one to twenty. This group may employ an Independent Inspection Agency to provide inspection and testing.

### 3.3.4.2.4 Pre-Service Testing

During new project construction, the Company assures that an acceptable test program is implemented. Organizational elements are assigned to:

a. Evaluate and independently confirm test results by internal evaluation.

b. Manage and perform tests with technical assistance from the NSSS Supplier or the Architect-Engineer as appropriate.

### 3.3.4.2.5 Operations Verification

During operations, the Company assures that the Quality Assurance Program described in this document is acceptably established and executed. This is done by assigning organizational elements to:

a. Establish and execute quality procedures to be used by the station staff, or those under their direction, for operating, maintenance, modifications, in-service inspection, refueling and stores activities.

b. Assure that such procedures and instructions comply with the policies contained in this Quality Assurance Program.

c. Review and approve Station Procedures and instructions and revisions thereto as provided for in the Technical Specifications.

d. Make temporary changes to station operating procedures which do not change the intent of the original procedures as described by Technical Specifications. These changes are reviewed and approved in the same manner as the original procedure.

## 3.4 DESCRIPTION OF GENERAL RESPONSIBILITIES

The Commonwealth Edison Company organization as related to Quality Assurance is shown in Exhibit 1.

Organizations which will be activated for future nuclear station construction are shown in Exhibit 2.

The Company assigns responsibilities for specific requirements through the Quality Assurance Program Database.

Brief discussions of the duties and responsibilities of those personnel indicated on Exhibit 1 are as follows:

### 3.4.1 Chairman and CEO

The Chairman and Chief Executive Officer (CEO) is responsible for overall corporate policy~~for quality and safety.~~ The Chairman promulgates corporate policy through a staff which includes:

President, Senior Vice President and Chief Nuclear Officer
Senior Vice President (~~Energy Facilities~~ Fossil Generation and Fuel)
Senior Vice President (Commercial Division Operations)

## (3.4.) 1.1 President

The President is responsible for Purchasing, Security, Environmental Services, ~~Affairs~~, Corporate Counsel, Public Relations and physical plant, other than generating stations. The President fulfills assigned responsibilities through a staff which includes:

Senior Vice President (Corporate Resources)

### (3.4.) 1.1.1 Senior Vice President (Corporate Resources)

The Senior Vice President is responsible for Purchasing, Security, Systems/Materials Analysis Department, Environmental Services, and buildings except for nuclear facilities. He fulfills these responsibilities through a staff which includes:

Systems/Materials Analysis Manager
Director, Corporate Security
Manager, Purchasing

#### (3.4.) 1.1.1.1 Systems/Materials Analysis Manager

The Systems/Materials Analysis Manager maintains the Company's off-site testing facilities and equipment for chemistry, metallurgy, nondestructive examination, and vibration analysis.

The Manager maintains an SNT-TC-1A qualified and certified Level III NDE person on staff who is responsible for personnel and procedure development and qualification to ASME Code requirements for nondestructive examination. This person may designate deputies for certification of personnel and procedures.

#### (3.4.) 1.1.1.2 Director of Corporate Security

The Director of Corporate Security is responsible for insuring that security programs at the nuclear stations effectively meet all commitments to, and the regulations of, the Nuclear Regulatory Commission.

DRAFT

(3.4.) **1.1.1.3 Manager of Purchasing**

The Manager of Purchasing purchases ~~non~~ fuel goods and services to specifications and contract requirements prepared by responsible originating departments.

(3.4.) **1.2 Senior Vice President (~~Energy Facilities~~ Fossil Generation and Fuels)**

The Senior Vice President ~~(Energy Facilities)~~ provides ~~strategy~~ and ~~policy for energy production in support of corporate needs. He provides resources and support~~ for the operation and maintenance of the ~~stations~~. He fulfills these responsibilities through a staff which includes:

(D) to page 1-24

Vice President ~~and Chief Nuclear Officer~~ Fossil Operations
Vice President, Fuels

(3.4.) **1.2~~.1~~ Senior Vice President and Chief Nuclear Officer**

The Vice President and Chief Nuclear Officer provides a single executive focal point for setting policies, objectives and priorities for the Nuclear Operations organization. He brings all resources involved in operations and direct support of operation under a single executive. He has overall responsibility for the Quality Assurance Program and plant nuclear safety. He fulfills these responsibilities through a staff which includes:

Site Vice Presidents (six)
Vice President of Nuclear Operations Support
Nuclear Operations Manager
Nuclear Engineering and Technology Services Manager
→ Nuclear Oversight Manager

(3.4.) **1.2.1~~.1~~ Site Vice President**

Each of the six Site Vice Presidents operates and maintains the station for which he is responsible, ~~including operation, maintenance, modification~~

fossil stations and the procurement of fuels.



DRAFT

~~and all support functions. He has complete operational and fiscal responsibility for the assigned station.~~

The Site Vice President is responsible for the Station's compliance with its NRC operating license, government regulations, ASME code requirements, and the Company's Quality Assurance Program, and nuclear safety policy.

He fulfills these responsibilities through a staff which includes:

Station Manager
Site Engineering and Construction Manager
Support Services Director
Regulatory Assurance Supervisor
~~Outage Planning Director (where established)~~
Site Quality Verification Director
Long-Range Work Control Superintendent

(3.4) 1.2.1.1 ~~d~~ Station Manager

The Station Manager is responsible for the safe, reliable and efficient day-to-day operation of the station for which he is responsible. He fulfills these responsibilities through a staff which includes:

Operations Manager
Technical Services Superintendent
Maintenance Superintendent
Work Control Superintendent (where established)

The Station Manager supervises the Station's on-site review function ~~as provided in the Administrative Section 6.0 of the Technical Specifications.~~

During periods when the Station Manager is unavailable, he designates this responsibility to an established alternate who satisfies the ANS 3.1 experience requirements for plant manager.

(3.4) 1.2.1.1.1 ~~2~~ Operations Manager

The Operations Manager is responsible for the safe, reliable and efficient operations of the station units.

(3.4.) 1.2.1.1~~1~~.2 **Technical Services Superintendent**

The Technical Services Superintendent provides support for plant operations in the areas of technical support, chemistry and health physics.

(3.4.) 1.2.1.1~~1~~.3 **Maintenance Superintendent**

The Maintenance Superintendent manages the day-to-day repair activities for mechanical, electrical and instrumentation equipment. He also supervises the Quality Control activities.

(3.4.) 1.2.1.1~~1~~.4 **Work Control Superintendent**

The Work Control Superintendent plans and oversees the station outages. In this capacity he manages the current outage and plans future outages.

(3.4.) 1.2.1.~~1~~.2 **Site Engineering and Construction Manager**

The Site Engineering and Construction Manager provides design support engineering, modification engineering, and construction services to the station. He has responsibility and authority for all day-to-day design activities and is responsible for developing design policies and procedures as a member of the Nuclear Engineering Committee (NEC) as well as implementing the design policies and procedures established by the NEC. He maintains plant configuration control. He provides engineering and construction support to the Work Control Superintendent. He fulfills these responsibilities through a staff which includes:

Station Support Engineering Supervisor
Modification Design Supervisor
Site Construction Superintendent
Modifications Administrator (where established)

### (3.4.) 1.2.1.2.1 Station Support Engineering Supervisor

The Station Support Engineering Supervisor provides design support to Operations, Maintenance, and Systems Engineering. He maintains design cognizance in order to provide support for design changes, regulatory responses, and in order to initiate the design change process.

### (3.4.) 1.2.1.2.2 Modification Design Supervisor

The Modification Design Supervisor provides detailed design engineering and implementation of modifications. He oversees architect/engineer activities and is responsible for coordination of design with other plants.

### (3.4.) 1.2.1.2.3 Site Construction Superintendent

The Site Construction Superintendent directs site contractors and contract management. He provides contracted craft labor and contractor administration to Maintenance when requested.

### (3.4.) 1.2.1.2.4 Modifications Administrator

The Modifications Administrator provides support for scheduling and tracking modification activities and contracts for A/E modification services.

### (3.4.) 1.2.1.3 Support Services Director

The Support Services Director provides Training, Materials Management, MIS Services, Security Services, and Office Support to all organizations on site. He fulfills these responsibilities through a staff which includes:

Materials Management Supervisor
Training Supervisor

### (3.4.) 1.2.1.3.1 Materials Management Supervisor

The Materials Management Supervisor coordinates parts requirements, specifies and evaluates parts, procures all materials for the site, ships and receives that material and controls the on-site inventory.

(3.4) 1.2.1~~3~~.3.2 Training Supervisor

The Training Supervisor provides training for all site personnel as required.

(3.4) 1.2.1~~3~~.4 Regulatory Assurance Supervisor

The Regulatory Assurance Supervisor is the station's administrative support for regulatory matters. He assists the Site Vice President in assessing the station's regulatory performance. He assists the station in dealing with regulatory agencies and Nuclear Regulatory Services.

(3.4) 1.2~~3~~.2 Vice President of Nuclear Operations Support (A) from page 1-21 here.

The Vice President of Nuclear Operations Support is the principal advisor on regulatory ~~and quality~~ assurance matters and requirements. His departments provide ~~nuclear~~ oversight activities ~~and~~ interactions with the NRC at the corporate level. ~~He is responsible for providing reports to~~ management concerning ~~the status as determined by this~~ oversight. He fulfills these responsibilities through a staff which includes:

Nuclear Regulatory Services Manager
~~Nuclear~~ Oversight ~~Manager~~
Nuclear Support Manager
~~Performance Monitoring & Improvement Manager~~

(3.4) 1.2~~3~~.2.1 Nuclear Regulatory Services Manager

The Nuclear Regulatory Services Manager is the administrative liaison between the Company and regulatory bodies. He coordinates division-wide programs that support licensing or regulatory assurance initiatives, helps in developing positions and coordinates responses to regulatory inquiries and notifications. He fulfills these responsibilities through a staff which includes:

Licensing Operations Director
~~Regulatory Performance Director~~
Emergency Preparedness ~~and State~~ Programs Director
Director of Strategic Licensing Policies and ~~Issues~~ Regulatory Performance
ICC Regulatory Services Director

(3.4.) 1.2~~.2~~.1.1 Licensing Operations Director

The Licensing Operations Director is the liaison between the Company and the NRC staff. He is concerned with the licensing process and the materials issued by the NRC that affect all plants.

(3.4.) 1.2.1.2.1.2 ~~Regulatory Performance Director~~

~~The Regulatory Performance Director~~ He is also the liaison between the Company and the NRC Region III Staff, ~~He~~ and he is concerned with inspections, SALP and Licensee Performance.

(3.4.) 1.2~~.2~~.1.3 Emergency Preparedness ~~and State Programs~~ Director

The Emergency Preparedness ~~and State Programs~~ Director maintains the Company's readiness to respond to certain emergencies at the nuclear plants. He maintains the Emergency Plan and coordinates training to support the plan.

(3.4.) 1.2~~.2~~.1.~~4~~ 2 Director of Strategic Licensing Policies and ~~Issues~~ Regulatory Performance

The Director of Strategic Licensing Policies and ~~Issues~~ Regulatory Performance develops and oversees implementation of ~~CECo's~~ the Company's policy on generic and strategic licensing issues.

(3.4.) 1.2~~.2~~.1.~~5~~ 4 ICC Regulatory Services Director

The ICC Regulatory Services Director prepares and responds to all ICC Regulatory Examinations of the Nuclear Operations ~~Division~~ organization. He supports the Company's Litigation Activities concerning Nuclear Operations.

(3.4.) 1.2.~~1.2.2~~ 5 Nuclear Oversight Manager

The Nuclear Oversight Manager manages the Quality Assurance Program and ~~the~~ Safety Review. He reports directly to the Senior ~~through the Vice President of Nuclear Operations Support to the~~ Vice President and Chief Nuclear Officer and is independent of Nuclear Operations. The Manager must have at least four years experience in the field of quality assurance, or an equivalent number of years of nuclear power plant experience in a supervisory position or a



B1 to page 1-24.

DRAFT

He is responsible for the vendor audit program and for conducting audits

combination of the two. The Manager shall have at least a baccalaureate degree in Engineering or related science. The Manager may have equivalent educational qualifications in accordance with paragraph 4.1 (items a-j) of ANSI/ANS 3.1. He develops, maintains, and interprets the Company's Quality Assurance policies, procedures, and implementing directives. He conducts audits of the Company organizations responsible for nuclear functions to verify that the Quality Assurance Program is effectively implemented. ~~The Manager verifies conformance through the Director of On-Site Quality Verification and the Off-Site Quality Verification Director and their staffs.~~ He has the authority and responsibility to stop work when a violation of the Quality Assurance Program, procedures, specifications or drawings is identified. He fulfills these responsibilities through a staff which includes:

The Nuclear Oversight Manager is the certifying authority for audit personnel.

~~Director of On-Site~~ Quality Verification Director

Director of Safety Review

~~Off-Site Quality Verification Director~~ Director of Quality Assurance Policy & Support

~~Quality Assurance Policy Director~~

Move to Page 1-19. (A)

(3.4) 1.2.1.~~2.2.1~~.5 ~~Director of On-Site~~ Quality Verification Director

The ~~Director of On-Site~~ Quality Verification Director provides on-site assessment of station line and support activities to ensure compliance with Quality Assurance and Nuclear Safety Requirements. He fulfills this responsibility through a staff which includes:

Independent Safety Engineering Group ~~Superintendent~~ Supervisor

Audit ~~Quality Assurance~~ Verification Superintendent Supervisor

~~Site Quality~~ Verification Superintendents Integrated Analysis Administrator

The ~~Director of On-Site~~ Quality Verification Director and staff ~~have direct access~~ report directly to the Site Vice President for Quality Assurance and Nuclear Safety matters. The Director has the authority, and responsibility to stop work when a violation of the Quality Assurance Program or Nuclear Safety issue is identified. The Director monitors the day-to-day station activities involving operating, modifications, maintenance, in-service inspection, refueling and stores through on-site audits, field monitoring, and safety evaluations. Significant safety or quality issues, requiring escalated action, will be directed through the Nuclear Oversight Manager to the Senior Vice President and Chief Nuclear Officer.

sufficient organizational freedom,



DRAFT

(A) Move to Page 1-19.

(3.4.) 1.2.~~1.2.2.2~~ .5.1 Corporate ~~Off-Site~~ Quality Verification Director

The ~~Off-Site~~ Corporate Quality Verification Director and his staff audit internal and external organizations as required by the Quality Assurance Program. He verifies that submitted vendors' quality assurance programs comply with Company requirements. He reviews procurement documentation to assure compliance with the Quality Assurance Program. He has the authority and responsibility to stop work when a violation of the Quality Assurance Program, procedures, specifications or drawings is identified.

(3.4.) 1.2.~~1.2.2.3~~ .5.2 Director of Safety Review

The Director of Safety Review and his staff provide ~~an~~ the independent safety review function for station activities on a routine basis. He is the contact point for industry operating experience and lessons learned information and analysis.

(3.4.) 1.2.~~1.2.2.4~~ .5.3 Director of Quality Assurance Policy ~~Director~~ & Support

The Director of Quality Assurance Policy ~~Director~~ & Support establishes, maintains and interprets Company Quality Assurance Policy. He provides training to the Company on Quality Assurance subjects. He and his staff control and maintain the Quality Assurance Program database. and establishes the requirements for auditor certification.

(3.4.) 1.2.~~1.2.3~~ .2.2 Nuclear Support Manager

The Nuclear Support Manager provides support to the stations in the areas of Maintenance and Quality Control, Training, Chemistry, Health Physics, Operations, Outages and Technical Support. He and his staff provide an off-site point of contact for Station Quality Control if off-site assistance is necessary for quality related matters. The Manager maintains an appointed Chief Level III Certifying Authority on staff who is responsible for qualification and certification of NQA-1 Inspection and test personnel. This person may designate deputies for certification of personnel.

### 1.2.1.2.4 Performance Monitoring and Improvement Manager

The Performance Monitoring and Improvement Manager provides a common resource to the Site Vice Presidents for improvement of performance. He serves as the contact point for INPO and as the coordinating point for performance improvement within the Nuclear Operations Department.

### 1.2.1.3 Nuclear Engineering and Technology Services Manager

The Nuclear Engineering and Technology Services Manager is the Chairman of the Nuclear Engineering Committee (NEC) which is comprised of himself and the six Site Engineering and Construction Managers. The NEC has the responsibility to establish policies and procedures to ensure that design activities are conducted in compliance with regulations and the ASME Code in a manner that supports safe and reliable operation. The Nuclear Engineering and Technology Services Manager provides engineering and construction support to the nuclear stations. He is responsible for the configuration management control programs. He provides generic programs for technical and licensing issues. He provides the design for nuclear fuel and certain in-core components. The manager advises the Senior Vice President and Chief Nuclear Officer on priorities for engineering and construction activities at the six stations. He manages the centralized stores facilities and services for the Nuclear Operations organization Division. The Manager is the designated holder of the Company's N-stamps. He notifies the Illinois Department of Nuclear Safety (the jurisdiction) of the location of required Code records. The Manager maintains an appointed Level III Concrete Inspection Engineer on staff responsible for the qualification and certification of concrete inspection and testing personnel. He fulfills these responsibilities through a staff which includes:

Nuclear Fuel Services Manager
Electrical, Instrumentation and Control Engineering Superintendent
Engineering Performance and Improvement Design Supervisor
Mechanical, Structural and Director
PRA, and Reliability Engineering Supervisor Superintendent
Regulatory Assurance Supervisor Engineering Superintendent and Design Administration Superintendent
Nuclear Parts Stores Supervisor Director
Nuclear Construction Supervisor Superintendent

(3.4.) 1.2~~3~~.3.1 **Nuclear Fuel Services Manager** B

The Nuclear Fuel Services Manager is responsible for the design and monitoring of nuclear fuel. He monitors fuel reliability, provides design for reload licensing, provides the safety analysis for each reload, and provides support for reactor operation.

(3.4.) 1.2~~3~~.4 **Nuclear Operations Manager** E

The Nuclear Operations Manager is responsible for implementation of policy and decisions within the Nuclear Operations ~~Organization~~ organization. He is responsible for planning and Chief Nuclear Officer policy statements, procedures and instructions. The manager is responsible for all internal and external Chief Nuclear Officer communications. He is the liaison for management training in the Nuclear Operations ~~Organization~~ organization.

(3.4.) 1.~~2~~.~~2~~ 3.1 **Vice President, Fuels** (D) from page 1-15. D

The Vice President, Fuels procures nuclear fuel and reprocessing to specifications furnished by the Nuclear Fuel Services Department.

(3.4.) 1.~~3~~ .4 **Senior Vice President (Commercial Division Operations)**

The Senior Vice President (Commercial Division Operations) is responsible for the transmission and distribution of electricity to the customers and all support activities associated with it. He fulfills these responsibilities through a staff which includes:

Vice President, Transmission and Distribution Operations

(3.4.) 1.~~3~~.~~1~~ 4.1 **Vice President, Transmission and Distribution Operations**

The Vice President, Transmission and Distribution Operations is responsible for the care and maintenance of the Transmission and Distribution Systems. He fulfills these responsibilities through a staff which includes:

T&D Operational Analysis Department Manager

(3.4.) 1.2.5 Nuclear Oversight Manager (B1) & (B2) from page 1-20 from page 1-21

(3.4.) 1.2.5.1 Corp QA dir.
" 1.2.5.2 Dir of S.R.
" 1.2.5.3 Dir of QA Policy & Support (C) from page 1-22.

(3.4.) 1.~~3.1.1~~ .4.1.1 T&D Operational Analysis Department Manager

The T&D Operational Analysis Department Manager provides specialized field testing services through technical specialists. He provides calibration services traceable to National Standards for measuring and testing equipment. The Manager retains supporting Quality Assurance documentation. The Manager maintains the Company's electrical testing facilities and equipment required to fulfill assigned responsibilities. His staff reviews design specifications to verify the inclusion of adequate electrical testing requirements. Also, the Manager is responsible for inspection and proof testing of electrical generation, transmission and distribution equipment. During new projects construction, the Manager directs field engineers who conduct electrical construction tests and participate in preoperational and start-up testing.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI 18.7
- ANSI/ASME NQA-1
- ASME SEC III NCA 4000
- ANSI N45.2.1
- ANSI N45.2.2
- ANSI N45.2.3
- ANSI N45.2.4
- ANSI N45.2.5
- ANSI N45.2.8
- ANSI N45.2.9
- ANSI N45.2.15
- ANSI N45.2.20

DRAFT

REVISION 64 65

~~8/17/93~~ 2/15/94

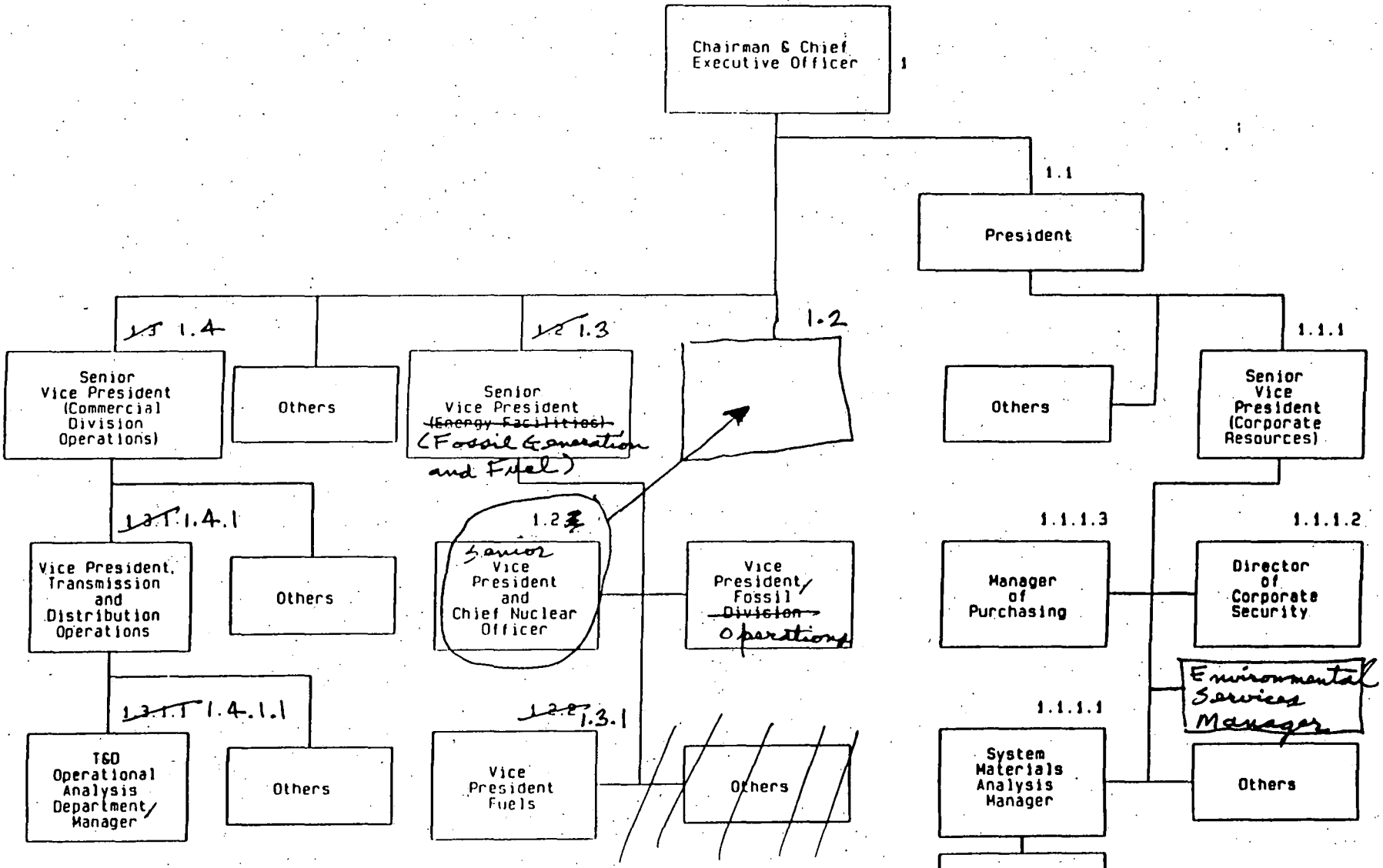
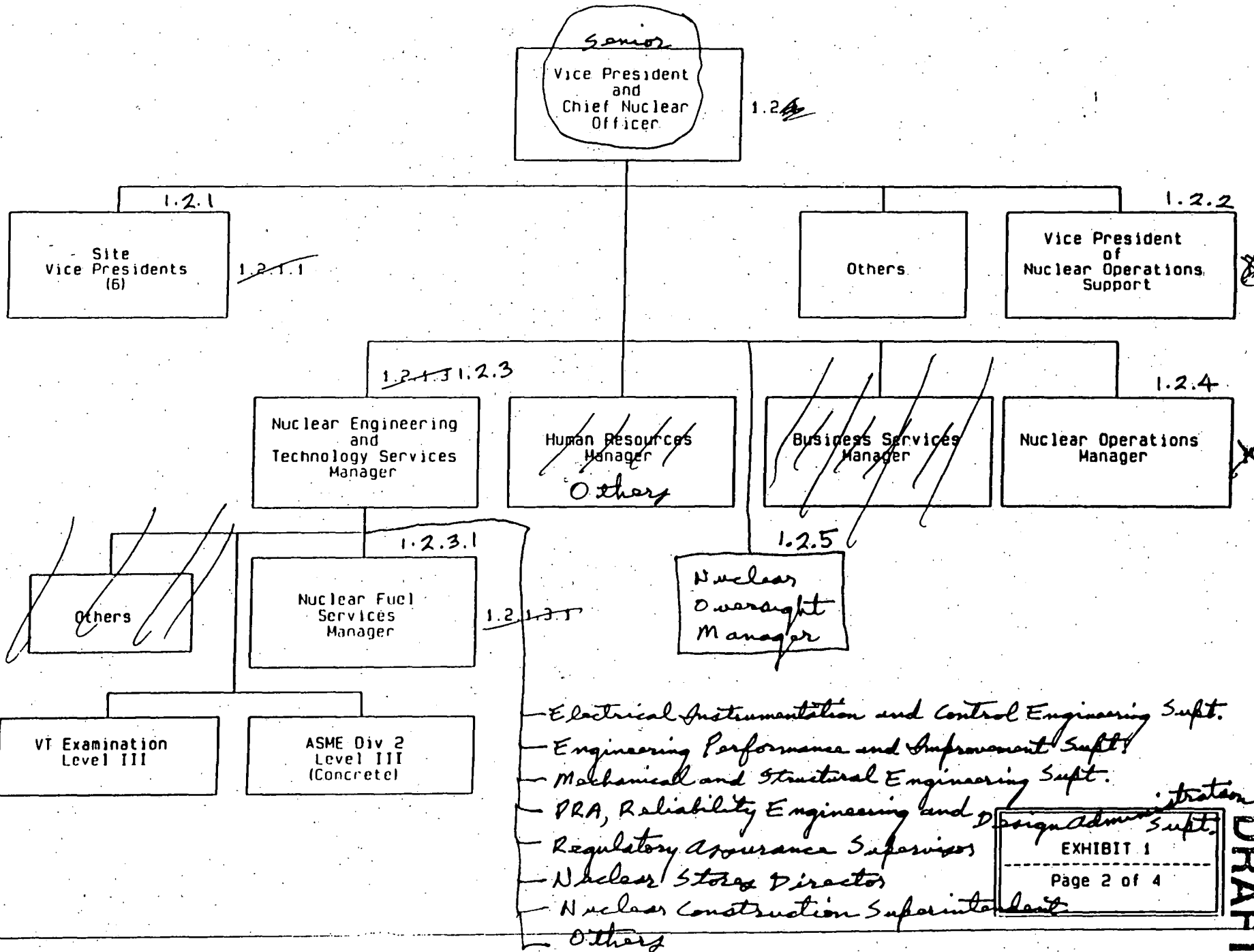



EXHIBIT 1

Page 1 of 4

DRAFT

DRAFT



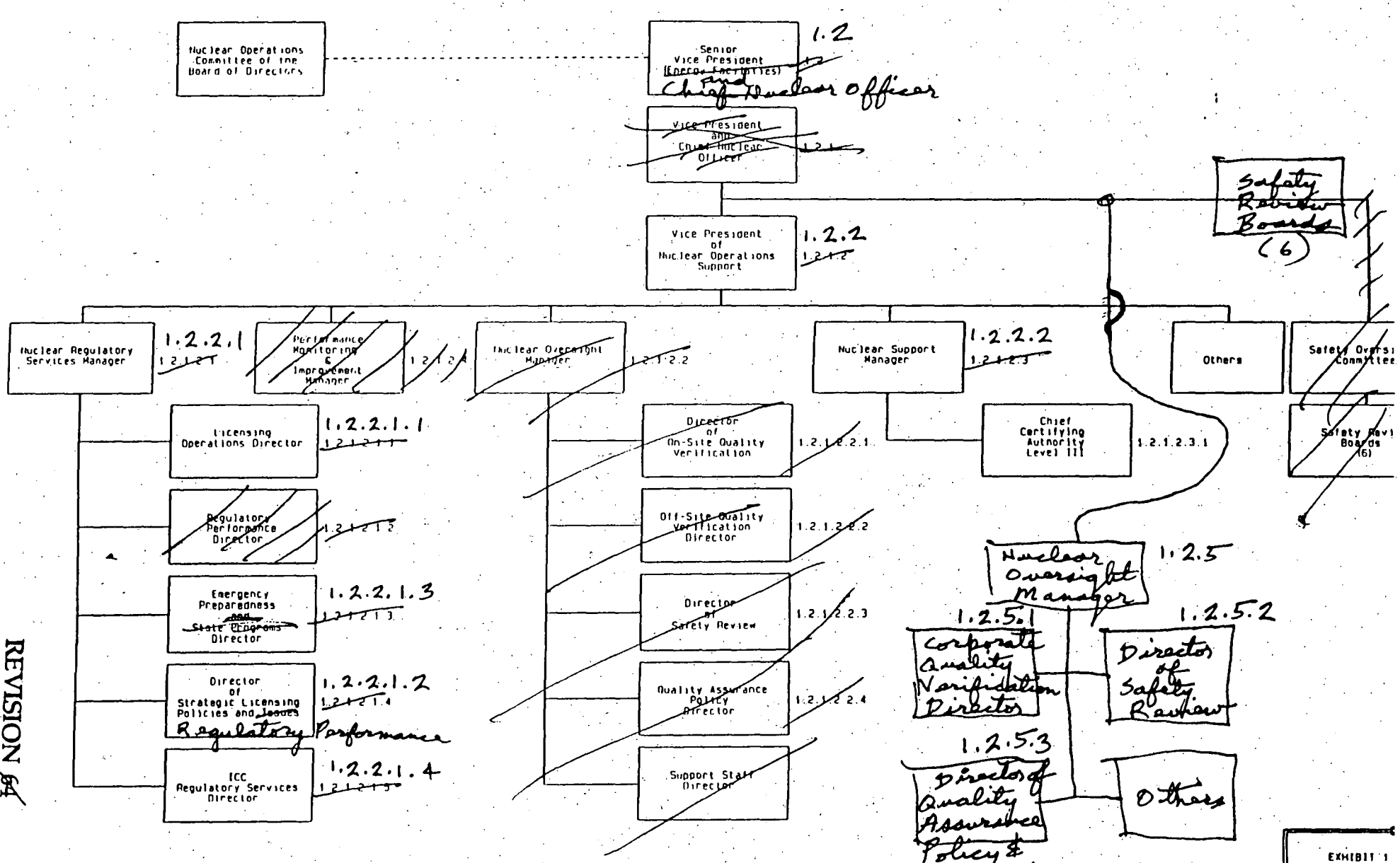

REVISION 64

8/17/93
2/15/94

EXHIBIT 1
Page 2 of 4

DRAFT

DRAFT



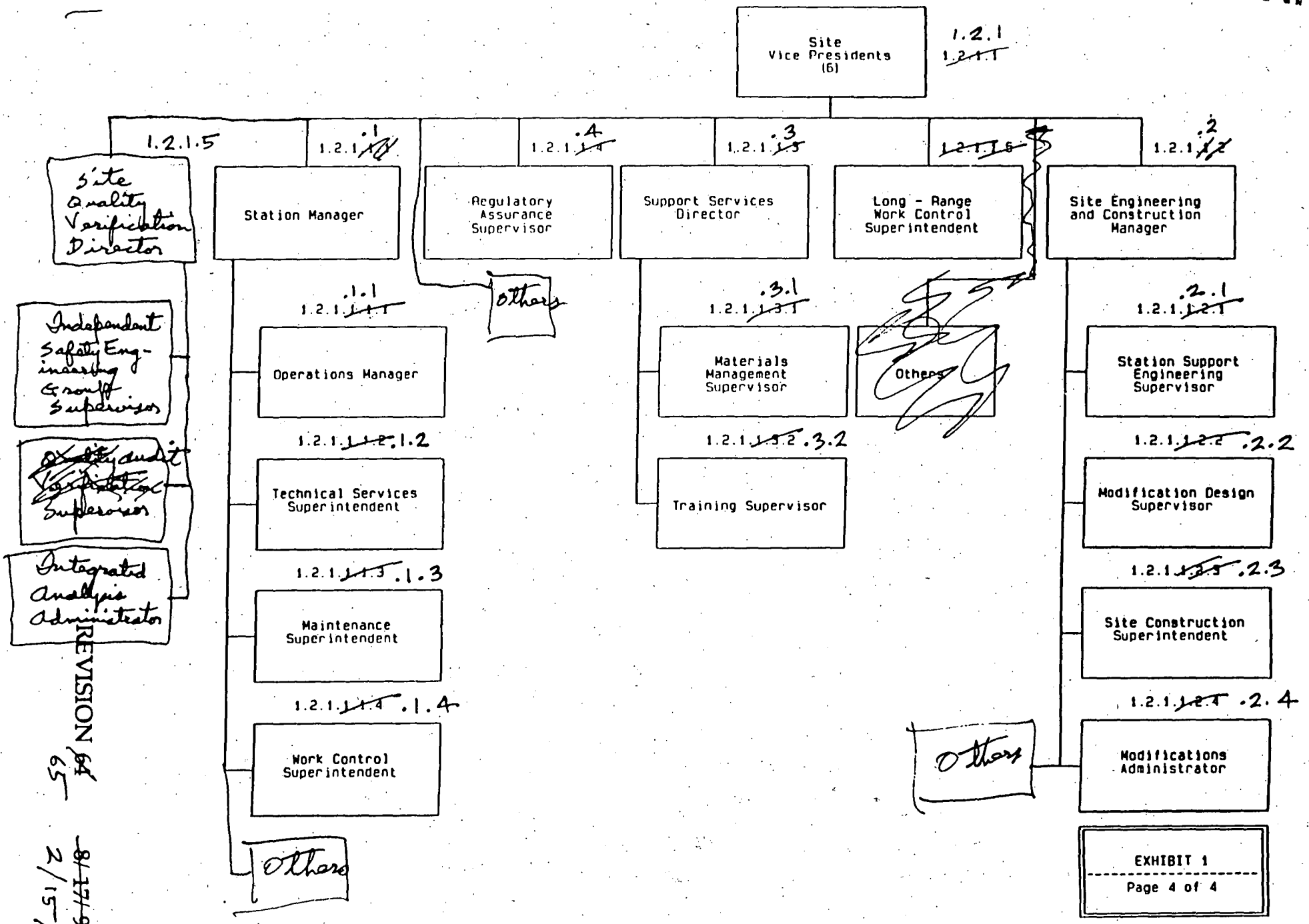

REVISION 64
65

8/17/93
2/15/94

DRAFT

EXHIBIT 1
Page 3 of

DRAFT




REVISION 64

65

8/17/93

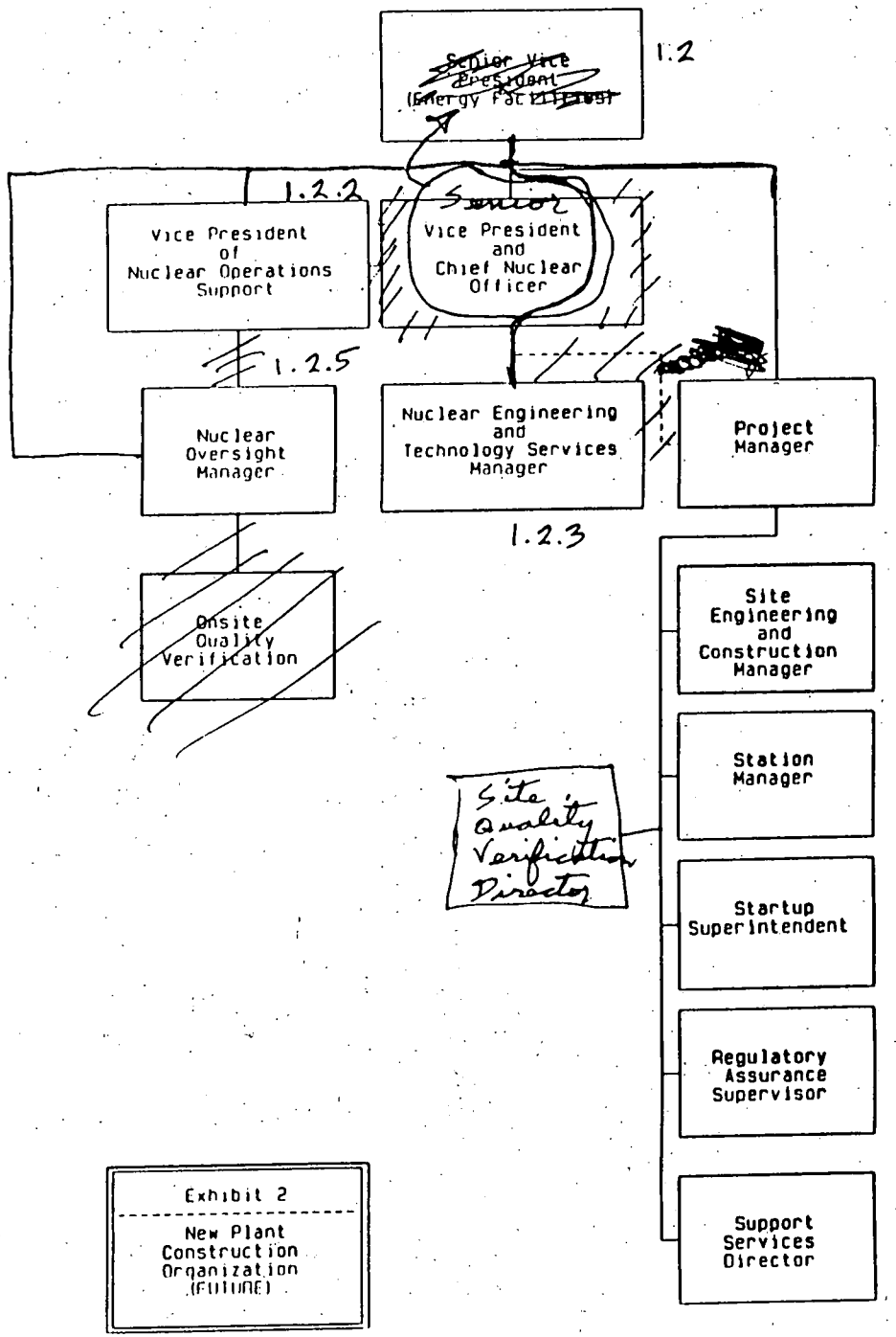
2/15/94

DRAFT

EXHIBIT 1

Page 4 of 4

DRAFT




REVISION 64
8/17/93
2/15/94
DRAFT

DRAFT

## 1. POLICY

It is the policy of the Company to have a Quality Assurance Program that:

a. Complies with ASME Code, Federal Regulations, and other requirements.

b. Defines and documents the requirements and commitments that, when implemented, protect the health and safety of the public and our workers.

c. Serves to protect the interests of the Company.

## 2. RESPONSIBILITIES

All departments involved in the production of nuclear power are governed by this program and are responsible for carrying out the requirements of this section. These departments include:

a. Nuclear Operations Division
b. Nuclear Stations
c. Site Regulatory Assurance Department
d. Site Material Management Department
e. Site Engineering and Construction Department
f. Nuclear Engineering and Technology Services Department
g. Nuclear Support Department
~~h. Performance Monitoring and Support Department~~
i. Nuclear Operations Staff
j. Nuclear Regulatory Services Department
k. Nuclear Oversight Department
l. Purchasing Department
m. Corporate Security Department
n. Systems Materials Analysis Department
o. T&D Operational Analysis Department



DRAFT

# 3. REQUIREMENTS

## 3.1 General

Either regulation or the Company, independent of regulations, requires the activities of the Quality Assurance Program. As such, this program meets the intent of the word "shall" as used in regulations and ANSI and ASME documents.

This program applies without limitation to safety related or ASME Code structures, systems, components, and activities. It also applies as described in Section 19 to regulatory related structures, systems, components and activities to a degree consistent with their importance to safety.

This Quality Assurance Program is in effect during all phases of the design, fabrication, erection, testing, operation and decommissioning of the Company's nuclear power plants. "Operation" includes operation, maintenance, repair, modification, refueling, and in-service inspection.

The Quality Assurance Program takes into account the need for special controls, processes, test equipment, tools, and skills necessary to attain the required quality and the need for the verification of quality by inspection and test.

This Quality Assurance Program complies with the quality requirements of:

a. 10CFR50

1. paragraph 55a
2. paragraph 55(e)
3. paragraph 59
4. Appendix A
5. Appendix B
6. Appendix R

b. 10CFR21
c. 10CFR71 Subpart H
d. ASME Boiler and Pressure Vessel Code (CODE) Section III (NCA 4000), Division 1 and Division 2, 1992
e. ASME Code Section XI, 1992
f. ANSI/ANS 3.2, 1988
g. ANSI/ASME NQA-1, 1989 (1a, 1b)
h. ANSI/ASME NQA-2, 1989
i. ANSI/ANS 3.1, 1981

This Quality Assurance Program complies with the programmatic quality requirements of the following standards. Specific work practices and acceptance criteria are reflected in implementing procedures.

a. ANSI N101.4, 1972
b. AWS D1.1-80
c. IEEE Standard 323, 1974

Because of compliance with the above list of standards, this Quality Assurance Program also complies with the regulatory positions of the following Regulatory Guides:

a. 1.26 Rev 3
b. 1.28 Rev 3
c. 1.29 Rev 3
d. 1.33 Rev 2
e. 1.54 (6/73)
f. 1.68 Rev 2
g. 1.143 Rev 1
h. 4.15 Rev 1

ANSI/ASME NQA-1, 1983 and ANSI/ASME NQA-2, 1986 were written to replace ANSI N45.2 and selected daughter standards. Among these the Company had previously been committed to:

a. ANSI N45.2.1, (1973)
b. ANSI N45.2.2, (1972)
c. ANSI N45.2.3, (1973)
d. ANSI N45.2.4, (1974) (IEEE STD 336)
e. ANSI/ASME N45.2.5, (1978)
f. ANSI N45.2.8, (1975)
g. ANSI N45.2.9, (1975)
h. ANSI N45.2.11, (1974)
i. ANSI N45.2.13, (1976)

Because this program complies with NQA-1 and the programmatic requirements of NQA-2, the intent of the following Regulatory Guides is also met:

a. 1.30 Rev 0
b. 1.37 Rev 0
c. 1.38 Rev 2
d. 1.39 Rev 2
e. 1.58 Rev 1
f. 1.64 Rev 2
g. 1.74 (2/74)
h. 1.88 Rev 2
i. 1.94 Rev 1
j. 1.116 Rev 0
k. 1.123 Rev 1
l. 1.144 (9/80)
m. 1.146 (8/78)

The Company's Nuclear Units have differing effective Operating License dates. Each plant's SAR and/or Technical Specifications documents the extent of commitments to technical requirements of Regulatory Guides, Safety Guides and/or ANSI Standards. However, this quality assurance program applies to all operations and includes those quality requirements contained in the documents listed in this section.

Also, the Company requires that each of its vendors maintain a quality assurance program which satisfies the applicable portions of:

a. ANSI/ASME NQA-1 and ANSI N45.2 Standards not covered by ANSI/ASME NQA-1 or the ANSI/ASME N45.2 series of standards for previously accepted, non-ASME quality programs.

b. ANSI/ASME N18.7 Standards,

c. ANSI/ASME N626.3, 1988, for firms supplying ASME Code design services.

## 3.2 Planning

### 3.2.1 General

All quality activities are planned to achieve their objectives. Such planning includes review of relevant requirements. Planning establishes the systematic, sequential progression of actions to meet the defined requirements.

The Company documents these plans in appropriate communications, approvals, instructions, and procedures.

### 3.2.2 Controlled Conditions

Activities described in this program are accomplished under controlled conditions. Controlled conditions include appropriate equipment, qualified personnel, suitable environment, and use of appropriate procedures. Other sections of this program describe these controlled conditions.

### 3.2.3 Program Planning

An Audit Program will be planned and conducted in accordance with Section 18 of this program.

A Design Program will be planned and conducted in accordance with Section 3 of this program.

A Procurement Program will be planned and conducted in accordance with Sections 4, 7, 8, and 13 of this program.

### 3.3 Program Description

The Company's total program for providing administrative controls and quality assurance is incorporated in many diverse documents. Exhibit 1 shows the relationship among the most important classes of these documents for the Quality Assurance Program. This document is the QA Program and serves as the company policy directive for Nuclear Quality Assurance. Nuclear Operating Policies may provide implementation of this program. At the interdepartmental level, the Special Process Procedure Manual and the QA Directives describe interdepartmental requirements to implement the QA Program. Nuclear Operating Directives may also provide implementation of the QA Program at this level. At the intra-departmental level, implementing procedures are written to the extent necessary to assure consistent results by all departments which implement the Policy and the QA Program. Approved procedures and instructions implement the quality requirements. Line, staff, administrative, and quality oversight organizations issue these implementing procedures. All activities affecting quality are described in sufficient detail to assure quality.

The implementation of the QA Program will be tracked by the Quality Assurance Database. In the interim, the Quality Procedures serve as the implementing documents for the Quality Assurance Program. Quality Procedure 2.0 provides a description of the implementation of the program and the relationship between the QA Program and the existing Quality Procedures until the Quality Assurance Database is operative for this function.

The Quality Assurance Program Database summarizes the sources of requirements and the relationship among them and the QA program.

### 3.4 Indoctrination & Training

Personnel performing activities affecting quality are oriented, indoctrinated, and trained as necessary to assure achievement and maintenance of suitable proficiency. Training programs are developed to indoctrinate, qualify and/or certify personnel in specific activities in which they will be engaged. These training programs include:

a. Quality Assurance Program.

b. Quality principles.

c. Company policies.

d. Implementing procedures.

Training is conducted in a time frame adequate to prepare personnel for their job responsibilities and is an extension of formal education or work experience. Training required for specific qualifications or certifications is conducted and documented in accordance with applicable regulations and requirements including the requirements of NQA-1. Qualification documents specify functions and basis of qualification. Personnel performing or verifying activities affecting quality are tested to determine if established levels of knowledge and proficiency are attained. Proficiency of personnel performing and verifying activities affecting quality is maintained by retraining, reexamining and/or recertifying as determined by management or required by Code.

Training and certification of personnel associated with nondestructive examination are carried out in accordance with the requirements of NQA-1 and ASME Section III, NX-5520. A Level III certified person administers all Code examination activities.

Training and certification of personnel associated with concrete containment inspections is in accordance with Appendix VII of ASME Section III, Division 2. The period of qualification for concrete inspectors is three years.

Vendor personnel engaged in inspection, examination and testing activities will be trained, qualified and certified to perform their specific activity under the above requirements.

### 3.5 Program Review

The Company regularly reviews the status and adequacy of the Quality Assurance Program. Reports to management described in Sections 1 and 18 of this Program fulfill this requirement. Vendors are required to perform regular reviews of the status and adequacy of their quality assurance programs. The Nuclear Oversight Department defines and measures the overall effectiveness of the Quality Assurance Program.

The independence of the Nuclear Oversight Department is described in Section 1 of this program. Nuclear Oversight uses its own audits and evaluations in determining quality assurance program and corrective action effectiveness as described in Sections 16 and 18 of this program. Independent reviews are described in Section 18 of this program.

### 3.6 Quality Assurance Manual

The Company Quality Assurance Manual consists of this Quality Assurance Program document, and the Quality Assurance Program Database. The Quality Assurance Program Database contains:

a. The Quality Assurance Program.

b. The pertinent parts of source documents.

c. Cross-references among these elements.

d. Cross-references to the responsible departments and implementing procedures.

The Manual is available to Company personnel, NRC personnel, the Authorized Nuclear Inspector, and other regulatory authorities. The

Company submits revisions to the Quality Assurance Program document (as the Topical Report) to the NRC for acceptance as follows:

a. Programmatic changes which reduce commitments must be accepted prior to implementation.

b. Substantive changes (Organizational, operational, etc.) will be submitted within 30 days of effective date.

c. Changes, editorial changes, reassignments which do not reduce commitments may not be submitted at the time of the change, but are submitted at least ~~annually.~~ once every two years.

The Authorized Nuclear Inspector Supervisor accepts proposed changes before they are put into effect. Changes are distributed.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in this section. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

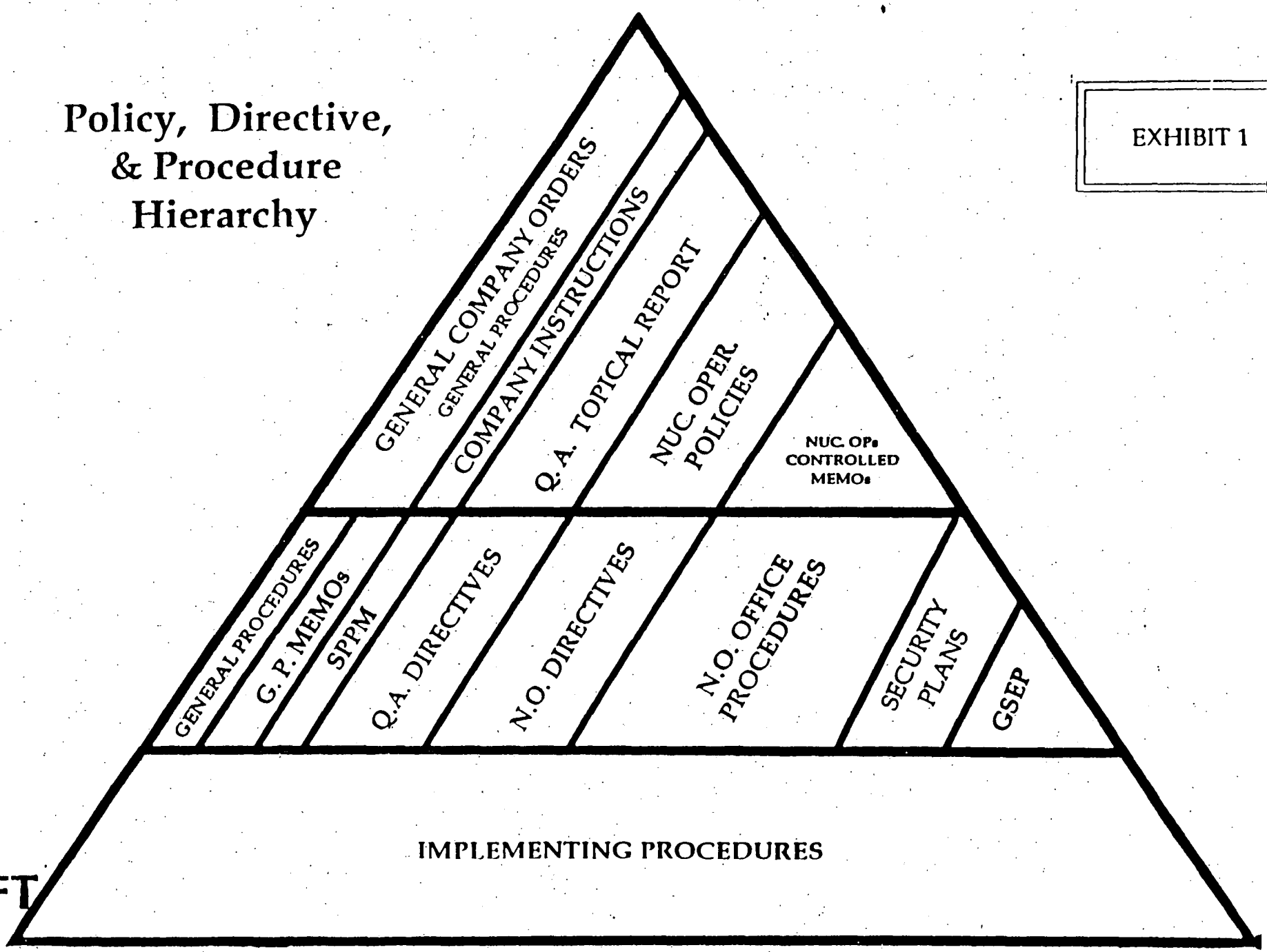
- 10CFR50 APPENDIX B Criteria 2
- ANSI/ASME NQA-1
- ANSI N18.7
- ANS 3.2
- ANSI N45.2
- ANSI N45.2.11
- ANSI N45.2.9
- ASME Code Section III NCA-4000

- ANSI N45.2.3
- ANSI N 101.4
- LaSalle Station FSAR 7/83
- Byron/Braidwood Stations FSAR 9/79
- ANSI N45.2.4
- IEEE N45.2.1
- ANSI N45.2.1
- ANSI N45.2.5
- ANSI N45.2.13
- ANSI N45.2.8
- Technical Specifications: Byron, Braidwood, Dresden, LaSalle, Quad Cities, Zion Stations

DRAFT

EXHIBIT 1

# Policy, Directive, & Procedure Hierarchy




REVISION 64

REVISION 65 8/17/93 2/15/94

DRAFT

DRAFT

# 1. POLICY

Design, design interfaces, and design changes shall be defined, controlled and verified.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department
Nuclear Fuel Services Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

Nuclear Engineering and Technology Services

The ~~Engineering and Construction~~ Department and the Site Engineering and Construction Department are responsible for overall design and design control of mechanical, electrical, instrumentation and control, structural and nuclear related systems and components. The Nuclear Fuel Services Department is responsible for reactor core design analysis, core design specifications and design reviews, for nuclear fuel and in-core components. Specific responsibilities for these departments are stated in Section 1.



DRAFT

Design control involves independent review and evaluation of design documents. These design evaluations or reviews are conducted to written procedures and include consideration of quality standards, quality assurance requirements, materials suitability, process suitability, interface control, analytical or testing requirements, design basis, and configuration management.

### 3.2 Design Input

Design inputs, such as design bases, performance requirements, regulatory requirements, codes, and standards shall be identified and documented. Their selection shall be reviewed and approved by the responsible design organization. The design input shall be specified and approved in a timely manner and to the level of detail necessary to provide a consistent basis for making design decisions, accomplishing design verification, and evaluating design changes. Changes from approved design inputs, including the reason for the changes shall be identified, approved, documented, and controlled.

### 3.3 Design Process

The responsible design organization shall prescribe and document the design activities in a timely manner and to the level of detail necessary to permit verification that the design meets requirements. Included in this scope of activities are considerations for field engineering; physics; seismic, stress, thermal, hydraulic, and radiation factors; the Safety Analysis accident scenarios; and accessibility for inservice inspection, maintenance and repairs. Design documents shall be adequate to support facility design, construction, and operation. Selection of the appropriate quality standards shall be documented, reviewed and approved.

Reasons for changes from specified quality standards, shall be identified, documented, approved and controlled. Design methods, materials, parts, equipment, and processes that are essential to the function of the structure, system, or component shall be selected and reviewed for suitability of application. Applicable industry experience, as set forth in reports or other documentation, shall be made available to cognizant

design personnel. The final design output documents and approved changes thereto shall be relatable to the design input by documentation in sufficient detail to permit design verification. The final design shall identify assemblies and/or components that are part of the item being designed. If materials, parts, equipment, or processes are different from the published vendor information, these differences shall be documented.

### 3.4 Design Analyses

Design analyses shall be performed in a planned, controlled, and documented manner. Design analysis documents shall be legible and suitable for reproduction, filing, and retrieval. They shall be sufficiently detailed as to purpose, method, assumptions, design input, references, and units such that a person technically qualified in the subject can independently review and verify the analyses and its results. Calculations shall be identified for retrievability by subject including structure, system, component, originator, reviewer and date or by other unique identifiers.

Computer programs may be utilized for design analysis without individual verification of the program for each application provided:

a. The computer program has been verified to show that it produces correct solutions for the encoded mathematical model within defined limits for each parameter employed; ~~and~~

b. ~~An~~ The encoded mathematical model has been shown to produce a valid solution to the physical problem associated with the particular application.

Computer programs shall be controlled to assure that changes are documented and approved. Verification shall be required for changes to previously verified computer programs including evaluation of the effects of these changes on (a) and (b) above.

Documentation of design analyses shall include:

a. Statement of the objective of the analyses.
b. List of design inputs and their sources.
c. Results of literature searches or other applicable background data.
d. List of assumptions and indication of those that must be verified as the design proceeds.
e. List of any computer calculation and the bases for its use, and
f. Review and approval.

## 3.5 Design Verification

Design adequacy shall be verified by one or more of the following: performance of design reviews, use of alternate calculations, or performance of qualification tests. The design verification method(s) used shall be identified and documented. The results of design verification shall be documented including the identification of the verifier. Design verification shall be performed by competent individual(s) other than those who performed the original design. Cursory supervisory reviews do not satisfy the intent of design verification.

Verification shall be performed in a timely manner. Design verification, for the stage of design activity accomplished, shall be performed prior to release for procurement, manufacture, construction, or release to another organization for use in other design activities provided sufficient data exists. Any unverified portion of the design shall be identified and controlled. In all cases the design verification shall be completed prior to relying upon the component, system, structure, or computer program to perform its function.

### 3.5.1 Extent of Design Verification

The extent of the design verification required is a function of the importance to safety, the complexity of the design, the degree of standardization, the state of the art, and the similarity with previously proven designs. Where the design has been subjected to a verification process, the process need not be duplicated for identical designs. For each application the applicability of standardized or previously proven designs for design inputs shall be verified. Known problems affecting the standard or previously proven designs and their effects on other features shall be considered. The original design and associated verification shall be adequately documented and referenced in subsequent applications. Design verification shall be required for changes to previously verified designs. This includes evaluation of the effects of those changes on the overall design and on any affected design analyses.

### 3.5.2 Methods

Acceptable verification methods include one or more of the following: design reviews, alternate calculations, and qualification testing.

#### 3.5.2.1 Design Reviews

Critical design reviews shall provide assurance that the final design is correct and satisfactory.

#### 3.5.2.2 Alternate Calculations

Calculations or analyses shall be made with alternate methods to verify correctness of the original calculations or analyses. The appropriateness of assumptions, input data used, and the computer program or other calculation method used shall be reviewed.

### 3.5.2.3 Qualification Tests

When design adequacy is verified by qualification tests, the tests and test configuration shall be identified. Testing shall demonstrate adequacy of performance under conditions that simulate the most adverse design conditions. Where the test is intended to verify only specific design features, the other features of the design shall be verified by other means. Test results shall be documented and evaluated by the responsible design organization to assure that test requirements have been met. If qualification testing indicates that changes to the item are necessary to obtain acceptable performance, the change shall be documented and verified to assure satisfactory performance.

## 3.6 Change Control

Changes to final designs, field changes, modifications to operating facilities, and nonconforming items dispositioned use-as-is or repair shall be justified and subject to design control measures commensurate with those applied to the original design. These measures shall include assurance that the design analyses for the structure, system, or component are still valid. Changes shall be approved by the same affected groups or organizations which reviewed and approved the original design documents. In the case where the original organization is no longer responsible for design approval, then a new responsible design organization shall be designated. The designated organization shall have demonstrated competence in the specific design area of interest and have an adequate understanding of the requirements and intent of the original design.

When a design change is approved other than by revision to the affected design documents, measures shall be established to incorporate, where appropriate, the change into these documents.

Where a significant design change is necessary because of an incorrect design, the design process and verification procedure shall be reviewed and appropriate action taken.

Plant personnel will be made aware of design changes/modifications which may affect the performance of their duties.

### 3.7 Interface Control

Design interfaces shall be identified and controlled. The company shall coordinate design efforts among the participating organizations. Interface controls shall include the assignment of responsibility and the establishment of procedures among participating design organizations. Controls shall be for the review, approval, release, distribution and revision of documents involving design interfaces.

Design information transmitted across interfaces shall be documented and controlled.

### 3.8 Documentation and Records

Specific requirements are stated in Section 6 and Section 17.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI/ASME NQA-1
- ASME Section III, NCA-4000

# 1. POLICY

This section identifies the requirements for preparation, review and retention of procurement documents.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company establishes procedures for the preparation and review of procurement documents. Procurement documents at all tiers include or reference requirements that are deemed necessary to assure adequate quality. These requirements include reference to 10CFR21 when applicable.

### 3.2 Supplier QA Program Requirements

Procurement Documents require:

a. Each vendor who supplies safety related items or services has and implements a quality assurance program that meets the requirements of 10CFR50 Appendix B.

b. For purchases of ASME Code items or services, the vendor's quality assurance program is consistent with the applicable requirements of the Code.

Section 7 contains specific exceptions to these requirements.

### 3.3 Content of Procurement Documents

Procurement documents at all tiers include the following as deemed necessary by the Company.

#### 3.3.1 Scope of Work

Procurement documents describe the scope of the items or services to be furnished by a vendor.

#### 3.3.2 Technical Requirements

The Company specifies technical requirements by reference to specific drawings, specifications, codes, standards, regulations, procedures, or instructions (including revisions thereto) that describes the items or services to be furnished. The procurement documents identify test, inspection and acceptance requirements. The procurement document identifies special instructions and requirements for such activities as designing, identification, fabrication, cleaning, erecting, packaging, handling, shipping, and extended storage.

### 3.3.3 Extension of QA Program to Subtier Suppliers

Procurement documents require the vendors to incorporate quality assurance program requirements in subtier procurement documents.

### 3.3.4 Right of Access for Inspection and Audit

Procurement documents provide for access to the vendor's facilities and records for inspection or audit by the Company or its designated representative.

### 3.3.5 Nonconformances

Procurement documents include requirements for reporting and approving the disposition of nonconformances.

### 3.3.6 Documentation Requirements

Procurement documents identify the documentation requirements including:

a. Required quality assurance records.
b. Those records to be transmitted to the Company.
c. Time of submittal.
d. The retention time and method of disposition of those records the vendor retains.

### 3.3.7 Spare and Replacement Parts

The procurement documents require the identification of appropriate spare and replacement parts or assemblies and the appropriate delineation of the technical and quality assurance related data required for ordering these parts or assemblies.

### 3.4 Procurement Document Review

The Company reviews procurement documents to assure that they include the necessary technical and quality requirements before release for bid and contract award. Records concerning the review and evaluation of procurement documents include, in whole or in part:

a. Minutes of meetings.
b. Comment letters.
c. Design review records.
d. Project quality assurance audits, and
e. A copy of the original design document marked with comments or latest revisions.

These records are kept in the Company department files, vendor files, or both locations. Trained personnel who are qualified in QA practices and concepts review procurement documents for adequacy of the referenced quality requirements. They document concurrence in the adequacy of the specified quality requirements.

### 3.5 Control of Procurement Document Changes

Changes to procurement documents are subject to the same review and approval as the original documents. Procurement documents incorporate changes made because of bid evaluations or contract negotiations. The review of these changes and their effects are completed before contract award. The review of changes includes the following:

a. The appropriate requirements specified in paragraph 3.3 of this section.
b. Determination of any additional or modified design criteria.
c. Analysis of exceptions or changes requested by the vendor.
d. Determination of the effects these changes may have on

    1) the intent of the procurement documents or
    2) quality of the procurement documents or
    3) quality of the item or service to be furnished.

Reviews required by this section are done by personnel who have:

a. Access to the pertinent information and
b. Understanding of the requirements and intent of the procurement documents.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13

# 1. POLICY

Activities governed by the Commonwealth Edison Company Quality Assurance Program shall be performed as directed by documented instructions, procedures, and drawings appropriate for the activity. The requirements for the use of these procedures shall also be prescribed in writing. These instructions, procedures, and drawings shall include acceptance criteria as applicable or appropriate for the activity.

Those participating in any activity shall be aware of and use the proper and current revision of instructions, procedures, drawings and engineering requirements for performing the activity.

# 2. RESPONSIBILITIES

Nuclear Operations is responsible for the preparation and implementation of Nuclear Operations Directives necessary to accomplish the Nuclear Station activities in a uniform and systematic manner.

The Nuclear Stations provide operations procedures and instructions. These procedures will be consistent with NRC license requirements for administering the policies, procedures, and instructions to assure safe operation from the time that the Operating License is issued through the life of the station.

Any Commonwealth Edison Company departmental group involved with nuclear plant design, procurement, maintenance, modification, construction, or operation may propose procedures, as necessary, to meet regulatory, ASME Code or other applicable code requirements. These departments include:

a. Nuclear Operations Division
b. Nuclear Stations
c. Site Regulatory Assurance Department
d. Site Material Management Department
e. Site Engineering and Construction Department

f. Nuclear Engineering and Technology Services Department
g. Nuclear Support Department
~~h. Performance Monitoring and Support Department~~
i. Nuclear Operations Department
j. Nuclear Regulatory Services Department
k. Nuclear Oversight Department
l. Purchasing Department
m. Corporate Security Department
n. Systems Materials Analysis Department
o. T&D Operational Analysis Department
p. Vice President, Fuels

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

## 3. REQUIREMENTS

### 3.1 Preparation and Review

Procedures shall be prepared, reviewed, approved, and used as prescribed in writing and shall contain sufficient detail to perform the required actions. Where appropriate, these procedures will include checklists containing the necessary attributes to be observed or measured.

The procedures will be independently reviewed and evaluated by other involved departments with interface responsibilities and the comments forwarded to the issuing department.

### 3.2 General

Operation, maintenance, or modification of equipment shall be preplanned and performed in accordance with written procedures appropriate to the circumstances and which conform to applicable codes, standards, specifications and criteria. When ASME Code work is involved, these documents shall include applicable code requirements and shall be made available to the Authorized Inspector for review and insertion of hold points as applicable.

Temporary procedures may be issued to provide guidance in unusual situations which are not within the scope of the normal procedures. Temporary procedures shall be subject to review and approval, and shall include designation of the time period during which they may be used.

In the event of an emergency not covered by an approved procedure, authorized personnel shall provide appropriate direction to minimize personnel injury and damage to the facility and to protect the health and safety of plant personnel and the general public.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criterion V
- 10CFR50.55
- ASME B&PV Code, Section III, NCA-4000
- ANSI/ASME NQA-1
- ANSI N18.7
- ANS-3.2 1988
- ANSI N45.2
- ANSI/ANS 3.2
- ANSI N45.2.11
- ANSI N45.2.13
- Facility Operating Licenses (Technical Specifications)

# 1. POLICY

The preparation, issue and change of documents, (e.g., instructions, procedures and drawings) shall be controlled by the Company to assure that correct documents are used. For all activities affecting quality these controls will include:

a. A review for adequacy, completeness and correctness.
b. An approval for release by authorized personnel.
c. The distribution to, and use at, the location where the activity is performed.

# 2. RESPONSIBILITIES

Any Commonwealth Edison Company organization involved with the preparation, issue, and change of documents affecting quality for nuclear plant activities shall establish procedures necessary to implement the requirements of this section. These departments include:

a. Nuclear Operations Division
b. Nuclear Stations
c. Site Regulatory Assurance Department
d. Site Material Management Department
e. Site Engineering and Construction Department
f. Nuclear Engineering and Technology Services Department
g. Nuclear Support Department
h. ~~Performance Monitoring and Support Department~~
i. Nuclear Operations Staff
j. Nuclear Regulatory Services Department
k. Nuclear Oversight Department
l. Purchasing Department
m. Corporate Security Department
n. Systems Materials Analysis Department
o. T&D Operational Analysis Department

Individuals participating in any activity shall be made aware of and use proper and current documents.

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

## 3. REQUIREMENTS

### 3.1 Document Preparation, Review, Approval, Issuance and Distribution

Document control measures shall provide for:

a. Identifying individuals or organizations responsible for preparing, reviewing, approving and issuing documents including revisions.

b. Identifying and assuring that proper documents are used in performing this activity.

c. Coordinating and controlling interface documents.

d. Establishing lists of documents required to be controlled by organizations involved with activities affecting quality.

e. Distributing documents approved for issuance in accordance with updated and current distribution lists.

### 3.2 Document Changes

Changes to documents shall be reviewed and approved by the same organizations that performed the original review and approval unless designated to another responsible organization. The reviewing organization shall have access to pertinent background data or information upon which to base their approval. Minor changes to documents, such as editorial corrections, may not require that the revised

documents receive the same review and approval as the original documents. To avoid a possible omission of a required review, procedures will be established to control minor changes.

### 3.3 General

Procedures developed to control documents shall meet the requirements of ANSI N18.7.

Procedures shall be reviewed and approved prior to initial use. The frequency of subsequent reviews shall be specified by the Company and shall be at an interval of 24 months or less unless justification for a longer interval between reviews has been established. Based on this justification, certain classes of procedures may not require a formal review cycle. The reviews will be accomplished by individuals other than the originator, knowledgeable in the area affected by the procedure.

Document controls required by ASME Section III, Division 1 and Division 2 are as stated in the ASME Code Interface.

ASME Code documents will be made available to the authorized Nuclear Inspector.

Document control procedures shall assure that proper documents are accessible and are being used. Obsolete documents are to be recalled or identified.

The scope of the document control program is to be defined. Examples of documents to be controlled include, but are not limited to: as-built drawings, engineering calculations, design specifications, computer codes, purchase orders and related documents, audit and surveillance procedures, operating procedures, emergency operating procedures, technical specifications, nonconformance reports, corrective action reports, work instructions and procedures, calibration procedures, quality verification procedures, inspection and test reports, Safety Analysis Reports, and Topical Reports.

DRAFT

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 6
- ANSI/ASME NQA-1
- ASME B & PV Code, Section III, NCA-4000
- ANSI N18.7
- ANSI N45.2
- ANSI N45.2.11
- ANSI/ANS-3.2



DRAFT

# 1. POLICY

This section establishes the quality system elements and related policies that assure the quality of purchased material, equipment and services.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Operations Division
b. Nuclear Stations
c. Site Material Management Department
d. Site Engineering and Construction Department
e. Nuclear Engineering and Technology Services Department
f. Nuclear Oversight Department
g. Purchasing Department
h. Corporate Security Department
i. Systems Materials Analysis Department
j. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 Supplier Selection

### 3.1.1 General

The Company establishes measures to assure that purchased material, equipment and services conform to the procurement documents.

### 3.1.2 Company Responsibilities

The Company assigns responsibilities in the supplier selection process to the following organizations:

a. The Nuclear Oversight Department evaluates the Quality Program.

b. The following departments, as appropriate, evaluate vendors technical capabilities:

~~1)~~ Nuclear Engineering and Technology Services Department
~~2)~~ Site Engineering and Construction Department
~~3)~~ Nuclear Stations
~~4)~~ T&D Operational Analysis Department
~~5)~~ System Materials Analysis Department

### 3.1.3 Methods

The Company establishes measures for evaluation and selection of procurement sources. These measures include one or more of the following:

a. Evaluation of the supplier's history of providing an identical or similar product that performs satisfactorily in actual use.

b. Vendor's current quality records supported by documented qualitative and quantitative information that can be objectively evaluated.

c. Vendor's technical and quality capability as determined by a direct evaluation of his or her facilities and personnel and the implementation of his or her quality assurance program.

The Company documents and files the results of these measures.

### 3.2 Bid Evaluations

The Company reviews and evaluates bids and awards contracts using written procedures. The results shall be documented. The Company reviews bids to assure that they conform to the procurement document requirements. Individuals or organizations designated to evaluate the following subjects make the bid evaluation as applicable to the type of procurement:

a. Technical considerations.
b. Quality assurance requirements.
c. Research and development effort.
d. Supplier's personnel.
e. Supplier's production capability.
f. Supplier's past performance.
g. Alternates.
h. Exceptions.

The Company obtains commitments to resolve unacceptable conditions resulting from the bid evaluation before award of the contract.

### 3.3 Supplier In-Process Control

#### 3.3.1 General

The Company establishes measures to interface with vendors and to verify vendor's performance. The measures include the following:

a. Establishing an understanding between the company and vendor.

b. Requiring the vendor to identify planning techniques and processes to be used in fulfilling procurement document requirements.

c. Reviewing vendor documents that are generated or processed during activities fulfilling procurement requirements.

d. Identifying and processing necessary change information.

e. Establishing method of document information exchange between the Company and vendor.

f. Establishing the extent of source surveillance and inspection activities.

3.3.2 In-Process Control and Verification Planning

Depending on the complexity or scope of the item or service, the Company communicates with the supplier to establish:

a. An understanding between the Company and the supplier of the procurement requirements.

b. The intent of the Company in monitoring and evaluating the vendor's performance.

c. The planning, manufacturing techniques, tests, inspections, and processes to be employed by the supplier in meeting procurement requirements.

The Company and supplier mutually agree on notification points, including hold and witness points. They document this agreement. The Company plans and does the verification of vendor's activities to assure conformance to the purchase order requirements with ~~QA organization~~ Site Quality or Nuclear Oversight participation. This verification uses written procedures or checklists. Verification activity plans, as applicable to the method of procurement, provide for:

a. Specifying the characteristics or processes to be witnessed, inspected, or verified, and accepted.

b. The method of surveillance and the extent of documentation required.

c. Those responsible for carrying out these procedures.

d. Audits, surveillances, or inspections that assure that the supplier complies with the quality requirements.

### 3.3.3 Programmatic Verification

The Company or its agents verify the effectiveness of the vendor's quality program by survey, audit or surveillance. The Company does these verifications at intervals consistent with the importance to safety, complexity and quality of the product, or services furnished. The Company witnesses or observes activities when source verification is used. The Company does audits per the requirements established in Section 18. The Company conducts verification activities as early as practicable so that subsequent activities do not prevent disclosure of deficiencies. The Company's verification activities do not relieve the vendor of his or her responsibility for verification on quality achievement.

### 3.3.4 Quality Verification at Source

Qualified personnel do verification activities at the vendor location per approved checklists or procedures. These activities verify conformance to identified technical and quality requirements.

### 3.3.5 In- Process Documentation Verification

The Company establishes methods to control, handle and approve vendor documents. Vendors submit these documents per procurement requirements. The Company uses acceptance criteria for the acquisition, processing, and record evaluation of technical inspection and test data.

### 3.3.6 Documentation of Verification Activities

The Company records activities done to verify vendor conformance to the requirements of procurement documents. The Company documents source surveillances, inspections, audits, receiving inspections, nonconformances, dispositions, waivers and corrective actions concerning vendor activities. The Company evaluates the documentation to determine the vendor's quality assurance program effectiveness.

### 3.3.7 Control of Procurement Changes

The Company documents changes to procurement documents involving technical or quality assurance matters. These changes are subjected to the same review and approval process as the original procurement document.

## 3.4 Acceptance of Purchased Items and Services

### 3.4.1 General

The Company uses approved procedures to accept purchased items and services. The methods used to accept an item or services from a vendor include one or more of the following:

a. Vendor Certificate of Conformance.
b. Source verification.
c. Receiving Inspection.
d. Post installation testing.
e. Product testing. (See section 3.4.6 for acceptance of services.)

The vendor identifies procurement requirements that have not been met. The vendor explains the disposition of all nonconformances per Section 15.

### 3.4.2 Acceptance by Receiving Inspection

Acceptance solely by receiving inspection is satisfactory only when the item or services are:

a. Relatively simple and standard in design, manufacture and test; and

b. Adaptable to standard or automated inspection or test of the product to verify quality characteristics after delivery; and

c. Such that receiving inspection does not require operations that could adversely affect the integrity, function, or cleanness of the item.

(Receipt inspection of an item supplied by a vendor that has been audited or surveyed and has supplied a certificate of conformance or compliance is over and above the meaning of "acceptance solely by receiving inspection.") When procurement documents require documentation to be furnished before receiving inspection, the company reviews such documentation during receiving inspection. During receiving inspection, the Company inspects as necessary to verify conformance to specified requirements, taking into account source verification and audit activities and the demonstrated quality performance of the vendor. The Company does receiving inspections using procedures and inspection instructions to verify, by objective evidence, such features as proper configuration; identification; dimensional, physical and other characteristics; freedom from shipping damage; and cleanliness. The Company coordinates the review of vendor documentation with receiving inspection when procurement documents require such documentation to be furnished prior to receiving inspection.

### 3.4.3 Acceptance by Source Verification

The Company considers acceptance by source verification when the item or service is:

a. Vital to plant safety; or
b. Difficult to verify quality characteristics after delivery; or
c. Complex in design, manufacture and test.

Source verification activities (for receipt inspection) include the following, as applicable:

a. The vendor has submitted documentation as required.

b. Documentation provides verification of approvals, material, applicable inspections and tests.

c. The Company has approved fabrication procedures and processes.

d. The vendor has complied with fabrication procedures and processes.

e. The applicable qualifications, process records and certifications are available.

f. The vendor has inspected, examined and tested components and assemblies as required.

g. Applicable inspection, test and certification records are available.

h. The vendor has dispositioned nonconformances as required.

i. The vendor has cleaned, preserved, packed and identified components and assemblies per specified requirements.

Upon acceptance by source verification, the Company furnishes documented evidence of acceptance to the receiving destination of the item, to the Purchaser, and to the vendor.

### 3.4.4 Acceptance by Certificate of Conformance

Acceptance by this method is satisfactory when the item or service is of simple design and involves standard materials, processes and tests. Such items may be fabricated subject to selected qualification, sample or batch testing to establish or maintain a minimum quality confidence level. When not precluded by other requirements, documentary evidence may take the form of written certificates of conformance that identify the requirements met by the items, provided means are available to verify the validity of such claims. When used, a certificate of conformance meets the following minimum criteria:

a. The certificate identifies the purchased material and purchase order number.

b. The certificate identifies the specific procurement requirements such as codes, standards or other specifications applicable to the purchased item.

c. The procurement requirements identified include any approved changes, waivers, or deviations that apply to the subject item.

d. The certificate identifies any procurement requirements that have not been met with an explanation and the means for resolving the nonconformances.

e. A person who is responsible for the quality function attests to the certificate.

f. Procedures describe the certification system, including the procedures to be followed in filling out a certificate.

g. Audits, surveys, or surveillances of the supplier verify the validity of supplier certificates and the effectiveness of the certification system.

h. The Company conducts these at intervals commensurate with the supplier's past quality performance.

The procurement documents specify supplemental documentation such as material certificates or test reports when necessary.

### 3.4.5 Acceptance by Post-Installation Testing

When post-installation testing is used, the Company and vendor mutually establish post-installation test requirements and acceptance documentation. Acceptance by this method is satisfactory when performed following the accomplishment of at least one preceding method and when:

a. It is difficult to verify the quality characteristics of the item without it being installed and in use; or

b. The item requires an integrated system checkout or test with other items to verify its quality characteristics; or

c. The item cannot prove its ability to perform its intended function except when in use.

### 3.4.6 Acceptance of Services Only

In cases involving procurement of services only, the Company accepts the service by any of the following methods:

a. Technical verification of data produced.

b. Surveillance or audit of the activity.

c. Review of objective evidence for conformance to the procurement document requirements such as certifications, stress reports, etc.

The Company does a receiving inspection for items sent off site for repair, testing, or rework.

### 3.4.7 Acceptance of ASME Code Items

Personnel receiving ASME code items use a checklist. The checklist includes the following:

a. All characteristics that the material specifications require to be reported. (Receiving personnel examine each such characteristic using accepted procedures and record the results. Characteristics included on certified material test reports or certificates of compliance need not be duplicated in the checklists.)

b. A record that the certified material test reports and certificates of compliance have been received, reviewed and found acceptable.

c. Proper documentation of the results of the examination or test procedure conducted by the certificate holder when necessary to show the compliance with material specifications or other requirements.

### 3.4.8 Commercial Grade Items

Where the design utilizes commercial grade items, the following requirements are an acceptable alternate to other requirements of this section:

a. An approved design document identifies the commercial grade item. (An alternate commercial grade item may be

applied, provided the cognizant design organization provided verification that the alternate commercial grade item will perform the intended function and will meet design requirements applicable to both the replaced item and its application.)

b. The Company performs source evaluation and selection, where determined necessary based on complexity and importance to safety.

c. The Company identifies commercial grade items in the purchase order by the vendor's published product description.

d. After receipt of a commercial grade item, the Company determines the following:

1) Damage was not sustained during shipment.
2) The item received was the item ordered.
3) Inspection and/or testing is accomplished, as required by the purchaser, to assure conformance with the manufacturer's published requirements.
4) Documentation, as applicable to the item, was received and is acceptable.

3.5 Presence of Documentary Evidence

Documented evidence that material or equipment conforms to procurement requirements is present at the site before use or installation. This documentary evidence shall be retained at the nuclear power plant site and shall be sufficient to identify the specific requirements such as codes, standards or specifications met by the purchased material and equipment.

## 3.6 Spares

### 3.6.1 General

Procedures control the procurement, storage and issue of materials and components including spare and replacement parts. Procurement documents for these items identify the appropriate technical and quality related requirements. The Company purchases spare parts and replacement items, equipment and components to original or better design requirements.

### 3.6.2 Equivalent Specifications and Code Requirements

The Company purchases materials and components associated with safety-related structures or systems to specifications and codes equivalent to those specified for the original equipment, or those specified by a properly reviewed and approved revision. When the Company cannot obtain material that has been manufactured and supplied in conformance with ASME Section III, the Company may procure stock material and upgrade it by appropriate tests to ASME Section III. The Company provides certification covering such upgrading (i.e. Providing a Certified Material Test Report) for all operations performed by the Company or their vendors. Where the QA requirements of the original item cannot be determined, qualified individuals conduct an engineering evaluation to establish the requirements and controls. This evaluation insures that interfaces, interchangeability, safety, fit and function are not adversely affected or contrary to applicable regulatory or Code requirements. The evaluators document the results. Where the company procured the original item with no specifically identified quality assurance program requirements, or from an Original Equipment Manufacturer/Supplier (OEM/OES) who no longer is on the Quality Approved Bidders List, identical (like-for-like) items may be similarly procured from the OEM/OES. In such cases, the Company conducts a joint technical engineering and quality assurance documented evaluation to established requirements and controls to assure at least equivalent product performance. The evaluation shall assure that

interfaces, interchangeability, safety, fit and function are not adversely affected or are not contrary to applicable regulatory or Code requirements.

### 3.6.3 Procurement from Other Utilities

Purchases of Safety Related items can be made from other utilities who have had an NRC approved QA Program in effect at the time of their procurement and receipt. Such utility has maintained a Quality System Program for storage, handling and maintenance with documented traceability to the manufacturer of the items. Certificates of Conformance to the above requirements and associated required documentation are provided.

### 3.6.4 Equivalent Production/ Fabrication Requirements

Items associated with safety-related structures or systems are produced or fabricated under requirements at least equivalent to that of the original equipment, or those specified by a properly reviewed and approved revision.

### 3.6.5 Maintenance or Modification

The Company performs maintenance or modifications that may affect function of safety-related structures, systems, or components in a manner to ensure quality at least equivalent to that specified in original design bases and requirements, materials specifications and inspection requirements.

### 3.6.6 Testing or Design for Equivalence

Replacement items receive adequate testing or are of a design for which experience shows a high probability of satisfactory performance. The Company considers phased replacement to permit in-service performance of the new component to be evaluated. When used, this minimizes the possibility of a hidden deficiency producing a systematic failure.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code, Section III
- ANSI N45.2.13

# 1. POLICY

This section establishes the requirements for identification and control of materials, parts, and components.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 Identification and Traceability

### 3.1.1 General

The Company establishes procedures for the identification and control of materials, parts and components, including partially fabricated assemblies. The Company establishes procedures to control welding and brazing materials. The Company establishes controls to assure that only

correct and accepted items are used or installed. The Company maintains identification on the items or in documents traceable to the items. The Company controls nonconforming items according to Section 15. The Company maintains parts, material, and equipment in storage traceable to quality assurance documents.

### 3.1.2 Traceability

The responsible organizations document and maintain identification and traceability of items (including partially fabricated subassemblies) throughout fabrication, installation and use of the item. Before use or installation of an item, the installer verifies that identification and traceability have been maintained. The Company reestablishes the identification before installation or use, if it has been lost. Audits and surveillances assure that an identification and traceability system are provided and maintained.

### 3.1.3 Identification Methods

Identification is on the item where practicable. Identification is clear, unambiguous and indelible. Identification does not affect the function of the item. If the item cannot be practicably marked, the Company uses records traceable to the item for identification. If physical identification is either impractical or insufficient for proper control, the Company controls an item by physical separation, procedural control or other appropriate means.

### 3.1.4 Transfer of Markings

Before cutting or dividing material, the Company transfers marks or coded markings to the unmarked portions. The Company independently verifies proper identification of each piece.

### 3.1.5 Limited Life Items

The Company identifies and controls items having limited life to preclude use of items whose shelf life or operating life has expired.

### 3.1.6 Stored Items

The Company uses procedures to assure proper control of identification of items in storage.

### 3.1.7 Special Materials

The Company clearly identifies and marks special nuclear materials, radioactive sources and hazardous materials.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI 18.7
- ANSI N45.2
- ASME Code, Section III
- ANSI/ASME NQA-1
- ANSI N45.2.4
- ANSI N45.2.8
- ANSI N45.2.13

# 1. POLICY

When the quality of a process cannot be assured through observation of the final product, the process is referred to as a special process. The quality of such processes is assured through reliance on operator skill and in-process control. Examples of special processes include welding, brazing, heat treating, non-destructive examination (NDE), chemical cleaning, coating, and concrete placement. Special processes will be performed in accordance with applicable requirements. These requirements are defined as codes, standards, specifications, or special instructions.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.0 General

The Company department directing the work during construction, repair, replacement, modification, or inservice inspection (ISI) activities will be

responsible for controlling special processes. This includes:

a. Procedure Development and Qualification
b. Procedure Implementation
c. Personnel Qualification
d. Maintenance and Retention of Records

Special process controls will be assured through audit or surveillance activities.

### 3.1 Procedure Qualification and Control

Special processes will be controlled by instructions, procedures, drawings, checklists, travelers, or other appropriate means. Special process controls will specify the preparatory steps, processing details, conditions to be maintained during the process, equipment requirements, inspection and test requirements, acceptance criteria, and records requirements.

Special process procedures will be written and qualified in accordance with applicable requirements.

Special process procedures will be reviewed and approved as follows:

a. Company heat treating, welding, brazing and other non-NDE procedures will be reviewed and approved by the Mechanical and Structural Design ISI/Materials Supervisor.

b. Company NDE, coating, and ASME Code concrete placement procedures will be reviewed and approved by the appropriate Company Level III.

c. Contractor and subcontractor Section III and XI and other ISI-related NDE procedures will be reviewed and approved by the Company NDE Level III.

d. Other contractor and subcontractor special process procedures will be reviewed by the responsible Company engineering organization.

When permitted by applicable requirements, the Company may direct contractors or subcontractors to use Company special process procedures.

The Company will assure that qualification of Company, contractor, and subcontractor ASME Code NDE procedures is verified by the ANI or ANII.

When there is a specific reason to question whether special process procedure requirements are being met, the Company, the ANI, or the ANII may require re-evaluation of the procedure before work may proceed.

### 3.2 Personnel Qualification and Certification

When required, Company, contractor, and subcontractor personnel performing special processes will be trained, tested, qualified, or certified in accordance with a procedure which meets applicable requirements.

When permitted by applicable requirements, the Company may qualify and control contractor and subcontractor personnel.

The Company will assure that qualification of Company, contractor and subcontractor ASME Code NDE personnel is verified by the ANI or ANII.

When there is a specific reason to question the ability of an individual performing special processes, the Company, the ANI, or the ANII may require re-evaluation before that individual will be permitted to resume work.

Individuals failing any retest will be removed from applicable operations pending requalification.

### 3.3 Special Process Records

Special process records will provide evidence that special processes were performed in accordance with approved procedures by qualified personnel. These records will be retained by the Company, or by the contractor or subcontractor as required by procurement documents.

Records will be maintained for currently qualified personnel, processes, and equipment of each special process.

Completion of special process records will be verified by Station Tech Staff, Station Quality Control, or by the responsible Company engineering organization.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 9
- ANSI/ASME NQA-1
- ASME Sec. III Divisions 1 and 2
- ASME Sec. XI

# 1. POLICY

The company will plan and execute an inspection program to verify that activities affecting quality conform to documented requirements. The independent inspections described in this section are not intended to dilute or replace the clear responsibility of the first line supervisors for the quality of work performed under their supervision.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company will establish controls for coordination and execution of inspection plans. Company Quality Control or other qualified organizations are responsible for implementation of established inspection plans. If the inspection plan includes inspections by personnel other than the quality organization, the inspection requirements, personnel qualification criteria, and inspector independence will be accepted by the responsible quality organization prior to implementation.

## 3.2 Inspection Plans

The company will prepare documented inspection plans. Related codes, standards, specifications and design documents will be used to develop the inspection plans. The plans will identify:

a. Activities to be inspected
b. Inspection characteristics
c. Inspection techniques/equipment (including accuracy requirements)
d. Acceptance criteria
e. Responsible organizations
f. Qualification requirements
g. Provisions for the recording of inspection results
h. Provisions for inspection and test status

The inspection plans may be separate documents or an integral part of approved instructions, procedures or drawings.

## 3.3 Inspection Personnel

Inspections will be performed by qualified personnel. Inspections for acceptance will be performed by inspectors with valid certifications. Inspectors will be independent, other than those who performed or directly supervised the activity being inspected. Inspection of operating activities may be conducted by second line supervisory personnel or other qualified personnel not assigned first line supervisory responsibility for the conduct of the work. Operating activities are defined as work functions associated with normal operations of the plant, routine maintenance, and certain technical services routinely assigned to the on-site operating organization. On-the-Job training and team inspections shall be performed under the direct supervision of qualified personnel.

### 3.4 Inspector Qualification

A qualification program will be established and documented to conform to applicable codes, standards, or licensing requirements. Qualifications and certifications will be kept current.

### 3.5 Inspection Process

Inspections will be performed using approved instructions, procedures, process sheets, travelers, or checklists and applicable drawings.

#### 3.5.1 Inspection

Inspections will be performed for each work or operating activity where necessary to verify quality. Where inspection sampling is used to verify acceptability of a group of items the sampling procedure shall be based on recognized standard practices.

#### 3.5.2 Process Monitoring

Process monitoring may be used when inspection of processed material or products is impossible or impractical. When necessary to ensure quality throughout the duration of the process, both inspection and process monitoring will be systematically used to verify conformance to requirements.

#### 3.5.3 Hold Points/ Witness Points

When inspections must be performed before work can continue, hold points will be established in appropriate documents. Consent to waive hold points will be recorded prior to continuation of work. When inspection is desired but not mandatory before work can continue, witness points will be established. Completion of hold and witness points will be documented.

### 3.5.4 Re-inspection

When acceptance criteria are not met, corrected areas will be reinspected. Changes to, or rework of, an item after inspection will require re-inspection of the affected areas.

### 3.5.5 Final Inspection Review

A final evaluation will be performed. Inspection results will be reviewed to confirm that required inspections and quality records have been completed, identified nonconformances have been resolved and the item conforms to specified requirements. Final acceptance of the item will be approved by authorized personnel.

### 3.5.6 Inspection Records

Inspection records will be of sufficient detail to confirm completion and as a minimum identify:

a. Item inspected
b. Date of inspection
c. Inspector/Data recorder
d. Type of observation
e. MT&E used
f. Results or acceptability
g. Reference to action taken in connection with identified nonconformances
h. Authorized individual approving results

When the inspection activity is performed using a separate procedure, the procedure and its revision will be recorded.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 10
- ANSI/ASME NQA-1
- ANSI/ANS 3.2
- ASME SEC. III NCA 4000

# 1. POLICY

This section identifies the requirements for preparation, review, performance and documentation of testing at nuclear stations.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Purchasing Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

### 3.1.1 Testing Program

The company's overall testing program falls into two broad categories described as the initial testing phase and the operational testing phase. The initial testing phase ends approximately at the time of fuel load (receipt of operating license). The operational testing phase begins at this time. Tests performed after fuel load and those tests which lead directly to and support fuel load fall in the operational testing phase. In

traditional terms, start-up testing, surveillance testing, and post modification testing fall into the operational testing phase, while vendor testing, construction testing and preoperational testing fall into the material testing phase.

The Company establishes and controls a test program to assure that design and performance criteria have been satisfied. The test program includes, as appropriate, procedures to ensure that structures, systems, subsystems and components will perform in service. See paragraph 3.1.2, Test Procedures, of this Section.

The test program covers all required tests including:

a. tests during design,
b. tests during fabrication,
c. tests during construction activities associated with plant maintenance and modification during the plant operational phase.
d. the demonstration of satisfactory performance following plant maintenance and modifications or procedural changes.

The program includes, as applicable:

a. proof tests prior to installation,
b. construction tests,
c. preoperational tests,
d. start-up tests as required for a new plant,
e. operational tests,
f. those tests required by plant maintenance or modifications,
g. prototype qualification tests, and
h. production tests.

### 3.1.2 Test Procedures

The program uses written test procedures which include the requirements and acceptance limits from applicable design documents. The Company reviews and approves test procedures. The Company reviews and approves changes to test procedures, including changes which alter test sequence, in a similar manner to the original.

The organization responsible for the design of the item to be tested establishes the test requirements and acceptance criteria. The Company bases test requirements and acceptance criteria upon specified requirements contained in applicable design or other pertinent documents. Test requirements include specific characteristics to be tested. The Company specifies specific test methods when they must be employed. The Company uses written procedures or checklists. It documents the status of equipment both before and after testing.

Test procedures include provisions to assure that:

a. proper calibrated inspection and test instruments are used,
b. equipment to be tested is properly released for testing,
c. inspections and tests are done under suitable environmental conditions, (See paragraph 3.1.2.1, Prerequisites, of this Section),
d. data documentation is in compliance with test procedures, and
e. retention control of test data documentation is adequate.

The Company may use appropriate sections of related documents, such as ASTM methods, supplier manuals, equipment maintenance instructions, or approved drawings or travelers with acceptance criteria in lieu of specially prepared written test procedures. Such documents must include adequate instructions to assure the required quality of work.

DRAFT

Test and inspection procedures contain:

a. A description of objectives.

b. Responsibilities.

c. Test or inspection requirements contained in applicable design documents.

d. Acceptance criteria or limits contained in applicable design or other source documents, such as vendor's literature, engineering drawings or plant specifications that will be used to evaluate results.

e. Prerequisites for or checks to be made prior to performing the tests or inspections including any special conditions to be used to simulate normal or abnormal operating conditions;

f. Limiting conditions.

g. Instructions or check-lists used to verify or document that affected plant systems are arranged in their correct lineup and for restoring the system to the condition consistent with the normal plant operating status.

h. Any special equipment or calibrations required to conduct the test or inspection.

i. Test or inspection procedure.

Where tests and inspections are to be witnessed, the procedure identifies hold points or witness points in the testing sequence to permit witnessing. The procedure requires appropriate approval for the test to continue beyond the designated hold point.

### 3.1.2.1 Prerequisites

Prerequisites include the following, as applicable:

a. Calibrated instrumentation, in accordance with Section 12, Control of Measuring and Test Equipment.



DRAFT

b. Appropriate Test Equipment.
c. Trained Personnel.
d. Condition of test equipment and the item to be tested.
e. Suitable environmental conditions, and
f. Provisions for data acquisition.

Procedures ensure that prerequisite steps for equipment testing, such as:

a. Completion of necessary construction,
b. Prior testing,
c. Formal release for testing,
d. Safety precautions, and
e. Measures to preserve equipment status have been or will be performed.

A detailed prescribed physical inspection of equipment components and facilities is performed to ensure readiness for operation. Typical items to be covered include:

a. Cleanliness,
b. Lubrication,
c. Setting of limit switches,
d. Calibration of instruments, and
e. Presence of safety devices.

3.1.2.2 Schedule

The Company provides a schedule to assure that all necessary tests are performed and properly evaluated on a timely basis. It schedules testing so that the safety of the plant is never dependent on the performance of an untested system.

3.1.3 Test Results

The Company evaluates test results to assure conformance with design and performance requirements.

The Company documents inspection and test results in a test report or data sheet. Each report identifies the following:

a. The item to which it applies.
b. The procedures or instruction followed in performing the task.
c. The identification of the conditions encountered which were not anticipated.
d. Identity of inspector or tester.
e. Completion date and other significant dates and times.
f. Location where testing was performed or where test samples were taken.
g. Measuring and test equipment used.
h. The acceptability of the test.
i. The deviation of test results from acceptance criteria (nonconformance).
j. The actions taken to correct the deviations noted.
k. As-found condition, and
l. As-left condition.

### 3.1.4 Test Records

Test records include:

a. Test procedures.
b. Test results.
c. Documents that provide acceptance criteria, and
d. Data sheets completed during the tests.

## 3.2 Initial Test Program

### 3.2.1 Construction Tests

The company plans, executes, documents, and evaluates tests required to collect data, such as for ~~siting~~ site selection or design input.

Surveillance of construction activities includes tests to verify that items being installed and the installation comply with specified quality and performance requirements. These tests are performed at appropriate points in the construction phase as access permits or when questions arise as to the quality of components or workmanship.

A component test is a functional, operational, or performance test of an individual piece of equipment or unit system under prescribed conditions. Typical parameters to be examined are:

a. Direction of rotation,
b. Bearing temperatures,
c. Vibration,
d. Time delays, and
e. Ability to operate with remote and local controls.

The Company performs hydrostatic tests to verify conformance to specified requirements the reactor coolant system, including all or parts of connected systems which cannot be isolated from the test pressure. The applicable test requirements are contained in section III of the ASME code.

Where preliminary operation of equipment, during construction, is utilized for a testing function, the Company clearly establishes and documents the purpose of the test, its scope, and results.

Tests are repeated if construction or associated activity affects the results of the tests. The need to repeat a test is ascertained at the time of preparing for post-construction testing.

Tests and shakedown runs are made on energized systems where necessary to evaluate operations and to properly condition for service (for example, the seating of brushes or bearings, the stabilization of instrumentation and burn-in of electronic devices).

The Company considers providing a run-in period to minimize early failures during operation of the plant, where appropriate.

### 3.2.1.1 Coatings

The company uses the specifications of ANSI N101.4-1972 for test requirements for applied coatings when these tests are required during design, manufacture, and installation.

### 3.2.1.2 Compacted Fill

The Company conducts in-process tests on compacted fill in accordance with ANSI 45.2.5.

### 3.2.1.3 Concrete

The Company conducts in-process tests on concrete and pre-stressing steels in accordance with ANSI 45.2.5.

### 3.2.1.4 Instrumentation

The Company tests instrumentation and control channels to assure that they are properly calibrated. In addition, the Company performs specific tests at critical levels such as "set points" in a manner simulating the approach toward the set point. These calibrations are made with these devices in their normal positions if the calibration is dependent upon location or attitude. The Company makes tests to determine that proper response is obtained over the operating range of the device. It gives particular attention to verifying independence and dependence, as appropriate, of the elements of the systems. The Company tags or labels items after calibration indicating date of calibration and identity of the person that performed the calibration.

The Company prepares and documents installation, inspection and test procedures and work instructions for instrumentation and electrical equipment. These documents are kept current and revised as necessary

to assure that installation, inspections and tests are performed in accordance with latest information. They include as appropriate:

a. Installation specifications;
b. Inspection and test objectives;
c. Precautions to avoid component or system damage during testing or inspection;
d. Inspection and test equipment required;
e. Sequence of tests (if applicable);
f. Sequential actions to be performed;
g. Frequency of inspection or test;
h. Prerequisites;
i. Approvals;
j. Data report form;
k. Identification of test equipment and date or required recalibration where required for interpretation of test results; and
l. Inspection and test acceptance limits.

3.2.1.5 Electrical Tests

Electrical tests include:

a. Continuity tests, short circuit tests, polarity and rotational tests;
b. Control system tests including indicating meters, recorders, transducers, targets and lamps, annunciators and alarms, controls and interlocks;
c. Voltage breakdown tests on liquid insulation;
d. Overpotential (HIPOT) tests as specified; ~~and~~
e. Insulation resistance measurements as specified.

Overpotential tests conform to the applicable codes and standards. The manufacturer's recommendations are always considered.

### 3.2.1.6 Mechanical Tests

The Company performs mechanical tests to ascertain that electric and/or instrumentation components or systems can withstand system pressure ratings. As a minimum, the Company applies such tests to pressure sensing and transmitting devices operating in steam, hydraulic, and vacuum systems and their hydraulic or pneumatic interconnecting piping or tubing and associated instruments. Pressurized equipment which is a part of electric apparatus such as heat exchangers, circulating systems, actuating systems, and electric and instrumentation containment penetrations are likewise tested if site assembled or fabricated. If equipment is assembled at the construction site, the Company conducts tests after the assembly is complete even though the components may have been previously tested. Manufacturer' tests of fabricated items may be accepted for equipment not disturbed during the construction phase. The Company performs these tests in accordance with the applicable codes and standards.

### 3.2.1.7 Physical and Chemical Tests

Physical and chemical tests, in accordance with the applicable codes, include, as appropriate:

a. Chemical analyzing of fluids for oxygen or moisture content and purity.
b. Radiation sensitivity testing to confirm that radiation sensors and controlling devices are properly functioning.

### 3.2.2 Preoperational Tests

The preoperational testing, when completed, involves the operation of all items in a system to assure that the operation of that system is in accordance with the design criteria and functional requirements. The preoperational phase demonstrates proper coordinated operation of the plant systems, to the extent feasible. The Company demonstrates

required independence and dependence of subsystems. The Company tests to verify that the quality of installed equipment has not deteriorated during the construction phase.

Partial systems or more than one system as defined by the test boundaries may also be tested to assure that operation is in accordance with the design criteria and functional requirements. Where mechanical equipment's and systems' operation must coordinate with non-mechanical equipment or systems, the preoperational test performed includes verifying the compatibility of interfacing equipment and functions.

The Company designs preoperational tests to permit evaluation of system performance. They include, for example:

a. The measurement of flow,
b. The measurement of temperature,
c. The measurement of pressure response time,
d. The measurement of vibration,
e. Transfer of the power supply to emergency power, ~~and~~
f. The measurement of the accuracy and response of control devices.

Preoperational tests demonstrate, as nearly as can be practicably simulated, the overall integrated operation of the plant systems at rated conditions, including simultaneous operations of the auxiliary systems. Preoperational tests require variation on control parameters, such as pump stops, and restarts, cycling valves and varying flows so that system performance can be evaluated.

The test procedure identifies and describes any temporary or simulated conditions or equipment. If not previously planned, the Company prepares and issues a documented notice with approval of the

responsible organization stating the substitutions that existed for the test. The Company provides written verification that temporary installations have been satisfactorily replaced by the permanent installations.

Preoperational testing includes, but is not limited to the following:

a. System integrity.
b. In-line instrument installation is consistent with specified flow directions.
c. Sensing lines are phased correctly in in-line elements and sensors.
d. Service requirements for initial operation such as flow alignments, limiting flow orificing and relief devices have been performed.
e. Operation of controls, valves, dampers, operators, and load limiting devices.
f. Rotating equipment (motors, pumps, blowers)-rotation, speed, vibration, noise, and no-load operation.
g. Handling equipment-load tests of cranes, hoists, conveyors, hooks, and handling adapters, and accessories.
h. Containment systems.
i. Air handling systems.
j. Fuel storage and handling systems.
k. Reactor components handling systems.
l. Instrument air systems.
m. Fluid service systems.
n. Waste effluent systems. ~~and~~
o. Auxiliary building systems.

The final preoperational test includes the review of the construction tests made on assemblies and components with particular attention given to those construction tests that demonstrate functional or operational results. When these tests serve as a prerequisite or a part of the final system test, the Company reviews construction activity which may have affected the results.

Where necessary, the Company demonstrates freedom from unwanted or harmful effects of conducted or induced electrical noise.

The Company checks the suitability of plant operating procedures to the maximum extent possible during the performance of preoperational and start-up tests and where permitted at other times prior to fuel load.

Tests, or portions thereof, are repeated if construction or associated activity affects the results of the tests. The need to repeat a test is ascertained at the time of preparing for post-construction testing.

The Company rectifies the following before final testing:

a. Temporary electrical connections,
b. Temporary piping sections,
c. Abnormal chemical solutions,
d. Unspecified setting of devices,
e. The fixing of a moving component, or
f. The effecting of any other abnormality.

Exceptions to this are cases where fuel loading or other critical operations prevent using the complete assembly for the test. In these instances, the Company documents the substitutions that existed for the test.

The Company uses normal system readout devices and installed transducers as far as possible to monitor the operation during the test. It uses special measuring instruments and simulating devices where the installed equipment in not adequate for the purpose of conducting tests.

Test equipment used has adequate capacity and is compatible with system under test so that the results will not be distorted.

### 3.2.2.1 Cold Functional Tests

These tests follow preoperational testing of individual systems including reactor coolant systems. The Company performs this testing to obtain operational data of equipment with maximum allowable simultaneous operation on interfacing systems and equipment and final verification of functional performance of these systems.

The Company tests the required individual systems to demonstrate cold functional operability of individual components, subsystems, and systems, and to demonstrate compatibility with other systems. These tests, where appropriate, demonstrate the following:

a. System pressure drop.
b. Flow rate.
c. Controls and throttling device settings.
d. Function of interlocks, alarms and automatic features.
e. Instrument calibration.
f. Setting of meter biases.
g. System stability.
h. Adequacy of pipe and equipment support settings.
i. Heat runs on rotating equipment.
j. Adequacy of ventilation, lubrication and cooling systems under sustained operating conditions.
k. Ability to meet water chemistry requirements.

### 3.2.2.2 Hot Functional Tests for PWR Plants Only

Hot functional tests for PWR plants usually follow cold functional tests and simulate plant operating conditions at elevated temperatures and pressures. All auxiliary and support systems exclusive of those required for pre-criticality testing must be available for these tests. If any of these systems are not available, the responsible organization specifically authorizes exclusion of these systems or subsystems from testing and document those exceptions.

These tests include the following as a minimum:

a. System pressure drop.
b. Flow rate.
c. Controls and throttling device settings.
d. Function of interlocks, alarms and automatic features.
e. Instrument calibration.
f. Setting of meter biases.
g. Systems stability.
h. Adequacy of pipe and equipment support settings.
i. Heat runs on rotating equipment.
j. Verification of heat exchanger performance.
k. Verification of boron control system performance.
l. Thermal insulation effectiveness.
m. Set points of temperature, pressure and level devices.
n. System heatup tests.
o. System cooldown tests.
p. Hot flow tests.
q. Setting protective devices.
r. Hot clearances; and
s. Vibration measurements of major equipment and piping.

## 3.3 Operational Tests Program

### 3.3.1 Start-up Tests

Start-up tests demonstrate the performance of systems that could not be tested prior to operation and to confirm those physical parameters, hydraulic or mechanical characteristics that need to be known, but which could not be predicted with the required accuracy, and to confirm that plant behavior conforms to design criteria. The Company plans the start-up test program to permit safe fuel loading and start-up; to increase power in safe increments; and to perform major testing at specified power plateaus. If tests require the variation of operating parameters outside of their normal range, the Company prescribes the limits within which such variation is permitted. The scope of the testing demonstrates

insofar as practicable that the plant is capable of withstanding the design transients and accidents.

The Company checks the suitability of plant operating procedures to the maximum extent possible during the performance of preoperational and start-up tests and where permitted at other times prior to fuel load.

### 3.3.2 Surveillance Tests

The Company's test program covers surveillance testing during the operational phase to provide assurances that failures or substandard performance do not remain undetected and that the required reliability of safety related systems is maintained.

### 3.3.3 Maintenance or Major Procedure Change

The Company performs tests following plant modification or significant changes in operating procedures to confirm that the modification or changes produce expected results. These tests also demonstrate that the change does not produce an unsafe operating condition.

## 4.0 REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13

# 1. POLICY

Measuring and test equipment (M&TE) will be calibrated and controlled to maintain its accuracy.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The T&D Operational Analysis Department is responsible for maintenance and calibration (traceable to National Standards) of Company M&TE except analytical chemistry and radio-chemistry laboratory equipment.

Part or all of this responsibility may be delegated to the Stations.

The Stations are responsible for the control of Station analytical chemistry, radio-chemistry laboratory M&TE, and standard solutions. They are also responsible for the control of the station M&TE program.

The Nuclear Engineering and Technology Services Department is responsible for the establishment of accuracy requirements for M&TE. Excluded are analytical chemistry and radiochemistry M&TE. Normally this will be the manufacturer's published accuracy. If such published accuracy is not required, new accuracy requirements will be established by Nuclear Engineering and Technology Services. The Nuclear Engineering and Technology Services Department is responsible for resolution of technical issues including when certification is required.

3.2 Control

A program will specify how M&TE will be stored, handled, and used. As a minimum the following items will be addressed:

a. Environmental restrictions.
b. Personnel Qualifications.
c. M&TE selection.
d. Usage history.
e. Certification requirements.
f. Status.
g. Damage or suspect M&TE.
h. Administrative controls.
i. Repairs and maintenance.
j. Items not requiring certification.

3.3 Accuracy

M&TE will be calibrated against standards at least four times more accurate than the item being calibrated. Deviation from this standard will be controlled.

The accuracy ratio of M&TE to the plant equipment being calibrated will be determined by an engineering process.

Standards will be calibrated against standards having a greater accuracy. When this is not possible, equal accuracy may be used if it is adequate. Such deviations will be controlled.

### 3.4 Traceability

M&TE will be calibrated against certified standards having valid relationships to nationally recognized standards.

### 3.5 Interval

A calibration interval will be established for all M&TE. The M&TE program will specify how this interval is established. "Upon Request", "Not To Be Calibrated", and "Before and After Use" are acceptable frequencies.

### 3.6 ASME Code

M&TE used in Code applications will meet all requirements of the applicable Code sections.

### 3.7 Certification

Certification of M&TE is required for:

a. Calibration of other M&TE.
b. Verification of design parameters.

Certification of M&TE is not required when the measurements do not require specific accuracy.

DRAFT

### 3.8 Corrective Actions

When M&TE is found to be out of tolerance, an evaluation will be made of its previous uses to determine corrective action. Out of tolerance or suspect equipment will be identified and segregated to prevent inadvertent use.

### 3.9 Vendor Control

Vendors supplying certification services will be on the Company Quality Approved Bidders List.

### 3.10 Commercial Devices

Control measures are not required for rulers, tape measures, levels, and other such commercial devices, if such equipment provides adequate accuracy.

### 3.11 Records

M&TE calibration records will contain, as a minimum:

a. Last calibration date.
b. Next calibration date.
c. Standards used.
d. Serial Number.
e. Calibration Data.
f. As found/As left condition.
g. Repairs (If any).
h. Calibration Procedure Used.
i. Individual performing calibration.
j. Equipment location.
k. Out of tolerance notification.
l. Established accuracy.
m. Results Approval.



DRAFT

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 12
- ANSI/ASME NQA-1
- ASME Section III NCA 4000

# 1. POLICY

This section identifies the requirements for material control. This includes handling, storage, shipping, cleaning and preservation of material and equipment.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Systems Materials Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General Material Control

The Company uses written procedures or instructions to specify special protective conditions per the item's design and procurement requirements necessary to prevent damage or deterioration of materials components, and systems during handling, preservation, storage, and shipping. These procedures include provisions for inspection, examination, testing and documentation. The vendor's Quality Program includes shipping procedures that provide for inspection and control of items leaving the vendor's plant. The Company establishes instructions for marking and labelling to identify, maintain, and preserve an item, including indication of the presence of special environments or the need for special controls. These requirements apply to the storage of chemicals, reagents, lubricants and other consumable materials.

### 3.2 Special Equipment and Environments

When required, the Company:

a. Specifies special equipment (such as containers, shock absorbers and accelerometers).

b. Specifies special protective environments (such as inert gas atmosphere, specific moisture content levels and temperature levels).

c. Provides special equipment and special protective environments.

d. Verifies the maintenance of special equipment and special protective environments.

### 3.3 Classification of Items

The Company classifies each item received into one of four levels established in ANSI N45.2.2. This classification considers the manufacturer's requirements. The Company packages, ships, receives, stores and handles according to the established level or a higher level. When a package or assembly contains items of different levels, the Company classifies it to the highest level designated for any of the items contained.

### 3.4 Cleaning, Shipping, Storage and Preservation

The Company uses written procedures or instructions for cleaning, packaging, shipping, storage and preservation. These procedures specify special protective conditions necessary to prevent damage or deterioration of materials and equipment.

### 3.5 Handling Tools and Equipment

The Company inspects and tests special handling tools and equipment using procedures at specified time intervals to verify adequate maintenance. The Company provides special handling procedures and

instructions for items that are susceptible to handling damage. These procedures delineate acceptable techniques, necessary qualifications and precautions for maintenance and use. Operators of special handling and lifting equipment have experience or are trained in its use.

### 3.6 Additional Requirements

The Company uses written procedures or instructions to specify detailed requirements for the following subjects:

a. Storage records.
b. Access to storage areas.
c. Housekeeping.
d. Fire Protection.
e. Removal of items from storage.

The vendors ship special nuclear materials and sources as specified in the NRC license and other regulatory requirements.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50, Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code, Section III
- ANSI N4.2.2
- ANSI N45.2.4

# 1. POLICY

This section identifies the requirements for tracking the status of inspection and test performed on equipment at nuclear plants.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Nuclear Oversight Department
f. Corporate Security Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company uses marking, tags, stamps, routing cards, labels, forms, or other means to identify the operating status of plant equipment. This identification helps avoid inadvertent bypassing of the inspections and tests required prior to its use. The Company provides control procedures which describe the use of such tags, stamps, routing cards, labels, forms, and other methods. The Company specifies the authority for application and removal of tags, markings, labels and stamps.

The Company identifies items that are acceptable or unacceptable for installation by tagging, labeling, color coding, physical separation, or using an inventory system. When tags are used:

a. The stock is made from material which will not deteriorate during storage,

b. The stock used is not deleterious to the item, and

c. Tags are securely affixed to the items and displayed in an area that is readily accessible.

The Company indicates the date the item was placed in the acceptable or unacceptable installation status. The program for quality control regulates this activity. The Company conditionally releases items for installation pending subsequent correction of the nonconformance.

The Company maintains records and marks equipment to indicate calibration status. The Company clearly identifies test equipment found to be out of calibration.

The Company clearly identifies and documents all temporary connections, such as jumpers and bypass lines, and temporary set points of control equipment to allow restoration before placing the item in service.

The Company tags critical valves, controls and switches to prevent inadvertent actuation during flushing.

### 3.1.1 Procedures

The Company uses procedures for control of equipment to maintain personnel and reactor safety and to avoid unauthorized operation of equipment. These procedures require control measures such as locking or tagging to secure and identify equipment in a controlled status. The

procedures require independent verifications, where appropriate, to ensure that necessary measures, such as tagging equipment, have been done correctly.

### 3.2 Operating Status

#### 3.2.1 Release for Maintenance

Operating personnel, including a senior reactor operator, as applicable grant permission to release plant systems or equipment for maintenance or surveillance tests. Prior to granting permission, such operating personnel:

a. ~~V~~verify that the equipment or system can be released.

b. ~~D~~determine how long it may be out of service.

c. ~~D~~determine what functional testing or redundant systems are required prior to and during the out-of-service period.

The Company documents such permission. The Company uses independent verification to the extent necessary to ensure that the proper system was removed from service. The Company considers the degraded protection available when one subsystem of a redundant safety system has been removed for maintenance or surveillance testing.

#### 3.2.2 Preparation for Work

After permission has been granted to take the equipment out of service, measures provide for protection of equipment and workers. The Company clearly identifies the status of equipment and systems at any location where the equipment can be operated. The Company enforces strict control measures for such equipment. The operating staff can easily identify equipment which is in other than normal conditions.

DRAFT

In addition to the requirements of the technical specifications conditions to be considered in preparing equipment for maintenance or surveillance testing include, for example:

a. Shutdown margin.
b. Method of emergency core cooling.
c. Establishment of a path for decay heat removal.
d. Temperature and pressure of the system.
e. Valves between work and hazardous materials.
f. Venting, draining and flushing.
g. Entry into closed vessels.
h. Hazardous atmospheres and ALARA considerations.
i. Handling hazardous materials, and
j. Electrical hazards.

When entering a closed system, the Company prevents the entry of extraneous material and removes foreign material before reclosing the system.

Appropriate personnel inform control room supervision of changes in equipment status, including temporary modifications, and the effects of such changes.

3.2.3 Temporary Modifications

The Company controls temporary modifications, such as temporary bypass lines, electrical jumpers, lifted electrical leads, and temporary trip point settings with approved procedures. These procedures include requirements for the period of time for which the temporary modification is in effect. They also include a requirement for:

a. An independent verification by a second person of the proper installation or removal of the temporary modification, or

b. A functional test which conclusively proves the proper installation or removal of the temporary modification.



DRAFT

The Company maintains a log or other documented evidence for the current status of such temporary modifications. The Company reviews temporary modifications periodically to assess their continued need and appropriateness.

### 3.2.4 Return to Service

When equipment is ready to be returned to service, operating personnel place the equipment in operation and verify and document its functional acceptability. The Company assures return to normal conditions including:

a. Removal of electrical jumpers.

b. Removal of signals used during testing.

c. Returning valves, breakers, or switches to proper start-up or operating positions, and

d. Assuring that all alarms which are indicative of inoperative status are cleared.

A second qualified person verifies proper alignment of equipment unless:

a. All equipment, valves and switches involved in the activity can be proven to be in their correct alignment by functional testing without adversely affecting the safety of the plant, or

b. Such verification would result in significant radiation exposure.

The person who performs the independent verifications is qualified to perform such tasks. When placed into service, equipment receives additional surveillance during the run-in period. The on-duty supervisor responsible for the unit formally accepts equipment which is returned to service.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13

Implementation of these procedures prevents the inadvertent use or installation of nonconforming items.

The Company and its vendors establish and document measures for the identification, control and disposition of items and services that do not meet procurement document requirements. These measures provide for:

a. Review of nonconforming items.

b. The vendor submitting nonconformance notice to the Company. These submittals include vendor recommended disposition (i.e. "use-as-is" or "repair") and technical justification. The vendor submits nonconformances to the procurement document requirements or Company approved documents to the Company for approval of the recommended disposition if:

   1) The vendor has violated a technical or material requirement, or

   2) The vendor has violated a requirement in vendor documents, which have been approved by the Company, or

   3) The vendor cannot correct the nonconformance by continuation of the original manufacturing process or by rework, or

   4) The item does not conform to the original requirement even though the item can be restored to a condition such that the capability of the item to function is unimpaired.

c. Company disposition of vendor recommendation.

d. Verification of disposition of nonconformances.

e. Maintenance of records of vendor nonconformances.

### 3.2 Identification

The Company identifies nonconforming items by marking, tagging or other methods which do not adversely affect the end use of the item. The identification is legible and easily recognizable.

### 3.3 Segregation

When practical, the Company segregates nonconforming items by placing them in a hold area until properly dispositioned. When segregation is impractical or impossible due to physical conditions such as size, weight or access limitations, other precautions are employed to preclude inadvertent use of a nonconforming item.

### 3.4 Disposition

#### 3.4.1 Control

The Company uses written procedures to review and accept, reject, repair or rework nonconforming items. The Company controls processing, delivery, installation or use of a nonconforming item pending an evaluation and an approved disposition by authorized personnel. The Company documents ultimate disposition of nonconforming items.

#### 3.4.2 Evaluation

The Company has responsibility for resolution of Company nonconformances.

For items under a contractor's direct control, the Company may delegate to the contractor the authority to perform technical evaluation of nonconformances, if the contractor has an acceptable procedure for

handling nonconforming items. Where the Company delegates such authority, the contractor is responsible for establishing that:

a. All actions fall within the requirements set by the Company.

b. Accepted nonconformance meets the design intent.

c. Personnel performing the evaluation meet the requirements of Paragraph 3.4.3, and

d. Code items meet the requirements of the Code.

The Company remains responsible for the satisfactory resolution of vendor nonconformances.

When technical evaluation has not been delegated, the Company will make a technical evaluation of all pertinent data relating to the nonconformity, including the cause, where known, and the corrective action either taken or planned to prevent recurrence.

Where ASME Code requirements are involved, the Authorized Nuclear Inspector reviews and accepts or rejects the disposition and justification.

### 3.4.3 Personnel

Personnel having expertise in the pertinent discipline will determine whether a nonconforming item may be accepted "as-is," may be repaired to an acceptable condition, or must be rejected. These personnel have adequate competence and knowledge necessary to make this evaluation and have access to pertinent background information.

### 3.4.4 Documentation

The Company identifies, documents, and retains the disposition (such as use-as-is, reject, repair, or rework) of nonconforming items traceable to each item and technically justifies the disposition.

The Company subjects items which are nonconforming to design requirements and dispositioned "use-as-is" or "repair" to design control measures commensurate with those applied to the original design. The Company technically dispositions and justifies acceptance "as-is," to assure that the final condition of nonconforming items will not adversely affect

a. code requirements,
b. safety,
c. operability, or
d. maintainability

of the items, or of the component or system in which it is installed. The as-built records, if such records are required, reflect the accepted deviation.

If the nonconformance can be corrected after installation, the item may be released for installation on a conditional release basis. The Company documents the authority and technical justification for the conditional release of the item for installation and makes it part of the documentation.

3.4.5 Repaired, Reworked, or Scrapped Items

The Company reexamines repaired or reworked items using procedures and the original acceptance criteria unless the disposition has established alternate acceptance criteria.

The Company reinspects items that have been corrected. The area of inspection may be confined to the area of the nonconformance. When it has been determined that the corrected item is satisfactory, the Company changes the status of the item to "acceptable." The Company makes an appropriate entry in the documentation after acceptance is determined.

The Company scraps, discards or transfers to training use a nonconforming item that cannot be corrected or accepted "as-is".

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANS 3.2
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13
- ANSI/ANS 3.2
- ANSI N45.2.4
- IEEE STD 336
- ANSI N45.2.8
- ANSI N45.2.2

# 1. POLICY

This section describes the Company program to identify and correct occurrences adverse to quality.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Regulatory Assurance Department
c. Site Material Management Department
d. Site Engineering and Construction Department
e. Nuclear Engineering and Technology Services Department
f. Nuclear Oversight Department
g. Systems Materials Analysis Department
h. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company uses a corrective action system to promptly identify and correct items or occurrences which are adverse to quality or might adversely affect the safe operation of a nuclear generating station. Parts or all of this system may be electronically monitored and electronic records may be used as the sole record of such a system. These items or occurrences include failures, malfunctions, deficiencies, deviations, defective material and equipment, nonconformances and programmatic deficiencies.

For the procurement process, the Company uses procedures that include methods for the identification of conditions adverse to quality and methods for timely corrective action. The Company requires individual vendors and their contractors to include corrective action measures in their quality assurance programs.

The Company makes a thorough investigation of occurrences. It identifies corrective action to preclude the recurrence of an event. These events may include reactor trip, failed equipment, personnel error, and procedural infractions. Assigned personnel are responsible for determining the root cause(s) of the event and developing recommendations to preclude recurrence. These personnel report the results of this determination to appropriate station personnel and company management. The report includes a detailed description of the occurrence, the findings of the investigation, and recommended corrective measures. Any required formal reports are filed with the appropriate regulatory agency.

The Company notifies the rest of the nuclear industry of any significant event and its circumstances to help preclude a similar event occurring at another plant.

3.2 Significant Conditions

The Company takes measures to assure that the cause of any significant condition adverse to quality is determined and takes corrective action to preclude repetition.

An independent review body reviews violations, deviations and reportable events, that were required to be reported to the NRC in writing within 24 hours, such as:

a. Violations of applicable codes, regulations, orders, technical specifications, license requirements or internal procedures or instructions having safety significance.

b. Significant operating abnormalities or deviations from normal or expected performance of plant safety-related structures, systems, or components.

c. Events, as defined in the plant technical specifications.

This independent review includes the review of results of any investigations made and the recommendations resulting from such investigations.

For significant conditions adverse to quality that arise during the procurement process, the Company uses procedures to describe the method used to:

a. Identify and document deviations and nonconformances.

b. Review and evaluate the conditions to determine the cause, extent and measures needed to correct and prevent recurrence.

c. Report the conditions and corrective action to the appropriate levels of management.

d. Implement and maintain required corrective action.

For significant or recurring deficiencies (or errors), the Company follows written procedures to correct the deficiency (or error), determine the cause and make changes in the design process and the quality assurance program to prevent similar types of deficiencies (or errors) from recurring.

### 3.3 Design Errors

The Company detects deficiencies or errors in design or in the design quality assurance program by:

a. Design verification measures.
b. Personnel using the design documents.
c. Audits.
d. Tests Conducted.
e. Actual failure during operation.
f. Other means.

When a significant design change is necessary because of an incorrect design, the Company reviews and modifies the design process and verification procedures.

### 3.4 Plant Hardware Malfunctions

The causes of malfunction are promptly determined, evaluated and recorded. Experience with the malfunctioning equipment and similar components are reviewed and evaluated to determine whether a replacement component of the same type can be expected to perform the function reliably. If evidence indicates that common components in safety-related systems have performed unsatisfactorily, corrective measures are planned prior to replacement or repair of all such components. Appropriate procedures are revised in a timely manner to prevent recurrence of equipment malfunction or abnormal operation.

### 3.5 Documentation and Reporting

The Company documents the identification of significant conditions adverse to quality, the cause of the condition and the corrective action taken. It reports these items to appropriate levels of management. The report is made immediately if prompt corrective action is required. If the nonconformity is not an indication of a significant failure in any portion of the Quality Assurance Program, the Company does not require reporting to management.

The Company keeps records to identify:

a. Incidents (e.g., major damage, personal injury, major schedule delays.)

b. Nonconforming items in accordance with Section 15, "Nonconforming Materials, Parts or Components."

c. Unfavorable conditions and programmatic deficiencies identified in Audit Reports in accordance with Section 18, "Audits."

d. Significant equipment failures and malfunctions which occur during Station operation.

The Company tracks the completion of corrective action for nonconformances. It maintains records of nonconformances and their resolution. Periodic reports to management inform them of the status of nonconformances. The Company issues reports indicating the status of all corrective action in progress. These reports are routed to Company corporate management. These periodic reports are reviewed to ensure prompt implementation of the corrective action. Nuclear Oversight routinely reports nonconforming items to appropriate levels of management. The following items are not reported:

a. Minor weld inclusions, undercuts, or porosities, where the magnitude or frequency of occurrence is not indicative of a significant problem in design, procedures, materials or workmanship.

b. Minor departures, except for Code applications, from specified physical or chemical properties of materials that do not require extensive evaluation to determine adequacy of the materials.

c. Minor structural departures from design requirements, such as low strength concrete or porosity of concrete, provided that an extensive evaluation is not required to determine adequacy of the structure or repairs.

d. Minor departures from performance specifications, as demonstrated by acceptance of construction and preoperational tests, which do not require extensive evaluations of an item's performance capability or extensive redesign.

e. The occurrence of a nonconformance that can and will be remedied through the use of established methods in applicable codes or approved procedures.

f. The nonconforming item will have the capability of performing its intended function. The responsible department sends copies of the nonconformances to the cognizant quality area.

For construction or modification activities under Nuclear Engineering and Technology Services or Site Engineering and Construction control, on-site corrective action measures consist of procedures for prompt resolution and approval of corrective actions by Nuclear Engineering and Technology Services or Site Engineering and Construction. The responsible manager brings significant nonconformances to the attention of corporate management for actions where satisfactory resolution cannot be achieved by Nuclear Engineering and Technology Services or Site Engineering and Construction.

### 3.6 Verification and Follow-up

For construction or modification activities under SEC control, SEC assures that the corrective action has been taken. The Company requires contractors and vendors to follow-up on corrective action commitments within their quality programs.

Independent personnel follow-up and approve that nonconformances have been corrected satisfactorily.

For Operations, trend studies and audit results are evaluated to assure that corrective measures are effectively implemented and that actions to prevent recurrence are effective. The Company verifies completion of corrective actions for maintenance, repair, refueling and operation activities.

The Company performs surveillance of site corrective action. The Company is responsible to track and verify completion of corrective action taken for audit deficiencies including programmatic deficiencies identified in audits. The Company verifies and approves the completion of corrective actions by the station.

The Company regularly reviews and analyzes records:

a. To assure that the causes of nonconformities and the corrective action have been clearly described.

b. To assure that the overall effect resulting from the use of nonconforming items has been evaluated by authorized Commonwealth Edison Company personnel.

c. To determine whether corrective measures will preclude recurrence. Personnel performing the evaluation function are responsible for considering the cause and the feasibility of corrective action to assure that the necessary quality of an item is not deteriorated. Where it is determined that the cause cannot be corrected in a timely manner, the effective date or corrective action will be determined during the review and evaluation. Evaluation may indicate the need for investigations to assure that corrective measures are considered complete. Evaluation may also indicate that the nature of the nonconformity is minor and does not require corrective action.

start new paragraph

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 16
- ANSI N18.7
- ANS 3.2
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13
- ANSI/ANS 3.2
- ANSI N45.2.11

# 1. POLICY

The company establishes and implements a program to ensure that sufficient records of items and activities are generated and maintained in accordance with applicable requirements.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Operations Division
b. Nuclear Stations
c. Site Regulatory Assurance Department
d. Site Material Management Department
e. Site Engineering and Construction Department
f. Nuclear Engineering and Technology Services Department
g. Nuclear Support Department
~~h. Performance Monitoring and Support Department~~
i. Nuclear Operations Staff
j. Nuclear Regulatory Services Department
k. Nuclear Oversight Department
l. Purchasing Department
m. Corporate Security Department
n. Systems Materials Analysis Department
o. T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through The Quality Assurance Data Base.

# 3. REQUIREMENTS

## 3.1 Program

The records program provides for:

a. Administration.
b. Receipt.
c. Transmittal.
d. Storage.
e. Preservation.
f. Safekeeping.
g. Retention.
h. Disposition.

## 3.2 Administration

The quality records program will include those record types, controls, and provisions for storage and preservation contained in NQA-1, Supplement 17S-1. Authority and responsibility for record control activities is delineated. Records are administered through a system which includes an index of record type, retention period, and storage location.

Records will be legible, accurate, complete, identifiable, and retrievable. Records may be maintained in electronic media. Records are complete when dated and stamped, initialed, signed or otherwise authenticated. This may include electronic approval and authorization. Corrections, revisions, or supplements to completed records will be reviewed and approved by an authorized individual in the originating organization. Such changes will be dated and stamped, initialed, signed, or otherwise authenticated including the use of electronic approval and authorization. Procedures will be established to assure that only those persons authorized to use electronic approval grant such approvals.

Measures will be established for replacement, restoration, or substitution of lost or damaged records.

DRAFT

### 3.3 Receipt

A system for receipt control of records will be established. Receipt control is required for records transferred:

a. Between company locations.
b. Between vendors and the company.
c. From company department files to final storage locations.

### 3.4 Transmittal

Systems are established to transfer records between company locations and between vendors and the company. Records transferred from company department files to a final storage location are also under such systems.

The system includes:

a. Inventory of transmitted records.
b. Receipt acknowledgment.

### 3.5 Storage

Record storage facilities are established to meet regulatory requirements, including those of NQA-1, Supplement 17S-1 and ASME Section III, NCA 4134.17. Storage systems provide for:

a. Assignment of responsibilities.
b. Control and accountability of records removed.

### 3.6 Preservation

In order to prevent deterioration, records are stored:

a. In a manner to prevent damage from moisture, temperature, pressure, etc.
b. In binders, folders, envelopes, or similar systems.



DRAFT

Manufacturers recommendations are followed for special recording media.

### 3.7 Safekeeping

Measures are established to prevent access to records by unauthorized personnel. These measures guard against theft and vandalism.

### 3.8 Retention

Record retention periods are established to meet regulatory requirements. The most stringent retention period is implemented when multiple requirements exist.

### 3.9 Disposition

Records will be dispositioned at the end of the prescribed retention period. A review of regulatory requirements will be performed prior to disposition to assure current requirements are satisfied.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- ANSI/ASME NQA-1
- 10CFR50 Appendix B, Criteria 17
- ASME Section III, NCA 4000
- ANSI N18.7
- ANS 3.2

DRAFT

# 1. POLICY

A documented, comprehensive system of planned and periodic performance based audits and assessments of the Company and its vendors is conducted to verify quality assurance program compliance, adequacy, and effectiveness and to assess conformance with management controls.

Audits are conducted to the requirements of NQA-1 to assist the audited organization and to assure completion of required corrective actions, commitments, or improvements.

# 2. RESPONSIBILITIES

(A) from following page

The Nuclear Oversight Department is responsible for carrying out the requirements of this section. The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 Audits - General

(B)

### 3.1.1 Responsibility

Nuclear Oversight's responsibilities include conducting the external (offsite) audit program of Company stations, departments, and vendors involved in nuclear activities, the management assessment program, and participation in joint member groups. ~~Nuclear Oversight is also~~ (C) responsible for and conducts the internal (onsite) audit and surveillance program and assessments of Company stations and departments involved in nuclear activities ~~and is independent of Nuclear Operations.~~ (D)

new paragraph

The Site Quality Verification Director is

### 3.1.2 Scheduling (E)

Audits are performed to schedules approved by the Nuclear Oversight Manager or Site Quality Verification Director, as appropriate, which include the minimum audit areas and frequencies. Schedules are reviewed semi-annually and revised accordingly to assure



DRAFT

on preceding page 18-1

A

The following departments are responsible for carrying out the requirements of this Section:

Nuclear Oversight Department
Site Quality Verification Department

B

The Nuclear Oversight Manager has the responsibility for the performance of periodic audits to determine that Quality Assurance and Nuclear Safety policy is being carried out.

C

Nuclear Oversight is independent of Nuclear Operations.

D

The Site Quality Verification Director has sufficient organizational freedom, authority, and responsibility to provide an onsite assessment of station line and support activities to ensure compliance with Quality Assurance and Nuclear Safety Requirements.

E

Planned and comprehensive performance based audits are performed to assure that safety related functions are fully evaluated.

that coverage is maintained current. Audits ~~will be~~ are initiated early to assure effective quality assurance during design, procurement, manufacturing, construction, installation, inspection, testing, and operations.

Additional unscheduled audits may also be performed at various stages of activities, based on the nature and safety significance of the work being done to verify continued adherence to and effectiveness of the quality systems.

~~Operating activities will be audited in compliance with the Technical Specifications.~~ Each ongoing Code activity is audited annually and results are made available to the ANI. (X) from following page

Material Manufacturers or Material Suppliers who are qualified under the Company's ASME "N" Certificate of Authorization and who are actively supplying Code materials will be audited/surveyed annually. Vendors and their subtier suppliers are audited periodically--generally in conjunction with plant visits for witnessing inspection points. The Company's active participation in joint utility audit programs provides an alternative means to fulfilling its responsibility for auditing active vendors.

### 3.1.3 Preparation

A documented plan or an agenda will identify the audit scope, requirements, audit personnel, activities to be audited, organizations to be notified, applicable documents, and schedule. An approved checklist or procedure for each audit will identify the quality and technical elements of the area or items to be evaluated. Audit plans, agendas, checklists, and procedures will be prepared in advance under the direction of the Audit Team Leader.

### 3.1.4 Personnel

Audits will be accomplished by experienced personnel qualified in accordance with NQA-1 who are familiar with written procedures, standards and processes applicable to the area being audited. Audit

DRAFT

The Site Quality Verification Director(s) and the Corporate Quality Verification Director shall approve their respective agenda, checklist, findings, and report of each audit. Audits shall be conducted on a performance driven frequency, not to exceed 24 months, and in accordance with the Company Quality Assurance Program and procedures. Audits shall include the following safety-related functions:

a. The conformance of unit operation to provisions contained within the technical specifications and applicable license conditions.

b. The adherence to procedure, training, and qualification of the station staff.

c. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems, components, or method of operation that affect nuclear safety.

d. The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix B, 10CFR 50.

~~e. The Facility Emergency Plan and implementing procedures.~~

~~f. The Facility Security Plan and implementing procedures.~~

e.g. Onsite and offsite reviews.

f.h. The Facility Fire Protection programmatic controls including the implementing procedures by qualified Nuclear Oversight or Site Quality Verification personnel.

g.i. The fire protection equipment and program implementation utilizing either a qualified offsite licensee fire protection engineer or an outside independent fire protection consultant. ~~An outside independent fire protection consultant shall be used at least every third year.~~

h.j. The Radiological Environmental Monitoring Program and its results.

i.k. The Offsite Dose Calculation Manual and implementing procedures.

j.l. The Process Control Program and implementing procedures for the solidification of radioactive wastes.

k.m. The performance of activities required by the Company Quality Assurance Program for effluent and environmental monitoring.

(X) to preceding page

DRAFT

personnel shall have sufficient authority and organizational freedom to make the audit process meaningful and effective and shall not have direct responsibilities in the areas to be audited. The Audit Team Leader shall organize and direct the audit and ensure the audit team collectively has the required experience or training for the activities to be audited. The audit team may be supplemented by technical specialists to provide additional experience and competence.

### 3.1.5 Performance

Performance based audits are conducted to assess specific activities, processes, and records on the basis of their impact and importance relative to safety, reliability, and functionality. Audits can be focused on areas most in need of improvement. Objective evidence shall be examined to the extent necessary to determine that a quality system is being effectively implemented.

### 3.1.6 Reporting and Follow-up

An audit report includes the description of the audit scope, identification of the audit team and personnel contacted during audit activities, a summary of audit results (including a statement on effectiveness of the quality assurance program elements), and a comprehensive description of each audit concern. Audit results will be documented and distributed and shall be reviewed by the management having responsibility in the area being audited. Deficiencies requiring prompt corrective action are reported immediately to the management of the audited organization.

Responsible management shall take necessary actions to correct the deficiencies identified in the audit. They will define the corrective action to be taken, actions which will prevent recurrence, and a schedule for implementing these actions.

These commitments will be evaluated by the Audit Team Leader. Recurring deficiencies or failure to implement corrective action will be reported to appropriate Company executives.

Copies of documentation, reports, and correspondence are kept on file at the appropriate station.

All findings of noncompliance with NRC requirements and significant and findings of each audit shall be reported to the Station Manager, the appropriate Site Vice President, the Nuclear Oversight Manager and the Station Vice President and CNO.

DRAFT

Verification of the completion of scheduled corrective action commitments is performed to assure deficiencies or adverse conditions are corrected. Previous deficient areas or adverse conditions are followed up to assure effective corrective action is effective and implementation continues.

### 3.1.7 Records

The audit plan, report, objective evidence, written replies, and the record of completion of corrective action and deficiency follow-up ~~will be~~ is on file. Personnel qualification records for audit team members ~~shall be~~ are established, maintained, and reviewed.

### 3.2 Independent Management Audit/ Assessment

Audits of the Company are performed by the Authorized Inspection Agency as required by the Code and ASME N626.0. A periodic review of the audit program will be performed by an independent organization to assure that audits are being accomplished to program requirements. An annual report on the status, adequacy, and implementation of the Quality Assurance Program is submitted to the Chief Nuclear Officer by the ~~Vice President of Nuclear Operations Support.~~ Nuclear Oversight Manager. Senior Vice President and

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N18.7-1977
- ANSI/ANS 3.2-1988

areas most in need of improvement. Objective evidence shall be examined to the extent necessary to determine that a quality system is being effectively implemented.

### 3.1.6 Reporting and Follow-up

An audit report includes the description of the audit scope, identification of the audit team and personnel contacted during audit activities, a summary of audit results (including a statement on effectiveness of the quality assurance program elements), and a comprehensive description of each audit concern. Audit results will be documented and distributed and shall be reviewed by the management having responsibility in the area being audited. Deficiencies requiring prompt corrective action are reported immediately to the management of the audited organization.

All findings of noncompliance with NRC requirements, and significant recommendations and findings of each audit shall be reported to the Station Manager, the appropriate Site Vice President, the Nuclear Oversight Manager, and the Senior Vice President and CNO.

any nuclear safety or quality issue will be directed through the NOM

Responsible management shall take the necessary actions to correct the deficiencies identified in the audit. They will define the corrective action to be taken, actions which will prevent recurrence, and a schedule for implementing these actions.

These commitments will be evaluated by the Audit Team Leader. Recurring deficiencies or failure to implement corrective action will be reported to appropriate Company executives.

Copies of documentation, reports, and correspondence are kept on file at the appropriate station.

Verification of the completion of scheduled corrective action commitments is performed to assure deficiencies or adverse conditions are corrected. Previous deficient areas or adverse conditions are followed up to assure corrective action is effective and implementation continues.

# 1. POLICY

It is the policy of the Company to assure a high degree of availability and reliability for our nuclear plants while ensuring the health and safety of the public and our workers. Therefore, the Quality Assurance Program is applied in a graded manner to certain areas and activities that are not clearly defined as safety related or Code related. the Company calls this application Augmented Quality.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

a. Nuclear Stations
b. Site Material Management Department
c. Site Engineering and Construction Department
d. Nuclear Engineering and Technology Services Department
e. Corporate Security Department

The Company assigns responsibilities for specific requirements through the Quality Assurance Database.

# 3. REQUIREMENTS

The Company applies the Quality Assurance Program to certain systems, structures, components, and activities which are not safety related or Code related to a degree consistent with their importance to safety. While there may be minor interfaces with additional sections of this manual, the following sections apply to the programmatic elements of the noted activities:

3.1 ~~Radiation Protection~~ Health Physics and ALARA (As Low As Reasonably Achievable) ~~ALARA~~

Sections 3, 4, 5, 6, 15, 16, and 18 are applicable to this area.

### 3.2 Emergency Planning

Section 5, 6, 16, and 18 is applicable to this area.

### 3.3 Transport of Radioactive Waste

Sections 4, 5, 6, and 17 are applicable to this area.

### 3.4 Security

Security is controlled for each station by the station security plan that is prepared per NUREG 0908. This plan describes the applicable personnel organization, the keeping of records, audits, and the reporting of abnormal conditions. Sections 6 and 16 are applicable to this area.

### 3.5 Review of Class IE Equipment Qualification

Sections 3, 5, 6, and 15 are applicable to this area.

### 3.6 Training

Sections 4, 5, 6, 15, 17, and 18 are applicable to this area.

### 3.7 Environmental Monitoring

Sections 17 and 18 are applicable to this area.

### 3.8 Meteorology

Sections 17 and 18 are applicable to this area.

### 3.9 Fire Protection

A quality assurance program is required for fire protection systems in Safety Related areas. Nuclear Engineering and Technology Services is responsible for determining this need for systems on a case by case basis. The Stations are responsible for determining this need for other fire protection equipment on a case by case basis. When required by these organizations, Sections 3, 4, 5, 6, 7, 10, 11, 14, 15, 16, 17 and 18 are applicable to this area.

### 3.10 Repairs and Alterations Subject to IDNS Jurisdiction

Welded repairs and all alterations to non-ISI boilers and pressure vessels, as described in Sections 505.10 and 505.50(a) of the Illinois Department of Nuclear Safety (IDNS) Boiler and Pressure Vessel Safety Rules, and the repair of pressure relief valves, as described in Section 505.2500(a)(1)(b) of the rules, are to be conducted in accordance with Section 505.2500(a)(1)(a)(ii) of the Rules. Section 505.2500(a)(1)(a)(ii) requires that the Company apply an approved QA Program to such repairs and alterations and describe how it is applied. The following describes the Company's application.

The Company has a QA Program which is reviewed and accepted by the NRC. In addition, the QA Program and the ASME [Section III] Interface are reviewed and accepted by an accredited Authorized Inspection Agency. Authorized Inspectors are present at each of the Company's plants while Code work is in progress.

Section 1 of this QA Program describes the authority and responsibilities of the organization. It also describes the retention of responsibility when repair and modification activities are subcontracted.

Section 3 requires that designs and changes to designs be defined, documented, and controlled.

Section 5 requires that all work be accomplished in accordance with documented instructions and procedures and be subject to appropriate process controls. The implementation of this is the use of the Nuclear Work Request (NWR) to authorize, track, and control work in the plant. The NWR system provides for specifying when work is CODE related and is not limited to any particular Section of the ASME Code. It further provides for detailed instructions for accomplishing the work. This includes the need for qualified inspectors, qualified welders, qualified

procedures, special processes, required documentation, approved drawings, and post-maintenance/post-modification testing. NWRs marked as Code work are offered to the AI for the insertion of Hold and Witness points.

Sections 4, 7, 8, and 13 address the procurement, receiving, handling, storage, disbursement, and marking of materials. Local implementing procedures establish traceability of materials to the procurement and receiving processes and provide assurance that only Code acceptable materials are utilized. Any specific requirements for heat traceability will be in accordance with the applicable Sections of the Code being used.

new 19 3.1 0 cont'd.

Section 9 details the controls for Special Processes while Section 10 covers the aspect of inspection. This includes the requirement for the use of independent, qualified inspectors and examiners when required by the Code, and invokes the Company's Special Processes and Procedures Manual (SPPM). The SPPM is also reviewed and accepted by the Authorized Inspection Agency.

Section 6 and 17 require that documents and records be generated and maintained to satisfy the requirements of the Code and the jurisdiction.

Section 18 provides for overview and audit of Code activities.

Repairs and alterations performed as described above meet the requirements of the approved QA Program and meet the requirements of the IDNS B&PV rules; regardless of the safety classification of the boiler or pressure vessel or pressure relief valve being repairs.

# 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendices A, B, and R
- 10CFR71 Part H
- 10CFR73
- 10CFR21
- ANSI/ASME NQA-2

DRAFT

add This New Section Section 20 page 20-1 pages 20-1 thru 20-10

# 1. POLICY

Independent safety reviews of plant operations are conducted to ensure that day-to-day activities are conducted in a safe manner. Senior management is provided with overall assessments of facility operation and recommendations to improve nuclear safety margins and plant reliability.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Nuclear Oversight Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base. Because of the regulatory need to specify responsible individuals for items previously contained in Technical Specifications, more detailed assignments of responsibility are contained in this Section than in others.

# 3. REQUIREMENTS

## 3.1 General

The Director of Safety Review shall be appointed by the Nuclear Oversight Manager responsible for nuclear activities. The corporate audit function shall be the responsibility of the Nuclear Oversight Manager and shall be independent of operations.

The Nuclear Oversight Manager reports to the Senior Vice President and Chief Nuclear Officer (CNO) and has the responsibility to set corporate policy for the areas of Quality Assurance and Nuclear Safety. The Nuclear Oversight Manager has the responsibility to determine that Nuclear Safety policy is being carried out. The Nuclear Oversight Manager has the authority to order unit shutdown or request any other action which he deems necessary to avoid unsafe plant conditions.



DRAFT

New Section 20 page 20-2

The use of the term Offsite Review refers to the Offsite Review and Investigative Function as previously used in Technical Specifications. Onsite Review refers to the Onsite Review and Investigative Function as previously used in Technical Specifications.

### 3.2 Offsite Review and Investigative Function

The Director of Safety Review shall:

1. Provide overall direction of the Offsite Review and Investigative Function.

2. Appoint a senior participant to conduct or direct individual review and investigative functions.

3. Assure that a cross disciplinary review determination is made for each item to be reviewed.

4. Assure that cross disciplinary offsite reviews are performed by qualified personnel of the appropriate disciplines when necessary.

5. Approve and report in a timely manner all findings of non-compliance with NRC requirements to the Station Manager, Site Vice President, Nuclear Oversight Manager, Senior Vice President and ~~the~~ CNO. and the

During periods when the Director of Safety Review is unavailable, he shall designate this responsibility to an established alternate, who satisfies the formal training and experience for the Director of Safety Review. The responsibilities of the personnel performing this function are stated below.

#### 3.2.1 Required Offsite Reviews

The Offsite Review and Investigative Function shall review:

New section 20 / section 20 / page 20-3

a. Safety evaluations for:

   1. changes to procedures, equipment, or systems ~~as described~~ in the safety analysis report, and that affect the description

   2. tests or experiments completed under the provision of 10CFR50.59 to verify that such actions did not constitute an unreviewed safety question.

b. Proposed changes to procedures, equipment, or systems which involve an unreviewed safety question as defined in 10CFR50.59.

c. Proposed tests or experiments which involve an unreviewed safety question as defined in 10CFR50.59.

d. Proposed changes in Technical Specifications or NRC Operating License.

e. Non-compliance with codes, regulations, orders, technical specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.

f. Significant operating abnormalities or deviation from normal and expected performance of plant equipment that affect nuclear safety as referred to it by an Onsite Review and Investigative Function.

g. All reportable events.

h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of safety-related structures, systems, or components.

i. All changes to the Generating Stations Emergency Plan prior to implementation of such change.

j. All items referred by the Site Vice President, Station Manager, Systems Engineering Supervisor, ~~or~~ the Nuclear Oversight Manager, or Onsite Review.

New Section
Section 20
page 20-4

### 3.2.2 Records

Records documenting the actions of Offsite Safety Review will be produced and maintained as follows:

a. Reviews, audits, and recommendations shall be documented and distributed as covered in Section 3.2(5).

b. Copies of documentation, reports, and correspondence shall be kept on file at the appropriate station.

### 3.2.3 Procedures

Written administrative procedures shall be prepared and maintained for the Offsite Review and Investigative Function. These procedures will include the following:

a. Content and method of submission of presentations to the Director of Safety Review.

b. Use of committees and consultants.

c. Review and approval.

d. Detailed listing of items to be reviewed.

e. Method of:

1. Appointing personnel.

2. Performing reviews and investigations.

3. Reporting findings and recommendations of reviews and investigations.

4. Approving reports.

5. Distributing reports.

New Section 20 Section 20 Page 20-5

f. Determining satisfactory completion of action required based on approved findings and recommendations reported by personnel performing the review and investigative functions.

### 3.2.4 Personnel

The persons, including consultants, performing the Offsite Review and Investigative Function, in addition to the Director of Safety Review shall have expertise in one or more of the following disciplines as appropriate for the subject or subjects being reviewed and investigated:

a. Nuclear power plant technology
b. Reactor operations
c. Utility operations
d. Power plant design
e. Reactor engineering
f. Radiological safety
g. Reactor safety analysis
h. Instrumentation and control
i. Metallurgy
j. Any other appropriate disciplines required by unique characteristics of the facility

Individuals performing the Offsite Review and Investigative Function shall possess the minimum formal training and experience, as listed below, for each discipline.

a. Nuclear Power Plant Technology - Engineering graduate or equivalent with 5 years experience in the nuclear field design and/or operation.

b. Reactor Operations - Engineering graduate or equivalent with 5 years experience in nuclear power plant operations.

c. Utility Operations - Engineering graduate or equivalent with at least 5 years of experience in utility operation and/or engineering.

New Section 20 page 20-6

d. Power Plant Design - Engineering graduate or equivalent with at least 5 years of experience in power plant design and/or operation.

e. Reactor Engineering - Engineering graduate or equivalent. In addition, at least 5 years of experience in nuclear plant engineering, operation, and/or graduate work in nuclear engineering or equivalent in reactor physics is required.

f. Radiological Safety - Engineering graduate or equivalent with at least 5 years of experience in radiation control and safety.

g. Reactor Safety Analysis - Engineering graduate or equivalent with at least 5 years of experience in nuclear engineering.

h. Instrumentation and Control - Engineering graduate or equivalent with at least 5 years of experience in instrumentation and control design and/or operation.

i. Metallurgy - Engineering graduate or equivalent with at least 5 years of experience in the metallurgical field.

The Director of Safety Review shall have experience and training which satisfy ANSI N18.1-1971 requirements for "Plant Managers."

### 3.3 Onsite Review and Investigative Function

#### 3.3.1 General

The Onsite Review and Investigative Function shall be supervised by the Station Manager. The Station Manager shall:

1. Provide directions for the Onsite Review and Investigative Function and appoint the Systems Engineering Supervisor or other comparably qualified individual as the senior participant to provide appropriate directions.

2. Approve participants for this function.

New Section 20 Page 20-7

3. Assure that at least two participants who collectively possess background and qualifications in the subject ~~matter under review~~ are selected to provide comprehensive interdisciplinary review coverage under this function.

4. Independently review and approve the findings and recommendations developed by personnel performing the Onsite Review and Investigative Function.

5. Report all findings of noncompliance with NRC requirements and provide recommendations.

6. Submit to the Offsite Review and Investigative Function for concurrence in a timely manner, those items described in Section 3.2.1 which have been approved by the Onsite Review and Investigative Function.

### 3.3.2 Authority

The Onsite Review and Investigative Function shall:

a. Advise the Station Manager on all matters related to Nuclear Safety.

b. Recommend to the Station Manager the disposition of items considered under Section 3.3.3, 1 through 9 prior to their implementation.

c. Include among its review conclusions for each item considered under Section 3.3.3, 1 through 4 a determination of whether or not the item involves an unreviewed safety question.

d. Provide prompt notification to the appropriate Site Vice President and the Director of Safety Review of disagreement between the Onsite Review and Investigative Function and the Station Manager. The Station Manager shall follow the recommendations of the Onsite Review and Investigative Function or select a course of action that is more conservative regarding safe operation of the facility.

New Section 20 page 20-8

### 3.3.3 Responsibility

The Onsite Review and Investigative Function shall be responsible for conducting the following:

1. Review of all applicable Plant Administrative Procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978 and changes thereto.

2. Review of Emergency Operating Procedures required to implement the requirements of NUREG-0737 and Supplement 1 to NUREG-0737 as stated in Section 7.1 of Generic Letter No. 82-33 and changes thereto.

3. Review of all proposed tests and experiments that affect nuclear safety.

4. Review of all proposed changes or modifications to plant systems or equipment that affect nuclear safety.

5. Review of proposed changes to the Fire Protection Program.

6. Review of the Station Security Plan and submittal of recommended changes to the Station Security Plan in accordance with station procedures.

7. Review of Emergency Plan and identification of recommended changes.

8. Review of changes to the Process Control Program and the Offsite Dose Calculation Manual.

9. Review of all proposed changes to the technical specifications or operating license, and any proposed change which involves an unreviewed safety question that is to be submitted to the Nuclear Regulatory Commission for approval.

10. Review of investigation results for all violations of the technical specifications, including the preparation and forwarding of reports covering evaluations and recommendations to prevent recurrence.

11. Review of investigation results for all Reportable Events and other significant operating abnormalities including the preparation and forwarding of reports covering evaluations and recommendations to prevent recurrence.

12. Review of investigation results for any accidental, unplanned, or uncontrolled radioactive release including the preparation and forwarding of reports covering evaluations and recommendations to prevent recurrence.

13. Review of unit operations to detect potential hazards to nuclear safety.

14. Performance of special reviews and investigations and reports thereon as requested by the Director of Safety Review.

### 3.3.4 Records

Reports, reviews, investigations, and recommendations prepared and performed for Section 3.3.3 shall be documented and forwarded to the Director of Safety Review unless otherwise specified.

Copies of all records and documentation shall be kept on file at the station.

### 3.3.5 Procedures

Written administrative procedures shall be prepared and maintained for conduct of the Onsite Review and Investigative Function. These procedures shall include the following:

a. Content and method of submission and presentation to the Station Manager, Site Vice President, and Director of Safety Review.

b. Use of committees.

New Section
Section 20
page 20-10

c. Review and approval.

d. Detailed listing of items to be reviewed.

e. Procedures for administration of the quality control activities.

f. Assignment of responsibilities.

### 3.3.6 Personnel

The personnel, including consultants, performing the Onsite Review and Investigative Function, in addition to the Station Manager, shall have expertise in one or more of the following disciplines as appropriate for the subject or subjects being reviewed and investigated:

a. Nuclear power plant technology
b. Reactor operations
c. Reactor engineering
d. Chemistry
e. Radiological controls
f. Instrumentation and control
g. Mechanical and electrical systems

Personnel performing the On site Review and Investigative Function shall meet minimum acceptable levels as described in ANSI N18.1-1971, Sections 4.2 and 4.4.

# 1. GENERAL

This Appendix of the Quality Assurance Manual consists of definitions of words or phrases found in the Commonwealth Edison Company Quality Assurance Program. The purpose of this definition section is to provide a common basis for understanding those words or phrases that may have a different meaning when used elsewhere.

All words and phrases are subject to review and revision as circumstances require.

- A -

**Approval**

Approval as used herein means by signature or initialing and date by an authorized individual.

**ASME Boiler and Pressure Vessel Code, Section III, Division 1 and Division 2 for Concrete Containment**

Refers to ASME Section III, Division 1 and Division 2 for Concrete Containment; ASME Section III; ASME Code; ASME; or Code.

**ASME Boiler and Pressure Vessel Code, Section XI**

Refers to ASME Section XI; Section XI; or Code.

**Audit**

A planned and documented activity performed to determine by investigation, examination, or evaluation of objective evidence the adequacy of and compliance with established procedures, instructions, drawings, and other applicable documents, and the effectiveness of implementation. An audit should not be confused with surveillance or inspection activities performed for the sole purpose of process control or product acceptance.

**Audit Team Leader**

An individual appointed to ~~head~~ lead an Audit Team. The Audit Team Leader coordinates the preparation of the audit report.

**Auditor**

One qualified and authorized to examine quality assurance practices and verify whether requirements are being met.

**Authorized Inspector or AI or ANI**

As used herein is meant to mean Authorized Nuclear Inspector. An Authorized Nuclear Inspector is an employee of an Authorized Inspection Agency who has qualifications for and has been properly accredited for Division 1 or Division 2.

**Authorized Nuclear Inservice Inspector or ANII**

As used herein is meant to mean the Authorized Nuclear Inservice Inspector. An ANII is an employee of an Authorized Inspection Agency who has qualifications for and has been properly accredited for ASME Section XI.

- B -

Balance of Plant

Generating Station items and equipment not designed, furnished or installed as a part of the Nuclear Steam Supply System. Balance-of Plant items include safety-related and Code items, such as the containment as well as non safety-related and non-Code items.

**Basic Component**

"Basic component", when applied to nuclear power reactors means a plant structure, system, component or part thereof necessary to assure (1) the integrity of the reactor coolant pressure boundary, (2) the capability to shut down the reactor and maintain it in a safe shutdown condition, or (3) the capability to prevent or mitigate the consequences of accidents which should result in potential offsite exposures comparable to those referred to in par 100.11 of 10CFR Chapter 1 (1-1-87), Part 21.

**Bid Package**

The total of drawings, specifications, codes, standards, quality and other requirements that describes the task on which a prospective contractor/supplier will bid.

- C -

**Calibration**

A method of assuring accuracy of gauges and instruments used for measuring and testing by comparing with recognized standards.

**Certificate of compliance**

A written statement, signed by a qualified person, attesting that the materials or items are in compliance with the purchasing documents.

**Certified Personnel**

Personnel who have passed a formal training program and a formal proficiency test for special processes such as welding, plating and nondestructive testing.

**Certified Standards**

Standards of measurement whose accuracy can be traced to standards at the National Institute of Standards and Technology or established standards.

**Certified Material Test Report**

A document attesting that material is in accordance with specified requirements including the actual results of all required chemical analyses, tests examinations.

**Change Order**

A formal award to a vendor or contractor covering revision(s) to the original Purchase Order or Change Order, involving but not limited to quantity, technical requirements, quality assurance requirements or scope of work.

**Change Order Requisition**

A document describing revisions to be made to the original Purchase Order or subsequent Change Order and which is converted into a Change Order.

**Characteristic**

Any property or attribute of an item, process or service that is distinct, describable and measurable, as conforming or nonconforming to specified quality requirements. Quality characteristics are generally identified in specifications and drawings which describe the item, process or service.

**Code**

See ASME Boiler and Pressure Vessel Code, Section III or Section XI, whichever is applicable.

**code**

A recognized standard for using or processing materials, or for the skill involved in use or processing.

**Cognizant Engineer**

The engineer assigned a specific task or area of responsibility in the design or testing of a component or system.

**Company**

Defined as Commonwealth Edison Company, and referred to variously as CECo, Edison or Company.

**Company Level III**

Chief Level III (NDE) for the Company

**Component**

ASME Code items such as vessels, concrete containments, piping systems, pumps, valves, core support structures and storage tanks which will be combined with other components to form an assembly or installation of a nuclear power plant.

**Component Identification Number**

An identification number assigned (where appropriate) to an item for use throughout its lifetime.

**Construction**

Activities at the building site necessary to erect, inspect and accept a power generating station and its associated installation. This definition applies unless otherwise indicated.

Construction (ASME Section III Div.1) comprises all activities relating to materials, design fabrication, examination, testing, inspection and certification required in the manufacture and installation of items.

Construction (ASME Section III Div. 2) includes all those operations required to build the component and its parts in accordance with the Design Drawings and Construction Specification which have been prepared by the Designer (A-E).

**Construction Tests**

Those tests necessary to verify that the installation of each component of a system is complete and complies with the applicable specifications, standards, codes, drawings and engineering information.

**Contract (Including purchase order)**

A binding agreement between two or more persons or companies.

**Contractor**

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

Code Contractor is a contractor holding a valid ASME Section III Certificate of Authorization.

**Control Point**

In a sequential operation, a checkpoint at which certain data are taken, inspections made or approval required.

**Corrective Action**

Measures taken to rectify conditions adverse to quality, and, where necessary, to preclude repetition.

- D -

**Department**

When a responsibility is given a Department in this manual it is meant that the Department Head has the responsibility.

**Design Change**

Any change in design that may affect functional requirements, operating conditions, safety-, regulatory-, reliability-, and Code-related requirements, performance objectives, plant reliability or design life and would require that affected documentation be changed.

### Design Controls

Methods for assuring that basic design requirements are formalized and translated into design documents with proper review to assure the scheduled release of a valid design.

### Design Criteria

Statements of the form, function and interface requirements within well defined limitations.

### Designer (Division 2)

As used in ASME Code Division 2 construction, the Designer (A-E) is the organization responsible for the preparation and completion of the Design Report, Design Drawings, and Construction Specifications for applicable items.

### Design Requirements

Documents that set the functional requirements, operating conditions safety requirements, performance objectives, design margins and design life. Included are any special requirements for size, weight, ruggedness, materials, fabrications or constructions, testing, maintenance, operating environments, safety margins and derating factors.

### Design Review

An analysis of design with respect to technical adequacy, interface control, inspectability, maintainability and conformance to applicable codes, standards, regulations and design criteria.

### Design Specification

A document that sets the functional requirements; design requirements; environmental conditions, including radiation; Code classification; definition of the boundaries; and material requirements. Sufficient detail shall be contained within the document to provide a complete basis for design.

For Section III ASME Code (Division I): A document prepared by the owner or owner's designee which provides a complete basis for construction in accordance with Section III.

**Desk Survey**

An evaluation of a supplier's quality control capability made from documented procedures and records of past performance.

**Destructive test**

A test to determine the properties of a material or the behavior of an item which results in the destruction of the sample or item.

**Deviation**

A nonconformance. Departure of a characteristic from specified requirements.

**Discrepancy**

A nonconformance.

**Documentation**

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

**Drawing Manifest**

A document for transmitting drawings, released for construction to Engineering, Construction and Production.

**- E -**

Edison

Defined as Commonwealth Edison Company and referred to variously as CECo, Edison or Company.

**Erector**

An organization involved in assembling and building equipment or structures at the site.

**Examination**

Specific actions by qualified personnel using qualified procedures to verify that items and fabrication processes are in conformance with specified requirements. This term, when used in conjunction with qualification of personnel to perform quality-related activities shall mean a written examination.

- F -

**Fabricator**

An organization involved in the manufacture of equipment.

**Fabricator (ASME Section III Div. 2)**

The NPT Certificate Holder

**Final Safety Analysis Report (FSAR)**

A finalization of the preliminary safety analysis report prepared for the Nuclear Regulatory Commission prior to issuance of an operating license.

**First Level Design Review**

A review conducted by the responsible project engineer within the design agency for a specific design discipline.

**Flow Chart**

A representation of the sequence of activities such as procurement, fabrication, processing, assembly, inspection and test, or the sequence of individual operations within one or more of those functions.

- H -

**Hold Point**

A designated stopping place during or following a specific activity at which inspection or examination is required before further work can be performed.

- I -

**Incident**

Occurrence of major damage, serious personal injury or significant schedule delay.

**Inspection**

A phase of quality control which, by means of examination, observation or measurement, determines the conformance of materials, supplies, components, parts, appurtenances, systems, processes or structures to predetermined quality requirements.

**Inspection and Test Plan**

A listing, with optimum sequencing, of all the inspections and tests required to be performed for a specific item, component, structure or service.

**Interface control**

Consideration that components and structures are geometrically and functionally compatible and that materials are compatible with both process and environment.

**Item**

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

When ASME Code items are referenced, this means products constructed under a certificate of authorization and material.

- J -

**Jurisdictional Boundaries**

The physical limits of a Code item which are identified to determine the applicability of Code rules for that item.

- L -

**Lifetime Record**

A record which meet one or more of the following criteria:

a) those which would be of significant value in demonstrating capability for safe operation;
b) those which would be of significant value in maintaining, reworking, repainting, replacing, or modifying an item;
c) those which would be of significant value in understanding the cause of an accident or malfunction of an item;
d) those which provide required baseline data for inservice inspections.

**Like-for-Like Replacement**

The replacement of an item with an item that is identical in all physical and performance characteristics.

**Local Purchase Order**

A purchase order initiated through the computer by a station for the purchase of only Company Stores Coded items.

- M -

**Maintenance**

Repair, rework, or replacement of a structure, system or component with equipment of the same design, i.e., meeting the same engineering requirements.

**Maintenance/ Modification Work Package**

The complete set of documentation that enables the Station to fabricate, examine, test and install ASME and safety-related items. The work package consists of the Work Request, provisions for Station Traveler, Document Checklist and maintenance/modification procedures and supporting information such as, but not limited to, approved drawings, Design Specifications, and Special process procedures.

**Material**

A substance or combination of substances forming components, parts, pieces and equipment. (Intended to include such things as machinery, castings, liquids, formed steel shapes, aggregates and cement.)

When ASME Code material is referenced, this refers to metallic materials which are manufactured to an SA, SB or SFA Specification or any other material specification permitted by Section III of the Code. For Division 2, refers to metallic materials, as well as to nonmetallic materials, conforming to the specifications permitted in Section III of the Code.

**Material Supplier**

An organization which supplies material produced and certified by Material Manufacturers, but does not perform any operations which affect the material except when agreed upon by the Certificate Holder who uses the material in Code construction or when so authorized by a Quality System Certificate (Materials). The Material Supplier may perform and certify the results of tests, examinations, repairs, or treatments required by the material specification or by this Section which were not performed by the Material Manufacturer.

**Modification**

A change to an item made necessary by, or resulting in, a change in design requirements. (ASME-NCA 9000)

A planned change in plant design or operation and accomplished in accordance with the requirements and limitation of applicable codes, standards, specifications, licenses and predetermined safety restrictions.

- N -

**National Standards**

Standards maintained at or issued by the National Institute of Standards and Technology (NIST) or other designated institutions, and the values for natural physical constants and conversion factors recommended by the NIST.

**Nonconformance**

A deficiency in characteristic, documentation or procedure that renders an item or activity unacceptable or indeterminate. Examples of nonconformance include: physical defects, test failures, incorrect or inadequate documentation and deviation or variation from prescribed processing, inspection or test procedures.

**Nonpermanent Record**

A record that is required to show evidence that an activity was performed in accordance with the applicable requirements but do not meet the criteria for a lifetime record.

**NQA-1 (ANSI/ ASME NQA-1-1989 Edition)**

Quality Assurance Program Requirements for Nuclear Facilities. For ASME Section III activities, NQA-1 is as modified by the Code.

Nuclear Steam Supply System (NSSS)

That portion of the nuclear generating plant which provides steam from nuclear heat. It includes reactor, its control systems, main coolant and steam generation systems, fuel handling equipment, emergency core cooling system and other safeguards, associated electrical equipment, instrumentation, spent fuel handling and radioactive waste disposal system.

- O -

Objective Evidence

Any statement of fact, information or record, either quantitative or qualitative, pertaining to the quality of an item or service based on observations, measurements or tests which can be verified.

Offsite
~~Off-Site~~ Review — investigative

The off~~-~~site review and ~~approval~~ function required by the Technical Specifications.

~~Station~~ Site ~~On-Site~~ Quality Verification Engineer or Inspector — move to "S" definitions

As used herein shall mean ~~Senior Nuclear Quality Programs Engineer or Inspector or Nuclear Quality Programs Engineer or Inspector or Nuclear Quality Programs Engineer or Inspector for quality assurance for maintenance, modifications, in-service inspection and Stores activities.~~ a member of the Site Quality Verification Department.

Onsite
~~On-Site~~ Review — investigative

The Station review and ~~approval~~ function required by the Technical Specifications.

Operational Tests

Tests that are performed during the operations of the plant to verify continued satisfactory performance of safety-related structures, systems and components.

- P -

**Phased replacement**

Where several identical items are to be replaced with a new model, replace a few at a time to allow monitoring of the new items.

**Preliminary Safety Analysis Report (PSAR)**

The initial detailed safety evaluation prepared for the U.S. Nuclear Regulatory Commission prior to issuance of the site construction permit and which delineates design, normal and emergency operation, potential accidents and predicted consequences of such accidents and the means proposed to prevent such accidents and/or reduce their consequences to acceptance levels.

**Preoperational Testing**

Preliminary testing prior to fuel loading and plant operation to assure that construction and installation are complete and to verify design and system functions.

**Procedure**

A controlled document that specifies or describes how an activity is to be performed. It may include methods to be employed, equipment or materials to be used, accept/reject criteria and sequence of operations.

**Projects Construction Superintendent**

The site Projects Construction Superintendent is the person responsible in the Engineering and Construction Department for initial plant construction.

**Proprietary Designs**

Designs engineered, produced and sold by a manufacturer in accordance with his or her criteria and warranty.

**Purchase Requisition**

The basic document describing a material, component or service which is converted into a purchase order for procurements.

- Q -

**Quality Assurance**

All those planned and systematic actions necessary to provide adequate confidence that an item or a facility will perform satisfactorily in service. For the Code, Quality Assurance comprises all those planned and systematic actions necessary to provide adequate confidence that all items designed and constructed are in accordance with the applicable Code.

**Quality Control**

Those quality assurance examinations and actions which provide a means to control and measure the characteristics of an item, process or facility to determine or establish conformance to acceptance standards and specified requirements.

**Quality Receipt Inspection Report**

A form utilized by station Quality Control to document technical receipt inspection of Code and safety-related items received by station Stores Department.

- R -

**Receiving Inspection Notice (RIN)**

A form initiated by station Stores Supervisor upon receipt of Code or safety-related items to record inspection for damage, to record receipt of documentation and to notify station Quality Control Engineer that items are available for technical receipt inspection.

**Record**

A completed document that:

a) furnishes evidence of the quality of items or activities
b) furnishes evidence of compliance with regulations or requirements
c) is required by Technical Specifications.

Included are such related documents as drawings, specifications, procurement documents, procedures, operating logs, and reportable occurrences.

Such documents may be originals or reproduced copies.

**Registered Professional Engineer (RPE)**

A person competent in the applicable field of design and qualified in accordance with the requirements of ANSI/ASME 626.3-1988.

**Repair**

The process of restoring a nonconforming characteristic to a condition such that the capability of an item to function reliably and safely is unimpaired, even though that item still may not conform to the original requirements. For ASME Section III items, repair is the process of physically restoring a nonconformance to a condition such that an item complies with Code requirements.

**Request for Bid**

Invitation made to suppliers or contractors to bid on a specific task for materials, goods and services.

**Request for Purchase**

A Generating Station's document originated by foremen, supervisors or department heads which designates the required items and services and delineates the design specifications, applicable codes and standards, as well as, any special requirements. This document is the basis of initiating a Purchase Requisition.

**Rework**

The process by which a nonconforming item is made to conform to a prior specified requirement by completion, remachining, and re-assembling using previously approved procedural requirements. (For ASME Section III, rework is same as repair.)

- S -

**Second Level Design Review**

Independent objective assessment of a design by qualified personnel who have no direct project responsibility for the design.

**Significant Conditions (adverse to quality)**

Those violations, deficiencies or events, having safety significance, that are required to be reported in writing within 24 hours to the NRC; severe operating abnormalities or large deviations from expected plant performance of safety related structures, systems, or components; "events" as described in the plant Technical Specifications; pervasive breakdowns in the quality assurance program; recurring deficiencies or errors that cannot be dispositioned or brought into conformance by established corrective action systems; or violations of the ASME Code that cannot be readily brought into compliance.

**Source Acceptance**

Acceptance made at Vendor plant prior to shipment of purchased items.

### Source Inspection

Inspection carried out at Vendor plant prior to shipment of purchased items.

### Special Process

A process, the results of which are highly dependent on the control of the process or skill of the operator, or both.

### Special Process Procedures Manual

A compilation of Commonwealth Edison company procedures governing nondestructive examination and special processes such as welding and heat treating.

### Specification

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

### Start-up Tests

Tests that are performed after initial fuel loading and proceed through several power level plateaus to 100% power.

### Stock Material

Material which is or may be used for conversion to an ASME SA, SB, or SFA Specification or allowable ASTM Specification. As used in this program Stock Material is that material that has not been produced in accordance with an NCA 3800 QA Program.

### Surveillance

Examination of supplier's manufacturing, inspection and test operations and of records of work in progress, this activity is documented.

### Survey

A documented evaluation of an organization's ability to perform Code activities as verified by a determination of the adequacy of the organization's quality program and by a review of the implementation of that program at the location of the work.

- T -

### Technical Review

A determination as to whether a nonconforming item will be accepted "as is", reworked, repaired to an acceptable condition or rejected.

### Technical Specification

The design and performance criteria and operating limits and principles of an operating license to be observed during initial fuel loading, critical testing, start-up, power operations, refueling and maintenance operations.

### Test

Determination of the physical and functional properties of items by subjecting the item to a set of physical, chemical, environmental or operating conditions.

### Test Plan

An outline, narrative description or flow diagram indicating the tests to be performed, the methods to be used and the points in the process where they are to be executed. May be a test procedure.

### Traceability

The ability to verify the history, location, or application of an item by means of recorded identification.

- V -

**Variation**

A nonconformance. Departure of a characteristic from specified requirements.

- W -

**Witness Points**

In a sequential operation, a notification to Commonwealth Edison Company or their authorized agent that a phase of work is about to be reached and Commonwealth Edison Company may witness such phase of work at a specific time or in process witnessing either where established in the Traveler or Procedure or in the course of monitoring the work activity, to verify acceptable performance of such activity.

**Work Instructions**

Instructions to personnel performing work on specific areas such as controls and identification of materials and equipment during fabrication or installation.

**Workmanship**

That quality of an item expressing its skillful and artful manufacture, without apparent blemishes.

DRAFT

## TABLE OF CONTENTS (Rev. ~~64~~ 65) 2 pages





DRAFT

## TABLE OF CONTENTS



Approved by _____ (acting) 8/17/93
Nuclear Oversight Manager Date

The following is a supplement which describes how this Manual complies with requirements of ASME Boiler and Pressure Vessel Code - Section III -Division 1 plus Division 2 for concrete containments.

## 1.0 GENERAL (NCA 4134.1, NCA 4134.2)

The Commonwealth Edison Company, hereafter known as the Company, has an overall Quality Assurance Program designed to accommodate the engineering and construction phases of a nuclear power plant as well as the subsequent operations of those plants including maintenance, modification, and repair. For purposes of Code activities, this program consists of four parts. The first part titled, Quality Assurance Program, which is also filed with the Nuclear Regulatory Commission as the Topical Report, contains the requirements to which the Company has committed. This part, titled ASME Code Interface, describes how the Company's program complies with specific sections of the ASME Code. The third part, the Station Quality Assurance Manual, covers essentially a Section XI program including In-Service Inspection activities. The last part is titled Quality Assurance Procedures (QP's).

The "Low" QP's (-1 through -50 suffix) were promulgated for administering contracts with construction contractors hired by the Company to build nuclear generating stations. These contractors had to have implemented their Company approved Quality Assurance Programs. The focus was on those controls necessary for the achievement of quality in the construction of new stations.

The "High" QP's (-51 through -100 suffix) were promulgated to be detailed implementing procedures for use by the station and supporting departments after the completion of the construction permit. The focus was on the consistent achievement of quality in the operation, maintenance, modification, and repair of operating nuclear facilities. Currently, the controls in the "High" QP's have been essentially replicated in the stations' administrative procedure sets.

new paragraph → The language in both sets of QP's has evolved to acknowledge that all craft-labor contract administration (including support of ongoing station

operations) is by Site Engineering and Construction (SEC), and all routine maintenance and repair (as well as operations) is the responsibility of the station organization.

The Quality Procedures are invoked as detailed in QP 2.0.

The recent (1993) Nuclear Division reorganization has focused the accountability for all activities in the on-site organizations during all phases in the life of a nuclear station. This includes the use of craft labor in support of the stations. This ASME Code Interface is provided to specifically explain the Company's implementation and compliance with Quality Assurance requirements of the ASME Code Section III as detailed in NCA 4134. Figure I shows the relationships among this Manual, ASME Code NCA 4000, and 10CFR50, Appendix B. Figure II identifies Division 2 document responsibilities.

Other detailed quality assurance procedures covering items such as training, the training program, review of procurement documents, personnel qualification and certification, maintenance and updating of ASME Code information on the computerized Quality Approved Bidders Lists, off-site audit plans, filing, trending, etc. are documented in the Nuclear Oversight Quality Assurance Procedures. Furthermore, individual Department procedures provide detailed requirements relative to specific responsibilities involving implementation of the Company's Quality Assurance Program, ASME Code and other National Codes and Standards.

## 1.1 Statement of Authority

and the Site Quality Verification Departments are

The Statement of Authority of the Nuclear Oversight organization of the Company is contained in the preface of this Manual. The Nuclear Oversight organization, ~~which includes the Onsite and Offsite Quality Verification Departments, is~~ empowered to assure compliance with the quality requirements of the ASME Code, other codes, Federal Regulations and the various National Standards that are applicable to an Owner's and N-type Certificate Holder's program of quality assurance for nuclear

The Senior Vice President and Chief Nuclear Officer has the overall responsibility for the Quality Assurance Program. The Nuclear Oversight Manager is responsible for establishing quality assurance Policy and verifying that the policy is implemented.

power. Those engaged in quality verification have the independence and authority to stop work.

## 1.2 Responsibility - General

In the event that the Company undertakes the construction of a new nuclear generating station or begins a project involving significant Section III construction additions, a new project organization may be established. Such an organization will follow the same program as described herein and will be managed by the Nuclear Engineering and Technology Services Department.

Responsibility for implementation of quality assurance requirements rests with the Chief Nuclear Officer, while the verification of the implementation and the establishment of policies involving quality assurance rests with the Nuclear Oversight Manager.

For construction of new plants, the Company relies upon the utilization of an Architect/Engineer (AE), Nuclear Steam Supply System (NSSS) suppliers, and subcontractors. The Company contracts with suppliers who are qualified in accordance with the applicable section of the ASME Code and who have the appropriate Code Certificates of Authorization or have a written quality program that has been evaluated and approved by a Company survey. The responsibility for Code compliance remains with the Company when the Company is to stamp the item. When the Company purchases Code items requiring stamping, it is the responsibility of the approved Code supplier to stamp the item.

### 1.2.1 Division 1 - Responsibility

It is the responsibility of the Nuclear Engineering and Technology Services Department to assure that stress analyses or calculations for parts and appurtenances are correctly incorporated into the drawings and Design Reports of components for which the Company assumes overall responsibility. The drawings used for design and construction shall be identified, described, and in agreement with the Design Report before it is certified. Completion of the applicable Data Reports and

subsequent stamping will be done by the Company. When authorized by the Authorized Nuclear Inspector (ANI), stamping will be witnessed by the ANI and the ~~Onsite~~ Site Quality Verification ~~Superintendent~~ Director or his designee.

### 1.2.2 Division 2 - Responsibility

For ASME Section III, Division 2 concrete containments, the Company performs construction management and does not perform the actual construction. The surveillance of the post-tensioning systems for existing concrete containments is performed under the cognizance of the Company's Division 2, Chief Level III.

Site Engineering and Construction has the responsibility for preparation and control of the construction procedures necessary to manage the concrete containment work, and for preparation of the Construction Report and the C-1 Data Report. They will delegate to their qualified contractors the duties of preparing implementing construction procedures and shop and field drawings, including test procedures that are needed to satisfy the requirements of the construction specification and design drawings. The responsibility for preparation and approval of the C-2 Data Report rests with the Fabricator. The Nuclear Engineering and Technology Services Manager will approve the Design and Construction Reports, and will certify the C-1 and N-3 Data Reports.

## 1.3 Organization Charts

The organization charts describing the Company's organization are contained in Section 1.0 of the Topical Report. The basic organizational structure within the Company during operations consists of a Site Vice President at each site with centralized support and independent overview. The engineering and construction portion of the organization consists of an onsite organization supported by a centralized support organization. The site organization is intimately and directly involved with the day-to-day construction and engineering activities associated with nuclear facility construction and modification. The Site Vice Presidents and the Nuclear Engineering and Technology Services

Manager report to the Senior Vice President and Chief Nuclear Officer. Station quality assurance is provided by ~~Onsite~~ Site Quality Verification Department which ~~is reports to independent of~~ the Site Vice President ~~organizations.~~ The station Quality Control group performs typical quality control functions such as inspections and examinations.

Quality Control is part of the Station organization although independent of production. Station Quality Control has an offsite reporting capability to the Nuclear Support Department to insure independence. Station Quality Control personnel have sufficient organizational freedom and authority to Stop Work in order to prevent inadvertent use or installation of nonconforming materials, parts, or components.

## 1.4 Policy Statement

The basic policy statements concerning the Company's Quality Assurance Program are contained in the "Policy Statement" at the beginning of each Section of the Topical Report. Overall policy includes not only compliance with ASME Section III, for Division 1 items contracted for after July 1, 1971, and for Division 2 concrete containment items contracted for after July 1, 1977, but also the requirements contained in the Code of Federal Regulations 10CFR50, Appendix B, ANSI/ASME NQA-1, 1989; and ANSI N45.2 Standards not included in ANSI/ASME NQA-1, and ANSI N18.7.

## 1.5 General

The Nuclear Oversight Manager informs the individual ANI's of the ANI Supervisor's approval of the Quality Assurance Program by transmittal of the acceptance letter to the individual ANI's.

The Company implements revisions to the Quality Assurance Program within 60 days of issuance. Final revisions to subordinate procedures and completion of training may take longer than 60 days.

### 1.6 Training

Personnel performing activities affecting quality are oriented, indoctrinated, and trained in their assigned duties in accordance with a documented training program.

Personnel performing special processes, inspection, and tests will be subject to removal from such activities if it is determined that the individual's capabilities or performance are not in accordance with Code requirements.

The qualification requirements for personnel performing NDE and Division 2 Concrete inspection are contained in the CECo Special Process Procedures Manual (SPPM) Vol. 1. This document meets the requirements of ASME Section III, NQA-1, and SNT-TC-1A.

The qualification requirements for personnel performing inspections and tests are contained in the CECo SPPM Vol. III. This document meets the requirements of ASME Sect. III and NQA-1.

Personnel performing audit activities are qualified in accordance with ASME Sect. III and NQA-1 and the Company's qualification procedure. These personnel will have experience and/or training commensurate with the scope, complexity, or special nature of the activity audited. Audit Team Leaders will be qualified based on education, experience, training, testing, audit participation and evaluation of written and oral communication skills. Auditor and Audit Team Leader qualifications are evaluated annually.

## 2.0 DRAWING AND SPECIFICATION CONTROL

(NCA 4134.3, NCA 4134.5, NCA 4134.6, NCA 3551, and NCA 3556)

Drawing and specification control is maintained by Nuclear Engineering and Technology Services to assure that only the latest approved drawings and specifications are utilized in the procurement, fabrication, construction, maintenance, and modification of nuclear power plant facilities. The Company utilizes ~~a centralized Drawing and Document~~ the central Drawing Facility

~~Control Center~~ to maintain an integrated document system not only for the Company but also for their subcontractors.

## 2.1 Production, Maintenance and Distribution of Documents

The Company contracts with qualified and Company approved Architect Engineering firms to provide design drawings, standards, certified designs, construction specifications, stress analyses, and Certified Design Reports for initial construction of the power plant. Augmenting the basic contract is the contract with the Nuclear Steam Supply System supplier who produces drawings, standards, design specifications, stress analyses, and Certified Design Reports for those portions of the plant for which he is assigned responsibility. Design Specifications will be produced that are adequate to form the basis for fabrication in accordance with the Code and are available for all items requiring an ASME Code symbol. Design reports will be produced for all components, component supports, and appurtenances. Load capacity data sheets and design report summaries supplied by a Certificate Holder shall be reviewed and verified by the Company or by its A/E's.

For modifications, a qualified Architect/Engineer is engaged to produce the design drawings, standards, certified design and construction specifications, stress analyses and design reports as required and to submit them for review, approval, and acceptance by the Nuclear Engineering and Technology Services Department. The Company may elect to produce the required drawings, standards and specifications and perform required calculations. Applicable requirements of the design specification will be translated into specifications, drawings, procedures, and instructions. In these instances, design work reviews and Registered Professional Engineer (RPE) Certification will be accomplished under the direction of the Company's own Registered Professional Engineers. The applicable Authorized Nuclear Inspector shall be made aware of the ASME Section III Code related design changes involving these modifications and all such changes will be reconciled with documents used for construction. The design package will identify the assemblies or components that are part of the item being designed.

Certification of all required design documents for initial construction and modifications which are performed by Architect/Engineers shall be by a Registered Professional Engineer. (Design documents, as a minimum, ~~and~~ include design specifications, design drawings, design reports for Division 1, Load Capacity Data Sheets and design report summaries. For Division 2, design documents include design construction specifications and reports plus design drawings.) The Design Report shall be certified only after all design requirements of the Code have been met. Such Registered Professional Engineers shall be other than the individuals certifying the Design Specifications but are not required to be independent of the organization holding the Certificate. The Company shall assure that all Registered Professional Engineers certifying design documents on their behalf are currently certified. Such Registered Professional Engineers shall be qualified in accordance with the requirements of ASME N626.3-1988 and the Company's procedures, and their records, shall be reviewed at least once every three years to assure that the qualifications have been maintained.

## 2.2 Drawing Revision Control/ Design Change Control

Nuclear Engineering and Technology Services and/or Site Engineering and Construction, or their designee, assures control of revisions to drawings produced by its Architect/Engineer or Nuclear Steam Supply System Supplier by requiring submittal for documented review and comment, of changes or revisions to the originally approved design drawings prior to release. With respect to modification of systems, structures, or components, the design revisions are submitted to the respective electrical, mechanical, or structural engineering disciplines of NETS or SEC, or their designee, for review prior to release. (Design change evaluation is carried out in accordance with Section 3.0 of the Topical Report.) An updated drawing revision status listing is available from the ~~Centralized~~ Central Drawing ~~and~~ Document ~~Center~~ Facility.

## 2.3 Specifications and Engineering Standard Revisions Control

The Nuclear Engineering and Technology Services Department assures control of revisions to specifications and engineering standards utilized

on nuclear power projects in accordance with the requirements described in Section 3.0 of the Topical Report. Design Specifications will be available for all components, appurtenances, and component standard supports (unless included in the design specification for the component).

## 3.0 PROCUREMENT (NCA 4134.4)

Basic procurement control, as exercised by the Company, is described in Sections 4.0 and 7.0 of the Topical Report. Overall, the engineering and construction portions of the procurement for construction of a new plant are conducted in such a manner that the Architect/Engineer is required to submit their design, specifications, and standards to be utilized in procurement to the Company for review and approval.

Subsequent to approval of procurement documents by the Company, the actual purchasing is performed by the General Office Purchasing Department or satellite purchasing organizations located at certain sites. Procurement by such site organizations are under the control and management of the General Office Purchasing Department. Associated procurement documentation packages, when required, are made from specifications and drawings issued and approved by the Architect/Engineer or the Company's Nuclear Engineering and Technology Services Department. In addition, procurement packages for ASME Code purchases are reviewed by a representative of Quality Verification to assure requirements are provided and the vendor is on the computerized CECo Quality Approved Bidders List. Designated individuals using written procedures complete and document this review prior to contract award. The Company plans procurement activities prior to the start of procurement. These activities are documented, including the procurement method and organizational responsibilities. Changes to procurement documents are incorporated into the original procurement documents.

the corporate

Department

The NSSS Supplier performs procurement within an approved quality assurance program subject to the Company's audit and surveillance of subcontractor activities.

3.1 Procurement Control (NCA 4134.4, NCA 4134.7, NCA 4134.8, NCA 4134.13 and NCA 4134.15)

Procurement document control in the design and construction phases of power plant construction is exercised by the Architect/Engineer or the Nuclear Steam Supply System Supplier in the specifications prepared by them. Such documents must comply with the requirements of the rules and regulations of ASME Section III as well as other regulatory guides, codes and standards.

The Company identifies and selects qualified manufacturers and suppliers of material, items and services on the Quality Approved Bidders List. These suppliers are qualified by survey, audit, or on the basis of being a current ASME Nuclear Certificate holder performing work within the scope of the Certificate. Procurement of Code material is made from a supplier or manufacturer who either holds the appropriate Quality System Certificate (Materials) or has written quality program that has been evaluated and approved by CECo survey.

When the Company qualifies a Material Supplier or a Material Manufacturer under the provisions of NCA-3800, the audit frequency shall be commensurate with the schedule of production or procurement but shall be conducted at least annually during the interval in which the Company's material is being controlled by a Material Supplier or produced by a Material Manufacturer.

Personnel receiving ASME Code material items, and services assure that the appropriate documentation is submitted including Certified Material Test Reports, Certificates of Conformance, and ASME Code Data Report Forms, as applicable.

During the operational phase, either an Architect/Engineer's control is exerted and/or the Company's own internal control is exerted, dependent upon the assignment of the responsibility by CECo. In those instances when the Company controls procurement, the requirements of ASME Section III, Classes 1, 2, 3, CS, MC and CC, as applicable, are directly included in the procurement documents. In the instances of the

utilization of an Architect/Engineer, the requirements of ASME Section III, as well as other applicable codes and standards are included in specifications by the Architect/Engineer and subsequently assured by the Company's engineering review. Where provided in the scope of the Certificate of Authorization, the provisions of NCA 3820(e), whereby a Certificate of Authorization Holder may supply material or may manufacturer and supply material, shall apply.

### 3.2 Source of Purchase Requisition Approval

During the engineering and construction phase of a new project, requests for proposal are prepared by Engineering and include a procurement package supplied by the Architect/Engineer to the Company or are developed internally.

Preparation of site procurement requisitions is the responsibility of Site Engineering and Construction. ASME requirements pertaining to Section III, Division 1, Classes 1, 2, 3, CS and MC, as applicable, and Division 2, Class CC for concrete containments are included as part of such purchase packages. When work is instituted by the Company for the maintenance of an existing power plant, procurement requisitions are initiated by the Station organization.

When procurement to support operations, including modifications and repairs, is initiated, the procedures and requirements are the same as described for the engineering and construction phase for a new plant.

### 3.3 Source Inspection

Where source inspection is required, it will be performed by Company personnel or the Company's agent, as applicable. Inspection will be by qualified personnel in accordance with preplanned inspection procedures or checklists.Source inspection and audit activities are also performed by the NSSS Supplier. The Company audits these activities to assure compliance with design requirements. When requested by the ANI, the Company shall arrange for access by the ANI to the Company's Code suppliers' facilities.

DRAFT

## 4.0 PROCESS CONTROL (NCA 4134.9, NCA 4134.10, NCA 4134.11 and NCA 4134.14)

Process Control is exercised by the Company in those activities involving the Code. In the construction phases, this process control is specified as part of the Company's contract with its AE, NSSS Supplier, or involved subcontractors. The requirements for checklists, travelers and production order systems, are also included in the procurement documents. For ASME Section III, Division 2 work, the Company contracts with ASME approved Certificate of Authorization holders for construction activities.

Process Control sheets, travelers or checklists are prepared, as necessary, and include:

1. document numbers and revisions to which the process, inspection or test conforms,
2. space for reporting results of completion of specific operations at checkpoints of fabrication, manufacture or installation, and
3. space for a signature, initials or stamp and date of responsible Company representatives and the ANI for those activities witnessed.

Process control documents for special processes include, or reference:

1. procedure, personnel and equipment qualification requirements,
2. conditions necessary for accomplishing the process, ~~and~~ ,
3. acceptance criteria, and
4. the activities that require qualified inspection and test personnel.

The Company submits welding and brazing procedures which have been qualified under the provisions of ASME Sections III and IX to the ANI for review and acceptance prior to use.



DRAFT

## 5.0 INSTRUCTIONS AND PROCEDURES (NCA 4134.5)

The Company reviews instructions, procedures and drawings for adequacy, completeness and correctness prior to approval and issue.

The Company establishes procedures to control minor changes to documents. These procedures identify the type of changes that are considered minor as well as the personnel who are authorized to review and approve these changes.

Nuclear Oversight reviews procedures for ASME Section III (Division 1 and 2) construction.

## 6.0 WELDING QUALITY ASSURANCE (NB-4300, NCA 3130, NCA 4134.9, NCA 5253 and NCA 5254)

Welding quality assurance, as practiced by the Company or their agent, is a controlled plan which assures that the welding procedures and welding personnel are properly qualified in accordance with Sections III and IX of the ASME Code. In the construction phase, welding quality assurance is specified as part of the Company's contract requirements with their A/E, NSSS Supplier, or involved contractors. Control is assured through the Company surveillance and audit or through the use of Independent Testing Agencies.

process

### 6.1 Welding Material Control

The welding material control system including details of control of storage, issuance, and use, is as outlined in the Company SPPM.

### 6.2 Qualification of Welders

The Company qualifies welders in accordance with the CECo SPPM. When there is a specific reason to question the welding procedure or the ability of welding personnel, the Authorized Nuclear Inspector may require requalification.

## 7.0 NONDESTRUCTIVE EXAMINATION (NB-5000 and CC-5000) and CONCRETE INSPECTION (CC-5000), (NCA 5255, NCA 5256)

For site contractors requiring subcontracted NDE and concrete inspection services, the Company contracts for provision of such services. The administration of the contract is assigned to the ~~Onsite~~ Quality Verification Department where such services are established for Nuclear Engineering and Technology Services ~~administered~~ contracts. In addition, the administration of such contracted services involving operating stations is undertaken by the station Quality Control Supervisor. Nondestructive examination and concrete inspection and testing contractors are surveyed and qualified by the Company, and resulting qualification documentation is supplied to the site Code contractors prior to their use of examination and inspection services. The performance of such services shall be by agreement with the inspection and testing contractor. The site Code Contractor ~~contractors~~ utilizing such testing and inspection services shall review and accept procedures and personnel qualifications of the testing and inspection contractor. The details governing qualification of personnel and procedures, NDE results, and equipment are contained in the CECo SPPM. NDE Procedures shall be proven by demonstration to the satisfaction of the cognizant Authorized Nuclear Inspector or Authorized Nuclear Inservice Inspector, as applicable.

Concrete inspection and testing personnel shall be qualified in accordance with the requirements of Appendix VII of ASME Section III, Division 2.

## 8.0 HEAT TREATING (NCA 5263, NB-4600)

Heat treating operations performed by or under the cognizance of, the Company are performed in a controlled and documented manner and the appropriate process parameters are monitored and recorded as required by Section III of the ASME Code.

## 9.0 DOCUMENTATION (NCA 4134.5, NCA 4134.6, NCA 4134.8, NCA 4134.9, NCA 4134.10, NCA 4134.11 and NCA 4134.17)

Records related to Code work are indexed and made available to the Company by the vendor. Records are also made available to the ANI.

The records program for classification and retention of records complies with Tables NCA 4134.17-1 and NCA 4143.17-2.

The records program provides for:

1. requirements for radiographic reproduction,
2. identification of records to be maintained,
3. validation of records,
4. indexing and location of records, and
5. maintaining traceability of records.

The receipt control system includes:

1. protection from loss or damage during receipt,
2. identification of responsible department/individual,
3. designation of required records,
4. identification of records received,
5. inspection of incoming records using written procedures, and
6. a structure to maintain control during the process.

A records custodian inventories record's submittals, acknowledges receipt and processes records.

### 9.1 System of Acquiring Final Documentation

In those instances where the Company performs a modification involving the Code, the verification and acceptance of satisfactory completion of procedures, certification data, NDE documentation, etc., that were required to acceptably repair, fabricate, and install the items specified in the maintenance modification work package is the responsibility of Station

Quality Control. When the Company has contracted for the fabrication, modification, maintenance or repair, the ASME qualified contractor is responsible for the final documentation.

Upon completion of the required testing, the complete documentation package is submitted to the station's ~~Technical Staff~~ Systems Engineering Supervisor for review and acceptance. The document package shall be forwarded expeditiously to the station Central File Supervisor for filing and retention.

Quality Assurance records shall be retained, identified, indexed, protected, retrievable and accessible, plus be classified as lifetime or nonpermanent as identified and provided in Section NCA 4134.17 of Section III of the ASME Code. Permanent lifetime records are either maintained in duplicate storage or in a 2-hour fire rated facility meeting NQA-1 requirements. When temporary storage of records is required, at least a 1-hour fire rated container shall be used. Facilities ~~used~~ for duplicate storage are sufficiently separated to eliminate a simultaneous hazard. The enforcement authority is kept notified as to the location of records showing compliance to Sections III and XI.

## 9.2 List of Final Documents

For each contract involving ASME Code activities, a list of required final documents shall be prepared. This list shall include the requirements of ASME Section III and applicable specifications, drawings, production travelers, maintenance procedures, etc. A Design Report summary may be provided in lieu of a Design Report for Standard Supports. The Final Documentation Checklist shall provide for the review and concurrence of the Authorized Nuclear Inspector and the Quality Control Supervisor.

## 9.3 Data Reports

The Nuclear Engineering and Technology Services Manager, as the chairman of the Nuclear Engineering Committee, has overall Owner's responsibility for the Form N-3, N-5, C-1 Data Report and other CECo N-type Data Reports, including stamping responsibility for ASME Section III, Div. 1 and Div. 2. The Nuclear Engineering and Technology Services

Manager delegates signature authority for Code activities to the Site Engineering and Construction Managers, however, he retains the overall responsibility. The sequence of stamping and for the completion of the Code Data Report Form shall be determined by the Authorized Nuclear Inspector and the Certificate Holder.

In any case, the Code Symbol Stamp shall not be applied until completion of the required examination and testing, and only with the authorization of the Authorized Nuclear Inspector. Before the component or appurtenance is placed in service, copies of the appropriate ASME Data Reports are filed with the enforcement authorities having jurisdiction at the location of each installation.

## 10.0 NATIONAL BOARD REGISTRATION OF PRESSURE VESSELS

Pressure vessels constructed to ASME Section III rules after December 31, 1976 for which Commonwealth Edison Company does the stamping under its ASME N-Certificate of Authorization shall be registered with the National Board of Boiler and Pressure Vessel Inspectors. The Nuclear Engineering and Technology Services Manager shall have the responsibility for controlling the consecutive issuance of National Board serial numbers to be affixed to these pressure vessels and shall maintain a record of the serial numbers assigned to each specific item. There will be no skips, gaps or duplication of National Board serial number 5 issued for these pressure vessels. The record shall include the date issued, description of the product to which the number is assigned, manufacturer's serial number, the Commonwealth Edison Company National Board serial number, and any additional information necessary to identify the item. The Nuclear Engineering and Technology Services Manager shall submit to the National Board the original and one legible copy of the ASME Data Report for each nuclear pressure vessel required to be stamped and registered with the National Board by the State of Illinois Boiler Safety Act, within 30 days of being stamped. The nameplate applied will conform to the facsimile included on Figure III.

## 11.0 TEST CONTROL (NCA 4134.11)

Test procedures identify or reference requirements and acceptance criteria contained in the ASME Code. The Company uses markings, tags, stamps, routing cards, labels, forms, or other means to indicate the status of examination and tests. The required inspections and tests described in Section 10 and Section 11 of the Topical Report are performed before placing equipment in service.

## 12.0 CALIBRATION CONTROL (NCA 4134.12)

To maintain accuracy within necessary limits, the measuring and test equipment used in activities affecting quality is periodically calibrated and adjusted in accordance with written procedures appropriate to the item(s) of measuring and test equipment involved. Procedures also are used to specify preoperational checks, environmental requirements, step-wise instructions for use, and instructions for storage. Suppliers and contractors to the Company are required to have and employ similar control measures which will be assured through surveillance, audit and approval of contractor procedures.

The ~~System~~ T&D Operational Analysis Department will be responsible for calibration and maintenance of the Company's measuring and test equipment. Assistance in this activity will be obtained from vendors or laboratories who have the necessary capabilities. Calibration authority may be delegated to the sites by the ~~SOAD~~ Manager. (T&D Operational Analysis Department)

When measuring and test equipment is found to be out of calibration, an evaluation shall be made and documented of the validity of previous inspection or test results and of the acceptability of items previously inspected or tested. All pressure test gauges used in ASME pressure testing shall be calibrated against a standard dead weight tester or a calibration master gauge prior to and after each test or series of tests.

Charpy V-Notch Testing Machines shall be calibrated at least once each year in accordance with ASTM-E-23-72 and employing standard

specimens obtained from the National Institute of Standards and Technology (NIST) Gaithersburg, MD. The associated temperature instruments shall be calibrated at least once in 3-month intervals or, when utilized with longer periods between use, such calibration shall be performed prior to being used.

Tags or labels are affixed to measuring and test equipment or its protective storage container to indicate the current calibration status. Devices consistently found out of calibration are repaired or replaced.

## 13.0 NONCONFORMANCES (NCA 4134.16)

During the construction phase of a new plant, the Company utilizes a Nonconformance Report (NCR) to document the identification, correction and disposition of items found not in compliance with specifications (including the Code). The Company's contractors may also generate their own internal Nonconformance Reports; however, those contractor identified discrepancies which require significant engineering to resolve or involve significant rework, must be submitted to the Company for review and approval prior to placing an applicable system in service. All Code noncompliances must be corrected and result in installations which comply with the Code.

Authorized and qualified personnel approve the proposed disposition of nonconformances. Completion of all required corrective actions (including actions to prevent recurrence) is verified and this verification is documented. Nonconformances are made available to the Authorized Nuclear Inspector for his review.

During the operations phase, the Company utilizes an Integrated Reporting Program which results in the generation of a Discrepancy Report for hardware or Code related nonconforming conditions. Review, disposition, and verification are performed in a similar manner as described for Nonconformance Reports. The Authorized Inspector is given the opportunity to review the Integrated Reporting Program documents which involved ASME Code activities.

# 14.0 INSPECTION AND TEST AND AUDIT PERSONNEL QUALIFICATION

## 14.1 Qualification of Inspection and Test Personnel

Inspection and test personnel shall be qualified to procedures which ~~will~~ comply with the ASME Section III requirements of ANSI/ASME NQA-1-1989, Supplement 2S-1 and meet the intent of Appendix 2A-1, and shall include requirements for qualification, personnel selection, indoctrination, training, determination of initial capability and provisions for periodic evaluation of performance. The certification of qualification shall document as a minimum, the employer's name, identification of person being certified, activities certified to be performed, basis used for certification, results of periodic evaluation, results of required physical examinations, and the signature of the person responsible for such certification.

## 14.2 Qualification of Audit Personnel

Auditors and Audit Team Leaders shall be qualified to procedures which ~~will~~ comply with the ASME Section III requirements of ANSI/ASME NQA-1-1989, Supplement 2S-3. Audit personnel shall have experience or training commensurate with the scope, complexity, or special nature of the activities to be audited. The Audit Team Leader program shall include requirements for assessing written and oral communication skills, training, audit participation, and a demonstration of proficiency, such as an examination.

The certification of qualification shall document the employer's name, Audit Team Leader's (or Auditor's) name, date of certification or recertification, basis of qualification, and signature of the Nuclear Oversight Manager, or designee. The qualification and certification records for each Auditor and Audit Team Leader shall be maintained and updated annually.

## 15.0 AUDITS (NCA 4134.18)

Audits are performed as required by the Audit Schedule. The audit frequency for ASME Code activities shall be commensurate with the schedule of activities and shall be such that an annual audit of all Code activities is performed at each station. Audits are performed using a preapproved checklist. The audit team is identified prior to the beginning of each audit. For audits related to Code activities, the Audit Team Leader signs the audit report. The Company provides personnel to accompany the ANI during required audits in accordance with the Code and ASME N626. These personnel have responsibility for ASME Code and Quality Assurance Program compliance.

## 16.0 LEVEL III

The Company maintains a Chief Level III for NDE. He is qualified in accordance with the SPPM Volume I. He in turn has delegated certain specific discipline duties to Deputy Level III's. All such delegations and their scope are documented.

Administrative Level III's may be appointed for non-NDE qualification and certification activities. Such appointments will be documented and the scope of such appointments will be defined.

## 17.0 AUTHORIZED NUCLEAR INSPECTOR (NCA 5000)

The Company maintains a valid, continuing agreement with an accredited Authorized Inspection Agency to provide inspection and audit services involving Section III and XI nuclear work. The Authorized Inspection Agency is required to perform all of the functions and maintain the records required in the applicable ASME N626 series of Standards and the ASME Code. The Company shall notify ASME and the enforcement authority whenever this written agreement is cancelled or changed to another Authorized Inspection Agency.

## 17.1 Relationship

The Authorized Nuclear Inspector's primary contact is the station Quality Control Superintendent. He also has ready access to the Onsite Quality Verification Superintendent who monitors and audits maintenance and modification work. At the construction sites, the primary contact is with the Site Engineering and Construction Manager, or designee.

## 17.2 Documents Available to the Authorized Nuclear Inspector (NCA 3252)

The Authorized Nuclear Inspector and any ASME survey team shall be afforded full access to procedures, procurement specifications, drawings, design specifications, construction specifications, design reports and documentation reviews of the design reports and construction reports involved in ASME Code work. Design Specifications shall be made available to the Authorized Inspector prior to fabrication of items requiring ASME Code stamp. The Authorized Nuclear Inspector, and Supervisor, shall have free access to the Company's and Manufacturer's and Supplier's facilities at all times while work on the item is being performed. He shall be afforded the opportunity to perform required N626 audits within the limitations of station safety, security and health regulations. He shall be provided adequate facilities including a drawer of a file cabinet, a desk, and a chair, plus a copy of the Company's Quality Assurance Manual.

The Authorized Nuclear Inspector shall be provided access to audit personnel qualification and training records as well as audit records for ASME work. Audit records include the audit plan, report, written replies, and the record of completion of corrective action.
The Authorized Nuclear Inspector shall also have access to procedure development and procedure qualifications performed by a contractor.
The Authorized Nuclear Inspector will notify the Quality Control Supervisor or the Site Engineering and Construction Manager, as applicable, of any problem.

The Authorized Nuclear Inspector may request that ASME Data Reports, Certified Material Test Reports, and Certificates of Compliance be submitted to him to facilitate his monitoring of Code requirements. As a minimum, these documents shall be submitted to the Authorized Nuclear Inspector prior to installation of the item(s). Also, a copy of this Quality Assurance Manual shall be filed with the Authorized Inspection Agency. A copy of the design report and any associated review documentation for the design report shall be made available to the regulatory and enforcement authorities having jurisdiction at the site of the nuclear power plant before it is placed in service.

## 17.3 Choosing of Hold Points

The ANI/ANII shall be kept informed on relevant aspects of the current Maintenance/Modification work packages involving ASME Code work. He shall be provided ample time during the work package approval process to insert his hold points in the work packages relating to Code work. He has the authority to place any item on hold if the Code is being violated. Completion of ANI/ANII review will be indicated by signature on the work package approval documents.

Additional records required by the Authorized Nuclear Inspector to assure Code compliance will be supplied by the Company upon request. Unlimited access to all facilities and activities shall be afforded the Authorized Inspection Agency.

## 17.4 NDE and the Authorized Nuclear Inspector

Detailed nondestructive examination procedures are made available for review and acceptance by the Authorized Nuclear Inspector prior to their use in ASME Code work. Nondestructive examination personnel files are available to the Authorized Nuclear Inspector upon request. He may require requalification of either procedures or personnel when there is specific reason to question the qualification of either.

## 17.5 Checklist of Final Documents and Data Reports

When the final documents and Data and Construction Reports have been prepared, the entire package shall be made available to the Authorized Nuclear Inspector. When the Authorized Nuclear Inspector is satisfied that the work is satisfactorily completed and ready to be stamped, he shall certify the Data and Construction Reports by signature. For Division 2 work, the Authorized Inspector shall assure that the Designer has signed such Data Reports and Construction Reports prior to affixing his signature.

## 17.6 Documents in Electronic Media

As technology advances, some or all work control and supporting documents may exist in all-electronic format. Permanent records required by the Code and by the jurisdiction will be retained in hard copy, including original pen and ink signatures, and will be afforded the same protection required for permanent records. When on-line electronic approval is utilized, measures will be established to assure that only those persons authorized to use and apply electronic approval grant such approval. Access control measures will be established to prevent unauthorized alteration or modification of documents controlling work. The Authorized Inspector will be afforded the same opportunities to review and insert Hold Points as afforded for paper-based documents.

# 18.0 CONTROL OF COMPUTER SOFTWARE

Control of computer software and resultant output that is used in the performance of design is procured, or developed, and maintained in accordance with the requirements of NQA-1 Supplements 3S-1 and Supplement 11S-2. Quality Procedure QP 3-54 is the implementing procedure for the control of computer software. QP 3-54 generally follows the intent of Part 2.7 to NQA-2. Computer program outputs, when appropriately controlled, may be used as design inputs and are subject to the requirements of NQA-1, Supplement 3S-1.

DRAFT

# FIGURE I

| | COMMONWEALTH EDISON QUALITY REQUIREMENTS | ASME III NCA - | 10CFR50 APPENDIX B |
|---|---|---|---|
| 1.0 | Organization | 4134.1 | I |
| 2.0 | Quality Assurance Program | 4134.2 | II |
| 3.0 | Design Control | 4134.3 | III |
| 4.0 | Procurement Document Control | 4134.4 | IV |
| 5.0 | Instructions, Procedures and Drawings | 4134.5 | V |
| 6.0 | Document Control | 4134.6 | VI |
| 7.0 | Control of Purchased Material Equipment and Services | 4134.7 | VII |
| 8.0 | Identification and Control of Materials, Parts and Components | 4134.8 | VIII |
| 9.0 | Control of Special Processes | 4134.9 | IX |
| 10.0 | Inspection | 4134.10 | X |
| 11.0 | Test Control | 4134.11 | XI |
| 12.0 | Control of Measuring and Test Equipment | 4134.12 | XII |
| 13.0 | Handling, Storage and Shipping | 4134.13 | XIII |
| 14.0 | Inspection, Test and Operating Status | 4134.14 | XIV |
| 15.0 | Nonconforming Materials, Parts or Components and Operations | 4134.15 | XV |
| 16.0 | Corrective Action | 4134.16 | XVI |
| 17.0 | Quality Assurance Records | 4134.17. 3280 | XVII |
| 18.0 | Audits | 4134.18 | XVIII |



REVISION ~~64~~ 65 ~~8/17/93~~ 2/15/94

DRAFT

# FIGURE II

## ASME Section III Division 2 Responsibilities Table

| DOCUMENT | PREPARED BY | REVIEWED BY | CERTIFIED BY | APPROVED[3] BY | PROVIDED BY | MADE AVAILABLE ON REQUEST |
|---|---|---|---|---|---|---|
| Design Specification NCA 3250) | D[1] | D,O | D[1] | – | O,D,C,K,I,J | – |
| Construction Specification (NCA 3340) | D | O | D | O | O,C,F,M[2],K | I,J |
| Design Drawings (NCA 3340) | D | O | D | O | O,C,F,M[2] | I,J,K |
| Design Reports (NCA 3350) | D | D | D | O | O,K,L | I,J |
| Construction Procedures (NCA 3351) [Note B] | C,F | D,C | – | D,C | D,O,C,L | I,J,K |
| Certified Material, Test Reports or Certificates of Compliance (CB-2130, CC-2130) [Note B] | M | C or D,F | M | – | C,F,O | J,I,D |
| Shop and Field Drawings NCA 3452 (Shop)<br>(Field)<br>[Note B] | F<br>C,F | D<br>C,D | –<br>– | D<br>C,D | C,F<br>C,F | I<br>I |
| Construction Reports (NCA 3454) | C | D | D,I | P,O | D,O,J,K | I,J |
| Data Report C-1 (NCA 8410) | C | – | D,C,I,O | – | O | I,J |
| Data Report N-2 (NCA 8410) | F | – | F,I | – | C | I,J |
| Data Report N-3 (NCA 8420) | O | – | K,I | – | J | – |

O - CECo Project Engineering (Owner or Designee)
D - Designer (A-E)
C - Constructor (CECo Project Construction)
F - Contractor to CECo Project Construction or another Constructor (Fabricator)
M - Material Manufacturer
I - Authorized Inspector
J - Jurisdictional Authority
K - CECo Nuclear Engineering Department (Owner)
L - CECo Construction Department
P - Project Manager

* Will be advised of the document availability.

(1) Owners designee
(2) Provided when necessary to permit the Material Manufacturer to perform his duties in conformance with the Code.
(3) Approval indicates an assurance that the ASME requirements were carried out by the designated party.

NOTES: (A) CECo Project Construction is the Construction Manager who will contract with contractors and CECo will have overall responsibility.

(B) Information provided to the indicated participants when required to satisfy their designated responsibilities under this Section. Other information provided only by specific arrangement with the Owner. Participants are required to furnish only such information as is necessary to permit the recipient to perform his duties in conformance with this Section. Other information may be furnished at the discretion of the responsible parties.

DRAFT

Page 1 of 1

REVISION 64 65 8/17/93 # 2/15/94

# FIGURE III

## Facsimile of Mandatory Stamping and/or Nameplate Marking

National Board Marking Area

| |
|---|
| N NAT'L BD. _____ (National Board Serial Number) |
| Certified By _____ |
| _____ |
| _____ |
| _____ |
| (See applicable Section of ASME Code for required marking) |

ASME Marking Area

Approximately 5 ½" L X 3 ½" H



REVISION ~~64~~ 65 ~~8/17/93~~ 2/15/94

DRAFT

DRAFT

## ADDENDUM 1

A pilot program of identifying and resolving all nonconforming and discrepant conditions under the Integrated Reporting Program (IRP) will be utilized at Quad Cities Station.

This addendum allows Quad Cities' to extend the use of the IRP to nonconforming hardware or in Code-related nonconforming conditions. This usage will be in variance with ASME Interface 13.0, QP 15-54 (2.0 SCOPE), and QP 15-1, 15-2, 15-51, 15-52, and 15-53. The pilot program will remain in effect for a period of 12 months effective 8/17/93 and ending 8/17/94.

The IRP will be implemented locally by procedures QCAP 2300-20, 2300-21, 2300-22, 2300-24, and 2300-25 - all Revision 0. These procedures meet the intent and requirements of Sections 15 & 16 of the Quality Assurance Topical Report, Section 13.0 of the ASME Interface, and QP 15-54. The Authorized Inspection Agency will be provided the above listed Quad Cities procedures (and subsequent revisions) for their review and acceptance as being equivalent to the controls described in the existing Quality Procedures (QPs).

An analysis of this pilot program will be made and the results used in determining the nature of those changes to the base program that are necessary to allow extension to other stations.



DRAFT

# TABLE OF CONTENTS & INDEX (Rev. 65) 15 pages

# Preface & Policy (Rev. 65) 1 page

# SECTION 1, ORGANIZATION (Rev. 65) 24 pages

## SECTION 2, QUALITY ASSURANCE PROGRAM (Rev. 65) 9 pages

## SECTION 3, DESIGN CONTROL (Rev. 65) 7 pages



## SECTION 4, PROCUREMENT DOCUMENT CONTROL (Rev. 65) 5 pages

## SECTION 5, INSTRUCTIONS, PROCEDURES AND DRAWINGS (Rev. 65) 3 pages



## SECTION 6, DOCUMENT CONTROL (Rev. 65) 4 pages

## SECTION 7, CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES (Rev. 65) 14 pages





DRAFT

## SECTION 8, IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

(Rev. 65) 3 pages

## SECTION 9, CONTROL OF SPECIAL PROCESSES (Rev. 65) 4 pages



## SECTION 10, INSPECTION (Rev. 65) 4 pages

## SECTION 12, CONTROL OF MEASURING AND TEST EQUIPMENT (Rev. 65) 4 pages



## SECTION 13, HANDLING, STORAGE AND SHIPPING (Rev. 65) 3 pages

## SECTION 14, INSPECTION, TEST AND OPERATING STATUS (Rev. 65) 6 pages



## SECTION 15, NONCONFORMING MATERIALS, PARTS OR COMPONENTS (Rev. 65) 5 pages

## SECTION 19, AUGMENTED QUALITY (Rev. 65) 5 pages



## SECTION 20, INDEPENDENT SAFETY REVIEWS

(Rev. 65) 10 pages

## APPENDIX A, DEFINITIONS (Rev. 65) 21 pages

Approved By_____ _____
Nuclear Oversight Manager Date

# COMMONWEALTH EDISON
# QUALITY ASSURANCE MANUAL

This Quality Assurance Manual has been prepared to delineate the requirements governing the Commonwealth Edison Company Quality Assurance Program for nuclear generating stations. Implementation of the program as described provides a degree of quality assurance commensurate with the requirements of ASME Code Section III (Division 1 & 2 for Concrete Containment), the Code of Federal Regulations and the requirements of the Nuclear Regulatory Commission governing design, procurement, construction, testing, operation, refueling, maintenance, repair, modification, and decommissioning of nuclear power generation facilities. The execution of the Quality Assurance Program will assure that the plants are built and operated to the requirements and with the reliability and safety to safeguard the general public and Company employees.

The Senior Vice President and Chief Nuclear Officer has overall responsibility for the Quality Assurance Program. Although specific positions and responsibilities are delineated in Section 1, the achievement of quality is the responsibility of each individual involved in Nuclear Operations.

The scope of this program covers the Quality Assurance Program for the life of all Commonwealth Edison nuclear generating plants except that the design, construction, testing and startup of Dresden, Quad Cities, and Zion was conducted in accordance with the quality assurance plans contained in the Dresden and Quad Cities FSARs and the Zion Quality Assurance Manual.

James J. O'Connor

**James J. O'Connor**

Chairman and Chief Executive Officer
Commonwealth Edison Company

# 1. POLICY

This section identifies the Commonwealth Edison Company (the Company) organization as it applies to the Quality Assurance Program. This section also defines responsibility and authority for establishing, executing and verifying the implementation of the Quality Assurance Program.

Each Officer, Manager, Superintendent, or Director identified in this Section is responsible for implementing the quality assurance program in their assigned areas. They may delegate the performance of their duties to qualified personnel reporting to them. Although the individuals identified may be responsible for specific attributes, the achievement of quality in the performance of quality related activities is the responsibility of each individual involved in nuclear operations.

The Company may delegate the performance of work to Architect-Engineers, NSSS Suppliers, contractors, consultants or others, but Commonwealth Edison Company retains responsibility. The Nuclear Oversight Manager is responsible for corporate quality assurance policy and corporate nuclear safety policy. The manager is assigned this responsibility by the Senior Vice President and Chief Nuclear Officer of the Company. The Nuclear Oversight Manager also verifies the implementation of the quality assurance program for the design, procurement, construction, and operation of the Company's nuclear power facilities. He is independent of production.

Organizational charts, functional descriptions of departmental responsibilities or descriptions of key quality assurance positions document lines of authority and responsibility for the Quality Assurance Program.

In general, the Quality Assurance Program provides that:

a. Activities are verified as being correctly performed.

b. Quality verification activities are performed independent of the individual or group directly responsible for performing the activity.

c. Quality verification personnel have the responsibility, authority, and organizational freedom to:

1. Identify quality problems.

2. Initiate, recommend, or provide solutions to quality problems through designated channels.

3. Verify implementation of the solutions.

4. Assure that further processing, delivery, installation, or use is controlled until proper disposition of a nonconformance, deficiency, or unsatisfactory condition has occurred.

5. Stop work on an operation or installation when a violation of the applicable QA Program, procedure, specification or drawing is identified.

d. Following a Stop Work, work can resume only after verification of necessary corrective actions to bring the installation or operation into conformance.

e. Only the individual who places a Stop Work or a person of higher authority in his or her organization may release the stop work order. The Nuclear Oversight Manager or the Site Quality Verification Director, as appropriate, or their designee must concur with the release.

NOTE: **The use of "he" and its derivatives throughout this document is not gender specific; all such usage refers to specified individuals regardless of gender.**

## 2. RESPONSIBILITIES

This entire section defines responsibilities for Company personnel.

# 3. REQUIREMENTS

## 3.1 Organization

Commonwealth Edison Company is responsible for the assurance of quality in all phases of the design, procurement, construction, modification, testing and operation of the Stations. Management assigns areas of responsibility to Commonwealth Edison organizational elements and individuals. The Company's Quality Assurance Program describes the policy and requirements to carry out this responsibility. This Quality Assurance Program description documents the Program and is approved by the Nuclear Oversight Manager.

## 3.2 Delegation

The Company may delegate certain phases of the work to contractors, Architect-Engineers, or an NSSS Supplier, who act as the Company's agents in the assigned areas. The Company also assigns the authority required to do this, including certification and stamping in accordance with the ASME Code.

The Company delegates these responsibilities in writing. Commonwealth Edison retains responsibility for procurement, design, construction, modifications, and operation of the plant including certification and stamping in accordance with the ASME Code.

## 3.3 Functional Responsibilities

### 3.3.1 NSSS Supplier

Responsibility for the Nuclear Steam Supply System is delegated to the NSSS Supplier. The NSSS Supplier shall:

a. Provide the mechanical, structural and electrical design of the NSSS plant to the Nuclear Engineering and Technology Services Department or the Site Engineering and Construction Department.

b. Review their own designs.

c. Evaluate the Architect-Engineers' designs and perform other independent evaluations as requested.

d. Document these reviews and evaluations and supply them to the Company.

e. Establish and maintain procurement control for NSSS components.

f. Furnish technical and quality control assistance for on-site activities relating to the NSSS.

g. Furnish rough draft test procedures to the Company.

h. Evaluate final draft test procedures when requested.

i. Work in accordance with a Commonwealth Edison accepted quality program.

### 3.3.2 Architect-Engineers

Responsibility for the design of structures, systems, and components not within the scope of the NSSS supplier may be delegated to an Architect-Engineering firm. When delegated, the Architect-Engineer shall:

a. Provide the mechanical, structural and electrical design of the plant to the Nuclear Engineering and Technology Services Department or the Site Engineering and Construction Department for their scope of responsibility.

b. Review their own designs.

c. Independently evaluate the NSSS supplier's designs and perform other independent evaluations as requested.

d. Document these reviews and evaluations and supply them to the Company.

e. Evaluate the NSSS Supplier procurement specifications.

f. Provide specifications for procurement of non-NSSS components and services.

g. Furnish rough draft test procedures to the Company.

h. Evaluate final draft test procedures when requested.

i. Independently evaluate vendor proposals for equipment and services, designs, vendor and contractor procedures, test reports, and design reports.

j. Perform document distribution when directed.

k. Work in accordance with a Commonwealth Edison accepted quality program.

### 3.3.3 Construction Contractors

The Company hires contractors to supply labor and service for maintenance, modification, and new construction. These contractors shall work to a Commonwealth Edison accepted quality program. This program may be the contractor's or the contractor may work in accordance with the Company's program. These contractors shall document their organization and any delegated responsibilities necessary to establish, execute, and verify the quality program.

### 3.3.4 Non-delegated Functional Requirements

The following description of the Company's non-delegated functional requirements are separated into two sections: establishment and execution of the quality program, and verification that the program has been implemented.

#### 3.3.4.1 Program Establishment and Execution

In order to establish and execute an effective Quality Assurance Program, Commonwealth Edison is organized to provide management services and administrative controls. These controls and services provide for effective

management of all aspects of quality related activities. This includes design, procurement, construction and modification, testing, and operations. The Company administers contracts that affect quality.

### 3.3.4.1.1 Design

Commonwealth Edison has engineering responsibility and design authority, makes final decisions on designs and implements engineering designs. The Company has the responsibility to properly translate the applicable Safety Analysis Report (SAR), regulatory requirements, ASME Code requirements, and design bases into specifications, drawings, procedures and instructions. This is accomplished by qualified personnel performing detailed design activities or reviewing and controlling the design work involving electrical, mechanical, structural and instrumentation and control designs of the NSSS Supplier and Architect-Engineer.

Commonwealth Edison is responsible for design changes.

The Company performs detailed design activities and issues design documents in accordance with approved procedures. For operating plants, the Company supervises the electrical, mechanical, structural, instrumentation and control and nuclear engineering activities involved in nuclear station modifications and maintains a configuration management program.

In addition, the Site Engineering and Construction (SEC) organization oversees the Site Architect-Engineer field group at those locations where one is established.

Finally, the Company notifies jurisdictional authorities of the location of Code related permanent records.

### 3.3.4.1.2 Procurement

Commonwealth Edison performs technical evaluations of service contractors for placement on the Company's Quality Approved Bidders List. The Company directly controls procurement of non-NSSS

components and services based on specifications prepared by the Company and Architect-Engineers. The Company receives and furnishes necessary storage facilities for designated items.

For operating plants, the Company prepares and processes Safety-Related and Code specifications for the award of service contracts for maintenance or modification work.

**3.3.4.1.3 Construction**

The Company is responsible for construction quality assurance and manages all site construction activities.

The Company directs and manages contractors performing new station construction and maintenance and modification work at existing plants.

Further, the Company develops craft labor specifications and provides estimating and quality control services as required.

The Nuclear Support Department administers the Quality Control Inspector Qualification and Certification Program. They oversee Q.C. certification programs and direct Inspection Agency inspection and testing activities performed for the Company. They coordinate Non-Destructive Examination certification programs with the System Materials Analysis Department.

For new plant construction, the Company has ASME Section III, Division 1 and 2, constructor responsibilities and maintains Level III personnel on staff. These individuals are responsible for personnel development, certification of inspectors and qualification of procedures, as required by rules established in ASME Section III.

Further, the Company is responsible for the Form N-3 Data Report and other Owner N-type Data Reports, including stamping responsibility for ASME Section III, Division 1 and Division 2.

### 3.3.4.1.4 Operations Program

Commonwealth Edison controls pre-service testing (preoperational and start-up testing) and writes the final draft of pre-service tests.

For operating plants, the Company plans the modification test programs and provides modification test acceptance criteria.

For operations, the program is planned and implemented to provide the Company with confidence that safety related systems, structures and components perform satisfactorily in service.

For new plants, the Company performs mechanical, electrical instrumentation and structural construction tests.

### 3.3.4.2 Verification

In order to verify and control the effectiveness of the Quality Assurance Program, the Company is organized to provide for audit, surveillance, review, inspection and testing. These verification methods assure that activities performed are correct for all aspects of quality related activities which include design, procurement, construction and modification, testing, and operations.

If conditions which are adverse to quality and which require prompt action are found by Nuclear Oversight or Site Quality Verification personnel at locations where work subject to this QA program is conducted and required corrective measures cannot be agreed upon, the Nuclear Oversight Manager will be promptly notified. If necessary, the Senior Vice President and Chief Nuclear Officer will assure resolution in accordance with the ASME Code and this Program.

### 3.3.4.2.1 Design

Commonwealth Edison reviews and accepts the specifications and drawings for electrical, mechanical instrumentation, nuclear and structural material, equipment and erection work, prepared by the Architect-Engineer and NSSS Supplier. The purpose of these reviews is to

verify inclusion of inspection, testing and acceptance criteria. The Company reviews the Architect-Engineer's evaluation of fabricator and erector's detailed designs, drawings and work instructions for reasonableness and completeness.

The Company assures that personnel certifying ASME Section III design activities are qualified Registered Professional Engineers in accordance with ASME N626.3-1988.

Commonwealth Edison assures that Architect/Engineers and NSSS Suppliers maintain procedures to assure that their personnel certifying ASME Section III design activities are qualified Registered Professional Engineers in accordance with ASME N626.3-1988.

The Company provides qualified personnel to review and approve the resolution of nonconformances relating to electrical, mechanical instrumentation and structural portions of the plant and to evaluate discrepant modification test results for operating plants.

The Company audits the design review system of Architect-Engineers, Nuclear Fuel Vendors and NSSS Suppliers.

#### 3.3.4.2.2 Procurement

Commonwealth Edison analyzes bids to assure that necessary quality requirements are included in purchase orders and contracts. The Company evaluates the NSSS Supplier procurement specifications and audits and inspects the NSSS Supplier's control measures.

Audits of off-site contractors are performed as required to assure quality functions.

At times, the Company may assign an Independent Inspection Agency to overview work occurring at off-site supplier's plants to verify that the Company's Quality Assurance and technical requirements are implemented.

### 3.3.4.2.3 Construction

The Company provides new project construction quality assurance.

Organizational elements are assigned to:

a. Closely monitor the construction quality assurance activities of on-site contractors and others.

b. Independently evaluate site contractor quality assurance programs.

c. Verify that construction activities carried out by site contractors conform to procurement document requirements.

d. Verify conformance and completeness of contractor's installation or erection to specification requirements.

e. Review, comment, and approve on-site contractor quality instructions and procedures.

f. Prepare checklists for witnessing inspection notification points at vendor plants.

g. Inspect and designate status of incoming material at the site.

h. Review inspection procedures.

i. Monitor quality control activities of contractors at the site.

j. Initiate those actions which are required to ensure that the assigned work is completed, in accordance with technical and design requirements.

k. Provide performance assessments of contractor work.

l. Audit and survey the compliance of the contractors to their accepted quality assurance program.

The Company has the functional responsibility to perform inspections of site construction activities but may assign these responsibilities to an Independent Inspection Agency. If assigned, these activities shall include inspection and testing, and to determine and report whether items conform to design, test and specification requirements or to reject unsatisfactory materials, equipment or workmanship.

The Company shall take the necessary steps to assure repair, rework or processing of a nonconformance report based on rejection by an Independent Inspection Agency.

For new project construction, the Company will establish a Site Quality Verification group. They will provide independent verification of the program compliance by audit and surveillance. This group will be established similar to Site Quality Verification Departments at operating sites. Sufficient qualified personnel are assigned to this group to assure program compliance but will average from one to twenty. This group may employ an Independent Inspection Agency to provide inspection and testing.

### 3.3.4.2.4 Pre-Service Testing

During new project construction, the Company assures that an acceptable test program is implemented. Organizational elements are assigned to:

a. Evaluate and independently confirm test results by internal evaluation.

b. Manage and perform tests with technical assistance from the NSSS Supplier or the Architect-Engineer as appropriate.

### 3.3.4.2.5 Operations Verification

During operations, the Company assures that the Quality Assurance Program described in this document is acceptably established and executed. This is done by assigning organizational elements to:

a. Establish and execute quality procedures to be used by the station staff, or those under their direction, for operating, maintenance, modifications, in-service inspection, refueling and stores activities.

b. Assure that such procedures and instructions comply with the policies contained in this Quality Assurance Program.

c. Review and approve Station Procedures and instructions and revisions thereto as provided for in the Technical Specifications.

d. Make temporary changes to station operating procedures which do not change the intent of the original procedures as described by Technical Specifications. These changes are reviewed and approved in the same manner as the original procedure.

## 3.4 DESCRIPTION OF GENERAL RESPONSIBILITIES

The Commonwealth Edison Company organization as related to Quality Assurance is shown in Exhibit 1.

Organizations which will be activated for future nuclear station construction are shown in Exhibit 2.

The Company assigns responsibilities for specific requirements through the Quality Assurance Program Database.

Brief discussions of the duties and responsibilities of those personnel indicated on Exhibit 1 are as follows:

### (3.4.) 1 Chairman and CEO

The Chairman and Chief Executive Officer (CEO) is responsible for overall corporate policy. The Chairman promulgates corporate policy through a staff which includes:

President
Senior Vice President and Chief Nuclear Officer
Senior Vice President (Fossil Generation and Fuel)
Senior Vice President (Commercial Division Operations)

### (3.4.) 1.1 President

The President is responsible for Purchasing, Security, Environmental Services, Corporate Counsel, Public Relations and physical plant, other than generating stations. The President fulfills assigned responsibilities through a staff which includes:

Senior Vice President (Corporate Resources)

### (3.4.) 1.1.1 Senior Vice President (Corporate Resources)

The Senior Vice President is responsible for Purchasing, Security, System Materials Analysis Department, Environmental Services, and buildings except for nuclear facilities. He fulfills these responsibilities through a staff which includes:

System Materials Analysis Manager
Director of Corporate Security
Manager of Purchasing

#### (3.4.) 1.1.1.1 System Materials Analysis Manager

The System Materials Analysis Manager maintains the Company's off-site testing facilities and equipment for chemistry, metallurgy, nondestructive examination, and vibration analysis.

The Manager maintains an SNT-TC-1A qualified and certified Level III NDE person on staff who is responsible for personnel and procedure development and qualification to ASME Code requirements for nondestructive examination. This person may designate deputies for certification of personnel and procedures.

#### (3.4.) 1.1.1.2 Director of Corporate Security

The Director of Corporate Security is responsible for insuring that security programs at the nuclear stations effectively meet all commitments to, and the regulations of, the Nuclear Regulatory Commission.

### (3.4.) 1.1.1.3 Manager of Purchasing

The Manager of Purchasing purchases non-fuel goods and services to specifications and contract requirements prepared by responsible originating departments.

### (3.4.) 1.2 Senior Vice President and Chief Nuclear Officer

The Senior Vice President and Chief Nuclear Officer provides a single executive focal point for setting policies, objectives and priorities for the Nuclear Operations organization. He brings all resources involved in operations and direct support of operation under a single executive. He has overall responsibility for the Quality Assurance Program and plant nuclear safety. He fulfills these responsibilities through a staff which includes:

- Site Vice Presidents (six)
- Vice President of Nuclear Operations Support
- Nuclear Engineering and Technology Services Manager
- Nuclear Operations Manager
- Nuclear Oversight Manager

### (3.4.) 1.2.1 Site Vice President

Each of the six Site Vice Presidents operates and maintains the station for which he is responsible.

The Site Vice President is responsible for the Station's compliance with its NRC operating license, government regulations, ASME code requirements, the Company's Quality Assurance Program, and nuclear safety policies.

He fulfills these responsibilities through a staff which includes:

- Station Manager
- Site Engineering and Construction Manager
- Support Services Director

Regulatory Assurance Supervisor
Site Quality Verification Director
Long-Range Work Control Superintendent

### (3.4.) 1.2.1.1 Station Manager

The Station Manager is responsible for the safe, reliable and efficient day-to-day operation of the station for which he is responsible. He fulfills these responsibilities through a staff which includes:

Operations Manager
Technical Services Superintendent
Maintenance Superintendent
Work Control Superintendent (where established)

The Station Manager supervises the Station's on-site review function.

During periods when the Station Manager is unavailable, he designates this responsibility to an established alternate who satisfies the ANS 3.1 experience requirements for plant manager.

#### (3.4.) 1.2.1.1.1 Operations Manager

The Operations Manager is responsible for the safe, reliable and efficient operations of the station units.

#### (3.4.) 1.2.1.1.2 Technical Services Superintendent

The Technical Services Superintendent provides support for plant operations in the areas of technical support, chemistry and health physics.

#### (3.4.) 1.2.1.1.3 Maintenance Superintendent

The Maintenance Superintendent manages the day-to-day repair activities for mechanical, electrical and instrumentation equipment. He also supervises the Quality Control activities.

### (3.4.) 1.2.1.1.4 Work Control Superintendent

The Work Control Superintendent plans and oversees the station outages. In this capacity he manages the current outage and plans future outages.

### (3.4.) 1.2.1.2 Site Engineering and Construction Manager

The Site Engineering and Construction Manager provides design support engineering, modification engineering, and construction services to the station. He has responsibility and authority for all day-to-day design activities and is responsible for developing design policies and procedures as a member of the Nuclear Engineering Committee (NEC) as well as implementing the design policies and procedures established by the NEC. He maintains plant configuration control. He provides engineering and construction support to the Work Control Superintendent. He fulfills these responsibilities through a staff which includes:

Station Support Engineering Supervisor
Modification Design Supervisor
Site Construction Superintendent
Modifications Administrator (where established)

### (3.4.) 1.2.1.2.1 Station Support Engineering Supervisor

The Station Support Engineering Supervisor provides design support to Operations, Maintenance, and Systems Engineering. He maintains design cognizance in order to provide support for design changes, regulatory responses, and in order to initiate the design change process.

### (3.4.) 1.2.1.2.2 Modification Design Supervisor

The Modification Design Supervisor provides detailed design engineering and implementation of modifications. He oversees architect/engineer activities and is responsible for coordination of design with other plants.

### (3.4.) 1.2.1.2.3 Site Construction Superintendent

The Site Construction Superintendent directs site contractors and contract management. He provides contracted craft labor and contractor administration to Maintenance when requested.

### (3.4.) 1.2.1.2.4 Modifications Administrator

The Modifications Administrator provides support for scheduling and tracking modification activities and contracts for A/E modification services.

### (3.4.) 1.2.1.3 Support Services Director

The Support Services Director provides Training, Materials Management, MIS Services, Security Services, and Office Support to all organizations on site. He fulfills these responsibilities through a staff which includes:

Materials Management Supervisor
Training Supervisor

### (3.4.) 1.2.1.3.1 Materials Management Supervisor

The Materials Management Supervisor coordinates parts requirements, specifies and evaluates parts, procures all materials for the site, ships and receives that material and controls the on-site inventory.

### (3.4.) 1.2.1.3.2 Training Supervisor

The Training Supervisor provides training for all site personnel as required.

### (3.4.) 1.2.1.4 Regulatory Assurance Supervisor

The Regulatory Assurance Supervisor is the station's administrative support for regulatory matters. He assists the Site Vice President in assessing the station's regulatory performance. He assists the station in dealing with regulatory agencies and Nuclear Regulatory Services.

### (3.4.) 1.2.1.5 Site Quality Verification Director

The Site Quality Verification Director provides on-site assessment of station line and support activities to ensure compliance with Quality Assurance and Nuclear Safety Requirements. He fulfills this responsibility through a staff which includes:

Independent Safety Engineering Group Supervisor
Audit Supervisor
Integrated Analysis Administrator

The Site Quality Verification Director and staff report directly to the Site Vice President for Quality Assurance and Nuclear Safety matters. The Director has sufficient organizational freedom, authority, and responsibility to stop work when a violation of the Quality Assurance Program or Nuclear Safety issue is identified. The Director monitors the day-to-day station activities involving operating, modifications, maintenance, in-service inspection, refueling and stores through on-site audits, field monitoring, and safety evaluations. Significant safety or quality issues, requiring escalated action, will be directed through the Nuclear Oversight Manager to the Senior Vice President and Chief Nuclear Officer.

### (3.4.) 1.2.2 Vice President of Nuclear Operations Support

The Vice President of Nuclear Operations Support is the principal advisor on regulatory matters and requirements. His departments provide interactions with the NRC at the corporate level. He fulfills these responsibilities through a staff which includes:

Nuclear Regulatory Services Manager
Nuclear Support Manager

### (3.4.) 1.2.2.1 Nuclear Regulatory Services Manager

The Nuclear Regulatory Services Manager is the administrative liaison between the Company and regulatory bodies. He coordinates division-wide programs that support licensing or regulatory assurance initiatives,

helps in developing positions and coordinates responses to regulatory inquiries and notifications. He fulfills these responsibilities through a staff which includes:

Licensing Operations Director
Director of Strategic Licensing Policies and Regulatory Performance
Emergency Preparedness Director
ICC Regulatory Services Director

### (3.4.) 1.2.2.1.1 Licensing Operations Director

The Licensing Operations Director is the liaison between the Company and the NRC staff. He is concerned with the licensing process and the materials issued by the NRC that affect all plants.

### (3.4.) 1.2.2.1.2 Director of Strategic Licensing Policies and Regulatory Performance

The Director of Strategic Licensing Policies and Regulatory Performance develops and oversees implementation of the Company's policy on generic and strategic licensing issues. He is also the liaison between the Company and the NRC Region III Staff, and he is concerned with inspections, SALP and Licensee Performance.

### (3.4.) 1.2.2.1.3 Emergency Preparedness Director

The Emergency Preparedness Director maintains the Company's readiness to respond to certain emergencies at the nuclear plants. He maintains the Emergency Plan and coordinates training to support the plan.

### (3.4.) 1.2.2.1.4 ICC Regulatory Services Director

The ICC Regulatory Services Director prepares and responds to all ICC Regulatory Examinations of the Nuclear Operations organization. He supports the Company's Litigation Activities concerning Nuclear Operations.

### (3.4.) 1.2.2.2 Nuclear Support Manager

The Nuclear Support Manager provides support to the stations in the areas of Maintenance and Quality Control, Training, Chemistry, Health Physics, Operations, Outages and Technical Support. He and his staff provide an off-site point of contact for Station Quality Control if off-site assistance is necessary for quality related matters. The Manager maintains an appointed Chief Level III Certifying Authority on staff who is responsible for qualification and certification of NQA-1 Inspection and test personnel. This person may designate deputies for certification of personnel.

### (3.4.) 1.2.3 Nuclear Engineering and Technology Services Manager

The Nuclear Engineering and Technology Services Manager is the Chairman of the Nuclear Engineering Committee (NEC) which is comprised of himself and the six Site Engineering and Construction Managers. The NEC has the responsibility to establish policies and procedures to ensure that design activities are conducted in compliance with regulations and the ASME Code in a manner that supports safe and reliable operation. The Nuclear Engineering and Technology Services Manager provides engineering and construction support to the nuclear stations. He is responsible for the configuration management control programs. He provides generic programs for technical and licensing issues. He provides the design for nuclear fuel and certain in-core components. The manager advises the Senior Vice President and Chief Nuclear Officer on priorities for engineering and construction activities at the six stations. He manages the centralized stores facilities and services for the Nuclear Operations organization. The Manager is the designated holder of the Company's N-stamp. He notifies the Illinois Department of Nuclear Safety (the jurisdiction) of the location of required Code records. The Manager maintains an appointed Level III Concrete Inspection Engineer on staff responsible for the qualification and certification of concrete inspection and testing personnel. He fulfills these responsibilities through a staff which includes:

Nuclear Fuel Services Manager
Electrical Instrumentation and Control Engineering Superintendent
Engineering Performance and Improvement Superintendent

Mechanical and Structural Engineering Superintendent
PRA, Reliability Engineering and Design Administration Superintendent
Regulatory Assurance Supervisor
Nuclear Stores Director
Nuclear Construction Superintendent

### (3.4.) 1.2.3.1 Nuclear Fuel Services Manager

The Nuclear Fuel Services Manager is responsible for the design and monitoring of nuclear fuel. He monitors fuel reliability, provides design for reload licensing, provides the safety analysis for each reload, and provides support for reactor operation.

### (3.4.) 1.2.4 Nuclear Operations Manager

The Nuclear Operations Manager is responsible for implementation of policy and decisions within the Nuclear Operations organization. He is responsible for planning and Chief Nuclear Officer policy statements, procedures and instructions. The manager is responsible for all internal and external Chief Nuclear Officer communications. He is the liaison for management training in the Nuclear Operations organization.

### (3.4.) 1.2.5 Nuclear Oversight Manager

The Nuclear Oversight Manager manages the Quality Assurance Program and Safety Review. He reports directly to the Senior Vice President and Chief Nuclear Officer and is independent of Nuclear Operations. The Manager must have at least four years experience in the field of quality assurance, or an equivalent number of years of nuclear power plant experience in a supervisory position or a combination of the two. The Manager shall have at least a baccalaureate degree in Engineering or related science. The Manager may have equivalent educational qualifications in accordance with paragraph 4.1 (items a-j) of ANSI/ANS 3.1. He develops, maintains, and interprets the Company's Quality Assurance and nuclear safety policies, procedures, and

implementing directives. He is responsible for the vendor audit program and for conducting audits of the Corporate organizations responsible for nuclear functions and the Site Quality Verification organization to verify that the Quality Assurance Program is effectively implemented.

He has the authority and responsibility to stop work when a violation of the Quality Assurance Program, procedures, specifications or drawings is identified.

The Nuclear Oversight Manager is the certifying authority for audit personnel.

He fulfills these responsibilities through a staff which includes:

Corporate Quality Verification Director
Director of Safety Review
Director of Quality Assurance Policy & Support

**(3.4.) 1.2.5.1 Corporate Quality Verification Director**

The Corporate Quality Verification Director and his staff audit internal and external organizations as required by the Quality Assurance Program. He verifies that submitted vendors' quality assurance programs comply with Company requirements. He reviews procurement documentation to assure compliance with the Quality Assurance Program. He has the authority and responsibility to stop work when a violation of the Quality Assurance Program, procedures, specifications or drawings is identified.

**(3.4.) 1.2.5.2 Director of Safety Review**

The Director of Safety Review and his staff provide the independent safety review function for station activities on a routine basis. He is the contact point for industry operating experience and lessons learned information and analysis.

### (3.4.) 1.2.5.3 Director of Quality Assurance Policy & Support

The Director of Quality Assurance Policy & Support establishes, maintains and interprets Company Quality Assurance Policy. He provides training to the Company on Quality Assurance subjects and establishes the requirements for auditor certification. He and his staff control and maintain the Quality Assurance Program database.

### (3.4.) 1.3 Senior Vice President (Fossil Generation and Fuel)

The Senior Vice President (Fossil Generation and Fuel) provides resources and support for the operation and maintenance of the fossil stations and the procurement of fuels. He fulfills these responsibilities through a staff which includes:

Vice President Fossil Operations
Vice President, Fuels

### (3.4.) 1.3.1 Vice President, Fuels

The Vice President, Fuels procures nuclear fuel and reprocessing to specifications furnished by the Nuclear Fuel Services Department.

### (3.4.) 1.4 Senior Vice President (Commercial Division Operations)

The Senior Vice President (Commercial Division Operations) is responsible for the transmission and distribution of electricity to the customers and all support activities associated with it. He fulfills these responsibilities through a staff which includes:

Vice President, Transmission and Distribution Operations

### (3.4.) 1.4.1 Vice President, Transmission and Distribution Operations

The Vice President, Transmission and Distribution Operations is responsible for the care and maintenance of the Transmission and

Distribution Systems. He fulfills these responsibilities through a staff which includes:

T&D Operational Analysis Department Manager

**(3.4.) 1.4.1.1 T&D Operational Analysis Department Manager**

The T&D Operational Analysis Department Manager provides specialized field testing services through technical specialists. He provides calibration services traceable to National Standards for measuring and testing equipment. The Manager retains supporting Quality Assurance documentation. The Manager maintains the Company's electrical testing facilities and equipment required to fulfill assigned responsibilities. His staff reviews design specifications to verify the inclusion of adequate electrical testing requirements. Also, the Manager is responsible for inspection and proof testing of electrical generation, transmission and distribution equipment. During new projects construction, the Manager directs field engineers who conduct electrical construction tests and participate in preoperational and start-up testing.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI 18.7
- ANSI/ASME NQA-1
- ASME SEC III NCA 4000
- ANSI N45.2.1
- ANSI N45.2.2
- ANSI N45.2.3
- ANSI N45.2.4
- ANSI N45.2.5
- ANSI N45.2.8
- ANSI N45.2.9
- ANSI N45.2.15
- ANSI N45.2.20

DRAFT

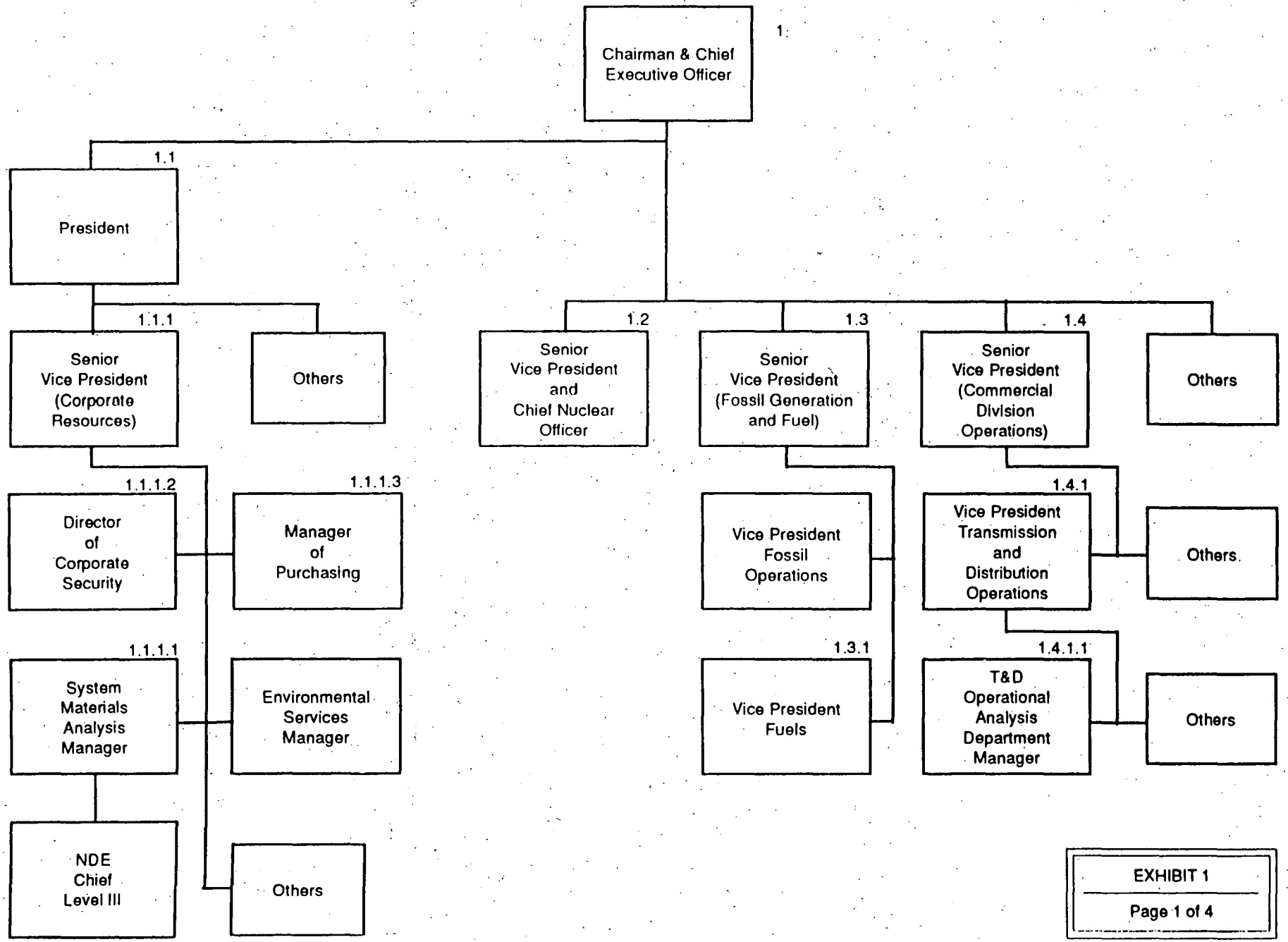



EXHIBIT 1

Page 1 of 4

REVISION 65 2/15/94

DRAFT

DRAFT

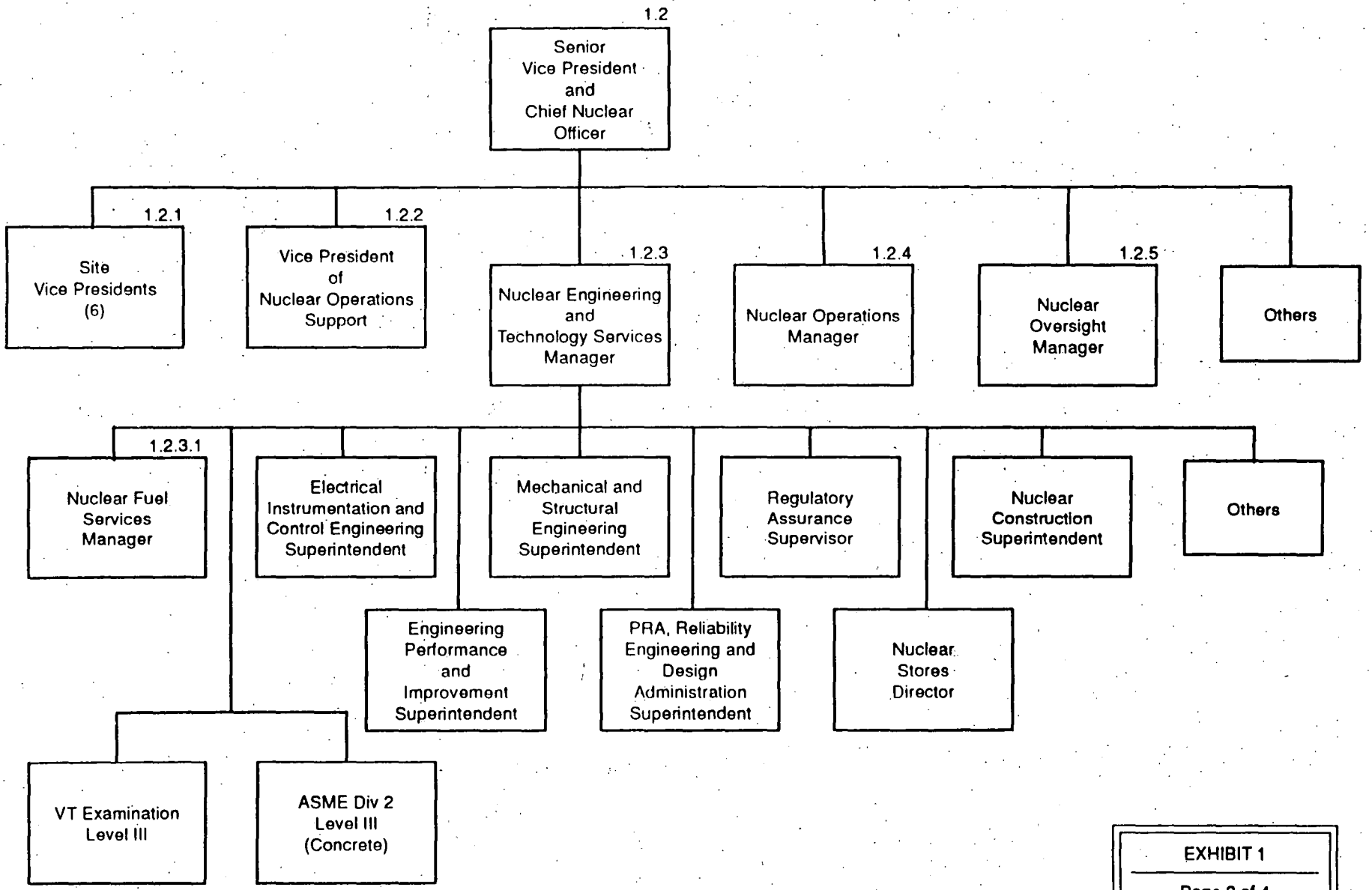



EXHIBIT 1

Page 2 of 4

REVISION 65 2/15/94

DRAFT

DRAFT

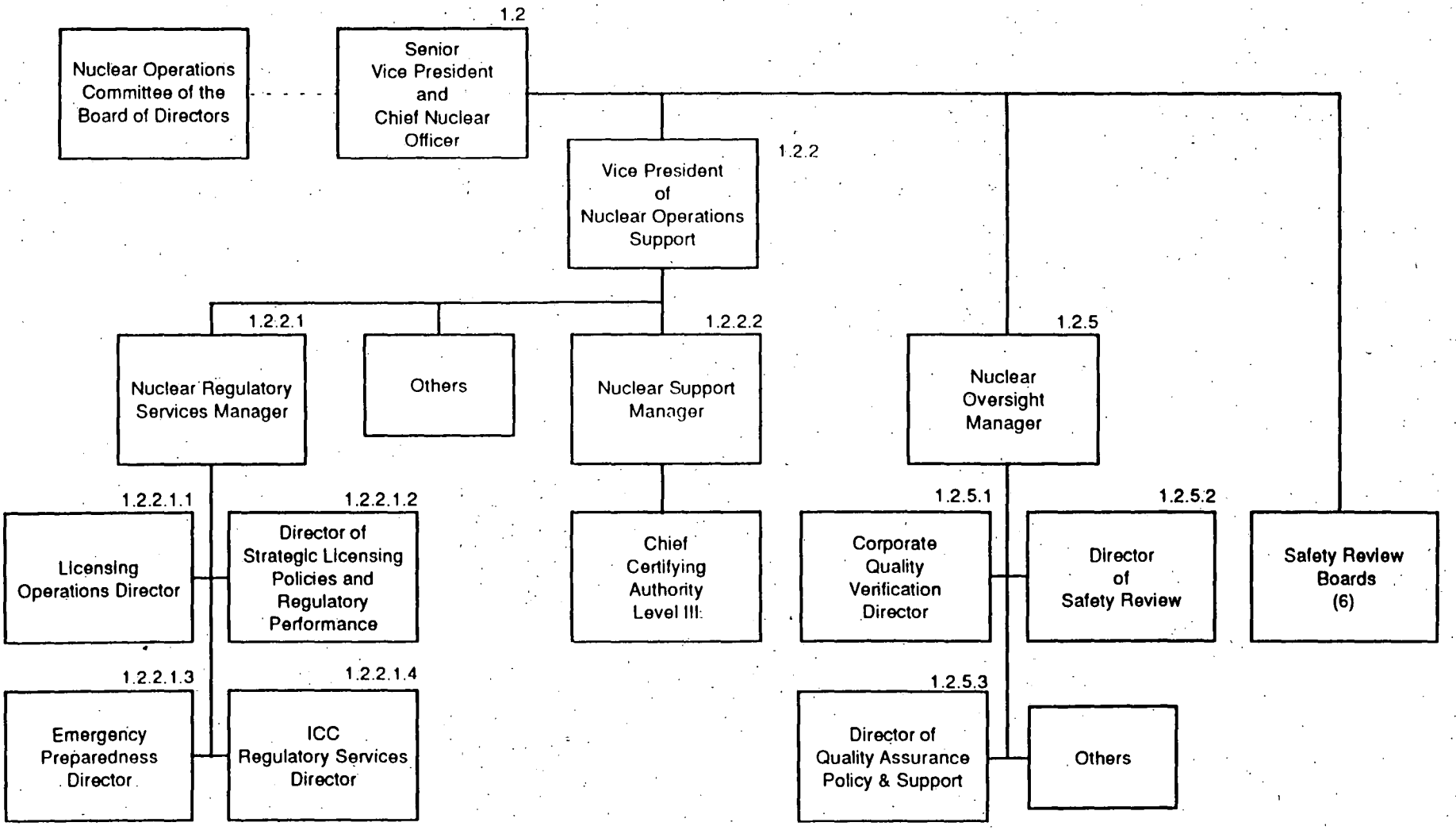


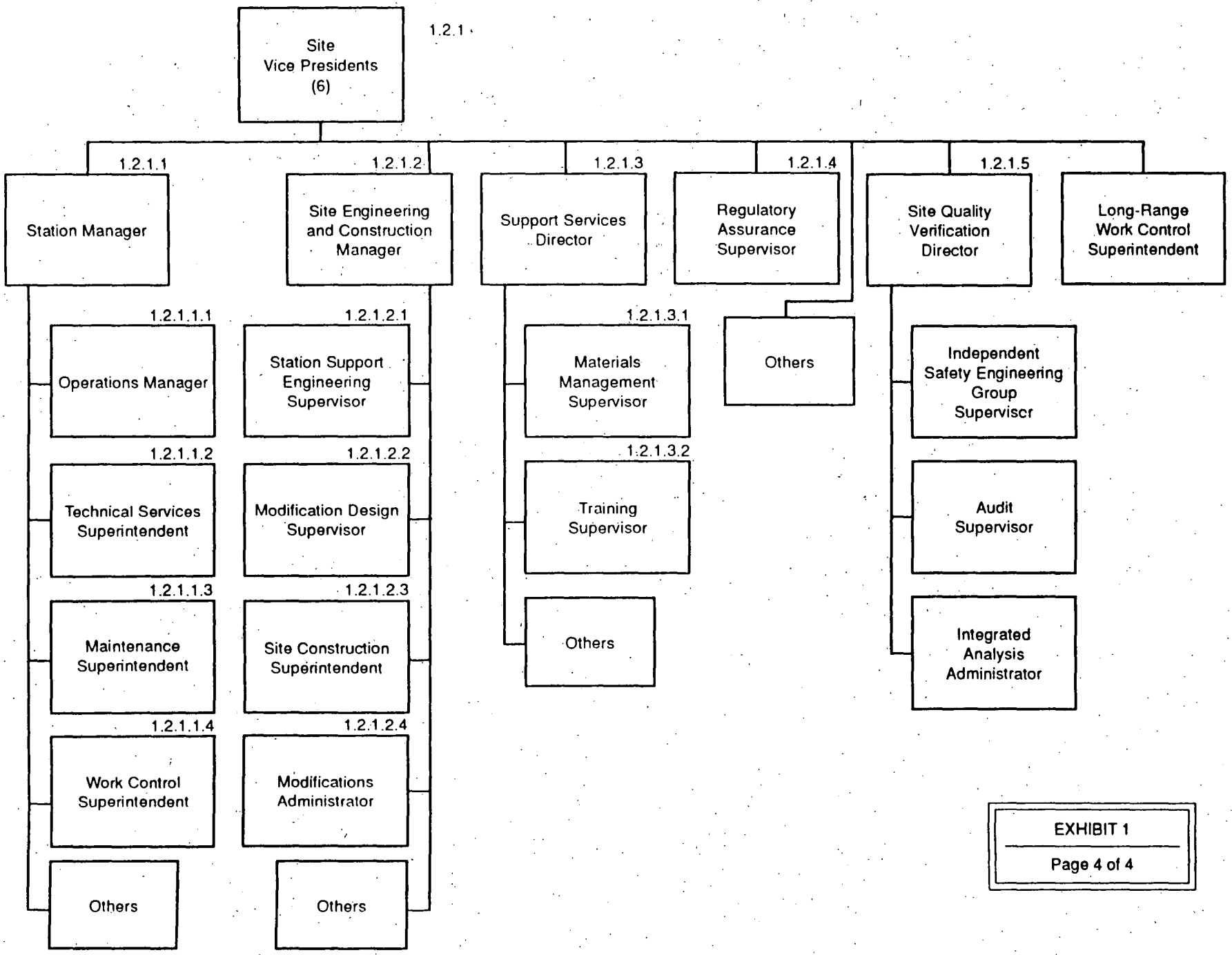

EXHIBIT 1

Page 3 of 4

REVISION 65 2/15/94

DRAFT

DRAFT




REVISION 65 2/15/94

EXHIBIT 1

Page 4 of 4

DRAFT

DRAFT

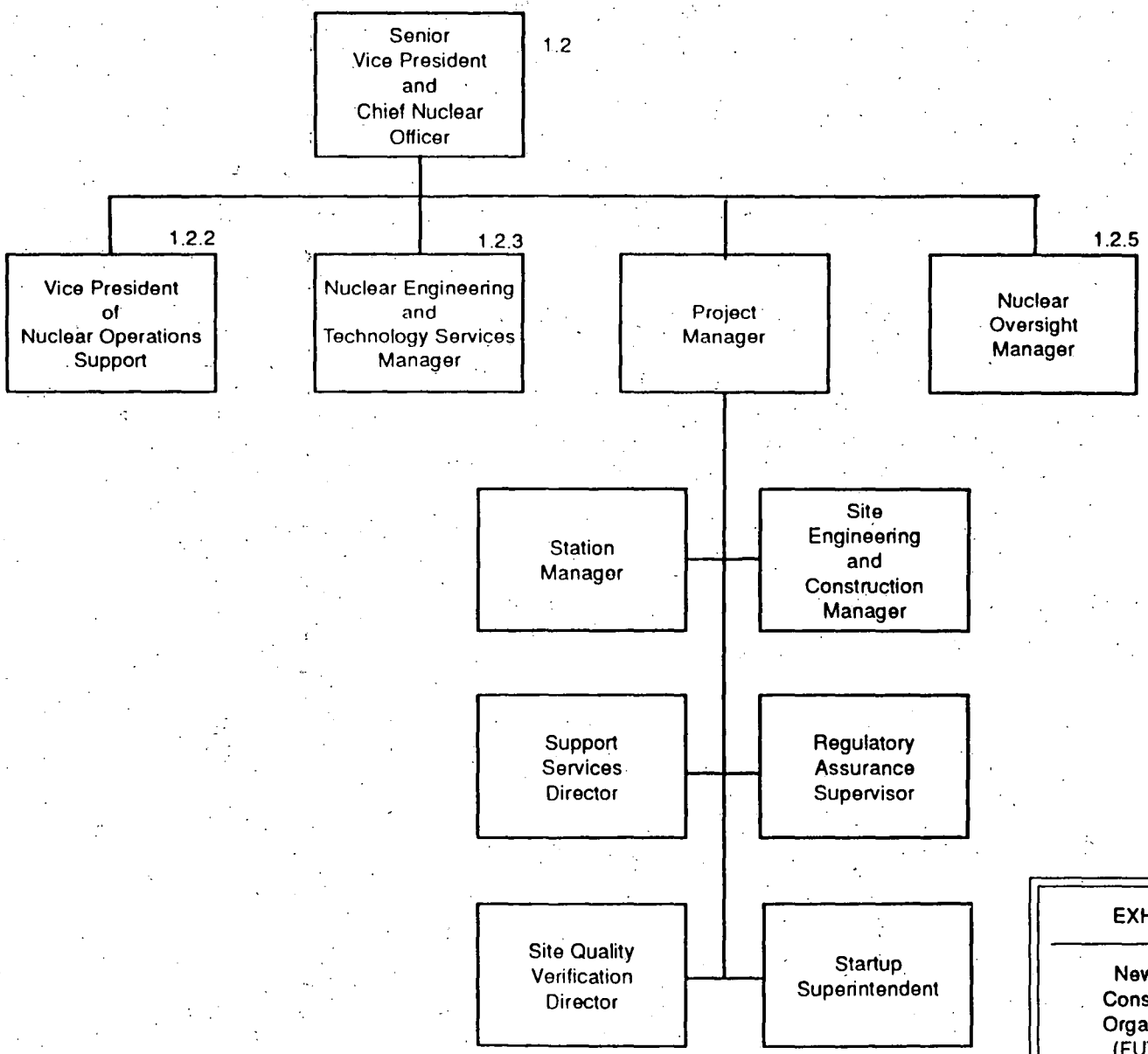



EXHIBIT 2

New Plant Construction Organization (FUTURE)

REVISION 65 2/15/94

DRAFT

# 1. POLICY

It is the policy of the Company to have a Quality Assurance Program that:

a. Complies with ASME Code, Federal Regulations, and other requirements.

b. Defines and documents the requirements and commitments that, when implemented, protect the health and safety of the public and our workers.

c. Serves to protect the interests of the Company.

# 2. RESPONSIBILITIES

All departments involved in the production of nuclear power are governed by this program and are responsible for carrying out the requirements of this section. These departments include:

Nuclear Operations Division
Nuclear Stations
Site Regulatory Assurance Department
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Support Department
Nuclear Operations Staff
Nuclear Regulatory Services Department
Nuclear Oversight Department
Purchasing Department
Corporate Security Department
Systems Materials Analysis Department
T&D Operational Analysis Department

# 3. REQUIREMENTS

## 3.1 General

Either regulation or the Company, independent of regulations, requires the activities of the Quality Assurance Program. As such, this program meets the intent of the word "shall" as used in regulations and ANSI and ASME documents.

This program applies without limitation to safety related or ASME Code structures, systems, components, and activities. It also applies as described in Section 19 to regulatory related structures, systems, components and activities to a degree consistent with their importance to safety.

This Quality Assurance Program is in effect during all phases of the design, fabrication, erection, testing, operation and decommissioning of the Company's nuclear power plants. "Operation" includes operation, maintenance, repair, modification, refueling, and in-service inspection.

The Quality Assurance Program takes into account the need for special controls, processes, test equipment, tools, and skills necessary to attain the required quality and the need for the verification of quality by inspection and test.

This Quality Assurance Program complies with the quality requirements of:

a. 10CFR50

   1. Paragraph 55a
   2. Paragraph 55(e)
   3. Paragraph 59
   4. Appendix A
   5. Appendix B
   6. Appendix R

b. 10CFR21

c. 10CFR71 Subpart H
d. ASME Boiler and Pressure Vessel Code (CODE) Section III (NCA 4000), Division 1 and Division 2, 1992
e. ASME Code Section XI, 1992
f. ANSI/ANS 3.2, 1988
g. ANSI/ASME NQA-1, 1989 (1a, 1b)
h. ANSI/ASME NQA-2, 1989
i. ANSI/ANS 3.1, 1981

This Quality Assurance Program complies with the programmatic quality requirements of the following standards. Specific work practices and acceptance criteria are reflected in implementing procedures.

a. ANSI N101.4, 1972
b. AWS D1.1-80
c. IEEE Standard 323, 1974

Because of compliance with the above list of standards, this Quality Assurance Program also complies with the regulatory positions of the following Regulatory Guides:

a. 1.26 Rev 3
b. 1.28 Rev 3
c. 1.29 Rev 3
d. 1.33 Rev 2
e. 1.54 (6/73)
f. 1.68 Rev 2
g. 1.143 Rev 1
h. 4.15 Rev 1

ANSI/ASME NQA-1, 1983 and ANSI/ASME NQA-2, 1986 were written to replace ANSI N45.2 and selected daughter standards. Among these the Company had previously been committed to:

a. ANSI N45.2.1, (1973)
b. ANSI N45.2.2, (1972)
c. ANSI N45.2.3, (1973)
d. ANSI N45.2.4, (1974) (IEEE STD 336)
e. ANSI/ASME N45.2.5, (1978)
f. ANSI N45.2.8, (1975)
g. ANSI N45.2.9, (1975)
h. ANSI N45.2.11, (1974)
i. ANSI N45.2.13, (1976)

Because this program complies with NQA-1 and the programmatic requirements of NQA-2, the intent of the following Regulatory Guides is also met:

a. 1.30 Rev 0
b. 1.37 Rev 0
c. 1.38 Rev 2
d. 1.39 Rev 2
e. 1.58 Rev 1
f. 1.64 Rev 2
g. 1.74 (2/74)
h. 1.88 Rev 2
i. 1.94 Rev 1
j. 1.116 Rev 0
k. 1.123 Rev 1
l. 1.144 (9/80)
m. 1.146 (8/78)

The Company's Nuclear Units have differing effective Operating License dates. Each plant's SAR and/or Technical Specifications documents the extent of commitments to technical requirements of Regulatory Guides, Safety Guides and/or ANSI Standards. However, this quality assurance program applies to all operations and includes those quality requirements contained in the documents listed in this section.

Also, the Company requires that each of its vendors maintain a quality assurance program which satisfies the applicable portions of:

a. ANSI/ASME NQA-1 and ANSI N45.2 Standards not covered by ANSI/ASME NQA-1 or the ANSI/ASME N45.2 series of standards for previously accepted, non-ASME quality programs.

b. ANSI/ASME N18.7 Standards.

c. ANSI/ASME N626.3, 1988, for firms supplying ASME Code design services.

## 3.2 Planning

### 3.2.1 General

All quality activities are planned to achieve their objectives. Such planning includes review of relevant requirements. Planning establishes the systematic, sequential progression of actions to meet the defined requirements.

The Company documents these plans in appropriate communications, approvals, instructions, and procedures.

### 3.2.2 Controlled Conditions

Activities described in this program are accomplished under controlled conditions. Controlled conditions include appropriate equipment, qualified personnel, suitable environment, and use of appropriate procedures. Other sections of this program describe these controlled conditions.

### 3.2.3 Program Planning

An Audit Program will be planned and conducted in accordance with Section 18 of this program.

A Design Program will be planned and conducted in accordance with Section 3 of this program.

A Procurement Program will be planned and conducted in accordance with Sections 4, 7, 8, and 13 of this program.

## 3.3 Program Description

The Company's total program for providing administrative controls and quality assurance is incorporated in many diverse documents. Exhibit 1 shows the relationship among the most important classes of these documents for the Quality Assurance Program. This document is the QA Program and serves as the company policy directive for Nuclear Quality Assurance. Nuclear Operating Policies may provide implementation of this program. At the interdepartmental level, the Special Process Procedure Manual and the QA Directives describe interdepartmental requirements to implement the QA Program. Nuclear Operating Directives may also provide implementation of the QA Program at this level. At the intra-departmental level, implementing procedures are written to the extent necessary to assure consistent results by all

departments which implement the Policy and the QA Program. Approved procedures and instructions implement the quality requirements. Line, staff, administrative, and quality oversight organizations issue these implementing procedures. All activities affecting quality are described in sufficient detail to assure quality.

The implementation of the QA Program will be tracked by the Quality Assurance Database. In the interim, the Quality Procedures serve as the implementing documents for the Quality Assurance Program. Quality Procedure 2.0 provides a description of the implementation of the program and the relationship between the QA Program and the existing Quality Procedures until the Quality Assurance Database is operative for this function.

The Quality Assurance Program Database summarizes the sources of requirements and the relationship among them and the QA program.

### 3.4 Indoctrination & Training

Personnel performing activities affecting quality are oriented, indoctrinated, and trained as necessary to assure achievement and maintenance of suitable proficiency. Training programs are developed to indoctrinate, qualify and/or certify personnel in specific activities in which they will be engaged. These training programs include:

a. Quality Assurance Program.
b. Quality principles.
c. Company policies.
d. Implementing procedures.

Training is conducted in a time frame adequate to prepare personnel for their job responsibilities and is an extension of formal education or work experience. Training required for specific qualifications or certifications is conducted and documented in accordance with applicable regulations and requirements including the requirements of NQA-1. Qualification documents specify functions and basis of qualification. Personnel

performing or verifying activities affecting quality are tested to determine if established levels of knowledge and proficiency are attained. Proficiency of personnel performing and verifying activities affecting quality is maintained by retraining, reexamining and/or recertifying as determined by management or required by Code.

Training and certification of personnel associated with nondestructive examination are carried out in accordance with the requirements of NQA-1 and ASME Section III, NX-5520. A Level III certified person administers all Code examination activities.

Training and certification of personnel associated with concrete containment inspections is in accordance with Appendix VII of ASME Section III, Division 2. The period of qualification for concrete inspectors is three years.

Vendor personnel engaged in inspection, examination and testing activities will be trained, qualified and certified to perform their specific activity under the above requirements.

### 3.5 Program Review

The Company regularly reviews the status and adequacy of the Quality Assurance Program. Reports to management described in Sections 1 and 18 of this Program fulfill this requirement. Vendors are required to perform regular reviews of the status and adequacy of their quality assurance programs. The Nuclear Oversight Department defines and measures the overall effectiveness of the Quality Assurance Program.

The independence of the Nuclear Oversight Department is described in Section 1 of this program. Nuclear Oversight uses its own audits and evaluations in determining quality assurance program and corrective action effectiveness as described in Sections 16 and 18 of this program. Independent reviews are described in Section 18 of this program.

### 3.6 Quality Assurance Manual

The Company Quality Assurance Manual consists of this Quality Assurance Program document, and the Quality Assurance Program Database. The Quality Assurance Program Database contains:

a. The Quality Assurance Program.
b. The pertinent parts of source documents.
c. Cross-references among these elements.
d. Cross-references to the responsible departments and implementing procedures.

The Manual is available to Company personnel, NRC personnel, the Authorized Nuclear Inspector, and other regulatory authorities. The Company submits revisions to the Quality Assurance Program document (as the Topical Report) to the NRC for acceptance as follows:

a. Programmatic changes which reduce commitments must be accepted prior to implementation.

b. Substantive changes (Organizational, operational, etc.) will be submitted within 30 days of effective date.

c. Changes, editorial changes, reassignments which do not reduce commitments may not be submitted at the time of the change, but are submitted at least once every two years.

The Authorized Nuclear Inspector Supervisor accepts proposed changes before they are put into effect. Changes are distributed.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in this section. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 APPENDIX B Criteria 2
- ANSI/ASME NQA-1

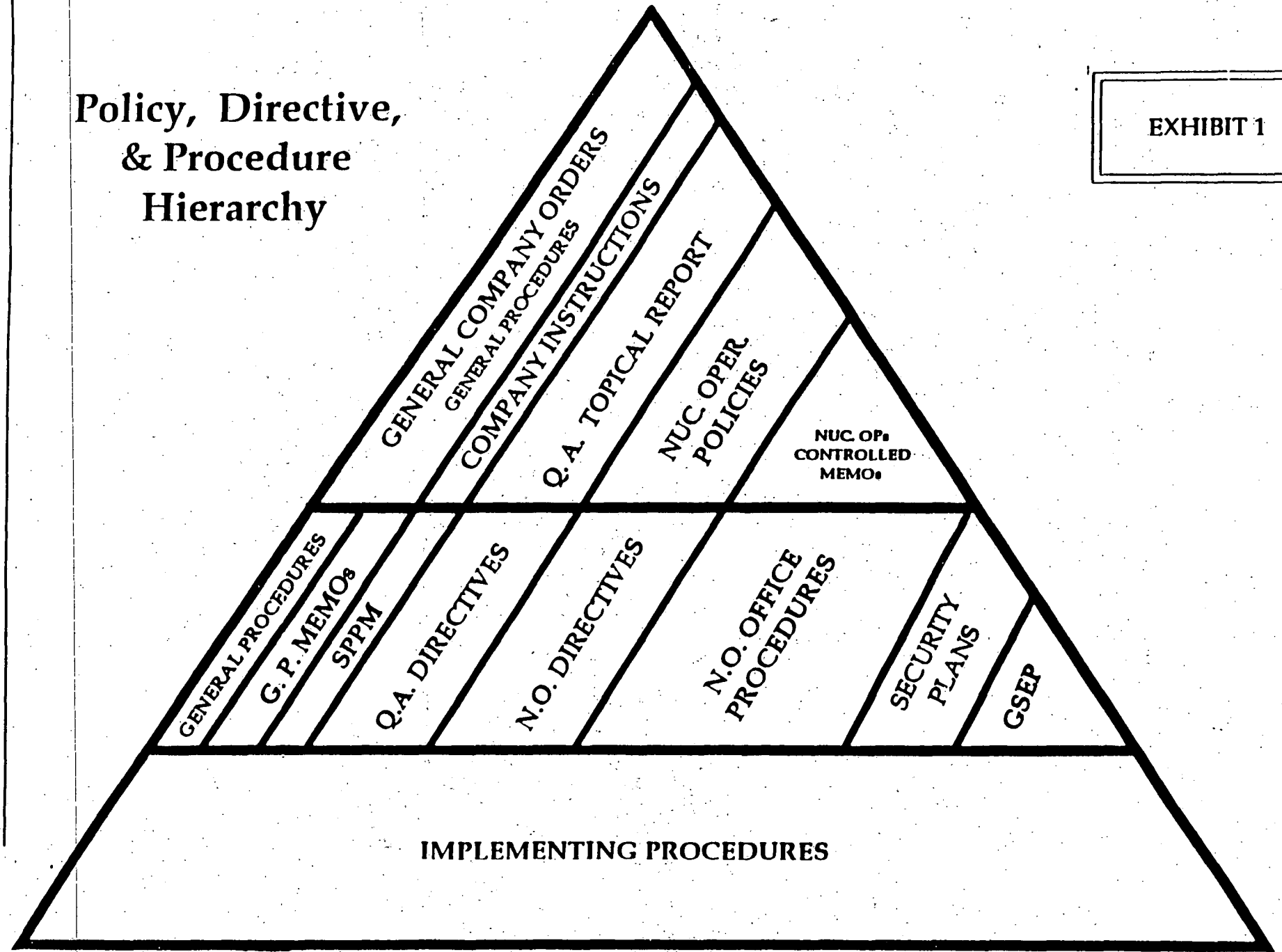
- ANSI N18.7
- ANS 3.2
- ANSI N45.2
- ANSI N45.2.11
- ANSI N45.2.9
- ASME Code Section III NCA-4000
- ANSI N45.2.3
- ANSI N 101.4
- LaSalle Station FSAR 7/83
- Byron/Braidwood Stations FSAR 9/79
- ANSI N45.2.4
- IEEE N45.2.1
- ANSI N45.2.1
- ANSI N45.2.5
- ANSI N45.2.13
- ANSI N45.2.8
- Technical Specifications: Byron, Braidwood, Dresden, LaSalle, Quad Cities, Zion Stations

DRAFT



# Policy, Directive, & Procedure Hierarchy

EXHIBIT 1






DRAFT

# 1. POLICY

Design, design interfaces, and design changes shall be defined, controlled and verified.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Oversight Department
Purchasing Department
Systems Materials Analysis Department
T&D Operational Analysis Department
Nuclear Fuel Services Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Nuclear Engineering and Technology Services Department and the Site Engineering and Construction Department are responsible for overall design and design control of mechanical, electrical, instrumentation and control, structural and nuclear related systems and components. The Nuclear Fuel Services Department is responsible for reactor core design analysis, core design specifications and design reviews, for nuclear fuel and in-core components. Specific responsibilities for these departments are stated in Section 1.

Design control involves independent review and evaluation of design documents. These design evaluations or reviews are conducted to written procedures and include consideration of quality standards, quality assurance requirements, materials suitability, process suitability, interface control, analytical or testing requirements, design basis, and configuration management.

### 3.2 Design Input

Design inputs, such as design bases, performance requirements, regulatory requirements, codes, and standards shall be identified and documented. Their selection shall be reviewed and approved by the responsible design organization. The design input shall be specified and approved in a timely manner and to the level of detail necessary to provide a consistent basis for making design decisions, accomplishing design verification, and evaluating design changes. Changes from approved design inputs, including the reason for the changes shall be identified, approved, documented, and controlled.

### 3.3 Design Process

The responsible design organization shall prescribe and document the design activities in a timely manner and to the level of detail necessary to permit verification that the design meets requirements. Included in this scope of activities are considerations for field engineering; physics; seismic, stress, thermal, hydraulic, and radiation factors; the Safety Analysis accident scenarios; and accessibility for inservice inspection, maintenance and repairs. Design documents shall be adequate to support facility design, construction, and operation. Selection of the appropriate quality standards shall be documented, reviewed and approved.

Reasons for changes from specified quality standards, shall be identified, documented, approved and controlled. Design methods, materials, parts, equipment, and processes that are essential to the function of the structure, system, or component shall be selected and reviewed for suitability of application. Applicable industry experience, as set forth in reports or other documentation, shall be made available to cognizant

design personnel. The final design output documents and approved changes thereto shall be relatable to the design input by documentation in sufficient detail to permit design verification. The final design shall identify assemblies and/or components that are part of the item being designed. If materials, parts, equipment, or processes are different from the published vendor information, these differences shall be documented.

### 3.4 Design Analyses

Design analyses shall be performed in a planned, controlled, and documented manner. Design analysis documents shall be legible and suitable for reproduction, filing, and retrieval. They shall be sufficiently detailed as to purpose, method, assumptions, design input, references, and units such that a person technically qualified in the subject can independently review and verify the analyses and its results. Calculations shall be identified for retrievability by subject including structure, system, component, originator, reviewer and date or by other unique identifiers.

Computer programs may be utilized for design analysis without individual verification of the program for each application provided:

a. The computer program has been verified to show that it produces correct solutions for the encoded mathematical model within defined limits for each parameter employed.

b. And the encoded mathematical model has been shown to produce a valid solution to the physical problem associated with the particular application.

Computer programs shall be controlled to assure that changes are documented and approved. Verification shall be required for changes to previously verified computer programs including evaluation of the effects of these changes on (a) and (b) above.

Documentation of design analyses shall include:

a. Statement of the objective of the analyses.
b. List of design inputs and their sources.
c. Results of literature searches or other applicable background data.
d. List of assumptions and indication of those that must be verified as the design proceeds.
e. List of any computer calculation and the bases for its use.
f. Review and approval.

### 3.5 Design Verification

Design adequacy shall be verified by one or more of the following: performance of design reviews, use of alternate calculations, or performance of qualification tests. The design verification method(s) used shall be identified and documented. The results of design verification shall be documented including the identification of the verifier. Design verification shall be performed by competent individual(s) other than those who performed the original design. Cursory supervisory reviews do not satisfy the intent of design verification.

Verification shall be performed in a timely manner. Design verification, for the stage of design activity accomplished, shall be performed prior to release for procurement, manufacture, construction, or release to another organization for use in other design activities provided sufficient data exists. Any unverified portion of the design shall be identified and controlled. In all cases the design verification shall be completed prior to relying upon the component, system, structure, or computer program to perform its function.

#### 3.5.1 Extent of Design Verification

The extent of the design verification required is a function of the importance to safety, the complexity of the design, the degree of standardization, the state of the art, and the similarity with previously proven designs. Where the design has been subjected to a verification process, the process need not be duplicated for identical designs. For

each application the applicability of standardized or previously proven designs for design inputs shall be verified. Known problems affecting the standard or previously proven designs and their effects on other features shall be considered. The original design and associated verification shall be adequately documented and referenced in subsequent applications. Design verification shall be required for changes to previously verified designs. This includes evaluation of the effects of those changes on the overall design and on any affected design analyses.

### 3.5.2 Methods

Acceptable verification methods include one or more of the following: design reviews, alternate calculations, and qualification testing.

#### 3.5.2.1 Design Reviews

Critical design reviews shall provide assurance that the final design is correct and satisfactory.

#### 3.5.2.2 Alternate Calculations

Calculations or analyses shall be made with alternate methods to verify correctness of the original calculations or analyses. The appropriateness of assumptions, input data used, and the computer program or other calculation method used shall be reviewed.

#### 3.5.2.3 Qualification Tests

When design adequacy is verified by qualification tests, the tests and test configuration shall be identified. Testing shall demonstrate adequacy of performance under conditions that simulate the most adverse design conditions. Where the test is intended to verify only specific design features, the other features of the design shall be verified by other means. Test results shall be documented and evaluated by the responsible design organization to assure that test requirements have been met. If qualification testing indicates that changes to the item are necessary to obtain acceptable performance, the change shall be documented and verified to assure satisfactory performance.

### 3.6 Change Control

Changes to final designs, field changes, modifications to operating facilities, and nonconforming items dispositioned use-as-is or repair shall be justified and subject to design control measures commensurate with those applied to the original design. These measures shall include assurance that the design analyses for the structure, system, or component are still valid. Changes shall be approved by the same affected groups or organizations which reviewed and approved the original design documents. In the case where the original organization is no longer responsible for design approval, then a new responsible design organization shall be designated. The designated organization shall have demonstrated competence in the specific design area of interest and have an adequate understanding of the requirements and intent of the original design.

When a design change is approved other than by revision to the affected design documents, measures shall be established to incorporate, where appropriate, the change into these documents.

Where a significant design change is necessary because of an incorrect design, the design process and verification procedure shall be reviewed and appropriate action taken.

Plant personnel will be made aware of design changes/modifications which may affect the performance of their duties.

### 3.7 Interface Control

Design interfaces shall be identified and controlled. The company shall coordinate design efforts among the participating organizations. Interface controls shall include the assignment of responsibility and the establishment of procedures among participating design organizations. Controls shall be for the review, approval, release, distribution and revision of documents involving design interfaces.

Design information transmitted across interfaces shall be documented and controlled.

### 3.8 Documentation and Records

Specific requirements are stated in Section 6 and Section 17.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI/ASME NQA-1
- ASME Section III, NCA-4000

# 1. POLICY

This section identifies the requirements for preparation, review and retention of procurement documents.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Oversight Department
Purchasing Department
Systems Materials Analysis Department
T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company establishes procedures for the preparation and review of procurement documents. Procurement documents at all tiers include or reference requirements that are deemed necessary to assure adequate quality. These requirements include reference to 10CFR21 when applicable.

### 3.2 Supplier QA Program Requirements

Procurement Documents require:

a. Each vendor who supplies safety related items or services has and implements a quality assurance program that meets the requirements of 10CFR50 Appendix B.

b. For purchases of ASME Code items or services, the vendor's quality assurance program is consistent with the applicable requirements of the Code.

Section 7 contains specific exceptions to these requirements.

### 3.3 Content of Procurement Documents

Procurement documents at all tiers include the following as deemed necessary by the Company.

#### 3.3.1 Scope of Work

Procurement documents describe the scope of the items or services to be furnished by a vendor.

#### 3.3.2 Technical Requirements

The Company specifies technical requirements by reference to specific drawings, specifications, codes, standards, regulations, procedures, or instructions (including revisions thereto) that describes the items or services to be furnished. The procurement documents identify test, inspection and acceptance requirements. The procurement document identifies special instructions and requirements for such activities as designing, identification, fabrication, cleaning, erecting, packaging, handling, shipping, and extended storage.

#### 3.3.3 Extension of QA Program to Subtier Suppliers

Procurement documents require the vendors to incorporate quality assurance program requirements in subtier procurement documents.

### 3.3.4 Right of Access for Inspection and Audit

Procurement documents provide for access to the vendor's facilities and records for inspection or audit by the Company or its designated representative.

### 3.3.5 Nonconformances

Procurement documents include requirements for reporting and approving the disposition of nonconformances.

### 3.3.6 Documentation Requirements

Procurement documents identify the documentation requirements including:

a. Required quality assurance records.
b. Those records to be transmitted to the Company.
c. Time of submittal.
d. The retention time and method of disposition of those records the vendor retains.

### 3.3.7 Spare and Replacement Parts

The procurement documents require the identification of appropriate spare and replacement parts or assemblies and the appropriate delineation of the technical and quality assurance related data required for ordering these parts or assemblies.

## 3.4 Procurement Document Review

The Company reviews procurement documents to assure that they include the necessary technical and quality requirements before release for bid and contract award. Records concerning the review and evaluation of procurement documents include, in whole or in part:

a. Minutes of meetings.
b. Comment letters.

c. Design review records.
d. Project quality assurance audits.
e. A copy of the original design document marked with comments or latest revisions.

These records are kept in the Company department files, vendor files, or both locations. Trained personnel who are qualified in QA practices and concepts review procurement documents for adequacy of the referenced quality requirements. They document concurrence in the adequacy of the specified quality requirements.

### 3.5 Control of Procurement Document Changes

Changes to procurement documents are subject to the same review and approval as the original documents. Procurement documents incorporate changes made because of bid evaluations or contract negotiations. The review of these changes and their effects are completed before contract award. The review of changes includes the following:

a. The appropriate requirements specified in Paragraph 3.3 of this section.
b. Determination of any additional or modified design criteria.
c. Analysis of exceptions or changes requested by the vendor.
d. Determination of the effects these changes may have on

    1) the intent of the procurement documents or
    2) quality of the procurement documents or
    3) quality of the item or service to be furnished.

Reviews required by this section are done by personnel who have:

a. Access to the pertinent information and
b. Understanding of the requirements and intent of the procurement documents.

# 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13

# 1. POLICY

Activities governed by the Commonwealth Edison Company Quality Assurance Program shall be performed as directed by documented instructions, procedures, and drawings appropriate for the activity. The requirements for the use of these procedures shall also be prescribed in writing. These instructions, procedures, and drawings shall include acceptance criteria as applicable or appropriate for the activity.

Those participating in any activity shall be aware of and use the proper and current revision of instructions, procedures, drawings and engineering requirements for performing the activity.

# 2. RESPONSIBILITIES

Nuclear Operations is responsible for the preparation and implementation of Nuclear Operations Directives necessary to accomplish the Nuclear Station activities in a uniform and systematic manner.

The Nuclear Stations provide operations procedures and instructions. These procedures will be consistent with NRC license requirements for administering the policies, procedures, and instructions to assure safe operation from the time that the Operating License is issued through the life of the station.

Any Commonwealth Edison Company departmental group involved with nuclear plant design, procurement, maintenance, modification, construction, or operation may propose procedures, as necessary, to meet regulatory, ASME Code or other applicable code requirements. These departments include:

Nuclear Operations Division
Nuclear Stations
Site Regulatory Assurance Department
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department

Nuclear Support Department
Nuclear Operations Department
Nuclear Regulatory Services Department
Nuclear Oversight Department
Purchasing Department
Corporate Security Department
Systems Materials Analysis Department
T&D Operational Analysis Department
Vice President, Fuels

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

## 3. REQUIREMENTS

### 3.1 Preparation and Review

Procedures shall be prepared, reviewed, approved, and used as prescribed in writing and shall contain sufficient detail to perform the required actions. Where appropriate, these procedures will include checklists containing the necessary attributes to be observed or measured.

The procedures will be independently reviewed and evaluated by other involved departments with interface responsibilities and the comments forwarded to the issuing department.

### 3.2 General

Operation, maintenance, or modification of equipment shall be preplanned and performed in accordance with written procedures appropriate to the circumstances and which conform to applicable codes, standards, specifications and criteria. When ASME Code work is involved, these documents shall include applicable code requirements and shall be made available to the Authorized Inspector for review and insertion of hold points as applicable.

Temporary procedures may be issued to provide guidance in unusual situations which are not within the scope of the normal procedures. Temporary procedures shall be subject to review and approval, and shall include designation of the time period during which they may be used.

In the event of an emergency not covered by an approved procedure, authorized personnel shall provide appropriate direction to minimize personnel injury and damage to the facility and to protect the health and safety of plant personnel and the general public.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criterion V
- 10CFR50.55
- ASME B&PV Code, Section III, NCA-4000
- ANSI/ASME NQA-1
- ANSI N18.7
- ANS-3.2 1988
- ANSI N45.2
- ANSI/ANS 3.2
- ANSI N45.2.11
- ANSI N45.2.13
- Facility Operating Licenses (Technical Specifications)

# 1. POLICY

The preparation, issue and change of documents, (e.g., instructions, procedures and drawings) shall be controlled by the Company to assure that correct documents are used. For all activities affecting quality these controls will include:

a. A review for adequacy, completeness and correctness.
b. An approval for release by authorized personnel.
c. The distribution to, and use at, the location where the activity is performed.

# 2. RESPONSIBILITIES

Any Commonwealth Edison Company organization involved with the preparation, issue, and change of documents affecting quality for nuclear plant activities shall establish procedures necessary to implement the requirements of this section. These departments include:

Nuclear Operations Division
Nuclear Stations
Site Regulatory Assurance Department
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Support Department
Nuclear Operations Staff
Nuclear Regulatory Services Department
Nuclear Oversight Department
Purchasing Department
Corporate Security Department
Systems Materials Analysis Department
T&D Operational Analysis Department

Individuals participating in any activity shall be made aware of and use proper and current documents.

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

## 3. REQUIREMENTS

### 3.1 Document Preparation, Review, Approval, Issuance and Distribution

Document control measures shall provide for:

a. Identifying individuals or organizations responsible for preparing, reviewing, approving and issuing documents including revisions.

b. Identifying and assuring that proper documents are used in performing this activity.

c. Coordinating and controlling interface documents.

d. Establishing lists of documents required to be controlled by organizations involved with activities affecting quality.

e. Distributing documents approved for issuance in accordance with updated and current distribution lists.

### 3.2 Document Changes

Changes to documents shall be reviewed and approved by the same organizations that performed the original review and approval unless designated to another responsible organization. The reviewing organization shall have access to pertinent background data or information upon which to base their approval. Minor changes to documents, such as editorial corrections, may not require that the revised documents receive the same review and approval as the original documents. To avoid a possible omission of a required review, procedures will be established to control minor changes.

### 3.3 General

Procedures developed to control documents shall meet the requirements of ANSI N18.7.

Procedures shall be reviewed and approved prior to initial use. The frequency of subsequent reviews shall be specified by the Company and shall be at an interval of 24 months or less unless justification for a longer interval between reviews has been established. Based on this justification, certain classes of procedures may not require a formal review cycle. The reviews will be accomplished by individuals other than the originator, knowledgeable in the area affected by the procedure.

Document controls required by ASME Section III, Division 1 and Division 2 are as stated in the ASME Code Interface.

ASME Code documents will be made available to the authorized Nuclear Inspector.

Document control procedures shall assure that proper documents are accessible and are being used. Obsolete documents are to be recalled or identified.

The scope of the document control program is to be defined. Examples of documents to be controlled include, but are not limited to: as-built drawings, engineering calculations, design specifications, computer codes, purchase orders and related documents, audit and surveillance procedures, operating procedures, emergency operating procedures, technical specifications, nonconformance reports, corrective action reports, work instructions and procedures, calibration procedures, quality verification procedures, inspection and test reports, Safety Analysis Reports, and Topical Reports.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 6
- ANSI/ASME NQA-1
- ASME B & PV Code, Section III, NCA-4000

- ANSI N18.7
- ANSI N45.2
- ANSI N45.2.11
- ANSI/ANS-3.2

# 1. POLICY

This section establishes the quality system elements and related policies that assure the quality of purchased material, equipment and services.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Operations Division
Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Oversight Department
Purchasing Department
Corporate Security Department
Systems Materials Analysis Department
T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 Supplier Selection

### 3.1.1 General

The Company establishes measures to assure that purchased material, equipment and services conform to the procurement documents.

### 3.1.2 Company Responsibilities

The Company assigns responsibilities in the supplier selection process to the following organizations:

a. The Nuclear Oversight Department evaluates the Quality Program.

b. The following departments, as appropriate, evaluate vendors technical capabilities:

Nuclear Engineering and Technology Services Department
Site Engineering and Construction Department
Nuclear Stations
T&D Operational Analysis Department
System Materials Analysis Department

### 3.1.3 Methods

The Company establishes measures for evaluation and selection of procurement sources. These measures include one or more of the following:

a. Evaluation of the supplier's history of providing an identical or similar product that performs satisfactorily in actual use.

b. Vendor's current quality records supported by documented qualitative and quantitative information that can be objectively evaluated.

c. Vendor's technical and quality capability as determined by a direct evaluation of his or her facilities and personnel and the implementation of his or her quality assurance program.

The Company documents and files the results of these measures.

### 3.2 Bid Evaluations

The Company reviews and evaluates bids and awards contracts using written procedures. The results shall be documented. The Company reviews bids to assure that they conform to the procurement document requirements. Individuals or organizations designated to evaluate the following subjects make the bid evaluation as applicable to the type of procurement:

a. Technical considerations.
b. Quality assurance requirements.
c. Research and development effort.
d. Supplier's personnel.
e. Supplier's production capability.
f. Supplier's past performance.
g. Alternates.
h. Exceptions.

The Company obtains commitments to resolve unacceptable conditions resulting from the bid evaluation before award of the contract.

### 3.3 Supplier In-Process Control

#### 3.3.1 General

The Company establishes measures to interface with vendors and to verify vendor's performance. The measures include the following:

a. Establishing an understanding between the company and vendor.

b. Requiring the vendor to identify planning techniques and processes to be used in fulfilling procurement document requirements.

c. Reviewing vendor documents that are generated or processed during activities fulfilling procurement requirements.

d. Identifying and processing necessary change information.

e. Establishing method of document information exchange between the Company and vendor.

f. Establishing the extent of source surveillance and inspection activities.

### 3.3.2 In-Process Control and Verification Planning

Depending on the complexity or scope of the item or service, the Company communicates with the supplier to establish:

a. An understanding between the Company and the supplier of the procurement requirements.

b. The intent of the Company in monitoring and evaluating the vendor's performance.

c. The planning, manufacturing techniques, tests, inspections, and processes to be employed by the supplier in meeting procurement requirements.

The Company and supplier mutually agree on notification points, including hold and witness points. They document this agreement. The Company plans and does the verification of vendor's activities to assure conformance to the purchase order requirements with Site Quality Verification or Nuclear Oversight participation. This verification uses written procedures or checklists. Verification activity plans, as applicable to the method of procurement, provide for:

a. Specifying the characteristics or processes to be witnessed, inspected, or verified, and accepted.

b. The method of surveillance and the extent of documentation required.

c. Those responsible for carrying out these procedures.

d. Audits, surveillances, or inspections that assure that the supplier complies with the quality requirements.

### 3.3.3 Programmatic Verification

The Company or its agents verify the effectiveness of the vendor's quality program by survey, audit or surveillance. The Company does these verifications at intervals consistent with the importance to safety, complexity and quality of the product, or services furnished. The Company witnesses or observes activities when source verification is used. The Company does audits per the requirements established in Section 18. The Company conducts verification activities as early as practicable so that subsequent activities do not prevent disclosure of deficiencies. The Company's verification activities do not relieve the vendor of his or her responsibility for verification on quality achievement.

### 3.3.4 Quality Verification at Source

Qualified personnel do verification activities at the vendor location per approved checklists or procedures. These activities verify conformance to identified technical and quality requirements.

### 3.3.5 In- Process Documentation Verification

The Company establishes methods to control, handle and approve vendor documents. Vendors submit these documents per procurement requirements. The Company uses acceptance criteria for the acquisition, processing, and record evaluation of technical inspection and test data.

### 3.3.6 Documentation of Verification Activities

The Company records activities done to verify vendor conformance to the requirements of procurement documents. The Company documents source surveillances, inspections, audits, receiving inspections,

nonconformances, dispositions, waivers and corrective actions concerning vendor activities. The Company evaluates the documentation to determine the vendor's quality assurance program effectiveness.

### 3.3.7 Control of Procurement Changes

The Company documents changes to procurement documents involving technical or quality assurance matters. These changes are subjected to the same review and approval process as the original procurement document.

## 3.4 Acceptance of Purchased Items and Services

### 3.4.1 General

The Company uses approved procedures to accept purchased items and services. The methods used to accept an item or services from a vendor include one or more of the following:

a. Vendor Certificate of Conformance.
b. Source verification.
c. Receiving Inspection.
d. Post installation testing.
e. Product testing. (See section 3.4.6 for acceptance of services.)

The vendor identifies procurement requirements that have not been met. The vendor explains the disposition of all nonconformances per Section 15.

### 3.4.2 Acceptance by Receiving Inspection

Acceptance solely by receiving inspection is satisfactory only when the item or services are:

a. Relatively simple and standard in design, manufacture and test; and

b. Adaptable to standard or automated inspection or test of the product to verify quality characteristics after delivery; and

c. Such that receiving inspection does not require operations that could adversely affect the integrity, function, or cleanness of the item.

(Receipt inspection of an item supplied by a vendor that has been audited or surveyed and has supplied a certificate of conformance or compliance is over and above the meaning of "acceptance solely by receiving inspection.") When procurement documents require documentation to be furnished before receiving inspection, the company reviews such documentation during receiving inspection. During receiving inspection, the Company inspects as necessary to verify conformance to specified requirements, taking into account source verification and audit activities and the demonstrated quality performance of the vendor. The Company does receiving inspections using procedures and inspection instructions to verify, by objective evidence, such features as proper configuration; identification; dimensional, physical and other characteristics; freedom from shipping damage; and cleanliness. The Company coordinates the review of vendor documentation with the receiving inspection when procurement documents require such documentation to be furnished prior to the receiving inspection.

### 3.4.3 Acceptance by Source Verification

The Company considers acceptance by source verification when the item or service is:

a. Vital to plant safety; or
b. Difficult to verify quality characteristics after delivery; or
c. Complex in design, manufacture and test.

Source verification activities (for receipt inspection) include the following, as applicable:

a. The vendor has submitted documentation as required.

b. Documentation provides verification of approvals, material, applicable inspections and tests.

c. The Company has approved fabrication procedures and processes.

d. The vendor has complied with fabrication procedures and processes.

e. The applicable qualifications, process records and certifications are available.

f. The vendor has inspected, examined and tested components and assemblies as required.

g. Applicable inspection, test and certification records are available.

h. The vendor has dispositioned nonconformances as required.

i. The vendor has cleaned, preserved, packed and identified components and assemblies per specified requirements.

Upon acceptance by source verification, the Company furnishes documented evidence of acceptance to the receiving destination of the item, to the Purchaser, and to the vendor.

### 3.4.4 Acceptance by Certificate of Conformance

Acceptance by this method is satisfactory when the item or service is of simple design and involves standard materials, processes and tests. Such items may be fabricated subject to selected qualification, sample or batch testing to establish or maintain a minimum quality confidence level. When not precluded by other requirements, documentary evidence may take the form of written certificates of conformance that identify the requirements met by the items, provided means are available to verify the validity of such claims. When used, a certificate of conformance meets the following minimum criteria:

a. The certificate identifies the purchased material and purchase order number.

b. The certificate identifies the specific procurement requirements such as codes, standards or other specifications applicable to the purchased item.

c. The procurement requirements identified include any approved changes, waivers, or deviations that apply to the subject item.

d. The certificate identifies any procurement requirements that have not been met with an explanation and the means for resolving the nonconformances.

e. A person who is responsible for the quality function attests to the certificate.

f. Procedures describe the certification system, including the procedures to be followed in filling out a certificate.

g. Audits, surveys, or surveillances of the supplier verify the validity of supplier certificates and the effectiveness of the certification system.

h. The Company conducts these at intervals commensurate with the supplier's past quality performance.

The procurement documents specify supplemental documentation such as material certificates or test reports when necessary.

### 3.4.5 Acceptance by Post-Installation Testing

When post-installation testing is used, the Company and vendor mutually establish post-installation test requirements and acceptance documentation. Acceptance by this method is satisfactory when performed following the accomplishment of at least one preceding method and when:

a. It is difficult to verify the quality characteristics of the item without it being installed and in use; or

b. The item requires an integrated system checkout or test with other items to verify its quality characteristics; or

c. The item cannot prove its ability to perform its intended function except when in use.

### 3.4.6 Acceptance of Services Only

In cases involving procurement of services only, the Company accepts the service by any of the following methods:

a. Technical verification of data produced.
b. Surveillance or audit of the activity.
c. Review of objective evidence for conformance to the procurement document requirements such as certifications, stress reports, etc.

The Company does a receiving inspection for items sent off site for repair, testing, or rework.

### 3.4.7 Acceptance of ASME Code Items

Personnel receiving ASME code items use a checklist. The checklist includes the following:

a. All characteristics that the material specifications require to be reported. (Receiving personnel examine each such characteristic using accepted procedures and record the results. Characteristics included on certified material test reports or certificates of compliance need not be duplicated in the checklists.)

b. A record that the certified material test reports and certificates of compliance have been received, reviewed and found acceptable.

c. Proper documentation of the results of the examination or test procedure conducted by the certificate holder when necessary to show the compliance with material specifications or other requirements.

### 3.4.8 Commercial Grade Items

Where the design utilizes commercial grade items, the following requirements are an acceptable alternate to other requirements of this section:

a. An approved design document identifies the commercial grade item. (An alternate commercial grade item may be applied, provided the cognizant design organization provided verification that the alternate commercial grade item will perform the intended function and will meet design requirements applicable to both the replaced item and its application.)

b. The Company performs source evaluation and selection, where determined necessary based on complexity and importance to safety.

c. The Company identifies commercial grade items in the purchase order by the vendor's published product description.

d. After receipt of a commercial grade item, the Company determines the following:

1) Damage was not sustained during shipment.

2) The item received was the item ordered.

3) Inspection and/or testing is accomplished, as required by the purchaser, to assure conformance with the manufacturer's published requirements.

4) Documentation, as applicable to the item, was received and is acceptable.

### 3.5 Presence of Documentary Evidence

Documented evidence that material or equipment conforms to procurement requirements is present at the site before use or installation. This documentary evidence shall be retained at the nuclear power plant site and shall be sufficient to identify the specific requirements such as codes, standards or specifications met by the purchased material and equipment.

### 3.6 Spares

#### 3.6.1 General

Procedures control the procurement, storage and issue of materials and components including spare and replacement parts. Procurement documents for these items identify the appropriate technical and quality related requirements. The Company purchases spare parts and replacement items, equipment and components to original or better design requirements.

#### 3.6.2 Equivalent Specifications and Code Requirements

The Company purchases materials and components associated with safety-related structures or systems to specifications and codes equivalent to those specified for the original equipment, or those specified by a properly reviewed and approved revision. When the Company cannot obtain material that has been manufactured and supplied in conformance with ASME Section III, the Company may procure stock material and upgrade it by appropriate tests to ASME Section III. The Company provides certification covering such upgrading (i.e. Providing a Certified Material Test Report) for all operations performed by the Company or their vendors. Where the QA requirements of the original item cannot be determined, qualified individuals conduct an engineering evaluation to establish the requirements and controls. This evaluation insures that interfaces, interchangeability, safety, fit and function are not adversely affected or contrary to applicable regulatory or Code requirements. The evaluators document the results. Where the company procured the original item with no specifically identified quality assurance program

requirements, or from an Original Equipment Manufacturer/Supplier (OEM/OES) who no longer is on the Quality Approved Bidders List, identical (like-for-like) items may be similarly procured from the OEM/OES. In such cases, the Company conducts a joint technical engineering and quality assurance documented evaluation to established requirements and controls to assure at least equivalent product performance. The evaluation shall assure that interfaces, interchangeability, safety, fit and function are not adversely affected or are not contrary to applicable regulatory or Code requirements.

### 3.6.3 Procurement from Other Utilities

Purchases of Safety Related items can be made from other utilities who have had an NRC approved QA Program in effect at the time of their procurement and receipt and such utility has maintained a Quality System Program for storage, handling and maintenance with documented traceability to the manufacturer of the items. Certificates of Conformance to the above requirements and associated required documentation are provided.

### 3.6.4 Equivalent Production/ Fabrication Requirements

Items associated with safety-related structures or systems are produced or fabricated under requirements at least equivalent to that of the original equipment, or those specified by a properly reviewed and approved revision.

### 3.6.5 Maintenance or Modification

The Company performs maintenance or modifications that may affect function of safety-related structures, systems, or components in a manner to ensure quality at least equivalent to that specified in original design bases and requirements, materials specifications and inspection requirements.

### 3.6.6 Testing or Design for Equivalence

Replacement items receive adequate testing or are of a design for which experience shows a high probability of satisfactory performance. The Company considers phased replacement to permit in-service performance of the new component to be evaluated. When used, this minimizes the possibility of a hidden deficiency producing a systematic failure.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code, Section III
- ANSI N45.2.13

# 1. POLICY

This section establishes the requirements for identification and control of materials, parts, and components.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Oversight Department
Purchasing Department
Systems Materials Analysis Department
T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 Identification and Traceability

### 3.1.1 General

The Company establishes procedures for the identification and control of materials, parts and components, including partially fabricated assemblies. The Company establishes procedures to control welding and brazing materials. The Company establishes controls to assure that only correct and accepted items are used or installed. The Company maintains identification on the items or in documents traceable to the items. The Company controls nonconforming items according to Section 15. The Company maintains parts, material, and equipment in storage traceable to quality assurance documents.

### 3.1.2 Traceability

The responsible organizations document and maintain identification and traceability of items (including partially fabricated subassemblies) throughout fabrication, installation and use of the item. Before use or installation of an item, the installer verifies that identification and traceability have been maintained. The Company reestablishes the identification before installation or use, if it has been lost. Audits and surveillances assure that an identification and traceability system are provided and maintained.

### 3.1.3 Identification Methods

Identification is on the item where practicable. Identification is clear, unambiguous and indelible. Identification does not affect the function of the item. If the item cannot be practicably marked, the Company uses records traceable to the item for identification. If physical identification is either impractical or insufficient for proper control, the Company controls an item by physical separation, procedural control or other appropriate means.

### 3.1.4 Transfer of Markings

Before cutting or dividing material, the Company transfers marks or coded markings to the unmarked portions. The Company independently verifies proper identification of each piece.

### 3.1.5 Limited Life Items

The Company identifies and controls items having limited life to preclude use of items whose shelf life or operating life has expired.

### 3.1.6 Stored Items

The Company uses procedures to assure proper control of identification of items in storage.

### 3.1.7 Special Materials

The Company clearly identifies and marks special nuclear materials, radioactive sources and hazardous materials.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI 18.7
- ANSI N45.2
- ASME Code, Section III
- ANSI/ASME NQA-1
- ANSI N45.2.4
- ANSI N45.2.8
- ANSI N45.2.13

# 1. POLICY

When the quality of a process cannot be assured through observation of the final product, the process is referred to as a special process. The quality of such processes is assured through reliance on operator skill and in-process control. Examples of special processes include welding, brazing, heat treating, non-destructive examination (NDE), chemical cleaning, coating, and concrete placement. Special processes will be performed in accordance with applicable requirements. These requirements are defined as codes, standards, specifications, or special instructions.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Oversight Department
Purchasing Department
Systems Materials Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

### 3.0 General

The Company department directing the work during construction, repair, replacement, modification, or inservice inspection (ISI) activities will be responsible for controlling special processes. This includes:

a. Procedure Development and Qualification
b. Procedure Implementation

c. Personnel Qualification
d. Maintenance and Retention of Records

Special process controls will be assured through audit or surveillance activities.

### 3.1 Procedure Qualification and Control

Special processes will be controlled by instructions, procedures, drawings, checklists, travelers, or other appropriate means. Special process controls will specify the preparatory steps, processing details, conditions to be maintained during the process, equipment requirements, inspection and test requirements, acceptance criteria, and records requirements.

Special process procedures will be written and qualified in accordance with applicable requirements.

Special process procedures will be reviewed and approved as follows:

a. Company heat treating, welding, brazing and other non-NDE procedures will be reviewed and approved by the Mechanical and Structural Design ISI/Materials Supervisor.

b. Company NDE, coating, and ASME Code concrete placement procedures will be reviewed and approved by the appropriate Company Level III.

c. Contractor and subcontractor Section III and XI and other ISI-related NDE procedures will be reviewed and approved by the Company NDE Level III.

d. Other contractor and subcontractor special process procedures will be reviewed by the responsible Company engineering organization.

When permitted by applicable requirements, the Company may direct contractors or subcontractors to use Company special process procedures.

The Company will assure that qualification of Company, contractor, and subcontractor ASME Code NDE procedures is verified by the ANI or ANII.

When there is a specific reason to question whether special process procedure requirements are being met, the Company, the ANI, or the ANII may require re-evaluation of the procedure before work may proceed.

### 3.2 Personnel Qualification and Certification

When required, Company, contractor, and subcontractor personnel performing special processes will be trained, tested, qualified, or certified in accordance with a procedure which meets applicable requirements.

When permitted by applicable requirements, the Company may qualify and control contractor and subcontractor personnel.

The Company will assure that qualification of Company, contractor and subcontractor ASME Code NDE personnel is verified by the ANI or ANII.

When there is a specific reason to question the ability of an individual performing special processes, the Company, the ANI, or the ANII may require re-evaluation before that individual will be permitted to resume work.

Individuals failing any retest will be removed from applicable operations pending requalification.

### 3.3 Special Process Records

Special process records will provide evidence that special processes were performed in accordance with approved procedures by qualified personnel. These records will be retained by the Company, or by the contractor or subcontractor as required by procurement documents.

Records will be maintained for currently qualified personnel, processes, and equipment of each special process.

Completion of special process records will be verified by Station Tech Staff, Station Quality Control, or by the responsible Company engineering organization.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 9
- ANSI/ASME NQA-1
- ASME Sec. III Divisions 1 and 2
- ASME Sec. XI

# 1. POLICY

The company will plan and execute an inspection program to verify that activities affecting quality conform to documented requirements. The independent inspections described in this section are not intended to dilute or replace the clear responsibility of the first line supervisors for the quality of work performed under their supervision.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Oversight Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company will establish controls for coordination and execution of inspection plans. Company Quality Control or other qualified organizations are responsible for implementation of established inspection plans. If the inspection plan includes inspections by personnel other than the quality organization, the inspection requirements, personnel qualification criteria, and inspector independence will be accepted by the responsible quality organization prior to implementation.

### 3.2 Inspection Plans

The company will prepare documented inspection plans. Related codes, standards, specifications and design documents will be used to develop the inspection plans. The plans will identify:

a. Activities to be inspected.
b. Inspection characteristics.
c. Inspection techniques/equipment (including accuracy requirements).
d. Acceptance criteria.
e. Responsible organizations.
f. Qualification requirements.
g. Provisions for the recording of inspection results.
h. Provisions for inspection and test status.

The inspection plans may be separate documents or an integral part of approved instructions, procedures or drawings.

### 3.3 Inspection Personnel

Inspections will be performed by qualified personnel. Inspections for acceptance will be performed by inspectors with valid certifications. Inspectors will be independent, other than those who performed or directly supervised the activity being inspected. Inspection of operating activities may be conducted by second line supervisory personnel or other qualified personnel not assigned first line supervisory responsibility for the conduct of the work. Operating activities are defined as work functions associated with normal operations of the plant, routine maintenance, and certain technical services routinely assigned to the on-site operating organization. On-the-Job training and team inspections shall be performed under the direct supervision of qualified personnel.

### 3.4 Inspector Qualification

A qualification program will be established and documented to conform to applicable codes, standards, or licensing requirements. Qualifications and certifications will be kept current.

### 3.5 Inspection Process

Inspections will be performed using approved instructions, procedures, process sheets, travelers, or checklists and applicable drawings.

#### 3.5.1 Inspection

Inspections will be performed for each work or operating activity where necessary to verify quality. Where inspection sampling is used to verify acceptability of a group of items the sampling procedure shall be based on recognized standard practices.

#### 3.5.2 Process Monitoring

Process monitoring may be used when inspection of processed material or products is impossible or impractical. When necessary to ensure quality throughout the duration of the process, both inspection and process monitoring will be systematically used to verify conformance to requirements.

#### 3.5.3 Hold Points/ Witness Points

When inspections must be performed before work can continue, hold points will be established in appropriate documents. Consent to waive hold points will be recorded prior to continuation of work. When inspection is desired but not mandatory before work can continue, witness points will be established. Completion of hold and witness points will be documented.

#### 3.5.4 Re-inspection

When acceptance criteria are not met, corrected areas will be reinspected. Changes to, or rework of, an item after inspection will require re-inspection of the affected areas.

#### 3.5.5 Final Inspection Review

A final evaluation will be performed. Inspection results will be reviewed to confirm that required inspections and quality records have been

completed, identified nonconformances have been resolved and the item conforms to specified requirements. Final acceptance of the item will be approved by authorized personnel.

### 3.5.6 Inspection Records

Inspection records will be of sufficient detail to confirm completion and as a minimum identify:

a. Item inspected.
b. Date of inspection.
c. Inspector/Data recorder.
d. Type of observation.
e. MT&E used.
f. Results or acceptability.
g. Reference to action taken in connection with identified nonconformances.
h. Authorized individual approving results.

When the inspection activity is performed using a separate procedure, the procedure and its revision will be recorded.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 10
- ANSI/ASME NQA-1
- ANSI/ANS 3.2
- ASME SEC. III NCA 4000

# 1. POLICY

This section identifies the requirements for preparation, review, performance and documentation of testing at nuclear stations.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Oversight Department
Purchasing Department
Systems Materials Analysis Department
T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

### 3.1.1 Testing Program

The company's overall testing program falls into two broad categories described as the initial testing phase and the operational testing phase. The initial testing phase ends approximately at the time of fuel load (receipt of operating license). The operational testing phase begins at this time. Tests performed after fuel load and those tests which lead directly to and support fuel load fall in the operational testing phase. In traditional terms, start-up testing, surveillance testing, and post modification testing fall into the operational testing phase, while vendor testing, construction testing and preoperational testing fall into the material testing phase.

The Company establishes and controls a test program to assure that design and performance criteria have been satisfied. The test program includes, as appropriate, procedures to ensure that structures, systems, subsystems and components will perform in service. See paragraph 3.1.2, Test Procedures, of this Section.

The test program covers all required tests including:

a. Tests during design.
b. Tests during fabrication.
c. Tests during construction activities associated with plant maintenance and modification during the plant operational phase.
d. The demonstration of satisfactory performance following plant maintenance and modifications or procedural changes.

The program includes, as applicable:

a. Proof tests prior to installation.
b. Construction tests.
c. Preoperational tests.
d. Start-up tests as required for a new plant.
e. Operational tests.
f. Those tests required by plant maintenance or modifications.
g. Prototype qualification tests.
h. Production tests.

### 3.1.2 Test Procedures

The program uses written test procedures which include the requirements and acceptance limits from applicable design documents. The Company reviews and approves test procedures. The Company reviews and approves changes to test procedures, including changes which alter test sequence, in a similar manner to the original.

The organization responsible for the design of the item to be tested establishes the test requirements and acceptance criteria. The Company bases test requirements and acceptance criteria upon specified requirements contained in applicable design or other pertinent

documents. Test requirements include specific characteristics to be tested. The Company specifies specific test methods when they must be employed. The Company uses written procedures or checklists. It documents the status of equipment both before and after testing.

Test procedures include provisions to assure that:

a. Proper calibrated inspection and test instruments are used.
b. Equipment to be tested is properly released for testing.
c. Inspections and tests are done under suitable environmental conditions. (See paragraph 3.1.2.1, Prerequisites, of this Section.)
d. Data documentation is in compliance with test procedures.
e. Retention control of test data documentation is adequate.

The Company may use appropriate sections of related documents, such as ASTM methods, supplier manuals, equipment maintenance instructions, or approved drawings or travelers with acceptance criteria in lieu of specially prepared written test procedures. Such documents must include adequate instructions to assure the required quality of work.

Test and inspection procedures contain:

a. A description of objectives.

b. Responsibilities.

c. Test or inspection requirements contained in applicable design documents.

d. Acceptance criteria or limits contained in applicable design or other source documents, such as vendor's literature, engineering drawings or plant specifications that will be used to evaluate results.

e. Prerequisites for or checks to be made prior to performing the tests or inspections including any special conditions to be used to simulate normal or abnormal operating conditions.

f. Limiting conditions.

g. Instructions or check-lists used to verify or document that affected plant systems are arranged in their correct lineup and for restoring the system to the condition consistent with the normal plant operating status.

h. Any special equipment or calibrations required to conduct the test or inspection.

i. Test or inspection procedure.

Where tests and inspections are to be witnessed, the procedure identifies hold points or witness points in the testing sequence to permit witnessing. The procedure requires appropriate approval for the test to continue beyond the designated hold point.

**3.1.2.1 Prerequisites**

Prerequisites include the following, as applicable:

a. Calibrated instrumentation, in accordance with Section 12, Control of Measuring and Test Equipment.
b. Appropriate Test Equipment.
c. Trained Personnel.
d. Condition of test equipment and the item to be tested.
e. Suitable environmental conditions.
f. Provisions for data acquisition.

Procedures ensure that prerequisite steps for equipment testing, such as:

a. Completion of necessary construction.
b. Prior testing.
c. Formal release for testing.
d. Safety precautions.
e. Measures to preserve equipment status have been or will be performed.

A detailed prescribed physical inspection of equipment components and facilities is performed to ensure readiness for operation. Typical items to be covered include:

a. Cleanliness.
b. Lubrication.
c. Setting of limit switches.
d. Calibration of instruments.
e. Presence of safety devices.

### 3.1.2.2 Schedule

The Company provides a schedule to assure that all necessary tests are performed and properly evaluated on a timely basis. It schedules testing so that the safety of the plant is never dependent on the performance of an untested system.

### 3.1.3 Test Results

The Company evaluates test results to assure conformance with design and performance requirements.

The Company documents inspection and test results in a test report or data sheet. Each report identifies the following:

a. The item to which it applies.
b. The procedures or instruction followed in performing the task.
c. The identification of the conditions encountered which were not anticipated.
d. Identity of inspector or tester.
e. Completion date and other significant dates and times.
f. Location where testing was performed or where test samples were taken.
g. Measuring and test equipment used.
h. The acceptability of the test.

i. The deviation of test results from acceptance criteria (nonconformance).
j. The actions taken to correct the deviations noted.
k. As-found condition.
l. As-left condition.

### 3.1.4 Test Records

Test records include:

a. Test procedures.
b. Test results.
c. Documents that provide acceptance criteria.
d. Data sheets completed during the tests.

## 3.2 Initial Test Program

### 3.2.1 Construction Tests

The company plans, executes, documents, and evaluates tests required to collect data, such as for site selection or design input.

Surveillance of construction activities includes tests to verify that items being installed and the installation comply with specified quality and performance requirements. These tests are performed at appropriate points in the construction phase as access permits or when questions arise as to the quality of components or workmanship.

A component test is a functional, operational, or performance test of an individual piece of equipment or unit system under prescribed conditions. Typical parameters to be examined are:

a. Direction of rotation.
b. Bearing temperatures.
c. Vibration.
d. Time delays.
e. Ability to operate with remote and local controls.

The Company performs hydrostatic tests to verify conformance to specified requirements the reactor coolant system, including all or parts of connected systems which cannot be isolated from the test pressure. The applicable test requirements are contained in section III of the ASME code.

Where preliminary operation of equipment, during construction, is utilized for a testing function, the Company clearly establishes and documents the purpose of the test, its scope, and results.

Tests are repeated if construction or associated activity affects the results of the tests. The need to repeat a test is ascertained at the time of preparing for post-construction testing.

Tests and shakedown runs are made on energized systems where necessary to evaluate operations and to properly condition for service (for example, the seating of brushes or bearings, the stabilization of instrumentation and burn-in of electronic devices).

The Company considers providing a run-in period to minimize early failures during operation of the plant, where appropriate.

### 3.2.1.1 Coatings

The company uses the specifications of ANSI N101.4-1972 for test requirements for applied coatings when these tests are required during design, manufacture, and installation.

### 3.2.1.2 Compacted Fill

The Company conducts in-process tests on compacted fill in accordance with ANSI 45.2.5.

### 3.2.1.3 Concrete

The Company conducts in-process tests on concrete and pre-stressing steels in accordance with ANSI 45.2.5.

### 3.2.1.4 Instrumentation

The Company tests instrumentation and control channels to assure that they are properly calibrated. In addition, the Company performs specific tests at critical levels such as "set points" in a manner simulating the approach toward the set point. These calibrations are made with these devices in their normal positions if the calibration is dependent upon location or attitude. The Company makes tests to determine that proper response is obtained over the operating range of the device. It gives particular attention to verifying independence and dependence, as appropriate, of the elements of the systems. The Company tags or labels items after calibration indicating date of calibration and identity of the person that performed the calibration.

The Company prepares and documents installation, inspection and test procedures and work instructions for instrumentation and electrical equipment. These documents are kept current and revised as necessary to assure that installation, inspections and tests are performed in accordance with latest information. They include as appropriate:

a. Installation specifications.
b. Inspection and test objectives.
c. Precautions to avoid component or system damage during testing or inspection.
d. Inspection and test equipment required.
e. Sequence of tests (if applicable).
f. Sequential actions to be performed.
g. Frequency of inspection or test.
h. Prerequisites.
i. Approvals.
j. Data report form.
k. Identification of test equipment and date or required recalibration where required for interpretation of test results.
l. Inspection and test acceptance limits.

### 3.2.1.5 Electrical Tests

Electrical tests include:

a. Continuity tests, short circuit tests, polarity and rotational tests.
b. Control system tests including indicating meters, recorders, transducers, targets and lamps, annunciators and alarms, controls and interlocks.
c. Voltage breakdown tests on liquid insulation.
d. Overpotential (HIPOT) tests as specified.
e. Insulation resistance measurements as specified.

Overpotential tests conform to the applicable codes and standards. The manufacturer's recommendations are always considered.

### 3.2.1.6 Mechanical Tests

The Company performs mechanical tests to ascertain that electric and/or instrumentation components or systems can withstand system pressure ratings. As a minimum, the Company applies such tests to pressure sensing and transmitting devices operating in steam, hydraulic, and vacuum systems and their hydraulic or pneumatic interconnecting piping or tubing and associated instruments. Pressurized equipment which is a part of electric apparatus such as heat exchangers, circulating systems, actuating systems, and electric and instrumentation containment penetrations are likewise tested if site assembled or fabricated. If equipment is assembled at the construction site, the Company conducts tests after the assembly is complete even though the components may have been previously tested. Manufacturer' tests of fabricated items may be accepted for equipment not disturbed during the construction phase. The Company performs these tests in accordance with the applicable codes and standards.

### 3.2.1.7 Physical and Chemical Tests

Physical and chemical tests, in accordance with the applicable codes, include, as appropriate:

a. Chemical analyzing of fluids for oxygen or moisture content and purity.
b. Radiation sensitivity testing to confirm that radiation sensors and controlling devices are properly functioning.

### 3.2.2 Preoperational Tests

The preoperational testing, when completed, involves the operation of all items in a system to assure that the operation of that system is in accordance with the design criteria and functional requirements. The preoperational phase demonstrates proper coordinated operation of the plant systems, to the extent feasible. The Company demonstrates required independence and dependence of subsystems. The Company tests to verify that the quality of installed equipment has not deteriorated during the construction phase.

Partial systems or more than one system as defined by the test boundaries may also be tested to assure that operation is in accordance with the design criteria and functional requirements. Where mechanical equipments' and systems' operation must coordinate with non-mechanical equipment or systems, the preoperational test performed includes verifying the compatibility of interfacing equipment and functions.

The Company designs preoperational tests to permit evaluation of system performance. They include, for example:

a. The measurement of flow.
b. The measurement of temperature.
c. The measurement of pressure response time.
d. The measurement of vibration.
e. Transfer of the power supply to emergency power.
f. The measurement of the accuracy and response of control devices.

Preoperational tests demonstrate, as nearly as can be practicably simulated, the overall integrated operation of the plant systems at rated conditions, including simultaneous operations of the auxiliary systems.

Preoperational tests require variation on control parameters, such as pump stops, and restarts, cycling valves and varying flows so that system performance can be evaluated.

The test procedure identifies and describes any temporary or simulated conditions or equipment. If not previously planned, the Company prepares and issues a documented notice with approval of the responsible organization stating the substitutions that existed for the test. The Company provides written verification that temporary installations have been satisfactorily replaced by the permanent installations.

Preoperational testing includes, but is not limited to the following:

a. System integrity.
b. In-line instrument installation is consistent with specified flow directions.
c. Sensing lines are phased correctly in in-line elements and sensors.
d. Service requirements for initial operation such as flow alignments, limiting flow orificing and relief devices have been performed.
e. Operation of controls, valves, dampers, operators, and load limiting devices.
f. Rotating equipment (motors, pumps, blowers)-rotation, speed, vibration, noise, and no-load operation.
g. Handling equipment-load tests of cranes, hoists, conveyors, hooks, and handling adapters, and accessories.
h. Containment systems.
i. Air handling systems.
j. Fuel storage and handling systems.
k. Reactor components handling systems.
l. Instrument air systems.
m. Fluid service systems.
n. Waste effluent systems.
o. Auxiliary building systems.

The final preoperational test includes the review of the construction tests made on assemblies and components with particular attention given to those construction tests that demonstrate functional or operational

results. When these tests serve as a prerequisite or a part of the final system test, the Company reviews construction activity which may have affected the results.

Where necessary, the Company demonstrates freedom from unwanted or harmful effects of conducted or induced electrical noise.

The Company checks the suitability of plant operating procedures to the maximum extent possible during the performance of preoperational and start-up tests and where permitted at other times prior to fuel load.

Tests, or portions thereof, are repeated if construction or associated activity affects the results of the tests. The need to repeat a test is ascertained at the time of preparing for post-construction testing.

The Company rectifies the following before final testing:

a. Temporary electrical connections.
b. Temporary piping sections.
c. Abnormal chemical solutions.
d. Unspecified setting of devices.
e. The fixing of a moving component.
f. The effecting of any other abnormality.

Exceptions to this are cases where fuel loading or other critical operations prevent using the complete assembly for the test. In these instances, the Company documents the substitutions that existed for the test.

The Company uses normal system readout devices and installed transducers as far as possible to monitor the operation during the test. It uses special measuring instruments and simulating devices where the installed equipment in not adequate for the purpose of conducting tests.

Test equipment used has adequate capacity and is compatible with system under test so that the results will not be distorted.

### 3.2.2.1 Cold Functional Tests

These tests follow preoperational testing of individual systems including reactor coolant systems. The Company performs this testing to obtain operational data of equipment with maximum allowable simultaneous operation on interfacing systems and equipment and final verification of functional performance of these systems.

The Company tests the required individual systems to demonstrate cold functional operability of individual components, subsystems, and systems, and to demonstrate compatibility with other systems. These tests, where appropriate, demonstrate the following:

a. System pressure drop.
b. Flow rate.
c. Controls and throttling device settings.
d. Function of interlocks, alarms and automatic features.
e. Instrument calibration.
f. Setting of meter biases.
g. System stability.
h. Adequacy of pipe and equipment support settings.
i. Heat runs on rotating equipment.
j. Adequacy of ventilation, lubrication and cooling systems under sustained operating conditions.
k. Ability to meet water chemistry requirements.

### 3.2.2.2 Hot Functional Tests for PWR Plants Only

Hot functional tests for PWR plants usually follow cold functional tests and simulate plant operating conditions at elevated temperatures and pressures. All auxiliary and support systems exclusive of those required for pre-criticality testing must be available for these tests. If any of these systems are not available, the responsible organization specifically authorizes exclusion of these systems or subsystems from testing and document those exceptions.

These tests include the following as a minimum:

a. System pressure drop.
b. Flow rate.
c. Controls and throttling device settings.
d. Function of interlocks, alarms and automatic features.
e. Instrument calibration.
f. Setting of meter biases.
g. Systems stability.
h. Adequacy of pipe and equipment support settings.
i. Heat runs on rotating equipment.
j. Verification of heat exchanger performance.
k. Verification of boron control system performance.
l. Thermal insulation effectiveness.
m. Set points of temperature, pressure and level devices.
n. System heatup tests.
o. System cooldown tests.
p. Hot flow tests.
q. Setting protective devices.
r. Hot clearances.
s. Vibration measurements of major equipment and piping.

## 3.3 Operational Tests Program

### 3.3.1 Start-up Tests

Start-up tests demonstrate the performance of systems that could not be tested prior to operation and to confirm those physical parameters, hydraulic or mechanical characteristics that need to be known, but which could not be predicted with the required accuracy, and to confirm that plant behavior conforms to design criteria. The Company plans the start-up test program to permit safe fuel loading and start-up; to increase power in safe increments; and to perform major testing at specified power plateaus. If tests require the variation of operating parameters outside of their normal range, the Company prescribes the limits within which such variation is permitted. The scope of the testing demonstrates insofar as practicable that the plant is capable of withstanding the design transients and accidents.

The Company checks the suitability of plant operating procedures to the maximum extent possible during the performance of preoperational and start-up tests and where permitted at other times prior to fuel load.

### 3.3.2 Surveillance Tests

The Company's test program covers surveillance testing during the operational phase to provide assurances that failures or substandard performance do not remain undetected and that the required reliability of safety related systems is maintained.

### 3.3.3 Maintenance or Major Procedure Change

The Company performs tests following plant modification or significant changes in operating procedures to confirm that the modification or changes produce expected results. These tests also demonstrate that the change does not produce an unsafe operating condition.

## 4.0 REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13

# 1. POLICY

Measuring and test equipment (M&TE) will be calibrated and controlled to maintain its accuracy.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The T&D Operational Analysis Department is responsible for maintenance and calibration (traceable to National Standards) of Company M&TE except analytical chemistry and radio-chemistry laboratory equipment.

Part or all of this responsibility may be delegated to the Stations.

The Stations are responsible for the control of Station analytical chemistry, radio-chemistry laboratory M&TE, and standard solutions. They are also responsible for the control of the station M&TE program.

The Nuclear Engineering and Technology Services Department is responsible for the establishment of accuracy requirements for M&TE. Excluded are analytical chemistry and radiochemistry M&TE. Normally

this will be the manufacturer's published accuracy. If such published accuracy is not required, new accuracy requirements will be established by Nuclear Engineering and Technology Services. The Nuclear Engineering and Technology Services Department is responsible for resolution of technical issues including when certification is required.

### 3.2 Control

A program will specify how M&TE will be stored, handled, and used. As a minimum the following items will be addressed:

a. Environmental restrictions.
b. Personnel Qualifications.
c. M&TE selection.
d. Usage history.
e. Certification requirements.
f. Status.
g. Damage or suspect M&TE.
h. Administrative controls.
i. Repairs and maintenance.
j. Items not requiring certification.

### 3.3 Accuracy

M&TE will be calibrated against standards at least four times more accurate than the item being calibrated. Deviation from this standard will be controlled.

The accuracy ratio of M&TE to the plant equipment being calibrated will be determined by an engineering process.

Standards will be calibrated against standards having a greater accuracy. When this is not possible, equal accuracy may be used if it is adequate. Such deviations will be controlled.

### 3.4 Traceability

M&TE will be calibrated against certified standards having valid relationships to nationally recognized standards.

### 3.5 Interval

A calibration interval will be established for all M&TE. The M&TE program will specify how this interval is established. "Upon Request", "Not To Be Calibrated", and "Before and After Use" are acceptable frequencies.

### 3.6 ASME Code

M&TE used in Code applications will meet all requirements of the applicable Code sections.

### 3.7 Certification

Certification of M&TE is required for:

a. Calibration of other M&TE.
b. Verification of design parameters.

Certification of M&TE is not required when the measurements do not require specific accuracy.

### 3.8 Corrective Actions

When M&TE is found to be out of tolerance, an evaluation will be made of its previous uses to determine corrective action. Out of tolerance or suspect equipment will be identified and segregated to prevent inadvertent use.

### 3.9 Vendor Control

Vendors supplying certification services will be on the Company Quality Approved Bidders List.

### 3.10 Commercial Devices

Control measures are not required for rulers, tape measures, levels, and other such commercial devices, if such equipment provides adequate accuracy.

### 3.11 Records

M&TE calibration records will contain, as a minimum:

a. Last calibration date.
b. Next calibration date.
c. Standards used.
d. Serial Number.
e. Calibration Data.
f. As found/As left condition.
g. Repairs (If any).
h. Calibration Procedure Used.
i. Individual performing calibration.
j. Equipment location.
k. Out of tolerance notification.
l. Established accuracy.
m. Results Approval.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 12
- ANSI/ASME NQA-1
- ASME Section III NCA 4000

# 1. POLICY

This section identifies the requirements for material control. This includes handling, storage, shipping, cleaning and preservation of material and equipment.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Systems Materials Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General Material Control

The Company uses written procedures or instructions to specify special protective conditions per the item's design and procurement requirements necessary to prevent damage or deterioration of materials components, and systems during handling, preservation, storage, and shipping. These procedures include provisions for inspection, examination, testing and documentation. The vendor's Quality Program includes shipping procedures that provide for inspection and control of items leaving the vendor's plant. The Company establishes instructions for marking and labelling to identify, maintain, and preserve an item, including indication of the presence of special environments or the need for special controls. These requirements apply to the storage of chemicals, reagents, lubricants and other consumable materials.

### 3.2 Special Equipment and Environments

When required, the Company:

a. Specifies special equipment (such as containers, shock absorbers and accelerometers).
b. Specifies special protective environments (such as inert gas atmosphere, specific moisture content levels and temperature levels).
c. Provides special equipment and special protective environments.
d. Verifies the maintenance of special equipment and special protective environments.

### 3.3 Classification of Items

The Company classifies each item received into one of four levels established in ANSI N45.2.2. This classification considers the manufacturer's requirements. The Company packages, ships, receives, stores and handles items according to the established level or a higher level. When a package or assembly contains items of different levels, the Company classifies it to the highest level designated for any of the items contained.

### 3.4 Cleaning, Shipping, Storage and Preservation

The Company uses written procedures or instructions for cleaning, packaging, shipping, storage and preservation. These procedures specify special protective conditions necessary to prevent damage or deterioration of materials and equipment.

### 3.5 Handling Tools and Equipment

The Company inspects and tests special handling tools and equipment using procedures at specified time intervals to verify adequate maintenance. The Company provides special handling procedures and instructions for items that are susceptible to handling damage. These procedures delineate acceptable techniques, necessary qualifications and precautions for maintenance and use. Operators of special handling and lifting equipment have experience or are trained in its use.

### 3.6 Additional Requirements

The Company uses written procedures or instructions to specify detailed requirements for the following subjects:

a. Storage records.
b. Access to storage areas.
c. Housekeeping.
d. Fire Protection.
e. Removal of items from storage.

The vendors ship special nuclear materials and sources as specified in the NRC license and other regulatory requirements.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50, Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code, Section III
- ANSI N4.2.2
- ANSI N45.2.4

# 1. POLICY

This section identifies the requirements for tracking the status of inspection and test performed on equipment at nuclear plants.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Oversight Department
Corporate Security Department
Systems Materials Analysis Department
T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company uses marking, tags, stamps, routing cards, labels, forms, or other means to identify the operating status of plant equipment. This identification helps avoid inadvertent bypassing of the inspections and tests required prior to its use. The Company provides control procedures which describe the use of such tags, stamps, routing cards, labels, forms, and other methods. The Company specifies the authority for application and removal of tags, markings, labels and stamps.

The Company identifies items that are acceptable or unacceptable for installation by tagging, labeling, color coding, physical separation, or using an inventory system. When tags are used:

a. The stock is made from material which will not deteriorate during storage.

b. The stock used is not deleterious to the item.

c. Tags are securely affixed to the items and displayed in an area that is readily accessible.

The Company indicates the date the item was placed in the acceptable or unacceptable installation status. The program for quality control regulates this activity. The Company conditionally releases items for installation pending subsequent correction of the nonconformance.

The Company maintains records and marks equipment to indicate calibration status. The Company clearly identifies test equipment found to be out of calibration.

The Company clearly identifies and documents all temporary connections, such as jumpers and bypass lines, and temporary set points of control equipment to allow restoration before placing the item in service.

The Company tags critical valves, controls and switches to prevent inadvertent actuation during flushing.

### 3.1.1 Procedures

The Company uses procedures for control of equipment to maintain personnel and reactor safety and to avoid unauthorized operation of equipment. These procedures require control measures such as locking or tagging to secure and identify equipment in a controlled status. The procedures require independent verifications, where appropriate, to ensure that necessary measures, such as tagging equipment, have been done correctly.

## 3.2 Operating Status

### 3.2.1 Release for Maintenance

Operating personnel, including a senior reactor operator, as applicable grant permission to release plant systems or equipment for maintenance or surveillance tests. Prior to granting permission, such operating personnel:

a. Verify that the equipment or system can be released.

b. Determine how long it may be out of service.

c. Determine what functional testing or redundant systems are required prior to and during the out-of-service period.

The Company documents such permission. The Company uses independent verification to the extent necessary to ensure that the proper system was removed from service. The Company considers the degraded protection available when one subsystem of a redundant safety system has been removed for maintenance or surveillance testing.

### 3.2.2 Preparation for Work

After permission has been granted to take the equipment out of service, measures provide for protection of equipment and workers. The Company clearly identifies the status of equipment and systems at any location where the equipment can be operated. The Company enforces strict control measures for such equipment. The operating staff can easily identify equipment which is in other than normal conditions.

In addition to the requirements of the technical specifications conditions to be considered in preparing equipment for maintenance or surveillance testing include, for example:

a. Shutdown margin.
b. Method of emergency core cooling.
c. Establishment of a path for decay heat removal.

d. Temperature and pressure of the system.
e. Valves between work and hazardous materials.
f. Venting, draining and flushing.
g. Entry into closed vessels.
h. Hazardous atmospheres and ALARA considerations.
i. Handling hazardous materials.
j. Electrical hazards.

When entering a closed system, the Company prevents the entry of extraneous material and removes foreign material before reclosing the system.

Appropriate personnel inform control room supervision of changes in equipment status, including temporary modifications, and the effects of such changes.

### 3.2.3 Temporary Modifications

The Company controls temporary modifications, such as temporary bypass lines, electrical jumpers, lifted electrical leads, and temporary trip point settings with approved procedures. These procedures include requirements for the period of time for which the temporary modification is in effect. They also include a requirement for:

a. An independent verification by a second person of the proper installation or removal of the temporary modification, or

b. A functional test which conclusively proves the proper installation or removal of the temporary modification.

The Company maintains a log or other documented evidence for the current status of such temporary modifications. The Company reviews temporary modifications periodically to assess their continued need and appropriateness.

### 3.2.4 Return to Service

When equipment is ready to be returned to service, operating personnel place the equipment in operation and verify and document its functional acceptability. The Company assures return to normal conditions including:

a. Removal of electrical jumpers.

b. Removal of signals used during testing.

c. Returning valves, breakers, or switches to proper start-up or operating positions.

d. Assuring that all alarms which are indicative of inoperative status are cleared.

A second qualified person verifies proper alignment of equipment unless:

a. All equipment, valves and switches involved in the activity can be proven to be in their correct alignment by functional testing without adversely affecting the safety of the plant, or

b. Such verification would result in significant radiation exposure.

The person who performs the independent verifications is qualified to perform such tasks. When placed into service, equipment receives additional surveillance during the run-in period. The on-duty supervisor responsible for the unit formally accepts equipment which is returned to service.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is

contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13

# 1. POLICY

This section describes the identification, documentation, segregation, and evaluation of non-conforming items.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Oversight Department
Purchasing Department
Systems Materials Analysis Department
T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company uses written procedures to identify and control items, services or activities that do not conform to requirements. These procedures address:

a. Identification of nonconforming items.
b. Documentation of identified nonconformances.
c. Segregation of nonconforming items.
d. Disposition of nonconforming items.
e. Notification of affected organizations.

Implementation of these procedures prevents the inadvertent use or installation of nonconforming items.

The Company and its vendors establish and document measures for the identification, control and disposition of items and services that do not meet procurement document requirements. These measures provide for:

a. Review of nonconforming items.

b. The vendor submitting nonconformance notice to the Company. These submittals include vendor recommended disposition (i.e. "use-as-is" or "repair") and technical justification. The vendor submits nonconformances to the procurement document requirements or Company approved documents to the Company for approval of the recommended disposition if:

   1) The vendor has violated a technical or material requirement, or

   2) The vendor has violated a requirement in vendor documents, which have been approved by the Company, or

   3) The vendor cannot correct the nonconformance by continuation of the original manufacturing process or by rework, or

   4) The item does not conform to the original requirement even though the item can be restored to a condition such that the capability of the item to function is unimpaired.

c. Company disposition of vendor recommendation.

d. Verification of disposition of nonconformances.

e. Maintenance of records of vendor nonconformances.

### 3.2 Identification

The Company identifies nonconforming items by marking, tagging or other methods which do not adversely affect the end use of the item. The identification is legible and easily recognizable.

### 3.3 Segregation

When practical, the Company segregates nonconforming items by placing them in a hold area until properly dispositioned. When segregation is impractical or impossible due to physical conditions such as size, weight or access limitations, other precautions are employed to preclude inadvertent use of a nonconforming item.

### 3.4 Disposition

#### 3.4.1 Control

The Company uses written procedures to review and accept, reject, repair or rework nonconforming items. The Company controls processing, delivery, installation or use of a nonconforming item pending an evaluation and an approved disposition by authorized personnel. The Company documents ultimate disposition of nonconforming items.

#### 3.4.2 Evaluation

The Company has responsibility for resolution of Company nonconformances.

For items under a contractor's direct control, the Company may delegate to the contractor the authority to perform technical evaluation of nonconformances, if the contractor has an acceptable procedure for handling nonconforming items. Where the Company delegates such authority, the contractor is responsible for establishing that:

a. All actions fall within the requirements set by the Company.

b. Accepted nonconformance meets the design intent.

c. Personnel performing the evaluation meet the requirements of Paragraph 3.4.3.

d. Code items meet the requirements of the Code.

The Company remains responsible for the satisfactory resolution of vendor nonconformances.

When technical evaluation has not been delegated, the Company will make a technical evaluation of all pertinent data relating to the nonconformity, including the cause, where known, and the corrective action either taken or planned to prevent recurrence.

Where ASME Code requirements are involved, the Authorized Nuclear Inspector reviews and accepts or rejects the disposition and justification.

### 3.4.3 Personnel

Personnel having expertise in the pertinent discipline will determine whether a nonconforming item may be accepted "as-is," may be repaired to an acceptable condition, or must be rejected. These personnel have adequate competence and knowledge necessary to make this evaluation and have access to pertinent background information.

### 3.4.4 Documentation

The Company identifies, documents, and retains the disposition (such as use-as-is, reject, repair, or rework) of nonconforming items traceable to each item and technically justifies the disposition.

The Company subjects items which are nonconforming to design requirements and dispositioned "use-as-is" or "repair" to design control measures commensurate with those applied to the original design. The Company technically dispositions and justifies acceptance "as-is," to assure that the final condition of nonconforming items will not adversely affect code requirements, safety, operability, or maintainability of the items, or of the component or system in which it is installed. The as-built records, if such records are required, reflect the accepted deviation.

If the nonconformance can be corrected after installation, the item may be released for installation on a conditional release basis. The Company documents the authority and technical justification for the conditional release of the item for installation and makes it part of the documentation.

### 3.4.5 Repaired, Reworked, or Scrapped Items

The Company reexamines repaired or reworked items using procedures and the original acceptance criteria unless the disposition has established alternate acceptance criteria.

The Company reinspects items that have been corrected. The area of inspection may be confined to the area of the nonconformance. When it has been determined that the corrected item is satisfactory, the Company changes the status of the item to "acceptable." The Company makes an appropriate entry in the documentation after acceptance is determined.

The Company scraps, discards or transfers to training use a nonconforming item that cannot be corrected or accepted "as-is".

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI N18.7
- ANS 3.2
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13
- ANSI/ANS 3.2
- ANSI N45.2.4
- IEEE STD 336
- ANSI N45.2.8
- ANSI N45.2.2

# 1. POLICY

This section describes the Company program to identify and correct occurrences adverse to quality.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Regulatory Assurance Department
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Oversight Department
Systems Materials Analysis Department
T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 General

The Company uses a corrective action system to promptly identify and correct items or occurrences which are adverse to quality or might adversely affect the safe operation of a nuclear generating station. Parts or all of this system may be electronically monitored and electronic records may be used as the sole record of such a system. These items or occurrences include failures, malfunctions, deficiencies, deviations, defective material and equipment, nonconformances and programmatic deficiencies.

For the procurement process, the Company uses procedures that include methods for the identification of conditions adverse to quality and

methods for timely corrective action. The Company requires individual vendors and their contractors to include corrective action measures in their quality assurance programs.

The Company makes a thorough investigation of occurrences. It identifies corrective action to preclude the recurrence of an event. These events may include reactor trip, failed equipment, personnel error, and procedural infractions. Assigned personnel are responsible for determining the root cause(s) of the event and developing recommendations to preclude recurrence. These personnel report the results of this determination to appropriate station personnel and company management. The report includes a detailed description of the occurrence, the findings of the investigation, and recommended corrective measures. Any required formal reports are filed with the appropriate regulatory agency.

The Company notifies the rest of the nuclear industry of any significant event and its circumstances to help preclude a similar event occurring at another plant.

### 3.2 Significant Conditions

The Company takes measures to assure that the cause of any significant condition adverse to quality is determined and takes corrective action to preclude repetition.

An independent review body reviews violations, deviations and reportable events, that were required to be reported to the NRC in writing within 24 hours, such as:

a. Violations of applicable codes, regulations, orders, technical specifications, license requirements or internal procedures or instructions having safety significance.

b. Significant operating abnormalities or deviations from normal or expected performance of plant safety-related structures, systems, or components.

c. Events, as defined in the plant technical specifications.

This independent review includes the review of results of any investigations made and the recommendations resulting from such investigations.

For significant conditions adverse to quality that arise during the procurement process, the Company uses procedures to describe the method used to:

a. Identify and document deviations and nonconformances.

b. Review and evaluate the conditions to determine the cause, extent and measures needed to correct and prevent recurrence.

c. Report the conditions and corrective action to the appropriate levels of management.

d. Implement and maintain required corrective action.

For significant or recurring deficiencies (or errors), the Company follows written procedures to correct the deficiency (or error), determine the cause and make changes in the design process and the quality assurance program to prevent similar types of deficiencies (or errors) from recurring.

3.3 Design Errors

The Company detects deficiencies or errors in design or in the design quality assurance program by:

a. Design verification measures.
b. Personnel using the design documents.
c. Audits.
d. Tests Conducted.
e. Actual failure during operation.
f. Other means.

When a significant design change is necessary because of an incorrect design, the Company reviews and modifies the design process and verification procedures.

### 3.4 Plant Hardware Malfunctions

The causes of malfunction are promptly determined, evaluated and recorded. Experience with the malfunctioning equipment and similar components are reviewed and evaluated to determine whether a replacement component of the same type can be expected to perform the function reliably. If evidence indicates that common components in safety-related systems have performed unsatisfactorily, corrective measures are planned prior to replacement or repair of all such components. Appropriate procedures are revised in a timely manner to prevent recurrence of equipment malfunction or abnormal operation.

### 3.5 Documentation and Reporting

The Company documents the identification of significant conditions adverse to quality, the cause of the condition and the corrective action taken. It reports these items to appropriate levels of management. The report is made immediately if prompt corrective action is required. If the nonconformity is not an indication of a significant failure in any portion of the Quality Assurance Program, the Company does not require reporting to management.

The Company keeps records to identify:

a. Incidents (e.g., major damage, personal injury, major schedule delays.)

b. Nonconforming items in accordance with Section 15, "Nonconforming Materials, Parts or Components."

c. Unfavorable conditions and programmatic deficiencies identified in Audit Reports in accordance with Section 18, "Audits."

d. Significant equipment failures and malfunctions which occur during Station operation.

The Company tracks the completion of corrective action for nonconformances. It maintains records of nonconformances and their resolution. Periodic reports to management inform them of the status of

nonconformances. The Company issues reports indicating the status of all corrective action in progress. These reports are routed to Company corporate management. These periodic reports are reviewed to ensure prompt implementation of the corrective action. Nuclear Oversight routinely reports nonconforming items to appropriate levels of management. The following items are not reported:

a. Minor weld inclusions, undercuts, or porosities, where the magnitude or frequency of occurrence is not indicative of a significant problem in design, procedures, materials or workmanship.

b. Minor departures, except for Code applications, from specified physical or chemical properties of materials that do not require extensive evaluation to determine adequacy of the materials.

c. Minor structural departures from design requirements, such as low strength concrete or porosity of concrete, provided that an extensive evaluation is not required to determine adequacy of the structure or repairs.

d. Minor departures from performance specifications, as demonstrated by acceptance of construction and preoperational tests, which do not require extensive evaluations of an item's performance capability or extensive redesign.

e. The occurrence of a nonconformance that can and will be remedied through the use of established methods in applicable codes or approved procedures.

f. The nonconforming item will have the capability of performing its intended function. The responsible department sends copies of the nonconformances to the cognizant quality area.

For construction or modification activities under Nuclear Engineering and Technology Services or Site Engineering and Construction control, on-site corrective action measures consist of procedures for prompt resolution and approval of corrective actions by Nuclear Engineering and Technology Services or Site Engineering and Construction. The

responsible manager brings significant nonconformances to the attention of corporate management for actions where satisfactory resolution cannot be achieved by Nuclear Engineering and Technology Services or Site Engineering and Construction.

### 3.6 Verification and Follow-up

For construction or modification activities under SEC control, SEC assures that the corrective action has been taken. The Company requires contractors and vendors to follow-up on corrective action commitments within their quality programs.

Independent personnel follow-up and approve that nonconformances have been corrected satisfactorily.

For Operations, trend studies and audit results are evaluated to assure that corrective measures are effectively implemented and that actions to prevent recurrence are effective. The Company verifies completion of corrective actions for maintenance, repair, refueling and operation activities.

The Company performs surveillance of site corrective action. The Company is responsible to track and verify completion of corrective action taken for audit deficiencies including programmatic deficiencies identified in audits. The Company verifies and approves the completion of corrective actions by the station.

The Company regularly reviews and analyzes records:

a. To assure that the causes of nonconformities and the corrective action have been clearly described.

b. To assure that the overall effect resulting from the use of nonconforming items has been evaluated by authorized Commonwealth Edison Company personnel.

c. To determine whether corrective measures will preclude recurrence.

Personnel performing the evaluation function are responsible for considering the cause and the feasibility of corrective action to assure that the necessary quality of an item is not deteriorated. Where it is determined that the cause cannot be corrected in a timely manner, the effective date or corrective action will be determined during the review and evaluation. Evaluation may indicate the need for investigations to assure that corrective measures are considered complete. Evaluation may also indicate that the nature of the nonconformity is minor and does not require corrective action.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- 10CFR50 Appendix B Criteria 16
- ANSI N18.7
- ANS 3.2
- ANSI N45.2
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N45.2.13
- ANSI/ANS 3.2
- ANSI N45.2.11

# 1. POLICY

The company establishes and implements a program to ensure that sufficient records of items and activities are generated and maintained in accordance with applicable requirements.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Operations Division
Nuclear Stations
Site Regulatory Assurance Department
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Nuclear Support Department
Nuclear Operations Staff
Nuclear Regulatory Services Department
Nuclear Oversight Department
Purchasing Department
Corporate Security Department
Systems Materials Analysis Department
T&D Operational Analysis Department

The Company assigns responsibility for specific requirements through The Quality Assurance Data Base.

# 3. REQUIREMENTS

### 3.1 Program

The records program provides for:

a. Administration.
b. Receipt.
c. Transmittal.

d. Storage.
e. Preservation.
f. Safekeeping.
g. Retention.
h. Disposition.

### 3.2 Administration

The quality records program will include those record types, controls, and provisions for storage and preservation contained in NQA-1, Supplement 17S-1. Authority and responsibility for record control activities is delineated. Records are administered through a system which includes an index of record type, retention period, and storage location.

Records will be legible, accurate, complete, identifiable, and retrievable. Records may be maintained in electronic media. Records are complete when dated and stamped, initialed, signed or otherwise authenticated. This may include electronic approval and authorization. Corrections, revisions, or supplements to completed records will be reviewed and approved by an authorized individual in the originating organization. Such changes will be dated and stamped, initialed, signed, or otherwise authenticated including the use of electronic approval and authorization. Procedures will be established to assure that only those persons authorized to use electronic approval grant such approvals.

Measures will be established for replacement, restoration, or substitution of lost or damaged records.

### 3.3 Receipt

A system for receipt control of records will be established. Receipt control is required for records transferred:

a. Between company locations.
b. Between vendors and the company.
c. From company department files to final storage locations.

### 3.4 Transmittal

Systems are established to transfer records between company locations and between vendors and the company. Records transferred from company department files to a final storage location are also under such systems.

The system includes:

a. Inventory of transmitted records.
b. Receipt acknowledgment.

### 3.5 Storage

Record storage facilities are established to meet regulatory requirements, including those of NQA-1, Supplement 17S-1 and ASME Section III, NCA 4134.17. Storage systems provide for:

a. Assignment of responsibilities.
b. Control and accountability of records removed.

### 3.6 Preservation

In order to prevent deterioration, records are stored:

a. In a manner to prevent damage from moisture, temperature, pressure, etc.
b. In binders, folders, envelopes, or similar systems.

Manufacturers recommendations are followed for special recording media.

### 3.7 Safekeeping

Measures are established to prevent access to records by unauthorized personnel. These measures guard against theft and vandalism.

### 3.8 Retention

Record retention periods are established to meet regulatory requirements. The most stringent retention period is implemented when multiple requirements exist.

### 3.9 Disposition

Records will be dispositioned at the end of the prescribed retention period. A review of regulatory requirements will be performed prior to disposition to assure current requirements are satisfied.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the Q.A. Program Database.

- ANSI/ASME NQA-1
- 10CFR50 Appendix B, Criteria 17
- ASME Section III, NCA 4000
- ANSI N18.7
- ANS 3.2

# 1. POLICY

A documented, comprehensive system of planned and periodic performance based audits and assessments of the Company and its vendors is conducted to verify quality assurance program compliance, adequacy and effectiveness, and to assess conformance with management controls.

Audits are conducted in accordance with written procedures and to the requirements of NQA-1 to assist the audited organization and to assure completion of required corrective actions, commitments, or improvements.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this Section:

Nuclear Oversight Department
Site Quality Verification Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base.

# 3. REQUIREMENTS

## 3.1 Audits - General

### 3.1.1 Responsibility

The Nuclear Oversight Manager has the responsibility for the performance of periodic audits to determine that Quality Assurance and Nuclear Safety policy is being carried out. Nuclear Oversight's responsibilities include conducting the external (offsite) audit program of Company stations, departments, and vendors involved in nuclear activities, the management assessment program, and participation in joint member groups. Nuclear Oversight is independent of Nuclear Operations.

The Site Quality Verification Director is responsible for and conducts the internal (onsite) audit and surveillance program and assessments of Company stations and departments involved in nuclear activities. The Site Quality Verification Director has sufficient organizational freedom, authority, and responsibility to provide an onsite assessment of station line and support activities to ensure compliance with Quality Assurance and Nuclear Safety Requirements.

### 3.1.2 Scheduling

Planned and comprehensive performance based audits are performed to assure that safety related functions are fully evaluated.

Audits are performed to schedules approved by the Nuclear Oversight Manager or Site Quality Verification Director, as appropriate, which include the minimum audit areas and frequencies. Schedules are reviewed semi-annually and revised accordingly to assure that coverage is maintained current. Audits are initiated early to assure effective quality assurance during design, procurement, manufacturing, construction, installation, inspection, testing, and operations.

Additional unscheduled audits may also be performed at various stages of activities, based on the nature and safety significance of the work being done, to verify continued adherence to and effectiveness of the quality systems.

The Site Quality Verification Director(s) and the Corporate Quality Verification Director shall approve their respective agenda, checklist, findings, and report of each audit. Audits shall be conducted on a performance driven frequency, not to exceed 24 months, and in accordance with the Company Quality Assurance Program and procedures. Audits shall include the following safety-related functions:

RELOCATION

a. The conformance of unit operation to provisions contained within the technical specifications and applicable license conditions.

b. The adherence to procedure, training, and qualification of the station staff.

RELOCATION

c. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems, components, or method of operation that affect nuclear safety.

d. The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix B, 10CFR 50.

e. Onsite and offsite reviews.

f. The Facility Fire Protection programmatic controls including the implementing procedures by qualified Nuclear Oversight or Site Quality Verification personnel.

g. The fire protection equipment and program implementation utilizing either a qualified offsite licensee fire protection engineer or an outside independent fire protection consultant.

h. The Radiological Environmental Monitoring Program and its results.

i. The Offsite Dose Calculation Manual and implementing procedures.

j. The Process Control Program and implementing procedures for the solidification of radioactive wastes.

k. The performance of activities required by the Company Quality Assurance Program for effluent and environmental monitoring.

Each ongoing Code activity is audited annually and results are made available to the Authorized Inspection Agency.

NOTE: WE REMOVED THE EMERGENCY PLANNING & SECURITY AUDITS. GENERIC LETTER

WE ALSO REMOVED THE 3 YEAR AUDIT OF FIRE PROTECTION.

Material Manufacturers or Material Suppliers who are qualified under the Company's ASME "N" Certificate of Authorization and who are actively supplying Code materials will be audited/surveyed annually. Vendors and their subtier suppliers are audited periodically--generally in conjunction with plant visits for witnessing inspection points. The Company's active participation in joint utility audit programs provides an alternative means to fulfilling its responsibility for auditing active vendors.

### 3.1.3 Preparation

A documented plan or an agenda will identify the audit scope, requirements, audit personnel, activities to be audited, organizations to be notified, applicable documents, and schedule. An approved checklist or procedure for each audit will identify the quality and technical elements of the area or items to be evaluated. Audit plans, agendas, checklists, and procedures will be prepared in advance under the direction of the Audit Team Leader.

### 3.1.4 Personnel

Audits will be accomplished by experienced personnel qualified in accordance with NQA-1 who are familiar with written procedures, standards and processes applicable to the area being audited. Audit personnel shall have sufficient authority and organizational freedom to make the audit process meaningful and effective and shall not have direct responsibilities in the areas to be audited. The Audit Team Leader shall organize and direct the audit and ensure the audit team collectively has the required experience or training for the activities to be audited. The audit team may be supplemented by technical specialists to provide additional experience and competence.

### 3.1.5 Performance

Performance based audits are conducted to assess specific activities, processes, and records on the basis of their impact and importance relative to safety, reliability, and functionality. Audits can be focused on

areas most in need of improvement. Objective evidence shall be examined to the extent necessary to determine that a quality system is being effectively implemented.

### 3.1.6 Reporting and Follow-up

An audit report includes the description of the audit scope, identification of the audit team and personnel contacted during audit activities, a summary of audit results (including a statement on effectiveness of the quality assurance program elements), and a comprehensive description of each audit concern. Audit results will be documented and distributed and shall be reviewed by the management having responsibility in the area being audited. Deficiencies requiring prompt corrective action are reported immediately to the management of the audited organization.

All findings of noncompliance with NRC requirements, and significant recommendations and SIGNIFICANT findings of each audit shall be reported to the Station Manager, the appropriate Site Vice President, the Nuclear Oversight Manager, ~~and~~ the Senior Vice President and CNO.
any nuclear safety or quality issue will be directed through the NOM to

Responsible management shall take the necessary actions to correct the deficiencies identified in the audit. They will define the corrective action to be taken, actions which will prevent recurrence, and a schedule for implementing these actions.

These commitments will be evaluated by the Audit Team Leader. Recurring deficiencies or failure to implement corrective action will be reported to appropriate Company executives.

Copies of documentation, reports, and correspondence are kept on file at the appropriate station.

Verification of the completion of scheduled corrective action commitments is performed to assure deficiencies or adverse conditions are corrected. Previous deficient areas or adverse conditions are followed up to assure corrective action is effective and implementation continues.

### 3.1.7 Records

The audit plan, report, objective evidence, written replies, and the record of completion of corrective action and deficiency follow-up is on file. Personnel qualification records for audit team members are established, maintained, and reviewed.

### 3.2 Independent Management Audit/ Assessment

Audits of the Company are performed by the Authorized Inspection Agency as required by the Code and ASME N626.0. A periodic review of the audit program will be performed by an independent organization to assure that audits are being accomplished to program requirements. An annual report on the status, adequacy, and implementation of the Quality Assurance Program is submitted to the Senior Vice President and Chief Nuclear Officer by the Nuclear Oversight Manager.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in Q.A. Program Database.

- 10CFR50 Appendix B
- ANSI/ASME NQA-1
- ASME Code Section III, NCA-4000
- ANSI N18.7-1977
- ANSI/ANS 3.2-1988

# 1. POLICY

It is the policy of the Company to assure a high degree of availability and reliability for our nuclear plants while ensuring the health and safety of the public and our workers. Therefore, the Quality Assurance Program is applied in a graded manner to certain areas and activities that are not clearly defined as safety related or Code related. The Company calls this application Augmented Quality.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Site Material Management Department
Site Engineering and Construction Department
Nuclear Engineering and Technology Services Department
Corporate Security Department

The Company assigns responsibilities for specific requirements through the Quality Assurance Database.

# 3. REQUIREMENTS

The Company applies the Quality Assurance Program to certain systems, structures, components, and activities which are not safety related or Code related to a degree consistent with their importance to safety. While there may be minor interfaces with additional sections of this manual, the following sections apply to the programmatic elements of the noted activities:

## 3.1 Health Physics and ALARA (As Low As Reasonably Achievable)

Sections 3, 4, 5, 6, 15, 16, and 18 are applicable to this area.

### 3.2 Emergency Planning

Sections 5, 6, 16, and 18 is applicable to this area.

### 3.3 Transport of Radioactive Waste

Sections 4, 5, 6, and 17 are applicable to this area.

### 3.4 Security

Security is controlled for each station by the station security plan that is prepared per NUREG 0908. This plan describes the applicable personnel organization, the keeping of records, audits, and the reporting of abnormal conditions. Sections 6 and 16 are applicable to this area.

### 3.5 Review of Class IE Equipment Qualification

Sections 3, 5, 6, and 15 are applicable to this area.

### 3.6 Training

Sections 4, 5, 6, 15, 17, and 18 are applicable to this area.

### 3.7 Environmental Monitoring

Sections 17 and 18 are applicable to this area.

### 3.8 Meteorology

Sections 17 and 18 are applicable to this area.

### 3.9 Fire Protection

A quality assurance program is required for fire protection systems in Safety Related areas. Nuclear Engineering and Technology Services is responsible for determining this need for systems on a case by case basis.

The Stations are responsible for determining this need for other fire protection equipment on a case by case basis. When required by these organizations, Sections 3, 4, 5, 6, 7, 10, 11, 14, 15, 16, 17 and 18 are applicable to this area.

### 3.10 Repairs and Alterations Subject to IDNS Jurisdiction

Welded repairs and all alterations to non-ISI boilers and pressure vessels, as described in Sections 505.10 and 505.50(a) of the Illinois Department of Nuclear Safety (IDNS) Boiler and Pressure Vessel Safety Rules, and the repair of pressure relief valves, as described in Section 505.2500(a)(1)(b) of the rules, are to be conducted in accordance with Section 505.2500(a)(1)(a)(ii) of the Rules. Section 505.2500(a)(1)(a)(ii) requires that the Company apply an approved QA Program to such repairs and alterations and describe how it is applied. The following describes the Company's application.

The Company has a QA Program which is reviewed and accepted by the NRC. In addition, the QA Program and the ASME [Section III] Interface are reviewed and accepted by an accredited Authorized Inspection Agency. Authorized Inspectors are present at each of the Company's plants while Code work is in progress.

Section 1 of this QA Program describes the authority and responsibilities of the organization. It also describes the retention of responsibility when repair and modification activities are subcontracted.

Section 3 requires that designs and changes to designs be defined, documented, and controlled.

Section 5 requires that all work be accomplished in accordance with documented instructions and procedures and be subject to appropriate process controls. The implementation of this is the use of the Nuclear Work Request (NWR) to authorize, track, and control work in the plant. The NWR system provides for specifying when work is CODE related and is not limited to any particular Section of the ASME Code. It further provides for detailed instructions for accomplishing the work. This includes the need for qualified inspectors, qualified welders, qualified

procedures, special processes, required documentation, approved drawings, and post-maintenance/post-modification testing. NWRs marked as Code work are offered to the AI for the insertion of Hold and Witness points.

Sections 4, 7, 8, and 13 address the procurement, receiving, handling, storage, disbursement, and marking of materials. Local implementing procedures establish traceability of materials to the procurement and receiving processes and provide assurance that only Code acceptable materials are utilized. Any specific requirements for heat traceability will be in accordance with the applicable Sections of the Code being used.

Section 9 details the controls for Special Processes while Section 10 covers the aspect of inspection. This includes the requirement for the use of independent, qualified inspectors and examiners when required by the Code, and invokes the Company's Special Processes and Procedures Manual (SPPM). The SPPM is also reviewed and accepted by the Authorized Inspection Agency.

Section 6 and 17 require that documents and records be generated and maintained to satisfy the requirements of the Code and the jurisdiction.

Section 18 provides for overview and audit of Code activities.

Repairs and alterations performed as described above meet the requirements of the approved QA Program and meet the requirements of the IDNS B&PV rules; regardless of the safety classification of the boiler or pressure vessel or pressure relief valve being repairs.

## 4. REFERENCES

The following references were used in the generation of this section. The Company's commitment to particular revisions of these standards is contained in Section 2. Specific references for the requirements listed in Part 3 of this section are contained in the QA Program Database.

- 10CFR50 Appendices A, B, and R
- 10CFR71 Part H

- 10CFR73
- 10CFR21
- ANSI/ASME NQA-2

NEW SECTION TO RELOCATE ON&OFF SITE ADMIN SECTION OF TECHNICAL SPECIFICATIONS TO THE TOPICAL

# 1. POLICY

Independent safety reviews of plant operations are conducted to ensure that day-to-day activities are conducted in a safe manner. Senior management is provided with overall assessments of facility operation and recommendations to improve nuclear safety margins and plant reliability.

# 2. RESPONSIBILITIES

The following departments are responsible for carrying out the requirements of this section:

Nuclear Stations
Nuclear Oversight Department

The Company assigns responsibility for specific requirements through the Quality Assurance Program Data Base. Because of the regulatory need to specify responsible individuals for items previously contained in Technical Specifications, more detailed assignments of responsibility are contained in this Section than in others.

# 3. REQUIREMENTS

## 3.1 General

The Director of Safety Review shall be appointed by the Nuclear Oversight Manager responsible for nuclear activities. The corporate audit function shall be the responsibility of the Nuclear Oversight Manager and shall be independent of operations.

The Nuclear Oversight Manager reports to the Senior Vice President and Chief Nuclear Officer (CNO) and has the responsibility to set corporate policy for the areas of Quality Assurance and Nuclear Safety. The Nuclear Oversight Manager has the responsibility to determine that Nuclear Safety policy is being carried out. The Nuclear Oversight Manager has the authority to order unit shutdown or request any other action which he deems necessary to avoid unsafe plant conditions.

The use of the term Offsite Review refers to the Offsite Review and Investigative Function as previously used in Technical Specifications. Onsite Review refers to the Onsite Review and Investigative Function as previously used in Technical Specifications.

### 3.2 Offsite Review and Investigative Function

The Director of Safety Review shall:

1. Provide overall direction of the Offsite Review and Investigative Function.

2. Appoint a senior participant to conduct or direct individual review and investigative functions.

3. Assure that a cross disciplinary review determination is made for each item to be reviewed.

↑ MAJOR DIFFERENCE

4. Assure that cross disciplinary offsite reviews are performed by qualified personnel of the appropriate disciplines when necessary.

5. Approve and report in a timely manner all findings of non-compliance with NRC requirements to the Station Manager, Site Vice President, Nuclear Oversight Manager, and the Senior Vice President and CNO.

During periods when the Director of Safety Review is unavailable, he shall designate this responsibility to an established alternate, who satisfies the formal training and experience for the Director of Safety Review. The responsibilities of the personnel performing this function are stated below.

#### 3.2.1 Required Offsite Reviews

The Offsite Review and Investigative Function shall review:

MINOR INTERPRETATION

a. Safety evaluations for:

   1. changes to procedures, equipment, or systems that affect the description in the safety analysis report, and

   2. tests or experiments completed under the provision of 10CFR50.59 to verify that such actions did not constitute an unreviewed safety question.

b. Proposed changes to procedures, equipment, or systems which involve an unreviewed safety question as defined in 10CFR50.59.

c. Proposed tests or experiments which involve an unreviewed safety question as defined in 10CFR50.59.

d. Proposed changes in Technical Specifications or NRC Operating License.

e. Non-compliance with codes, regulations, orders, technical specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.

f. Significant operating abnormalities or deviation from normal and expected performance of plant equipment that affect nuclear safety as referred to it by an Onsite Review and Investigative Function.

g. All reportable events.

h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of safety-related structures, systems, or components.

i. All changes to the Generating Stations Emergency Plan prior to implementation of such change.

j. All items referred by the Site Vice President, Station Manager, Systems Engineering Supervisor, the Nuclear Oversight Manager or Onsite Review.

TIE TO COMPANY

### 3.2.2 Records

Records documenting the actions of Offsite Safety Review will be produced and maintained as follows:

a. Reviews, audits, and recommendations shall be documented and distributed as covered in Section 3.2(5).

b. Copies of documentation, reports, and correspondence shall be kept on file at the appropriate station.

### 3.2.3 Procedures

Written administrative procedures shall be prepared and maintained for the Offsite Review and Investigative Function. These procedures will include the following:

a. Content and method of submission of presentations to the Director of Safety Review.

b. Use of committees and consultants.

c. Review and approval.

d. Detailed listing of items to be reviewed.

e. Method of:

1. Appointing personnel.

2. Performing reviews and investigations.

3. Reporting findings and recommendations of reviews and investigations.

4. Approving reports.

5. Distributing reports.

f. Determining satisfactory completion of action required based on approved findings and recommendations reported by personnel performing the review and investigative functions.

### 3.2.4 Personnel

The persons, including consultants, performing the Offsite Review and Investigative Function, in addition to the Director of Safety Review shall have expertise in one or more of the following disciplines as appropriate for the subject or subjects being reviewed and investigated:

a. Nuclear power plant technology
b. Reactor operations
c. Utility operations
d. Power plant design
e. Reactor engineering
f. Radiological safety
g. Reactor safety analysis
h. Instrumentation and control
i. Metallurgy
j. Any other appropriate disciplines required by unique characteristics of the facility

Individuals performing the Offsite Review and Investigative Function shall possess the minimum formal training and experience, as listed below, for each discipline.

a. Nuclear Power Plant Technology - Engineering graduate or equivalent with 5 years experience in the nuclear field design and/or operation.

b. Reactor Operations - Engineering graduate or equivalent with 5 years experience in nuclear power plant operations.

c. Utility Operations - Engineering graduate or equivalent with at least 5 years of experience in utility operation and/or engineering.

d. Power Plant Design - Engineering graduate or equivalent with at least 5 years of experience in power plant design and/or operation.

e. Reactor Engineering - Engineering graduate or equivalent. In addition, at least 5 years of experience in nuclear plant engineering, operation, and/or graduate work in nuclear engineering or equivalent in reactor physics is required.

f. Radiological Safety - Engineering graduate or equivalent with at least 5 years of experience in radiation control and safety.

g. Reactor Safety Analysis - Engineering graduate or equivalent with at least 5 years of experience in nuclear engineering.

h. Instrumentation and Control - Engineering graduate or equivalent with at least 5 years of experience in instrumentation and control design and/or operation.

i. Metallurgy - Engineering graduate or equivalent with at least 5 years of experience in the metallurgical field.

The Director of Safety Review shall have experience and training which satisfy ANSI N18.1-1971 requirements for "Plant Managers."

### 3.3 Onsite Review and Investigative Function

#### 3.3.1 General

The Onsite Review and Investigative Function shall be supervised by the Station Manager. The Station Manager shall:

1. Provide directions for the Onsite Review and Investigative Function and appoint the Systems Engineering Supervisor or other comparably qualified individual as the senior participant to provide appropriate directions.

2. Approve participants for this function.

3. Assure that at least two participants who collectively possess background and qualifications in the subject matter under review are selected to provide comprehensive interdisciplinary review coverage under this function.

4. Independently review and approve the findings and recommendations developed by personnel performing the Onsite Review and Investigative Function.

5. Report all findings of noncompliance with NRC requirements and provide recommendations.

6. Submit to the Offsite Review and Investigative Function for concurrence in a timely manner, those items described in Section 3.2.1 which have been approved by the Onsite Review and Investigative Function.

### 3.3.2 Authority

The Onsite Review and Investigative Function shall:

a. Advise the Station Manager on all matters related to Nuclear Safety.

b. Recommend to the Station Manager the disposition of items considered under Section 3.3.3, 1 through 9 prior to their implementation.

c. Include among its review conclusions for each item considered under Section 3.3.3, 1 through 4 a determination of whether or not the item involves an unreviewed safety question.

d. Provide prompt notification to the appropriate Site Vice President and the Director of Safety Review of disagreement between the Onsite Review and Investigative Function and the Station Manager. The Station Manager shall follow the recommendations of the Onsite Review and Investigative Function or select a course of action that is more conservative regarding safe operation of the facility.

### 3.3.3 Responsibility

The Onsite Review and Investigative Function shall be responsible for conducting the following:

1. Review of all applicable Plant Administrative Procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978 and changes thereto.

2. Review of Emergency Operating Procedures required to implement the requirements of NUREG-0737 and Supplement 1 to NUREG-0737 as stated in Section 7.1 of Generic Letter No. 82-33 and changes thereto.

3. Review of all proposed tests and experiments that affect nuclear safety.

4. Review of all proposed changes or modifications to plant systems or equipment that affect nuclear safety.

5. Review of proposed changes to the Fire Protection Program.

6. Review of the Station Security Plan and submittal of recommended changes to the Station Security Plan in accordance with station procedures.

7. Review of Emergency Plan and identification of recommended changes.

8. Review of changes to the Process Control Program and the Offsite Dose Calculation Manual.

9. Review of all proposed changes to the technical specifications or operating license, and any proposed change which involves an unreviewed safety question that is to be submitted to the Nuclear Regulatory Commission for approval.

10. Review of investigation results for all violations of the technical specifications, including the preparation and forwarding of reports covering evaluations and recommendations to prevent recurrence.

11. Review of investigation results for all Reportable Events and other significant operating abnormalities including the preparation and forwarding of reports covering evaluations and recommendations to prevent recurrence.

12. Review of investigation results for any accidental, unplanned, or uncontrolled radioactive release including the preparation and forwarding of reports covering evaluations and recommendations to prevent recurrence.

13. Review of unit operations to detect potential hazards to nuclear safety.

14. Performance of special reviews and investigations and reports thereon as requested by the Director of Safety Review.

### 3.3.4 Records

Reports, reviews, investigations, and recommendations prepared and performed for Section 3.3.3 shall be documented and forwarded to the Director of Safety Review unless otherwise specified.

Copies of all records and documentation shall be kept on file at the station.

### 3.3.5 Procedures

Written administrative procedures shall be prepared and maintained for conduct of the Onsite Review and Investigative Function. These procedures shall include the following:

a. Content and method of submission and presentation to the Station Manager, Site Vice President, and Director of Safety Review.

b. Use of committees.

c. Review and approval.

d. Detailed listing of items to be reviewed.

e. Procedures for administration of the quality control activities.

f. Assignment of responsibilities.

### 3.3.6 Personnel

The personnel, including consultants, performing the Onsite Review and Investigative Function, in addition to the Station Manager, shall have expertise in one or more of the following disciplines as appropriate for the subject or subjects being reviewed and investigated:

a. Nuclear power plant technology
b. Reactor operations
c. Reactor engineering
d. Chemistry
e. Radiological controls
f. Instrumentation and control
g. Mechanical and electrical systems

Personnel performing the On site Review and Investigative Function shall meet minimum acceptable levels as described in ANSI N18.1-1971, Sections 4.2 and 4.4.

# 1. GENERAL

This Appendix of the Quality Assurance Manual consists of definitions of words or phrases found in the Commonwealth Edison Company Quality Assurance Program. The purpose of this definition section is to provide a common basis for understanding those words or phrases that may have a different meaning when used elsewhere.

All words and phrases are subject to review and revision as circumstances require.

- A -

**Approval**

Approval as used herein means by signature or initialing and date by an authorized individual.

**ASME Boiler and Pressure Vessel Code, Section III, Division 1 and Division 2 for Concrete Containment**

Refers to ASME Section III, Division 1 and Division 2 for Concrete Containment; ASME Section III; ASME Code; ASME; or Code.

**ASME Boiler and Pressure Vessel Code, Section XI**

Refers to ASME Section XI; Section XI; or Code.

**Audit**

A planned and documented activity performed to determine by investigation, examination, or evaluation of objective evidence the adequacy of and compliance with established procedures, instructions, drawings, and other applicable documents, and the effectiveness of implementation. An audit should not be confused with surveillance or inspection activities performed for the sole purpose of process control or product acceptance.

**Audit Team Leader**

An individual appointed to lead an Audit Team. The Audit Team Leader coordinates the preparation of the audit report.

**Auditor**

One qualified and authorized to examine quality assurance practices and verify whether requirements are being met.

**Authorized Inspector or AI or ANI**

As used herein is meant to mean Authorized Nuclear Inspector. An Authorized Nuclear Inspector is an employee of an Authorized Inspection Agency who has qualifications for and has been properly accredited for Division 1 or Division 2.

**Authorized Nuclear Inservice Inspector or ANII**

As used herein is meant to mean the Authorized Nuclear Inservice Inspector. An ANII is an employee of an Authorized Inspection Agency who has qualifications for and has been properly accredited for ASME Section XI.

- B -

**Balance of Plant**

Generating Station items and equipment not designed, furnished or installed as a part of the Nuclear Steam Supply System. Balance-of Plant items include safety-related and Code items, such as the containment as well as non safety-related and non-Code items.

**Basic Component**

"Basic component", when applied to nuclear power reactors means a plant structure, system, component or part thereof necessary to assure (1) the integrity of the reactor coolant pressure boundary, (2) the capability to shut down the reactor and maintain it in a safe shutdown condition,

or (3) the capability to prevent or mitigate the consequences of accidents which should result in potential offsite exposures comparable to those referred to in par 100.11 of 10CFR Chapter 1 (1-1-87), Part 21.

**Bid Package**

The total of drawings, specifications, codes, standards, quality and other requirements that describes the task on which a prospective contractor/supplier will bid.

- C -

**Calibration**

A method of assuring accuracy of gauges and instruments used for measuring and testing by comparing with recognized standards.

**Certificate of compliance**

A written statement, signed by a qualified person, attesting that the materials or items are in compliance with the purchasing documents.

**Certified Personnel**

Personnel who have passed a formal training program and a formal proficiency test for special processes such as welding, plating and nondestructive testing.

**Certified Standards**

Standards of measurement whose accuracy can be traced to standards at the National Institute of Standards and Technology or established standards.

**Certified Material Test Report**

A document attesting that material is in accordance with specified requirements including the actual results of all required chemical analyses, tests examinations.

**Change Order**

A formal award to a vendor or contractor covering revision(s) to the original Purchase Order or Change Order, involving but not limited to quantity, technical requirements, quality assurance requirements or scope of work.

**Change Order Requisition**

A document describing revisions to be made to the original Purchase Order or subsequent Change Order and which is converted into a Change Order.

**Characteristic**

Any property or attribute of an item, process or service that is distinct, describable and measurable, as conforming or nonconforming to specified quality requirements. Quality characteristics are generally identified in specifications and drawings which describe the item, process or service.

**Code**

See ASME Boiler and Pressure Vessel Code, Section III or Section XI, whichever is applicable.

**code**

A recognized standard for using or processing materials, or for the skill involved in use or processing.

**Cognizant Engineer**

The engineer assigned a specific task or area of responsibility in the design or testing of a component or system.

**Company**

Defined as Commonwealth Edison Company, and referred to variously as CECo, Edison or Company.

**Company Level III**

Chief Level III (NDE) for the Company

**Component**

ASME Code items such as vessels, concrete containments, piping systems, pumps, valves, core support structures and storage tanks which will be combined with other components to form an assembly or installation of a nuclear power plant.

**Component Identification Number**

An identification number assigned (where appropriate) to an item for use throughout its lifetime.

**Construction**

Activities at the building site necessary to erect, inspect and accept a power generating station and its associated installation. This definition applies unless otherwise indicated.

Construction (ASME Section III Div.1) comprises all activities relating to materials, design fabrication, examination, testing, inspection and certification required in the manufacture and installation of items.

Construction (ASME Section III Div. 2) includes all those operations required to build the component and its parts in accordance with the Design Drawings and Construction Specification which have been prepared by the Designer (A-E).

**Construction Tests**

Those tests necessary to verify that the installation of each component of a system is complete and complies with the applicable specifications, standards, codes, drawings and engineering information.

**Contract (Including purchase order)**

A binding agreement between two or more persons or companies.

**Contractor**

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

Code Contractor is a contractor holding a valid ASME Section III Certificate of Authorization.

**Control Point**

In a sequential operation, a checkpoint at which certain data are taken, inspections made or approval required.

**Corrective Action**

Measures taken to rectify conditions adverse to quality, and, where necessary, to preclude repetition.

- D -

**Department**

When a responsibility is given a Department in this manual it is meant that the Department Head has the responsibility.

**Design Change**

Any change in design that may affect functional requirements, operating conditions, safety-, regulatory-, reliability-, and Code-related requirements, performance objectives, plant reliability or design life and would require that affected documentation be changed.

**Design Controls**

Methods for assuring that basic design requirements are formalized and translated into design documents with proper review to assure the scheduled release of a valid design.

**Design Criteria**

Statements of the form, function and interface requirements within well defined limitations.

**Designer (Division 2)**

As used in ASME Code Division 2 construction, the Designer (A-E) is the organization responsible for the preparation and completion of the Design Report, Design Drawings, and Construction Specifications for applicable items.

**Design Requirements**

Documents that set the functional requirements, operating conditions safety requirements, performance objectives, design margins and design life. Included are any special requirements for size, weight, ruggedness, materials, fabrications or constructions, testing, maintenance, operating environments, safety margins and derating factors.

**Design Review**

An analysis of design with respect to technical adequacy, interface control, inspectability, maintainability and conformance to applicable codes, standards, regulations and design criteria.

**Design Specification**

A document that sets the functional requirements; design requirements; environmental conditions, including radiation; Code classification; definition of the boundaries; and material requirements. Sufficient detail shall be contained within the document to provide a complete basis for design.

For Section III ASME Code (Division I): A document prepared by the owner or owner's designee which provides a complete basis for construction in accordance with Section III.

**Desk Survey**

An evaluation of a supplier's quality control capability made from documented procedures and records of past performance.

**Destructive test**

A test to determine the properties of a material or the behavior of an item which results in the destruction of the sample or item.

**Deviation**

A nonconformance. Departure of a characteristic from specified requirements.

**Discrepancy**

A nonconformance.

**Documentation**

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

**Drawing Manifest**

A document for transmitting drawings, released for construction to Engineering, Construction and Production.

- E -

**Edison**

Defined as Commonwealth Edison Company and referred to variously as CECo, Edison or Company.

**Erector**

An organization involved in assembling and building equipment or structures at the site.

**Examination**

Specific actions by qualified personnel using qualified procedures to verify that items and fabrication processes are in conformance with specified requirements. This term, when used in conjunction with qualification of personnel to perform quality-related activities shall mean a written examination.

- F -

**Fabricator**

An organization involved in the manufacture of equipment.

**Fabricator (ASME Section III Div. 2)**

The NPT Certificate Holder

**Final Safety Analysis Report (FSAR)**

A finalization of the preliminary safety analysis report prepared for the Nuclear Regulatory Commission prior to issuance of an operating license.

**First Level Design Review**

A review conducted by the responsible project engineer within the design agency for a specific design discipline.

**Flow Chart**

A representation of the sequence of activities such as procurement, fabrication, processing, assembly, inspection and test, or the sequence of individual operations within one or more of those functions.

- H -

**Hold Point**

A designated stopping place during or following a specific activity at which inspection or examination is required before further work can be performed.

- I -

**Incident**

Occurrence of major damage, serious personal injury or significant schedule delay.

**Inspection**

A phase of quality control which, by means of examination, observation or measurement, determines the conformance of materials, supplies, components, parts, appurtenances, systems, processes or structures to predetermined quality requirements.

**Inspection and Test Plan**

A listing, with optimum sequencing, of all the inspections and tests required to be performed for a specific item, component, structure or service.

**Interface control**

Consideration that components and structures are geometrically and functionally compatible and that materials are compatible with both process and environment.

**Item**

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

When ASME Code items are referenced, this means products constructed under a certificate of authorization and material.

- J -

**Jurisdictional Boundaries**

The physical limits of a Code item which are identified to determine the applicability of Code rules for that item.

- L -

**Lifetime Record**

A record which meet one or more of the following criteria:

a) those which would be of significant value in demonstrating capability for safe operation;
b) those which would be of significant value in maintaining, reworking, repainting, replacing, or modifying an item;
c) those which would be of significant value in understanding the cause of an accident or malfunction of an item;
d) those which provide required baseline data for inservice inspections.

**Like-for-Like Replacement**

The replacement of an item with an item that is identical in all physical and performance characteristics.

**Local Purchase Order**

A purchase order initiated through the computer by a station for the purchase of only Company Stores Coded items.

- M -

**Maintenance**

Repair, rework, or replacement of a structure, system or component with equipment of the same design, i.e., meeting the same engineering requirements.

**Maintenance/ Modification Work Package**

The complete set of documentation that enables the Station to fabricate, examine, test and install ASME and safety-related items. The work package consists of the Work Request, provisions for Station Traveler, Document Checklist and maintenance/modification procedures and supporting information such as, but not limited to, approved drawings, Design Specifications, and Special process procedures.

**Material**

A substance or combination of substances forming components, parts, pieces and equipment. (Intended to include such things as machinery, castings, liquids, formed steel shapes, aggregates and cement.)

When ASME Code material is referenced, this refers to metallic materials which are manufactured to an SA, SB or SFA Specification or any other material specification permitted by Section III of the Code. For Division 2, refers to metallic materials, as well as to nonmetallic materials, conforming to the specifications permitted in Section III of the Code.

**Material Supplier**

An organization which supplies material produced and certified by Material Manufacturers, but does not perform any operations which affect the material except when agreed upon by the Certificate Holder who uses the material in Code construction or when so authorized by a Quality System Certificate (Materials). The Material Supplier may perform and certify the results of tests, examinations, repairs, or treatments required by the material specification or by this Section which were not performed by the Material Manufacturer.

**Modification**

A change to an item made necessary by, or resulting in, a change in design requirements. (ASME-NCA 9000)

A planned change in plant design or operation and accomplished in accordance with the requirements and limitation of applicable codes, standards, specifications, licenses and predetermined safety restrictions.

- N -

**National Standards**

Standards maintained at or issued by the National Institute of Standards and Technology (NIST) or other designated institutions, and the values for natural physical constants and conversion factors recommended by the NIST.

**Nonconformance**

A deficiency in characteristic, documentation or procedure that renders an item or activity unacceptable or indeterminate. Examples of nonconformance include: physical defects, test failures, incorrect or inadequate documentation and deviation or variation from prescribed processing, inspection or test procedures.

**Nonpermanent Record**

A record that is required to show evidence that an activity was performed in accordance with the applicable requirements but do not meet the criteria for a lifetime record.

**NQA-1 (ANSI/ ASME NQA-1-1989 Edition)**

Quality Assurance Program Requirements for Nuclear Facilities. For ASME Section III activities, NQA-1 is as modified by the Code.

**Nuclear Steam Supply System (NSSS)**

That portion of the nuclear generating plant which provides steam from nuclear heat. It includes reactor, its control systems, main coolant and steam generation systems, fuel handling equipment, emergency core cooling system and other safeguards, associated electrical equipment, instrumentation, spent fuel handling and radioactive waste disposal system.

- O -

**Objective Evidence**

Any statement of fact, information or record, either quantitative or qualitative, pertaining to the quality of an item or service based on observations, measurements or tests which can be verified.

**Offsite Review**

The offsite review and investigative function required by the Technical Specifications.

**Onsite Review**

The Station review and investigative function required by the Technical Specifications.

**Operational Tests**

Tests that are performed during the operations of the plant to verify continued satisfactory performance of safety-related structures, systems and components.

- P -

**Phased replacement**

Where several identical items are to be replaced with a new model, replace a few at a time to allow monitoring of the new items.

**Preliminary Safety Analysis Report (PSAR)**

The initial detailed safety evaluation prepared for the U.S. Nuclear Regulatory Commission prior to issuance of the site construction permit and which delineates design, normal and emergency operation, potential accidents and predicted consequences of such accidents and the means proposed to prevent such accidents and/or reduce their consequences to acceptance levels.

**Preoperational Testing**

Preliminary testing prior to fuel loading and plant operation to assure that construction and installation are complete and to verify design and system functions.

**Procedure**

A controlled document that specifies or describes how an activity is to be performed. It may include methods to be employed, equipment or materials to be used, accept/reject criteria and sequence of operations.

**Projects Construction Superintendent**

The site Projects Construction Superintendent is the person responsible in the Engineering and Construction Department for initial plant construction.

**Proprietary Designs**

Designs engineered, produced and sold by a manufacturer in accordance with his or her criteria and warranty.

**Purchase Requisition**

The basic document describing a material, component or service which is converted into a purchase order for procurements.

- Q -

**Quality Assurance**

All those planned and systematic actions necessary to provide adequate confidence that an item or a facility will perform satisfactorily in service. For the Code, Quality Assurance comprises all those planned and systematic actions necessary to provide adequate confidence that all items designed and constructed are in accordance with the applicable Code.

**Quality Control**

Those quality assurance examinations and actions which provide a means to control and measure the characteristics of an item, process or facility to determine or establish conformance to acceptance standards and specified requirements.

**Quality Receipt Inspection Report**

A form utilized by station Quality Control to document technical receipt inspection of Code and safety-related items received by station Stores Department.

- R -

**Receiving Inspection Notice (RIN)**

A form initiated by station Stores Supervisor upon receipt of Code or safety-related items to record inspection for damage, to record receipt of documentation and to notify station Quality Control Engineer that item(s) are available for technical receipt inspection.

**Record**

A completed document that:

a) furnishes evidence of the quality of items or activities
b) furnishes evidence of compliance with regulations or requirements
c) is required by Technical Specifications.

Included are such related documents as drawings, specifications, procurement documents, procedures, operating logs, and reportable occurrences.

Such documents may be originals or reproduced copies.

**Registered Professional Engineer (RPE)**

A person competent in the applicable field of design and qualified in accordance with the requirements of ANSI/ASME 626.3-1988.

**Repair**

The process of restoring a nonconforming characteristic to a condition such that the capability of an item to function reliably and safely is unimpaired, even though that item still may not conform to the original requirements. For ASME Section III items, repair is the process of physically restoring a nonconformance to a condition such that an item complies with Code requirements.

**Request for Bid**

Invitation made to suppliers or contractors to bid on a specific task for materials, goods and services.

**Request for Purchase**

A Generating Station's document originated by foremen, supervisors or department heads which designates the required items and services and delineates the design specifications, applicable codes and standards, as well as, any special requirements. This document is the basis of initiating a Purchase Requisition.

**Rework**

The process by which a nonconforming item is made to conform to a prior specified requirement by completion, remachining, and re-assembling using previously approved procedural requirements. (For ASME Section III, rework is same as repair.)

- S -

**Second Level Design Review**

Independent objective assessment of a design by qualified personnel who have no direct project responsibility for the design.

**Significant Conditions (adverse to quality)**

Those violations, deficiencies or events, having safety significance, that are required to be reported in writing within 24 hours to the NRC; severe operating abnormalities or large deviations from expected plant performance of safety related structures, systems, or components; "events" as described in the plant Technical Specifications; pervasive breakdowns in the quality assurance program; recurring deficiencies or errors that cannot be dispositioned or brought into conformance by established corrective action systems; or violations of the ASME Code that cannot be readily brought into compliance.

**Site Quality Verification Engineer or Inspector**

As used herein shall mean a member of the Site Quality Verification Department.

**Source Acceptance**

Acceptance made at Vendor plant prior to shipment of purchased items.

**Source Inspection**

Inspection carried out at Vendor plant prior to shipment of purchased items.

**Special Process**

A process, the results of which are highly dependent on the control of the process or skill of the operator, or both.

**Special Process Procedures Manual**

A compilation of Commonwealth Edison company procedures governing nondestructive examination and special processes such as welding and heat treating.

**Specification**

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

**Start-up Tests**

Tests that are performed after initial fuel loading and proceed through several power level plateaus to 100% power.

**Stock Material**

Material which is or may be used for conversion to an ASME SA, SB, or SFA Specification or allowable ASTM Specification. As used in this program Stock Material is that material that has not been produced in accordance with an NCA 3800 QA Program.

**Surveillance**

Examination of supplier's manufacturing, inspection and test operations and of records of work in progress, this activity is documented.

**Survey**

A documented evaluation of an organization's ability to perform Code activities as verified by a determination of the adequacy of the organization's quality program and by a review of the implementation of that program at the location of the work.

- T -

**Technical Review**

A determination as to whether a nonconforming item will be accepted "as is", reworked, repaired to an acceptable condition or rejected.

**Technical Specification**

The design and performance criteria and operating limits and principles of an operating license to be observed during initial fuel loading, critical testing, start-up, power operations, refueling and maintenance operations.

**Test**

Determination of the physical and functional properties of items by subjecting the item to a set of physical, chemical, environmental or operating conditions.

**Test Plan**

An outline, narrative description or flow diagram indicating the tests to be performed, the methods to be used and the points in the process where they are to be executed. May be a test procedure.

**Traceability**

The ability to verify the history, location, or application of an item by means of recorded identification.

- V -

**Variation**

A nonconformance. Departure of a characteristic from specified requirements.

- W -

**Witness Points**

In a sequential operation, a notification to Commonwealth Edison Company or their authorized agent that a phase of work is about to be reached and Commonwealth Edison Company may witness such phase of work at a specific time or in process witnessing either where established in the Traveler or Procedure or in the course of monitoring the work activity, to verify acceptable performance of such activity.

**Work Instructions**

Instructions to personnel performing work on specific areas such as controls and identification of materials and equipment during fabrication or installation.

**Workmanship**

That quality of an item expressing its skillful and artful manufacture, without apparent blemishes.

## TABLE OF CONTENTS (Rev. 65) 2 pages

## TABLE OF CONTENTS



Approved by_____
Nuclear Oversight Manager Date

The following is a supplement which describes how this Manual complies with requirements of ASME Boiler and Pressure Vessel Code - Section III -Division 1 plus Division 2 for concrete containments.

## 1.0 GENERAL (NCA 4134.1, NCA 4134.2)

The Commonwealth Edison Company, hereafter known as the Company, has an overall Quality Assurance Program designed to accommodate the engineering and construction phases of a nuclear power plant as well as the subsequent operations of those plants including maintenance, modification, and repair. For purposes of Code activities, this program consists of four parts. The first part titled, Quality Assurance Program, which is also filed with the Nuclear Regulatory Commission as the Topical Report, contains the requirements to which the Company has committed. This part, titled ASME Code Interface, describes how the Company's program complies with specific sections of the ASME Code. The third part, the Station Quality Assurance Manual, covers essentially a Section XI program including In-Service Inspection activities. The last part is titled Quality Assurance Procedures (QP's).

The "Low" QP's (-1 through -50 suffix) were promulgated for administering contracts with construction contractors hired by the Company to build nuclear generating stations. These contractors had to have implemented their Company approved Quality Assurance Programs. The focus was on those controls necessary for the achievement of quality in the construction of new stations.

The "High" QP's (-51 through -100 suffix) were promulgated to be detailed implementing procedures for use by the station and supporting departments after the completion of the construction permit. The focus was on the consistent achievement of quality in the operation, maintenance, modification, and repair of operating nuclear facilities. Currently, the controls in the "High" QP's have been essentially replicated in the stations' administrative procedure sets.

The language in both sets of QP's has evolved to acknowledge that all craft-labor contract administration (including support of ongoing station operations) is by Site Engineering and Construction (SEC), and all routine maintenance and repair (as well as operations) is the responsibility of the station organization.

The Quality Procedures are invoked as detailed in QP 2.0.

The recent (1993) Nuclear Division reorganization has focused the accountability for all activities in the on-site organizations during all phases in the life of a nuclear station. This includes the use of craft labor in support of the stations. This ASME Code Interface is provided to specifically explain the Company's implementation and compliance with Quality Assurance requirements of the ASME Code Section III as detailed in NCA 4134. Figure I shows the relationships among this Manual, ASME Code NCA 4000, and 10CFR50, Appendix B. Figure II identifies Division 2 document responsibilities.

Other detailed quality assurance procedures covering items such as training, the training program, review of procurement documents, personnel qualification and certification, maintenance and updating of ASME Code information on the computerized Quality Approved Bidders Lists, off-site audit plans, filing, trending, etc. are documented in the Nuclear Oversight Quality Assurance Procedures. Furthermore, individual Department procedures provide detailed requirements relative to specific responsibilities involving implementation of the Company's Quality Assurance Program, ASME Code and other National Codes and Standards.

## 1.1 Statement of Authority

The Statement of Authority of the Nuclear Oversight organization of the Company is contained in the preface of this Manual. The Nuclear Oversight organization and the Site Quality Verification Departments are empowered to assure compliance with the quality requirements of the ASME Code, other codes, Federal Regulations and the various National Standards that are applicable to an Owner's and N-type Certificate Holder's program of quality assurance for nuclear power. Those engaged in quality verification have the independence and authority to stop work.

## 1.2 Responsibility - General

In the event that the Company undertakes the construction of a new nuclear generating station or begins a project involving significant Section III construction additions, a new project organization may be

established. Such an organization will follow the same program as described herein and will be managed by the Nuclear Engineering and Technology Services Department.

The Senior Vice President and Chief Nuclear Officer has the overall responsibility for the Quality Assurance Program. The Nuclear Oversight Manager is responsible for establishing Quality Assurance Policy and verifying that the Policy is implemented.

For construction of new plants, the Company relies upon the utilization of an Architect/Engineer (AE), Nuclear Steam Supply System (NSSS) suppliers, and subcontractors. The Company contracts with suppliers who are qualified in accordance with the applicable section of the ASME Code and who have the appropriate Code Certificates of Authorization or have a written quality program that has been evaluated and approved by a Company survey. The responsibility for Code compliance remains with the Company when the Company is to stamp the item. When the Company purchases Code items requiring stamping, it is the responsibility of the approved Code supplier to stamp the item.

### 1.2.1 Division 1 - Responsibility

It is the responsibility of the Nuclear Engineering and Technology Services Department to assure that stress analyses or calculations for parts and appurtenances are correctly incorporated into the drawings and Design Reports of components for which the Company assumes overall responsibility. The drawings used for design and construction shall be identified, described, and in agreement with the Design Report before it is certified. Completion of the applicable Data Reports and subsequent stamping will be done by the Company. When authorized by the Authorized Nuclear Inspector (ANI), stamping will be witnessed by the ANI and the Site Quality Verification Director or his designee.

### 1.2.2 Division 2 - Responsibility

For ASME Section III, Division 2 concrete containments, the Company performs construction management and does not perform the actual construction. The surveillance of the post-tensioning systems for existing concrete containments is performed under the cognizance of the Company's Division 2, Chief Level III.

Site Engineering and Construction has the responsibility for preparation and control of the construction procedures necessary to manage the concrete containment work, and for preparation of the Construction Report and the C-1 Data Report. They will delegate to their qualified contractors the duties of preparing implementing construction procedures and shop and field drawings, including test procedures that are needed to satisfy the requirements of the construction specification and design drawings. The responsibility for preparation and approval of the C-2 Data Report rests with the Fabricator. The Nuclear Engineering and Technology Services Manager will approve the Design and Construction Reports, and will certify the C-1 and N-3 Data Reports.

## 1.3 Organization Charts

The organization charts describing the Company's organization are contained in Section 1.0 of the Topical Report. The basic organizational structure within the Company during operations consists of a Site Vice President at each site with centralized support and independent overview. The engineering and construction portion of the organization consists of an onsite organization supported by a centralized support organization. The site organization is intimately and directly involved with the day-to-day construction and engineering activities associated with nuclear facility construction and modification. The Site Vice Presidents and the Nuclear Engineering and Technology Services Manager report to the Senior Vice President and Chief Nuclear Officer. Station quality assurance is provided by the Site Quality Verification Department which reports to the Site Vice President. The station Quality Control group performs typical quality control functions such as inspections and examinations.

Quality Control is part of the Station organization although independent of production. Station Quality Control has an offsite reporting capability to the Nuclear Support Department to insure independence. Station Quality Control personnel have sufficient organizational freedom and authority to Stop Work in order to prevent inadvertent use or installation of nonconforming materials, parts, or components.

## 1.4 Policy Statement

The basic policy statements concerning the Company's Quality Assurance Program are contained in the "Policy Statement" at the beginning of each Section of the Topical Report. Overall policy includes not only compliance with ASME Section III, for Division 1 items contracted for after July 1, 1971, and for Division 2 concrete containment items contracted for after July 1, 1977, but also the requirements contained in the Code of Federal Regulations 10CFR50, Appendix B, ANSI/ASME NQA-1, 1989; and ANSI N45.2 Standards not included in ANSI/ASME NQA-1, and ANSI N18.7.

## 1.5 General

The Nuclear Oversight Manager informs the individual ANI's of the ANI Supervisor's approval of the Quality Assurance Program by transmittal of the acceptance letter to the individual ANI's.

The Company implements revisions to the Quality Assurance Program within 60 days of issuance. Final revisions to subordinate procedures and completion of training may take longer than 60 days.

## 1.6 Training

Personnel performing activities affecting quality are oriented, indoctrinated, and trained in their assigned duties in accordance with a documented training program.

Personnel performing special processes, inspection, and tests will be subject to removal from such activities if it is determined that the individual's capabilities or performance are not in accordance with Code requirements.

The qualification requirements for personnel performing NDE and Division 2 Concrete inspection are contained in the CECo Special Process Procedures Manual (SPPM) Vol. 1. This document meets the requirements of ASME Section III, NQA-1, and SNT-TC-1A.

The qualification requirements for personnel performing inspections and tests are contained in the CECo SPPM Vol. III. This document meets the requirements of ASME Sect. III and NQA-1.

Personnel performing audit activities are qualified in accordance with ASME Sect. III and NQA-1 and the Company's qualification procedure. These personnel will have experience and/or training commensurate with the scope, complexity, or special nature of the activity audited. Audit Team Leaders will be qualified based on education, experience, training, testing, audit participation and evaluation of written and oral communication skills. Auditor and Audit Team Leader qualifications are evaluated annually.

## 2.0 DRAWING AND SPECIFICATION CONTROL

**(NCA 4134.3, NCA 4134.5, NCA 4134.6, NCA 3551, and NCA 3556)**

Drawing and specification control is maintained by Nuclear Engineering and Technology Services to assure that only the latest approved drawings and specifications are utilized in the procurement, fabrication, construction, maintenance, and modification of nuclear power plant facilities. The Company utilizes the Central Drawing Facility to maintain an integrated document system not only for the Company but also for their subcontractors.

### 2.1 Production, Maintenance and Distribution of Documents

The Company contracts with qualified and Company approved Architect Engineering firms to provide design drawings, standards, certified designs, construction specifications, stress analyses, and Certified Design Reports for initial construction of the power plant. Augmenting the basic contract is the contract with the Nuclear Steam Supply System supplier who produces drawings, standards, design specifications, stress analyses, and Certified Design Reports for those portions of the plant for which he is assigned responsibility. Design Specifications will be produced that are adequate to form the basis for fabrication in accordance with the Code and are available for all items requiring an ASME Code symbol. Design reports will be produced for all components, component supports, and appurtenances. Load capacity data sheets and design report summaries supplied by a Certificate Holder shall be reviewed and verified by the Company or by its A/E's.

For modifications, a qualified Architect/Engineer is engaged to produce the design drawings, standards, certified design and construction specifications, stress analyses and design reports as required and to submit them for review, approval, and acceptance by the Nuclear Engineering and Technology Services Department. The Company may elect to produce the required drawings, standards and specifications and perform required calculations. Applicable requirements of the design specification will be translated into specifications, drawings, procedures, and instructions. In these instances, design work reviews and Registered Professional Engineer (RPE) Certification will be accomplished under the direction of the Company's own Registered Professional Engineers. The applicable Authorized Nuclear Inspector shall be made aware of the ASME Section III Code related design changes involving these modifications and all such changes will be reconciled with documents used for construction. The design package will identify the assemblies or components that are part of the item being designed.

Certification of all required design documents for initial construction and modifications which are performed by Architect/Engineers shall be by a Registered Professional Engineer. (Design documents, as a minimum, include design specifications, design drawings, design reports for Division 1, Load Capacity Data Sheets and design report summaries. For Division 2, design documents include design construction specifications and reports plus design drawings.) The Design Report shall be certified only after all design requirements of the Code have been met. Such Registered Professional Engineers shall be other than the individuals certifying the Design Specifications but are not required to be independent of the organization holding the Certificate. The Company shall assure that all Registered Professional Engineers certifying design documents on their behalf are currently certified. Such Registered Professional Engineers shall be qualified in accordance with the requirements of ASME N626.3-1988 and the Company's procedures, and their records, shall be reviewed at least once every three years to assure that the qualifications have been maintained.

## 2.2 Drawing Revision Control/ Design Change Control

Nuclear Engineering and Technology Services and/or Site Engineering and Construction, or their designee, assures control of revisions to drawings produced by its Architect/Engineer or Nuclear Steam Supply

System Supplier by requiring submittal for documented review and comment, of changes or revisions to the originally approved design drawings prior to release. With respect to modification of systems, structures, or components, the design revisions are submitted to the respective electrical, mechanical, or structural engineering disciplines of NETS or SEC, or their designee, for review prior to release. (Design change evaluation is carried out in accordance with Section 3.0 of the Topical Report.) An updated drawing revision status listing is available from the Central Drawing Facility.

### 2.3 Specifications and Engineering Standard Revisions Control

The Nuclear Engineering and Technology Services Department assures control of revisions to specifications and engineering standards utilized on nuclear power projects in accordance with the requirements described in Section 3.0 of the Topical Report. Design Specifications will be available for all components, appurtenances, and component standard supports (unless included in the design specification for the component).

## 3.0 PROCUREMENT (NCA 4134.4)

Basic procurement control, as exercised by the Company, is described in Sections 4.0 and 7.0 of the Topical Report. Overall, the engineering and construction portions of the procurement for construction of a new plant are conducted in such a manner that the Architect/Engineer is required to submit their design, specifications, and standards to be utilized in procurement to the Company for review and approval.

Subsequent to approval of procurement documents by the Company, the actual purchasing is performed by the General Office Purchasing Department or satellite purchasing organizations located at certain sites. Procurement by such site organizations are under the control and management of the General Office Purchasing Department. Associated procurement documentation packages, when required, are made from specifications and drawings issued and approved by the Architect/Engineer or the Company's Nuclear Engineering and Technology Services Department. In addition, procurement packages for ASME Code purchases are reviewed by a representative of the corporate Quality Verification Department to assure requirements are provided and the vendor is on the computerized CECo Quality Approved Bidders List.

Designated individuals using written procedures complete and document this review prior to contract award. The Company plans procurement activities prior to the start of procurement. These activities are documented, including the procurement method and organizational responsibilities. Changes to procurement documents are incorporated into the original procurement documents.

The NSSS Supplier performs procurement within an approved quality assurance program subject to the Company's audit and surveillance of subcontractor activities.

### 3.1 Procurement Control (NCA 4134.4, NCA 4134.7, NCA 4134.8, NCA 4134.13 and NCA 4134.15)

Procurement document control in the design and construction phases of power plant construction is exercised by the Architect/Engineer or the Nuclear Steam Supply System Supplier in the specifications prepared by them. Such documents must comply with the requirements of the rules and regulations of ASME Section III as well as other regulatory guides, codes and standards.

The Company identifies and selects qualified manufacturers and suppliers of material, items and services on the Quality Approved Bidders List. These suppliers are qualified by survey, audit, or on the basis of being a current ASME Nuclear Certificate holder performing work within the scope of the Certificate. Procurement of Code material is made from a supplier or manufacturer who either holds the appropriate Quality System Certificate (Materials) or has written quality program that has been evaluated and approved by CECo survey.

When the Company qualifies a Material Supplier or a Material Manufacturer under the provisions of NCA-3800, the audit frequency shall be commensurate with the schedule of production or procurement but shall be conducted at least annually during the interval in which the Company's material is being controlled by a Material Supplier or produced by a Material Manufacturer.

Personnel receiving ASME Code material items, and services assure that the appropriate documentation is submitted including Certified Material Test Reports, Certificates of Conformance, and ASME Code Data Report Forms, as applicable.

During the operational phase, either an Architect/Engineer's control is exerted and/or the Company's own internal control is exerted, dependent upon the assignment of the responsibility by CECo. In those instances when the Company controls procurement, the requirements of ASME Section III, Classes 1, 2, 3, CS, MC and CC, as applicable, are directly included in the procurement documents. In the instances of the utilization of an Architect/Engineer, the requirements of ASME Section III, as well as other applicable codes and standards are included in specifications by the Architect/Engineer and subsequently assured by the Company's engineering review. Where provided in the scope of the Certificate of Authorization, the provisions of NCA 3820(e), whereby a Certificate of Authorization Holder may supply material or may manufacturer and supply material, shall apply.

### 3.2 Source of Purchase Requisition Approval

During the engineering and construction phase of a new project, requests for proposal are prepared by Engineering and include a procurement package supplied by the Architect/Engineer to the Company or are developed internally.

Preparation of site procurement requisitions is the responsibility of Site Engineering and Construction. ASME requirements pertaining to Section III, Division 1, Classes 1, 2, 3, CS and MC, as applicable, and Division 2, Class CC for concrete containments are included as part of such purchase packages. When work is instituted by the Company for the maintenance of an existing power plant, procurement requisitions are initiated by the Station organization.

When procurement to support operations, including modifications and repairs, is initiated, the procedures and requirements are the same as described for the engineering and construction phase for a new plant.

### 3.3 Source Inspection

Where source inspection is required, it will be performed by Company personnel or the Company's agent, as applicable. Inspection will be by qualified personnel in accordance with preplanned inspection procedures or checklists. Source inspection and audit activities are also performed by the NSSS Supplier. The Company audits these activities to assure compliance with design requirements. When requested by the ANI, the Company shall arrange for access by the ANI to the Company's Code suppliers' facilities.

## 4.0 PROCESS CONTROL (NCA 4134.9, NCA 4134.10, NCA 4134.11 and NCA 4134.14)

Process Control is exercised by the Company in those activities involving the Code. In the construction phases, this process control is specified as part of the Company's contract with its AE, NSSS Supplier, or involved subcontractors. The requirements for checklists, travelers and production order systems, are also included in the procurement documents. For ASME Section III, Division 2 work, the Company contracts with ASME approved Certificate of Authorization holders for construction activities.

Process Control sheets, travelers or checklists are prepared, as necessary, and include:

1. document numbers and revisions to which the process, inspection or test conforms,
2. space for reporting results of completion of specific operations at checkpoints of fabrication, manufacture or installation, and
3. space for a signature, initials or stamp and date of responsible Company representatives and the ANI for those activities witnessed.

Process control documents for special processes include, or reference:

1. procedure, personnel and equipment qualification requirements,
2. conditions necessary for accomplishing the process,
3. acceptance criteria, and
4. the activities that require qualified inspection and test personnel.

The Company submits welding and brazing procedures which have been qualified under the provisions of ASME Sections III and IX to the ANI for review and acceptance prior to use.

## 5.0 INSTRUCTIONS AND PROCEDURES (NCA 4134.5)

The Company reviews instructions, procedures and drawings for adequacy, completeness and correctness prior to approval and issue.

The Company establishes procedures to control minor changes to documents. These procedures identify the type of changes that are considered minor as well as the personnel who are authorized to review and approve these changes.

Nuclear Oversight reviews procedures for ASME Section III (Division 1 and 2) construction.

## 6.0 WELDING QUALITY ASSURANCE (NB-4300, NCA 3130, NCA 4134.9, NCA 5253 and NCA 5254)

Welding quality assurance, as practiced by the Company or their agent, is a controlled plan which assures that the welding procedures and welding personnel are properly qualified in accordance with Sections III and IX of the ASME Code. In the construction phase, welding quality assurance is specified as part of the Company's contract requirements with their A/E, NSSS Supplier, or involved contractors. Control is assured through the Company surveillance and audit process or through the use of Independent Testing Agencies.

### 6.1 Welding Material Control

The welding material control system including details of control of storage, issuance, and use, is as outlined in the Company SPPM.

### 6.2 Qualification of Welders

The Company qualifies welders in accordance with the CECo SPPM. When there is a specific reason to question the welding procedure or the ability of welding personnel, the Authorized Nuclear Inspector may require requalification.

## 7.0 NONDESTRUCTIVE EXAMINATION (NB-5000 and CC-5000) and CONCRETE INSPECTION (CC-5000), (NCA 5255, NCA 5256)

For site contractors requiring subcontracted NDE and concrete inspection services, the Company contracts for provision of such services. The administration of the contract is assigned to the Site Quality Verification Department where such services are established for Nuclear Engineering and Technology Services sponsored contracts. In addition, the administration of such contracted services involving operating stations is undertaken by the station Quality Control Supervisor. Nondestructive examination and concrete inspection and testing contractors are surveyed and qualified by the Company, and resulting qualification documentation is supplied to the site Code contractors prior to their use of examination and inspection services. The performance of such services shall be by agreement with the inspection and testing contractor. The site Code Contractor utilizing such testing and inspection services shall review and accept procedures and personnel qualifications of the testing and inspection contractor. The details governing qualification of personnel and procedures, NDE results, and equipment are contained in the CECo SPPM. NDE Procedures shall be proven by demonstration to the satisfaction of the cognizant Authorized Nuclear Inspector or Authorized Nuclear Inservice Inspector, as applicable.

Concrete inspection and testing personnel shall be qualified in accordance with the requirements of Appendix VII of ASME Section III, Division 2.

## 8.0 HEAT TREATING (NCA 5263, NB-4600)

Heat treating operations performed by or under the cognizance of, the Company are performed in a controlled and documented manner and the appropriate process parameters are monitored and recorded as required by Section III of the ASME Code.

## 9.0 DOCUMENTATION (NCA 4134.5, NCA 4134.6, NCA 4134.8, NCA 4134.9, NCA 4134.10, NCA 4134.11 and NCA 4134.17)

Records related to Code work are indexed and made available to the Company by the vendor. Records are also made available to the ANI.

The records program for classification and retention of records complies with Tables NCA 4134.17-1 and NCA 4143.17-2.

The records program provides for:

1. requirements for radiographic reproduction,
2. identification of records to be maintained,
3. validation of records,
4. indexing and location of records, and
5. maintaining traceability of records.

The receipt control system includes:

1. protection from loss or damage during receipt,
2. identification of responsible department/individual,
3. designation of required records,
4. identification of records received,
5. inspection of incoming records using written procedures, and
6. a structure to maintain control during the process.

A records custodian inventories record submittals, acknowledges receipt and processes records.

### 9.1 System of Acquiring Final Documentation

In those instances where the Company performs a modification involving the Code, the verification and acceptance of satisfactory completion of procedures, certification data, NDE documentation, etc., that were required to acceptably repair, fabricate, and install the items specified in the maintenance modification work package is the responsibility of Station Quality Control. When the Company has contracted for the fabrication, modification, maintenance or repair, the ASME qualified contractor is responsible for the final documentation.

Upon completion of the required testing, the complete documentation package is submitted to the station's Systems Engineering Supervisor for review and acceptance. The document package shall be forwarded expeditiously to the station Central File Supervisor for filing and retention.

Quality Assurance records shall be retained, identified, indexed, protected, retrievable and accessible, plus be classified as lifetime or nonpermanent as identified and provided in Section NCA 4134.17 of Section III of the ASME Code. Permanent lifetime records are either maintained in duplicate storage or in a 2-hour fire rated facility meeting NQA-1 requirements. When temporary storage of records is required, at least a 1-hour fire rated container shall be used. Facilities used for duplicate storage are sufficiently separated to eliminate a simultaneous hazard. The enforcement authority is kept notified as to the location of records showing compliance to Sections III and XI.

## 9.2 List of Final Documents

For each contract involving ASME Code activities, a list of required final documents shall be prepared. This list shall include the requirements of ASME Section III and applicable specifications, drawings, production travelers, maintenance procedures, etc. A Design Report summary may be provided in lieu of a Design Report for Standard Supports. The Final Documentation Checklist shall provide for the review and concurrence of the Authorized Nuclear Inspector and the Quality Control Supervisor.

## 9.3 Data Reports

The Nuclear Engineering and Technology Services Manager, as the chairman of the Nuclear Engineering Committee, has overall Owner's responsibility for the Form N-3, N-5, C-1 Data Report and other CECo N-type Data Reports, including stamping responsibility for ASME Section III, Div. 1 and Div. 2. The Nuclear Engineering and Technology Services Manager delegates signature authority for Code activities to the Site Engineering and Construction Managers, however, he retains the overall responsibility. The sequence of stamping and for the completion of the Code Data Report Form shall be determined by the Authorized Nuclear Inspector and the Certificate Holder.

In any case, the Code Symbol Stamp shall not be applied until completion of the required examination and testing, and only with the authorization of the Authorized Nuclear Inspector. Before the component or appurtenance is placed in service, copies of the appropriate ASME Data Reports are filed with the enforcement authorities having jurisdiction at the location of each installation.

## 10.0 NATIONAL BOARD REGISTRATION OF PRESSURE VESSELS

Pressure vessels constructed to ASME Section III rules after December 31, 1976 for which Commonwealth Edison Company does the stamping under its ASME N-Certificate of Authorization shall be registered with the National Board of Boiler and Pressure Vessel Inspectors. The Nuclear Engineering and Technology Services Manager shall have the responsibility for controlling the consecutive issuance of National Board serial numbers to be affixed to these pressure vessels and shall maintain a record of the serial numbers assigned to each specific item. There will be no skips, gaps or duplication of National Board serial numbers issued for these pressure vessels. The record shall include the date issued, description of the product to which the number is assigned, manufacturer's serial number, the Commonwealth Edison Company National Board serial number, and any additional information necessary to identify the item. The Nuclear Engineering and Technology Services Manager shall submit to the National Board the original and one legible copy of the ASME Data Report for each nuclear pressure vessel required to be stamped and registered with the National Board by the State of Illinois Boiler Safety Act, within 30 days of being stamped. The nameplate applied will conform to the facsimile included on Figure III.

## 11.0 TEST CONTROL (NCA 4134.11)

Test procedures identify or reference requirements and acceptance criteria contained in the ASME Code. The Company uses markings, tags, stamps, routing cards, labels, forms, or other means to indicate the status of examination and tests. The required inspections and tests described in Section 10 and Section 11 of the Topical Report are performed before placing equipment in service.

## 12.0 CALIBRATION CONTROL (NCA 4134.12)

To maintain accuracy within necessary limits, the measuring and test equipment used in activities affecting quality is periodically calibrated and adjusted in accordance with written procedures appropriate to the item(s) of measuring and test equipment involved. Procedures also are used to specify preoperational checks, environmental requirements, step-wise instructions for use, and instructions for storage. Suppliers and contractors to the Company are required to have and employ similar control measures which will be assured through surveillance, audit and approval of contractor procedures.

The T&D Operational Analysis Department will be responsible for calibration and maintenance of the Company's measuring and test equipment. Assistance in this activity will be obtained from vendors or laboratories who have the necessary capabilities. Calibration authority may be delegated to the sites by the T&D Operational Analysis Department Manager.

When measuring and test equipment is found to be out of calibration, an evaluation shall be made and documented of the validity of previous inspection or test results and of the acceptability of items previously inspected or tested. All pressure test gauges used in ASME pressure testing shall be calibrated against a standard dead weight tester or a calibration master gauge prior to and after each test or series of tests.

Charpy V-Notch Testing Machines shall be calibrated at least once each year in accordance with ASTM-E-23-72 and employ standard specimens obtained from the National Institute of Standards and Technology (NIST) Gaithersburg, MD. The associated temperature instruments shall be calibrated at least once in 3-month intervals or, when utilized with longer periods between use, such calibration shall be performed prior to being used.

Tags or labels are affixed to measuring and test equipment or its protective storage container to indicate the current calibration status. Devices consistently found out of calibration are repaired or replaced.

# 13.0 NONCONFORMANCES (NCA 4134.16)

During the construction phase of a new plant, the Company utilizes a Nonconformance Report (NCR) to document the identification, correction and disposition of items found not in compliance with specifications (including the Code). The Company's contractors may also generate their own internal Nonconformance Reports; however, those contractor identified discrepancies which require significant engineering to resolve or involve significant rework, must be submitted to the Company for review and approval prior to placing an applicable system in service. All Code noncompliances must be corrected and result in installations which comply with the Code.

Authorized and qualified personnel approve the proposed disposition of nonconformances. Completion of all required corrective actions (including actions to prevent recurrence) is verified and this verification is documented. Nonconformances are made available to the Authorized Nuclear Inspector for his review.

During the operations phase, the Company utilizes an Integrated Reporting Program which results in the generation of a Discrepancy Report for hardware or Code related nonconforming conditions. Review, disposition, and verification are performed in a similar manner as described for Nonconformance Reports. The Authorized Inspector is given the opportunity to review the Integrated Reporting Program documents which involved ASME Code activities.

# 14.0 INSPECTION AND TEST AND AUDIT PERSONNEL QUALIFICATION

## 14.1 Qualification of Inspection and Test Personnel

Inspection and test personnel shall be qualified to procedures which comply with the ASME Section III requirements of ANSI/ASME NQA-1-1989, Supplement 2S-1 and meet the intent of Appendix 2A-1, and shall include requirements for qualification, personnel selection, indoctrination, training, determination of initial capability and provisions for periodic evaluation of performance. The certification of qualification shall document as a minimum, the employer's name, identification of

person being certified, activities certified to be performed, basis used for certification, results of periodic evaluation, results of required physical examinations, and the signature of the person responsible for such certification.

### 14.2 Qualification of Audit Personnel

Auditors and Audit Team Leaders shall be qualified to procedures which comply with the ASME Section III requirements of ANSI/ASME NQA-1-1989, Supplement 2S-3. Audit personnel shall have experience or training commensurate with the scope, complexity, or special nature of the activities to be audited. The Audit Team Leader program shall include requirements for assessing written and oral communication skills, training, audit participation, and a demonstration of proficiency, such as an examination.

The certification of qualification shall document the employer's name, Audit Team Leader's (or Auditor's) name, date of certification or recertification, basis of qualification, and signature of the Nuclear Oversight Manager or designee. The qualification and certification records for each Auditor and Audit Team Leader shall be maintained and updated annually.

## 15.0 AUDITS (NCA 4134.18)

Audits are performed as required by the Audit Schedule. The audit frequency for ASME Code activities shall be commensurate with the schedule of activities and shall be such that an annual audit of all Code activities is performed at each station. Audits are performed using a preapproved checklist. The audit team is identified prior to the beginning of each audit. For audits related to Code activities, the Audit Team Leader signs the audit report. The Company provides personnel to accompany the ANI during required audits in accordance with the Code and ASME N626. These personnel have responsibility for ASME Code and Quality Assurance Program compliance.

# 16.0 LEVEL III

The Company maintains a Chief Level III for NDE. He is qualified in accordance with the SPPM Volume I. He in turn has delegated certain specific discipline duties to Deputy Level III's. All such delegations and their scope are documented.

Administrative Level III's may be appointed for non-NDE qualification and certification activities. Such appointments will be documented and the scope of such appointments will be defined.

# 17.0 AUTHORIZED NUCLEAR INSPECTOR (NCA 5000)

The Company maintains a valid, continuing agreement with an accredited Authorized Inspection Agency to provide inspection and audit services involving Section III and XI nuclear work. The Authorized Inspection Agency is required to perform all of the functions and maintain the records required in the applicable ASME N626 series of Standards and the ASME Code. The Company shall notify ASME and the enforcement authority whenever this written agreement is cancelled or changed to another Authorized Inspection Agency.

## 17.1 Relationship

The Authorized Nuclear Inspector's primary contact is the station Quality Control Superintendent. He also has ready access to the Site Quality Verification Director who monitors and audits maintenance and modification work. At the construction sites, the primary contact is with the Site Engineering and Construction Manager, or designee.

## 17.2 Documents Available to the Authorized Nuclear Inspector (NCA 3252)

The Authorized Nuclear Inspector and any ASME survey team shall be afforded full access to procedures, procurement specifications, drawings, design specifications, construction specifications, design reports and documentation reviews of the design reports and construction reports involved in ASME Code work. Design Specifications shall be made available to the Authorized Inspector prior to fabrication of items requiring ASME Code stamp. The Authorized Nuclear Inspector, and

Supervisor, shall have free access to the Company's and Manufacturer's and Supplier's facilities at all times while work on the item is being performed. He shall be afforded the opportunity to perform required N626 audits within the limitations of station safety, security and health regulations. He shall be provided adequate facilities including a drawer of a file cabinet, a desk, and a chair, plus a copy of the Company's Quality Assurance Manual.

The Authorized Nuclear Inspector shall be provided access to audit personnel qualification and training records as well as audit records for ASME work. Audit records include the audit plan, report, written replies, and the record of completion of corrective action.

The Authorized Nuclear Inspector shall also have access to procedure development and procedure qualifications performed by a contractor. The Authorized Nuclear Inspector will notify the Quality Control Supervisor or the Site Engineering and Construction Manager, as applicable, of any problem.

The Authorized Nuclear Inspector may request that ASME Data Reports, Certified Material Test Reports, and Certificates of Compliance be submitted to him to facilitate his monitoring of Code requirements. As a minimum, these documents shall be submitted to the Authorized Nuclear Inspector prior to installation of the item(s). Also, a copy of this Quality Assurance Manual shall be filed with the Authorized Inspection Agency. A copy of the design report and any associated review documentation for the design report shall be made available to the regulatory and enforcement authorities having jurisdiction at the site of the nuclear power plant before it is placed in service.

### 17.3 Choosing of Hold Points

The ANI/ANII shall be kept informed on relevant aspects of the current Maintenance/Modification work packages involving ASME Code work. He shall be provided ample time during the work package approval process to insert his hold points in the work packages relating to Code work. He has the authority to place any item on hold if the Code is being violated. Completion of ANI/ANII review will be indicated by signature on the work package approval documents.

Additional records required by the Authorized Nuclear Inspector to assure Code compliance will be supplied by the Company upon request. Unlimited access to all facilities and activities shall be afforded the Authorized Inspection Agency.

## 17.4 NDE and the Authorized Nuclear Inspector

Detailed nondestructive examination procedures are made available for review and acceptance by the Authorized Nuclear Inspector prior to their use in ASME Code work. Nondestructive examination personnel files are available to the Authorized Nuclear Inspector upon request. He may require requalification of either procedures or personnel when there is specific reason to question the qualification of either.

## 17.5 Checklist of Final Documents and Data Reports

When the final documents and Data and Construction Reports have been prepared, the entire package shall be made available to the Authorized Nuclear Inspector. When the Authorized Nuclear Inspector is satisfied that the work is satisfactorily completed and ready to be stamped, he shall certify the Data and Construction Reports by signature. For Division 2 work, the Authorized Inspector shall assure that the Designer has signed such Data Reports and Construction Reports prior to affixing his signature.

## 17.6 Documents in Electronic Media

As technology advances, some or all work control and supporting documents may exist in all-electronic format. Permanent records required by the Code and by the jurisdiction will be retained in hard copy, including original pen and ink signatures, and will be afforded the same protection required for permanent records. When on-line electronic approval is utilized, measures will be established to assure that only those persons authorized to use and apply electronic approval grant such approval. Access control measures will be established to prevent unauthorized alteration or modification of documents controlling work. The Authorized Inspector will be afforded the same opportunities to review and insert Hold Points as afforded for paper-based documents.

# 18.0 CONTROL OF COMPUTER SOFTWARE

Control of computer software and resultant output that is used in the performance of design is procured, or developed, and maintained in accordance with the requirements of NQA-1 Supplements 3S-1 and Supplement 11S-2. Quality Procedure QP 3-54 is the implementing procedure for the control of computer software. QP 3-54 generally follows the intent of Part 2.7 to NQA-2. Computer program outputs, when appropriately controlled, may be used as design inputs and are subject to the requirements of NQA-1, Supplement 3S-1.

# FIGURE I

| COMMONWEALTH EDISON QUALITY REQUIREMENTS | ASME III NCA - | 10CFR50 APPENDIX B |
|---|---|---|
| 1.0 Organization | 4134.1 | I |
| 2.0 Quality Assurance Program | 4134.2 | II |
| 3.0 Design Control | 4134.3 | III |
| 4.0 Procurement Document Control | 4134.4 | IV |
| 5.0 Instructions, Procedures and Drawings | 4134.5 | V |
| 6.0 Document Control | 4134.6 | VI |
| 7.0 Control of Purchased Material Equipment and Services | 4134.7 | VII |
| 8.0 Identification and Control of Materials, Parts and Components | 4134.8 | VIII |
| 9.0 Control of Special Processes | 4134.9 | IX |
| 10.0 Inspection | 4134.10 | X |
| 11.0 Test Control | 4134.11 | XI |
| 12.0 Control of Measuring and Test Equipment | 4134.12 | XII |
| 13.0 Handling, Storage, and Shipping | 4134.13 | XIII |
| 14.0 Inspection, Test and Operating Status | 4134.14 | XIV |
| 15.0 Nonconforming Materials, Parts or Components, and Operations | 4134.15 | XV |
| 16.0 Corrective Action | 4134.16 | XVI |
| 17.0 Quality Assurance Records | 4134.17.3280 | XVII |
| 18.0 Audits | 4134.18 | XVIII |

# FIGURE II

## ASME Section III Division 2 Responsibilities Table

| DOCUMENT | PREPARED BY | REVIEWED BY | CERTIFIED BY | APPROVE D[3] BY | PROVIDED BY | MADE AVAILABLE ON REQUEST |
|---|---|---|---|---|---|---|
| Design Specification NCA 3250) | D[1] | D,O | D[1] | – | O,D,C,K,I,J | – |
| Construction Specification (NCA 3340) | D | O | D | O | O,C,F,M[2],K | I,J |
| Design Drawings (NCA 3340) | D | O | D | O | O,C,F,M[2] | I,J,K |
| Design Reports (NCA 3350) | D | D | D | O | O,K,L | I,J |
| Construction Procedures (NCA 3351) [Note B] | C,F | D,C | – | D,C | D,O,C,L | I,J,K |
| Certified Material, Test Reports or Certificates of Compliance (CB-2130, CC-2130) [Note B] | M | C or D,F | M | – | C,F,O | J,I,D |
| Shop and Field Drawings NCA 3452 (Shop)<br>(Field)<br>[Note B] | F<br>C,F | D<br>C,D | –<br>– | D<br>C,D | C,F<br>C,F | I<br>I |
| Construction Reports (NCA 3454) | C | D | D,I | P,O | D,O,J,K | I,J |
| Data Report C-1 (NCA 8410) | C | – | D,C,I,O | – | O | I,J |
| Data Report N-2 (NCA 8410) | F | – | F,I | – | C | I,J |
| Data Report N-3 (NCA 8420) | O | – | K,I | – | J | – |

O-CECo Project Engineering (Owner or Designee)
D -Designer (A-E)
C -Constructor (CECo Project Construction)
F -Contractor to CECo Project Construction or another Constructor (Fabricator)
M -Material Manufacturer
I -Authorized Inspector
J -Jurisdictional Authority
K -CECo Nuclear Engineering Department (Owner)
L -CECo Construction Department
P-Project Manager

(1) Owners designee
(2) Provided when necessary to permit the Material Manufacturer to perform his duties in conformance with the Code.
(3) Approval indicates an assurance that the ASME requirements were carried out by the designated party.

* Will be advised of the document availability.

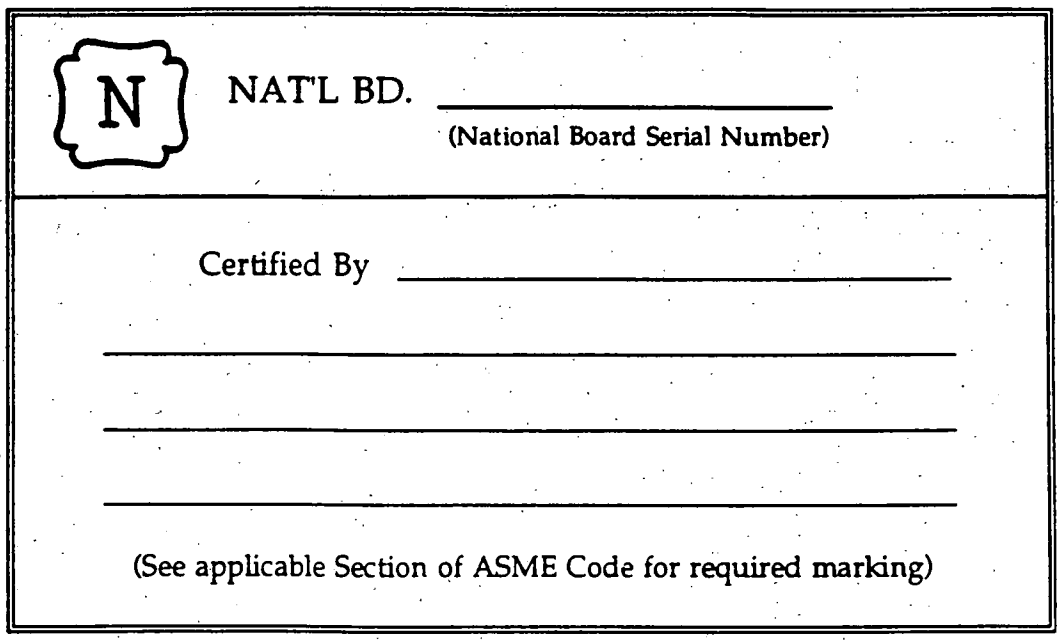
NOTES: (A) CECo Project Construction is the Construction Manager who will contract with contractors and CECo will have overall responsibility.

(B) Information provided to the indicated participants when required to satisfy their designated responsibilities under this Section. Other information provided only by specific arrangement with the Owner. Participants are required to furnish only such information as is necessary to permit the recipient to perform his duties in conformance with this Section. Other information may be furnished at the discretion of the responsible parties.

# FIGURE III

## Facsimile of Mandatory Stamping and/or Nameplate Marking

National Board Marking Area




ASME Marking Area

Approximately 5 ½" L X 3 ½" H

## ADDENDUM 1

A pilot program of identifying and resolving all nonconforming and discrepant conditions under the Integrated Reporting Program (IRP) will be utilized at Quad Cities Station.

This addendum allows Quad Cities' to extend the use of the IRP to nonconforming hardware or in Code-related nonconforming conditions. This usage will be in variance with ASME Interface 13.0, QP 15-54 (2.0 SCOPE), and QP 15-1, 15-2, 15-51, 15-52, and 15-53. The pilot program will remain in effect for a period of 12 months effective 8/17/93 and ending 8/17/94.

The IRP will be implemented locally by procedures QCAP 2300-20, 2300-21, 2300-22, 2300-24, and 2300-25 - all Revision 0. These procedures meet the intent and requirements of Sections 15 & 16 of the Quality Assurance Topical Report, Section 13.0 of the ASME Interface, and QP 15-54. The Authorized Inspection Agency will be provided the above listed Quad Cities procedures (and subsequent revisions) for their review and acceptance as being equivalent to the controls described in the existing Quality Procedures (QPs).

An analysis of this pilot program will be made and the results used in determining the nature of those changes to the base program that are necessary to allow extension to other stations.