

May 27, 2003

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Section 50.54(a)

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

MONTICELLO NUCLEAR PLANT  
DOCKET 50-263  
LICENSE No. DPR-22

PRAIRIE ISLAND NUCLEAR PLANT  
50-282 and 50-306  
DPR-40 and DPR-60

**SUBMITTAL OF REVISION 25 OF THE OPERATIONAL QUALITY ASSURANCE  
PLAN (OQAP)**

Pursuant to 10 CFR 50 Section 50.54(a), Revision 25 to the Xcel Energy Operational Quality Assurance Plan (OQAP) is submitted herein.

The changes included in Revision 25 do not reduce the commitments in the quality assurance program previously accepted by the NRC. The basis for this conclusion is provided in Appendix D of the enclosure.

If you have any questions with regard to this information, please call Edie Boyer at 715-377-3472.



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Attachment: Xcel Energy Operational Quality Assurance Plan, Revision 25

Q004

**ATTACHMENT**

**NUCLEAR MANAGEMENT COMPANY, LLC**

**MONTICELLO NUCLEAR  
GENERATING PLANT  
DOCKET 50-263**

**PRAIRIE ISLAND NUCLEAR  
GENERATING PLANT UNITS 1 AND 2  
50-282 and 50-306**

**May 27, 2003**

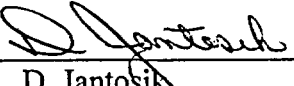
**Xcel Energy Operational Quality Assurance Plan, Revision 25**

**101 pages follows**


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## OPERATIONAL QUALITY ASSURANCE PLAN

### REVISION 25

Reviewed By:   
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Chief Nuclear Officer, NMC

Date: 5/8/2003

Effective Date: 5/8/2003

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**Operational Quality Assurance Plan**  
**Revision 25**

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1.0 Policy Statement

- 1.1 This quality assurance program is applicable to the Prairie Island and Monticello Nuclear Generation Plants that are regulated under provisions of an NRC Operating License.
- 1.2 The quality assurance program, as applied to activities affecting safety related functions, shall comply with and be responsive to applicable regulatory requirements and applicable industry codes and standards including:
1. 10CFR50, Appendix B.
  2. NRC Operating Licenses.
  3. The ASME Boiler and Pressure Vessel Code, Section XI, *Inservice Inspection*.
  4. 10CFR21, *Reporting of Defects and Noncompliance*.
  5. 10CFR71, Subpart H, *Quality Assurance*.
  6. Nuclear Plant Fire Protection Program, Operational Quality Assurance Plan, Appendix C.
  7. Monticello and Prairie Island Plant Security Plans.
  8. Monticello and Prairie Island Radiation Environmental Monitoring Program.
  9. ANSI N45.2.6-1978, *Qualifications of Inspection, Examination, and Testing Personnel for Nuclear Power Plants*, as modified by Regulatory Guide 1.58, Revision 1. (See sections 12 and 13.)
  10. ANSI N45.2.12-1977, *Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants*.
  11. ANSI N45.2.23-1978, *Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants*, as modified by Regulatory Guide 1.146, August, 1980.
- 1.3 The Operational Quality Assurance Program shall incorporate: (1) the requirements of ANSI N18.7-1976, as modified by Table 1-1 and (2) the requirements of the following standards to the extent specified by ANSI N18.7-1976, as modified by the regulatory position of the Regulatory or Safety Guides referenced below.
1. ANSI N18.1-1971, *Selection and Training of Nuclear Power Plant Personnel* (Regulatory Guide 1.8, Rev. 1).

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2. ANSI N45.2-1971, *Quality Assurance Program Requirements for Nuclear Power Plants*.
3. ANSI N45.2.1-1973, *Cleaning of Fluid Systems and Associated Components During Construction Phase of Nuclear Power Plants* (Regulatory Guide 1.37, 3-16-73).
4. ANSI N45.2.2-1972, *Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants (During the Construction Phase)* (Regulatory Guide 1.38, Rev. 2).
5. ANSI N45.2.3-1973, *Housekeeping During the Construction Phase of Nuclear Power Plants* (Regulatory Guide 1.39, Rev. 1).
6. ANSI N45.2.4-1972, *Installation, Inspection, and Testing Requirements for Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Stations* (Safety Guide 30, August 11, 1972).
7. ANSI N45.2.5-1974, *Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants* (Regulatory Guide 1.94, Rev. 1).
8. ANSI N45.2.8-1975, *Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants*.
9. ANSI N45.2.9-1974, *Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants* (Regulatory Guide 1.88, Rev. 2).
10. ANSI N45.2.10-1973, *Quality Assurance Terms and Definitions* (Regulatory Guide 1.74, February, 1974).
11. ANSI N45.2.11-1974, *Quality Assurance Requirements for the Design of Nuclear Power Plants* (Regulatory Guide 1.64, Rev. 2).
12. ANSI N45.2.13-1976, *Quality Assurance Requirements for the Control of Procurement of Items and Services for Nuclear Power Plants*.
13. ANSI N101.4-1972, *Quality Assurance for Protective Coatings Applied to Nuclear Facilities* (Regulatory Guide 1.54, June, 1973).

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- 1.4 Management directives and departmental instructions and procedures shall provide for compliance with appropriate regulatory, statutory, license and industry requirements. Specific quality assurance requirements and organizational responsibilities for implementation of these requirements shall be specified in implementing directives and instructions.
- 1.5 Compliance with this policy and the provisions of the Operational Quality Assurance Program is mandatory for Xcel Energy and NMC personnel with respect to nuclear plant operational activities or activities which support nuclear plant operation. Personnel shall therefore, be familiar with the requirements and responsibilities of the program that are applicable to their individual activities and interfaces.
- 1.6 The Chief Nuclear Officer NMC, through an independent organization, shall periodically have the Operational Quality Assurance Program reviewed to assure its adequacy.

Table 1-1

Exception to ANSI N18.7-1976

1. Documentation required by ANSI N18.7-1976 may be deferred for emergency work. Emergency work is defined as that work that must be completed immediately and which, if delayed, may result in an unsafe condition or significantly interfere with reliable plant operation.
2. Exceptions to Regulatory Guides and ANSI Standards are acceptable for those principal contractors, retained by NMC, such as NSSS contractors and A/E firms, which exceptions have been approved by the NRC.
3. Section 5.1; delete this section. The provisions associated with identification of the Operational Quality Assurance Program scope are explicitly identified in Section 4 of the Operational Quality Assurance Plan.
4. Section 5.2.2; replace the third sentence with the following - "Temporary changes to approved procedures shall be reviewed and approved as required by Section 8.4 of the Operational Quality Assurance Plan." Delete the fourth sentence.
5. Section 5.2.5; replace the second and third sentences with "Temporary procedures shall be reviewed and approved as required by Section 8.4 of the Operational Quality Assurance Plan."
6. Section 5.2.9; delete the reference to ANSI N18.17. The Plant Security Plans contain required security provisions.
7. Section 5.2.11, first sentence; change "abnormal occurrences" to "reportable events."
8. Section 5.2.13.2, fourth paragraph; change the first sentence to read "... installation or use of such items that serve a safety function."
9. Section 5.2.15 of ANSI N18.7-1976 shall govern review, approval, and control of required procedures except that, for procedures required by the Plant Technical Specifications, the review and approval requirements stipulated in Section 8.4 of the Operational Quality Assurance Plan shall be utilized rather than those contained in Section 5.2.15.
10. Section 5.3; change the last sentence to read "Procedures shall be prepared and approved prior to implementation as required by ANSI N18.7-1976, Section 5.2.15."

Table 1-1 (continued)

11. Sections 5.3.9 and 5.3.9.1; delete these sections. Emergency Operating Procedures shall be consistent with Supplement 1 to NUREG - 0737 - Requirements for Emergency Response Capability (Generic Letter 82-33).
12. Section 6; delete this section. The referenced documents are explicitly referenced in the Operational Quality Assurance Plan. NMC will evaluate new or revised ANSI Standards if appropriate for inclusion in the Operational Quality Assurance Plan.

## **2.0 Introduction**

Xcel Energy, Inc. (Xcel Energy) is involved in the construction and operation of fossil-fueled and hydro power plants, and the operation of nuclear power plants. Operating service agreements exist between Xcel Energy and the Nuclear Management Company, LLC (NMC) that designate NMC as the exclusive licensee authorized to use and operate the Prairie Island and Monticello Nuclear Generation Plants in accordance with the terms and conditions of their respective licenses. Ownership of the Prairie Island and Monticello Nuclear Generation Plants will not be affected by the transfer of operating authority; Xcel Energy retains ownership of the facilities. Nuclear plant operational activities are conducted under the Operational Quality Assurance Program. The Operational Quality Assurance Program is formulated to govern nuclear plant operational activities and associated support activities as required by NRC Operating License provisions and associated regulations.

### 3.0 Organization

#### 3.1 General Requirements

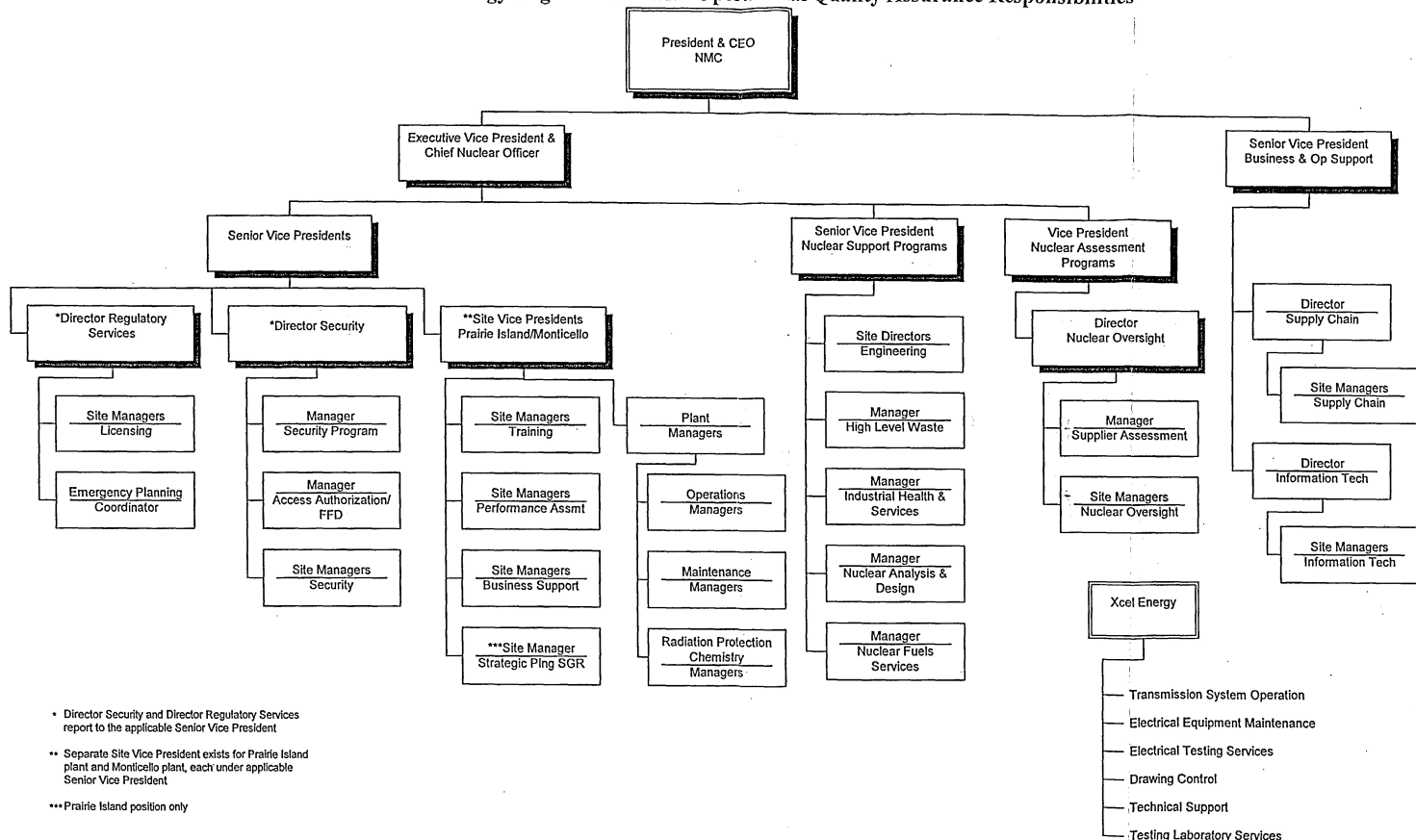
1. NMC shall be responsible for the establishment and execution of the Operational Quality Assurance Program. NMC may delegate to other organizations, including Xcel Energy, the work of establishing and executing the Operational Quality Assurance Program, or any part thereof, but shall retain responsibility therefor.
2. The authority and duties of persons and organizations performing quality assurance functions shall be clearly established and delineated in writing. Such persons and organizations shall have sufficient authority and organizational freedom to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions.
3. Assurance of quality requires management measures which provide that the individual or group assigned the responsibility for checking, auditing, inspecting, or otherwise verifying that an activity has been correctly performed is qualified and does not have responsibility for performing or directly supervising the work except that:
  - a. The individual or group assigned the responsibility for auditing is independent of the individual or group directly responsible for performing the specific activity.

#### 3.2 Organization Summary

Figure 1, *NMC and Xcel Energy Organizations with Operational Quality Assurance Responsibilities*, presents an organizational chart showing a summary of functional responsibilities.

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Figure 1  
NMC and Xcel Energy Organizations with Operational Quality Assurance Responsibilities



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## **4.0 Operational Quality Assurance Program**

### **4.1 General Requirements**

1. The Operational Quality Assurance Program shall be:
  - a. Documented by written Directives, Instructions, or Procedures.
  - b. Carried out throughout plant operating life in accordance with those Directives, Instructions, or Procedures.
2. The Program shall include identification of:
  - a. The structures, systems, and components to be covered.
  - b. The major organizations participating in the Program, together with the designated functions of these organizations.
3. The Program shall provide control over activities affecting the quality of the identified structures, systems, and components to the extent consistent with their importance to safety.
4. Activities affecting quality shall be accomplished under suitably controlled conditions. Controlled conditions include the use of appropriate equipment; suitable environmental conditions for accomplishing the activity, such as adequate cleanliness; and assurance that all prerequisites for the given activity have been satisfied.
5. The Program shall take into account the need for special controls, processes, test equipment, tools, and skills to attain the required quality, and the need for verification of quality by inspection and test.
6. The Program shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.
7. The adequacy and status of the Program shall be regularly reviewed.
8. Management of other organizations participating in the Program shall regularly review the status and adequacy of that part of the Program which they are executing.

## 4.2 General Description

1. The Operational Quality Assurance Program has been established to govern the operational activities and the activities necessary to support operation of the company's nuclear plants operated under an NRC Operating License. The Operational Quality Assurance Program is thus an overall integrated program between NMC and Xcel Energy which governs all safety related, fire protection related and 10CFR71 related activities as they pertain to operating nuclear plants.
2. The Program has been initiated by Senior Xcel Energy management issuing a single directive to the President & CEO NMC establishing that position as being responsible for formulating and implementing an Operational Quality Assurance Program and identifying the program objectives.
3. The Operational Quality Assurance Program shall utilize the following documents to meet the program objectives:
  - a. Operational Quality Assurance Plan (Plan).
  - b. Administrative Control Directives (Directives) at the Corporate level.
  - c. Administrative Work Instructions (Instructions) at the Site level.
  - d. Required Procedures (Procedures) at the Plant and Department level.
4. The Plan shall be considered an overall document which governs the implementing documents (i.e., Directives, Instructions, and Procedures).
5. For ease of administration, implementing documents shall be issued at the following program levels:
  - a. Corporate: Approving Authority, Site Vice Presidents and Director Nuclear Oversight NMC.
  - b. Sites (Prairie Island and Monticello): Approving Authority, Plant Manager.
  - c. Departments Providing Nuclear Plant Support: Approving Authority, Department Manager.

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6. Corporate Administrative Directives establish the minimum requirements for Site Administrative Instructions and other supporting departmental instructions and procedures.
  - a. There need not be a corresponding Site level Instructions for every Corporate level Directive. Corporate level Directives may also be implemented at the Site level through Site level Procedures.

**4.3 Operational Quality Assurance Plan**

1. The Operational Quality Assurance Plan shall be a document which describes in general terms how compliance with the quality requirements presented in 10CFR50, Appendix B and 10CFR71, Subpart H is accomplished with respect to company nuclear plants regulated by an NRC Operating License.
2. The Operational Quality Assurance Plan shall be issued under the authority of the Chief Nuclear Officer NMC and shall be reviewed periodically.
3. The Operational Quality Assurance Plan shall be controlled to assure current copies are made available to personnel responsible for the revision, review and approval of Corporate Administrative Directives.
4. All changes to the Operational Quality Assurance Plan shall be approved by the Chief Nuclear Officer NMC or equivalent management position.

**4.4 Administrative Control Directives**

1. Administrative Control Directives (Directives) shall be documents which establish responsibility and requirements governing activities associated with plant operation. Directives shall be first tier implementing documents and shall receive a quality review prior to issuance. The quality review shall assure compliance with the Operational Quality Assurance Program objectives. Required Directives shall be controlled and reviewed periodically.
2. Administrative Control Directives shall be issued as necessary. It is mandatory that the Directives at the Corporate level assure compliance with all applicable requirements of 10CFR50, Appendix B and 10CFR71, Subpart H.

#### **4.5 Administrative Work Instructions**

Administrative Work Instructions (Instructions) shall be documents which provide guidelines or instructions for the implementation of the requirements of Administrative Control Directives. Instructions shall be second tier implementing documents and shall receive a quality review prior to issuance. The quality review shall assure compliance with pertinent Directive requirements and assigned responsibilities. Required Instructions shall be controlled and reviewed periodically.

#### **4.6 Procedures**

1. Procedures shall be documents which provide specific instructions for performing an activity. Procedures shall be second or third tier documents utilized to perform safety related, fire protection, and 10CFR71 related activities as required by the applicable NRC Operating License Technical Specifications.
2. Procedures shall be provided where applicable, to assure that activities important to safety are performed in the required manner.

#### **4.7 Program Administration**

1. Administration of the Corporate level of the Operational Quality Assurance Program shall be performed by the Director Nuclear Oversight NMC.
2. Disputes between Nuclear Oversight personnel and other organizations relative to Program requirements shall be referred to the Approving Authority (as identified in Section 4.2 of this Plan) responsible for establishing the pertinent requirement.
3. Program administration shall include the following activities:
  - a. Review of Corporate Administrative Control Directives.
  - b. Performance of required audits.
  - c. Reporting to management concerning:
    - i. Program status.
    - ii. Program discrepancies including quality trends.

#### 4.8 Program Boundary

1. The structure, systems, components, and other items requiring quality assurance are listed in Appendices A and B. The Program shall also include shipment of radioactive materials as required by 10CFR71 and systems and activities associated with fire protection as identified in Appendix C.
2. An index shall be established and maintained by the Director Nuclear Oversight NMC which identifies the Directives that are utilized to implement the requirements of ANSI N18.7-1976 that are committed to in Section 1.0 of this plan and the requirements identified in the remaining sections of this plan.

#### 4.9 Quality Assurance Training

Training programs shall be established for those personnel performing quality-affecting activities such that they are knowledgeable in the quality assurance documents and their requirements and proficient in implementing these requirements. These training programs shall assure that:

1. Personnel responsible for performing quality-affecting activities are instructed as to the purpose, scope, and implementation of the quality-related Directives, Instructions, and Procedures.
2. Personnel performing quality-affecting activities are trained and qualified, as appropriate, in principles and techniques of the activity being performed.
3. The scope, the objective, and the method of implementing the training programs are documented.
4. Proficiency of personnel performing quality-affecting activities is maintained by retraining, re-examination, and/or recertification as appropriate.
5. Methods are provided for documenting training sessions describing content, attendance, date of attendance, and the results of the training session, as appropriate.
6. Fire protection training is accomplished in accordance with Appendix C.

## **5.0 Modification Control**

### **5.1 General Requirements**

Modifications shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the company designates another responsible organization.

### **5.2 Uniform Modification Process**

A uniform process for controlling modifications to nuclear plants shall be provided in the Operational Quality Assurance Program. Measures shall be established to assure that:

1. The requirements of ANSI N45.2.11-1974 are implemented.
2. Reviews and approvals are performed.
3. Plant documentation is updated.
4. Appropriate installation procedures are prepared and utilized.
5. Tests and inspections are performed as necessary.
6. Site procedures are reviewed and revised as appropriate.
7. 10CFR50.59 is complied with.
8. Fire protection reviews are performed as required by Appendix C.

## **6.0 Procurement Document Control**

### **6.1 General Requirements**

Measures shall be established to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitably included or referenced in the documents for procurement of material, equipment, and services, whether purchased by Xcel Energy or by its contractors or subcontractors. To the extent necessary, procurement documents shall require contractors or subcontractors to provide a quality assurance program consistent with the pertinent provisions of 10CFR50, Appendix B or 10CFR71, Subpart H.

### **6.2 Technical and Quality Requirements**

1. The Operational Quality Assurance Program shall contain provisions for controlling procurement of material, equipment, components, and services that are safety related, fire protection related, or 10CFR71 related and utilized at or for an operating nuclear plant.
2. Procurement documents shall contain specific technical and quality requirements. Renewal, spare, and replacement parts shall be required to meet the original specification (or properly reviewed and approved revision) or construction code, quality assurance documentation requirements, and vendor quality assurance program requirements.
3. Quality assurance requirements that are required of the vendor shall be included. Quality assurance requirements shall be based on ANSI N45.2-1971 (or equivalent standard). Documentation requirements shall include, as applicable, chemical analysis reports, material certification, testing results, and testing reports. Time and frequency of submittals should be included.
4. Procurement documents shall contain provisions which establish the right of access to vendor facilities and records for source inspection and audits as appropriate.
5. Procurement documents for contracting packages for transport of radioactive materials shall require a copy of the package license, certificate, or other NRC approval authorizing use of the package. The procurement documents shall also require copies of all documents referred to in the license, certificates, or other NRC approval as applicable.

### **6.3 Review and Approval**

Documents, and changes thereto initiating procurement of safety related, fire protection related, 10CFR71 related material, equipment, components or services shall be approved by appropriate management personnel and shall be subject to a quality review to insure applicable regulatory requirements, design bases, quality assurance, and other requirements are adequately satisfied prior to release.

### **6.4 Fire Protection Procurement Control**

The additional procurement controls identified in Appendix C shall be applied to purchasing fire protection systems and equipment.

## **7.0 Instructions, Procedures and Drawings**

### **7.1 General Requirements**

1. Directives, Instructions, Procedures, and drawings of a type appropriate to the circumstances shall be provided for the control and performance of activities which affect quality.
2. Directives, Instructions, Procedures, and drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

### **7.2 Directives and Instructions**

Directives and Instructions shall be issued which establish procedural requirements for appropriate functional areas. Such procedural requirements shall include the following as appropriate:

1. Procedure review and approval requirements.
2. Procedure control requirements.
3. Procedure content requirements.

### **7.3 Procedures**

1. Procedures of a type appropriate to the circumstances shall be provided for the performance of activities which affect the quality of safety related, fire protection related, or 10CFR71 related structures, systems, or components.
2. At Monticello, detailed written procedures, including the applicable checkoff lists and instructions, covering areas listed below, shall be prepared and followed.
  - a. Operating procedures, including:
    - i. Integrated and system procedures for normal startup, operation and shutdown of the reactor and all systems and components involving nuclear safety of the facility.
    - ii. Fuel handling operations.

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- iii. Actions to be taken to correct specific and foreseen potential or actual malfunction of systems or components including responses to alarms, primary system leaks and abnormal reactivity changes and including follow-up actions required after plant protective system actions have initiated.
- iv. Surveillance and testing requirements that could have an effect on nuclear safety.
- v. Implementing procedures of the fire protection program.
- vi. Implementing procedures for the Process Control Program and Offsite Dose Calculation Manual including quality control.
- b. Emergency procedures, including implementing procedures of the emergency plan, including procedures for coping with emergency conditions involving potential or actual releases of radioactivity.
- c. Surveillance test procedures.
- d. Routine or preventive maintenance procedures.
- e. Calibration procedures.
- f. Plant chemistry and count room procedures.
- g. Radiation protection procedures and procedures that implement the requirements of the Radiation Protection Plan including applicable check-off lists and instructions.
- h. Emergency plan procedures.
- i. Special process procedures.
- j. Preoperational and operational test procedures.
- k. Audit procedures.
- l. Fire fighting procedures.
- m. Document control procedures.
- n. Radioactive material shipment procedures.
- o. Inspection and examination procedures.

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- p. Security procedures that implement the requirements of the Security Plan and the Security Contingency Plan.
- 3. At Prairie Island, detailed written procedures, including the applicable checkoff lists and instructions, covering areas listed below shall be prepared and followed.
  - a. Operating procedures, including:
    - i. Integrated and system procedures for normal startup, operation and shutdown of the reactor and all systems and components involving nuclear safety of the facility.
    - ii. Fuel handling operations.
    - iii. Actions to be taken to correct specific and foreseen potential or actual malfunction of systems or components including responses to alarms, primary system leaks and abnormal reactivity changes and including follow-up actions required after plant protective system actions have initiated.
    - iv. Surveillance and testing requirements that could have an effect on nuclear safety.
  - b. Emergency procedures, including:
    - i. Implementing procedures of the Facility Emergency Plan, including procedures for coping with emergency conditions involving potential or actual releases of radioactivity.
    - ii. Implementing procedures of emergency plans for coping with earthquakes and floods.
  - c. Surveillance test procedures.
  - d. Routine or preventive maintenance procedures.
  - e. Calibration procedures.
  - f. Plant chemistry and count room procedures.
  - g. Radiation protection procedures.
  - h. Emergency plan procedures.

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- i. Special process procedures.
- j. Preoperational and operational test procedures.
- k. Audit procedures.
- l. Fire fighting procedures.
- m. Document control procedures.
- n. Radioactive material shipment procedures.
- o. Inspection and examination procedures.

**7.4 Drawings and Technical Manuals**

Drawings and technical manuals of a type appropriate to the circumstances may be used as procedural documents for conducting activities that affect the quality of safety related, fire protection related, or 10CFR71 related structures, systems, or components.

## 8.0 Document Control

### 8.1 General Requirements

1. Measures shall be established to control the issuance of documents, such as Directives, Instructions, Procedures, and drawings, including changes thereto, which prescribe activities affecting quality.
2. These measures shall assure that documents, including changes, are:
  - a. Reviewed for adequacy and approved for release by authorized personnel, and
  - b. Are distributed to and used at the location where the prescribed activity is performed.
3. Changes to documents shall be reviewed and approved by the same organization that performed the original review and approval or another designated responsible organization.

### 8.2 Administrative Control Directive Control

1. Directives issued to implement the Operational Quality Assurance Program shall be controlled to assure that current copies and appropriate indexes are made available to personnel performing the prescribed activities. Directives shall be reviewed to assure their compatibility with the Operational Quality Assurance Program objectives and shall be approved by the designated management.
2. Changes to Directives shall be reviewed and approved in the same manner as the original.

### 8.3 Administrative Work Instruction Control

1. Instructions issued to implement provisions of Directives shall be controlled to assure that current copies and appropriate indexes are made available to personnel performing the prescribed activities. Instructions shall be reviewed to assure that they are compatible with pertinent Directive provisions and shall be approved by designated management.
2. Changes to Instructions shall be reviewed and approved in the same manner as the original.

## 8.4 Procedure Control

1. Required procedures shall be controlled to assure that current copies are made available to personnel performing the prescribed activities. Appropriate indexes of standing procedures shall be formulated and made available to personnel responsible for performing the prescribed activities.
2. Except as specified in Sections 8.4-3 and 8.4-4, required procedures shall:
  - a. Be reviewed by an independent knowledgeable individual and be approved by a member of management responsible for the prescribed activity.
  - b. Have significant changes to required procedures reviewed and approved in the same manner as the original.
  - c. Be periodically reviewed.
3. Monticello Procedure Control
  - a. Required procedures and procedure changes shall be reviewed as specified by Section 22.4-8 and approved by a member of plant management designated by the Plant Manager.
  - b. The following procedures, including applicable checklists and instructions, shall be reviewed by the Operations Committee and approved by a member of plant management designated by the Plant Manager.
    - i. Procedures required by Technical Specifications.
    - ii. The Radiation Protection Plan and implementing procedures, with the exception of those nonsafety-related procedures governing work activities exclusively applicable to or performed by health physics personnel.
    - iii. Maintenance and test procedures.
  - c. Non-safety related procedures governing work activities exclusively applicable to or performed by health physics personnel not reviewed by the Operations Committee shall be reviewed and approved by the radiation protection manager.
  - d. Non-safety related procedures governing work activities exclusively applicable to or performed by security personnel not reviewed by the Operations Committee shall be reviewed and approved by the security manager.

e. Temporary Changes

- i. Temporary changes to those procedures which are required to be reviewed by the Operations Committee, which do not change the intent of the original procedures, may be made with the concurrence of two members of the unit management staff, at least one of whom holds a Senior Operator License. Such changes should be documented, reviewed by the Operations Committee and approved by a member of the plant management designated by the plant manager within one month.
- ii. The radiation protection manager shall review temporary changes to health physics procedures not reviewed by the Operations Committee.
- iii. The security manager shall review temporary changes to security procedures not reviewed by the Operations Committee.

| 4

4. Prairie Island Procedure Control

- a. Required procedures and procedure changes shall be reviewed as specified by Section 22.4-8 and approved by a member of plant management designated by the Plant Manager except that maintenance procedures shall be reviewed and approved in accordance with Section 8.4-5.
- b. Temporary changes to Operations Committee reviewed procedures, which do not change the intent of the original procedure may be made with the concurrence of two members of the unit management staff, at least one of whom holds a Senior Reactor Operator License. Such changes shall be documented, reviewed by the Operations Committee and approved by a member of plant management designated by the Plant Manager within one month.
- c. Non-safety related procedures which govern work activities exclusively applicable to or performed by security personnel shall be reviewed and approved by the security manager. Temporary changes to such procedures shall be reviewed by two individuals knowledgeable in the area affected by the procedure.

5. Maintenance and Test Procedures

- a. The following maintenance and test procedures will be developed to satisfy routine inspection, preventive maintenance programs, and operating license requirements.

- i. Routine testing of Engineered Safeguards and equipment as required by the facility License and the Technical Specifications.
- ii. Preventive or corrective maintenance of plant equipment and systems that could have an effect on nuclear safety.
- iii. Calibration and preventive maintenance of instrumentation that could affect the nuclear safety of the plant.
- iv. Special testing of equipment for proposed changes to operational procedures or proposed system design changes.

b. At Prairie Island:

- i. Maintenance work orders and their associated maintenance and test procedures for the activities listed in Section 8.4-5.a.i through iv. shall be prepared, reviewed and approved. Each procedure or procedure change shall be reviewed by a qualified individual(s) other than the individual(s) who prepared the procedure or procedure change. The appropriate plant management (as previously designated by the Plant Manager) shall approve these procedures.
- ii. Individuals responsible for reviews performed in accordance with the requirements of Section 8.4-5.b.i shall meet or exceed the qualifications described in section 4.2 or 4.4 of ANSI N18.1-1971 and shall be previously designated by the Plant Manager. Such reviews shall include a determination of whether or not additional cross disciplinary review is necessary.
- iii. All reviews shall include a determination of the need for an evaluation to establish whether or not prior NRC approval is required in accordance with 10 CFR 50.59.

## 8.5 Drawing Control

- 1. Drawings which represent the physical and functional aspects of the operating nuclear plants and which are critical to safe plant operation or safety of personnel shall be maintained in a current status. Appropriate indexes shall be formulated and made available to personnel responsible for plant operation, maintenance, and modification.

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2. Measures shall be established for revising site drawings and for distributing revised drawings. Proposed revisions to drawings shall be reviewed by a knowledgeable individual to determine the safety significance and appropriateness of the change.

**8.6 Specifications**

Plant design specifications shall be controlled to assure that current copies and appropriate indexes are made available to personnel responsible for plant operation, maintenance, and modification.

**8.7 Radioactive Shipment Package Documents**

All documents related to a specific shipping package for radioactive material shall be controlled by appropriate instructions; all significant changes to such documents shall be similarly controlled.

**8.8 Updated Safety Analysis Reports**

Updated Safety Analysis Reports shall be updated in accordance with the applicable provisions of 10CFR50.

**8.9 Technical Manuals**

Technical manuals that are used as procedural documents shall be controlled.

## **9.0 Control of Purchased Material, Equipment and Services**

### **9.1 General Requirements**

1. Measures shall be established to assure that purchased material, equipment and services conform to the procurement documents. These measures shall include provisions, as appropriate, for vendor evaluation and selection, objective evidence of quality furnished by the vendor, inspection at the vendor source, and examination of products upon delivery.
2. Documentary evidence that material and equipment conform to the procurement requirements shall be available at the site prior to installation or use of such material and equipment. This documentary evidence shall be retained at the site and shall be sufficient to indicate that the purchased material and equipment meet the specific requirements of the codes, standards, or specifications.
3. The effectiveness of the control of quality by vendors shall be assessed at intervals consistent with the importance, complexity and quantity of the product or service.

### **9.2 Procurement Review**

1. Documents initiating procurement of safety related, fire protection related, and 10CFR71 related material, equipment and services shall be subject to a review to ensure applicable regulatory requirements, design bases, quality assurance, and other requirements are adequately satisfied.
2. Quality assurance requirements shall include identification of applicable elements of ANSI N45.2-1971 (or equivalent) that are required to be included in the vendor's quality assurance program.

### **9.3 Vendor Evaluation and Verification**

1. The adequacy of vendor's quality assurance program specified in procurement documentation shall be verified prior to use of the procured material, equipment, or service. Vendor's adherence to their quality assurance program to the extent appropriate for the procured material, equipment or service shall be verified.
2. Vendor evaluations shall include inspections, audits, or surveillances as appropriate. These activities shall be planned and performed in accordance with written procedures based upon procurement document requirements.

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3. Material and equipment may be procured and used based on appropriate certificates of conformance, provided the validity of such certificates are periodically evaluated by audits, independent inspection or tests and that such certificates comply with applicable code provisions.

**9.4 Receipt Inspection**

1. Material and equipment shall be inspected upon receipt at the site prior to use or storage to determine that procurement requirements are satisfied. This inspection shall include verification that required documentation is complete.
2. Nonconforming material and equipment shall be controlled to assure such material or equipment is not utilized to fulfill a safety related, fire protection related or 10CFR71 related function prior to an acceptable resolution of the discrepancies.

## **10.0 Identification and Control of Materials, Parts and Components**

### **10.1 General Requirements**

1. Measures shall be established for the identification and control of materials, parts and components, including partially fabricated assemblies. These measures shall assure that identification of the item is maintained by heat number, part number, serial number or other appropriate means, either on the item or on records traceable to the item, as required throughout fabrication, erection, installation and use of the item.
2. These identification and control measures shall be designed to prevent the use of incorrect or defective material, parts and components.

### **10.2 Spare Parts Control**

1. Spare parts held for future use on safety related, fire protection related, and 10CFR71 related components shall be controlled in such a manner that assures they will perform their safety function when utilized.
2. Measures shall be taken which assures these items are in an appropriate condition for use or will be placed in such a condition prior to use.

### **10.3 Material Control**

Material held in storage for use on safety related, fire protection related, and 10CFR71 related systems, structures or equipment shall be controlled in such a manner as to prevent its degradation and to assure the rejection of incorrect or defective material. This material shall be identified by heat number or other appropriate means, either on the item or on records traceable to the item. The method utilized in identification shall not significantly affect the fit, function, or quality of the item being identified.

### **10.4 Receipt Inspection**

Material, parts and components that are to be utilized to fulfill a safety related, fire protection related, and 10CFR71 related function or used for shipment of radioactive materials shall be inspected upon receipt to assure that associated procurement document provisions have been satisfied. Measures shall be established for identifying nonconforming material, parts and components.

### **10.5 Nuclear Fuel Control**

Measures shall be established to protect special nuclear material against theft or diversion in accordance with applicable NRC regulations.

## **11.0 Control of Special Processes**

### **11.1 General Requirements**

Measures shall be established to assure that special processes, including welding, heat treating, and non-destructive examination are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria and other special requirements.

### **11.2 Welding Procedures**

1. Safety related welding and brazing shall be performed in accordance with qualified procedures. Safety related welding and brazing procedures shall be qualified in accordance with applicable codes and standards and shall be reviewed to assure their technical adequacy and approved by management.
2. Measures shall be established for controlling welding and brazing procedures that assure such procedures are qualified, reviewed and approved, as required, prior to use.

### **11.3 Welder Qualification**

1. Measures shall be established that assure safety related welding and brazing is performed by qualified personnel. Welders and brazers shall be qualified, and requalified, in accordance with applicable codes and standards.
2. Measures shall be established for controlling welder and brazer qualification and requalification that assure qualified personnel are utilized to perform safety related welding and brazing.

### **11.4 Heat Treating Procedures**

1. Heat treating shall be performed in accordance with procedures formulated and approved in accordance with applicable codes and standards.
2. Measures shall be established for controlling heat treating procedures that assure such procedures are qualified, reviewed, and approved, as required, prior to use.

## **12.0 Inspection and Examination**

### **12.1 General Requirements**

1. Measures shall be established for the inspection and examination of items or activities affecting quality to verify conformance to specified requirements for the purpose of determining acceptability.
2. Verification of items shall be performed for each work operation where necessary to assure quality. If verification of processed items is impossible or disadvantageous, indirect control by monitoring processing methods, equipment and personnel shall be provided.
3. Both verification and process monitoring shall be provided when control is inadequate without both.
4. If mandatory inspection hold points, which require witnessing or inspection and beyond which work shall not proceed without prior consent are required, the specific hold points shall be indicated in appropriate documents.
5. Personnel performing required inspections or examinations shall be qualified in accordance with applicable codes, standards and training programs.
6. Inspections and examinations shall be performed by individuals other than those who performed or directly supervised the activity being inspected or examined.

### **12.2 Plant Operation**

1. Measures shall be established that assure periodic inspection of safety related and fire protection related systems, components, and structures. Such inspection of plant systems and equipment shall be performed to assure that such systems and equipment are in the required status and configuration. Routine general inspections of the accessible plant facilities to verify appropriate safety measures are maintained including fire protection shall also be performed.
2. An inspection of the core shall be performed prior to startup following refueling to assure specified fuel and reactor internal configuration.
3. Personnel performing plant operation inspections shall be qualified based upon experience, training applicable to area of inspection and training in inspection methods.

### **12.3 Inservice Inspection**

1. Measures shall be established that assure inservice inspection examinations are performed in accordance with applicable provisions of the ASME Boiler and Pressure Vessel Code, Section XI as required by 10CFR50.55a.
2. Personnel performing inservice inspections shall be qualified in accordance with ANSI N45.2.6-1978, as modified by Regulatory Guide 1.58, Revision 1.

### **12.4 Inspection of Maintenance and Modifications**

1. Measures shall be established which assure that activities associated with plant maintenance and modifications are inspected when determined appropriate by quality or other qualified personnel. Such inspections shall include verification that:
  - a. Appropriate procedures are available,
  - b. Plant equipment control exists,
  - c. Applicable procedures are adhered to,
  - d. Qualified personnel are utilized,
  - e. Fire protection measures are established,
  - f. Radiation protection measures are established,
  - g. Appropriate materials and replacement parts are utilized,
  - h. Work is completed as required,
  - i. Plant equipment is returned to service as required,
  - j. Activities are appropriately documented, and
  - k. Redundant equipment is available.
2. Personnel performing inspections of plant maintenance and modifications shall be qualified based upon experience, training applicable to area of inspection and training in inspection methods.

## **12.5 Modifications and Non-Routine Maintenance**

1. Measures shall be established which assure that non-routine maintenance and modification receive prior review by a qualified individual to identify applicable inspections. Such reviews shall include considering: (1) required mechanical inspections, electrical inspections, instrumentation and control inspections, structural inspections, and inspection of non-NDE special processes, (2) appropriate inspection procedures, and (3) appropriate qualification of inspection personnel.
2. Measures shall also be established which assure that the results of identified inspections are evaluated by a qualified individual to verify their adequacy.
3. Personnel performing inspections of modifications and non-routine maintenance shall be qualified in accordance with ANSI N45.2.6-1978, as modified by Regulatory Guide 1.58, Revision 1.

## **12.6 Technical Services**

1. Measures shall be established which assure that activities associated with technical services (such as surveillance testing, instrument calibration, laboratory services, etc.) are inspected when determined appropriate by quality or other qualified personnel.
2. Personnel performing inspections of technical services shall be qualified based upon experience, training applicable to area of inspection and training in inspection methods.

## **12.7 Receipt Inspection**

Measures shall be established which assure that received items are inspected by personnel qualified in accordance with ANSI N45.2.6-1978, as modified by Regulatory Guide 1.58, Revision 1.

## **12.8 Vendor Inspection**

Measures shall be established which assure that verifications and process monitoring specified in appropriate procurement documents for items are performed by personnel qualified in accordance with ANSI N45.2.6-1978, as modified by Regulatory Guide 1.58, Revision 1.

## 12.9 Fire Protection Inspections

Measures shall be established which assure that fire protection inspections are performed in accordance with Appendix C, Section 14.0.

## 12.10 Radioactive Material Packages

1. Measures shall be established which assure that packages utilized to ship licensed radioactive material off-site are inspected in accordance with the applicable provisions of 10CFR71.
2. Personnel performing inspections of radioactive material packages shall be qualified based upon experience, training applicable to area of inspection and training in inspection methods.

## 12.11 Emergency Equipment

1. Measures shall be established which assure that emergency equipment required to implement emergency plans is inspected when determined appropriate by qualified personnel.
2. Personnel performing emergency equipment inspections shall be qualified based upon experience, training applicable to area of inspection and training in inspection methods.

## 12.12 Handling Equipment

1. Measures shall be established which assure that plant handling equipment (such as cranes, lift trucks, fuel handling tools) is inspected when determined appropriate by Nuclear Oversight personnel or other qualified personnel.
2. Personnel performing inspections of handling equipment shall be qualified based upon experience, training applicable to area of inspection and training in inspection methods.

## 12.13 Nondestructive Examination

Measures shall be established which assure that the following examinations are performed by personnel qualified in accordance with the American Society of Nondestructive Testing Recommended Practice No. SNT-TC-1A or ASNT CP-189, as required by the applicable ASME Code requirements for that site.

1. Radiographic Testing (RT).

2. Ultrasonic Testing (UT).
3. Magnetic Particle Testing (MT).
4. Liquid Penetrant Testing (PT).
5. Eddy Current Testing (ET).
6. Neutron Radiographic Testing (NRT).
7. Leak Testing (LT).

#### **12.14 Inspection and Examination Procedures**

1. Required inspections and examinations shall be performed in accordance with appropriate instructions, procedures, and checklists. Such instructions, procedures, and checklists shall contain a description of objectives, acceptance criteria and prerequisites for performing the inspections or examinations. These procedures shall also specify any special equipment or calibrations required to conduct the inspection or examination. Inspection and examination results shall be documented and evaluated by responsible authority to assure that inspection and examination requirements have been satisfied.
2. Where activities are to be inspected or examined, the activity procedure shall identify hold points in the activity sequence to permit inspection or examined. The activity procedure shall require appropriate approval for the work to continue beyond the designated hold point and identification of those performing the inspection. The procedure or checklist shall require recording the date, identification of those performing the inspection or examination, and as-found condition.

## 13.0 Test Control

### 13.1 General Requirements

1. Measures shall be established to assure that all testing required to demonstrate that structures, systems and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable documents. Proof tests prior to installation, preoperational tests, and operational tests during nuclear power plant operation, of structures, systems and components shall be included as appropriate.
2. Test procedures shall include provisions for assuring that all prerequisites for the given test have been met, that adequate test instrumentation is available and used, and that the test is performed under suitable environmental conditions. Test results shall be documented and evaluated to assure that test requirements have been satisfied.

### 13.2 Surveillance Tests

1. A surveillance test program shall be established to assure that testing required to demonstrate that safety related and fire protection related structures, systems, and components will perform satisfactorily in service. Surveillance tests shall be identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable documents. The surveillance test program shall include, as a minimum, those surveillance tests specified in applicable Technical Specifications and functional Inservice Inspection testing of pumps and valves. Surveillance requirements for fire detection and protection systems in other areas of the plants shall be developed using appropriate NFPA for guidance.
2. Surveillance test results shall be documented and evaluated to assure that test requirements have been satisfied or deficient items satisfactorily resolved. Functional Inservice Inspection tests shall be performed by personnel qualified in accordance with applicable requirements.

### 13.3 Preoperational and Operational Tests

Measures shall be established to assure that appropriate preoperational and operational tests are performed on safety related and fire protection related structures, systems and components that have been subject to modification or significant maintenance. Such tests shall be performed in accordance with the original design and testing requirements or acceptable alternatives. Test results shall be documented and evaluated to assure that test requirements have been satisfied or deficient items satisfactorily resolved.

### 13.4 Proof Tests

Measures shall be established to assure that appropriate proof tests are specified in procurement documents for safety related and fire protection related replacement material and equipment and that such tests are performed and documented prior to installation.

### 13.5 Special Tests

1. Monticello - Measures shall be established that assure safety related tests are reviewed and approved as required by Technical Specifications and applicable requirements of this document, and to determine whether prior NRC approval is required in accordance with 10 CFR 50.59. Such tests shall be performed in accordance with appropriate procedures. Test results shall be documented and evaluated to assure test requirements have been satisfied.
2. Prairie Island - Measures shall be established that assure safety related tests are reviewed and approved as required by applicable requirements of this document and to determine whether prior NRC approval is required in accordance with 10 CFR 50.59. Such tests shall be performed in accordance with appropriate procedures. Test results shall be documented and evaluated to assure test requirements have been satisfied.

### 13.6 Personnel Qualification

Personnel performing required tests shall be qualified based upon experience, training applicable to area of testing and training in testing methods, unless otherwise specified by applicable codes.

## **14.0 Control of Measuring and Test Equipment**

### **14.1 General Requirements**

Measures shall be established to assure that tools, gauges, instruments and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated and adjusted at specified periods to maintain accuracy within necessary limits.

### **14.2 Installed Plant Instrumentation**

Measures shall be established to assure that installed safety related plant instrumentation is maintained and calibrated at specified periods to maintain accuracy within necessary limits. Maintenance and calibration of safety related instrumentation shall be performed in accordance with appropriate procedures and shall be controlled and documented.

### **14.3 Measuring and Test Instrumentation**

Measures shall be established to assure that tools (micrometer, calipers, etc.), gauges, instruments and other inspection, measuring, test equipment and devices used to verify conformance to established requirements are maintained and calibrated at specified periods to maintain accuracy within necessary limits. Calibration of such measuring and test equipment shall be controlled and shall be traceable to the National Institute of Standards and Technology or where national standards are not available, the basis of calibration shall be documented.

## 15.0 Handling, Storage and Shipping

### 15.1 General Requirements

1. Measures shall be established to control the handling, storage, shipping, cleaning and preservation of safety related material and equipment in accordance with work and inspection instructions to prevent damage or deterioration.
2. When necessary for particular products, special protective environments such as inert gas atmosphere, humidity levels, and temperature levels, shall be specified and identified.

### 15.2 Storage Facilities

Storage facilities shall be provided at each operating nuclear plant for storage of safety related and fire protection related operating and maintenance supplies, spare parts, replacement parts, replacement equipment, materials and tools. These storage facilities shall assure physical protection and protection from environmental conditions including temperature and moisture as appropriate. Storage facilities shall be arranged and equipped to facilitate control of the stored safety related items.

### 15.3 Nuclear Fuel Storage

Areas shall be provided for storage of nuclear fuel which assure physical protection, subcritical arrangement, adequate cooling, adequate radiation shielding and containment of radioactive material as appropriate for the condition of the stored fuel.

### 15.4 Radioactive Material Storage

1. Areas shall be provided for storage of radioactive material which assure physical protection, as low as reasonably achievable radiation exposure to personnel, control of the stored material, and containment of radioactive material as appropriate.
2. Handling, storage, and shipment of radioactive material shall be controlled based upon the following criteria:
  - a. Established safety restrictions concerning the handling, storage, and shipping of packages for radioactive material shall be followed.
  - b. Shipments shall not be made unless all tests, certifications, acceptances, and final inspections have been completed.
  - c. Work instructions shall be provided for handling, storage, and shipping operations.

### **15.5 Storage Control**

Stored material, parts and equipment shall be controlled in a manner that assures safe plant operation when and if the items are utilized. Stored safety related and fire protection related items shall be controlled to assure that the item will perform its safety function when utilized.

### **15.6 Material Handling**

Safety related material, supplies, equipment and parts shall be handled in accordance with procurement documentation and in accordance with appropriate material handling practices. Material handling equipment shall be subject to periodic testing and preventive maintenance which assures its operability. Appropriate operating instructions and procedures shall be provided for handling equipment.

### **15.7 Shipping and Packaging**

1. Shipping and packaging requirements shall be prepared for material, equipment, and components that are to be shipped off-site and returned for use at a nuclear plant to perform a safety related function. Such requirements shall assure that the item's safety related function is not significantly degraded while in transit.
2. Shipping and packaging documents for radioactive material shall be consistent with pertinent requirements of 10CFR71.

## **16.0 Inspection, Test and Operating Status**

### **16.1 General Requirements**

1. Measures shall be established to indicate, by the use of markings such as stamps, tags, labels, routing cards, or other suitable means, the status of inspections and tests performed upon individual items of the nuclear plant. These measures shall provide for the identification of items which have satisfactorily passed required inspections and tests, where necessary to preclude inadvertent bypassing of such inspections and tests.
2. Measures shall also be established for indicating the operating status of structures, systems and components of the nuclear power plant, such as by tagging valves and switches to prevent inadvertent operation.

### **16.2 Maintenance Control**

1. Measures shall be established for the control of maintenance to safety related and fire protection related structures, systems and components that assure that:
  - a. Affected structures, systems and components are removed from service and secured in a manner consistent with operability and isolation requirements of the Technical Specifications.
  - b. Repair and modification activities are performed in a manner consistent with its importance to safety.
  - c. Upon completion of repairs and modifications the affected structures, systems and components are inspected and tested to determine that the required work was performed satisfactorily and that they will perform their safety function in the required manner.
2. In addition, measures shall be established to control maintenance activities that assure resulting radiation exposure to personnel is maintained as low as reasonably achievable (ALARA) and consistent with pertinent NRC regulations.
3. The above measures shall be implemented by utilizing appropriate work authorization processes, work procedures, safety tagging, bypass control, key control and area posting, as appropriate, for the involved activity.

### 16.3 Test Control

1. Measures shall be established for the control of tests to safety related and fire protection related structures, systems and components that assures that:
  - a. Proposed tests are reviewed and approved as required prior to performance.
  - b. The plant is placed in an acceptable status prior to the test, maintained in an acceptable status during the test, and returned to its normal status upon completion of the test.
  - c. Test results are reviewed and approved as appropriate.
2. The above measures shall be implemented by utilizing appropriate work authorization processes, test procedures, safety tagging, bypass control, and key control, as appropriate, for the involved test.

### 16.4 Safety Tagging

A safety tagging program shall be developed and utilized for control of nuclear plant equipment. This program shall contain provisions for uniquely identifying components whose operation is restricted or prohibited based upon safety considerations. Provisions shall be made for review, application, independent verification, removal, and documentation of such tagging.

### 16.5 Key Control

Measures shall be established for controlling keys for safety related and fire protection related switches or key devices important to plant security. These measures shall include restricted distribution and periodic inventory of such keys or key devices.

### 16.6 Bypass Control

1. Measures shall be established for controlling the application of devices utilized to bypass component functions that are important to safety. Such measures shall assure that:
  - a. Proposed bypasses to safety related and fire protection related items are reviewed to determine that the plant will be placed in an acceptable status when the bypass is applied.
  - b. Applied bypasses are independently verified.

- c. Removal of bypasses from safety related and fire protection related items are reviewed prior to removal.
  - d. Application of bypasses to safety related and fire protection related items is authorized by responsible personnel.
- 2. The application of safety related and fire protection related bypasses shall be considered a temporary measure and shall be reviewed periodically.
  - 3. All required activities associated with the application, review, approval and removal shall be documented.

#### 16.7 Radioactive Material Control

Inspection, test, and operating status of equipment and components associated with shipment of radioactive material shall be established based upon the following criteria:

- 1. Inspection, test, and operating status of packages for radioactive material shall be indicated and controlled by established procedures.
- 2. Status shall be indicated by tag, label, marking or log entry.
- 3. Status of non-conforming parts or packages shall be positively maintained by established procedures.

#### 16.8 Reactor Startup and Restart Control

Measures shall be established for controlling reactor startups and restarts. Such measures shall assure that safety related systems, components and structures have been placed in the required status and reviews have been completed to assure that the cause of any reactor trip (scram) has been investigated and satisfactorily resolved.

## **17.0 Nonconforming Materials, Parts or Components**

### **17.1 General Requirements**

1. Measures shall be established to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation. These measures shall include, as appropriate, procedures for identification, documentation, segregation, disposition and notification to affected organizations.
2. Nonconformance items shall be reviewed and accepted, rejected, repaired, or reworked in accordance with documented procedures.

### **17.2 Receipt Inspection**

1. Measures shall be established which assure that safety related and fire protection related material, supplies, equipment, and components are inspected to determine that they conform to specified requirements of pertinent procurement documents upon receipt at the site. The absence of required documentation or discrepant documentation shall constitute nonconformance.
2. Provisions shall be made for identifying nonconforming items and for segregation of nonconforming items. Nonconforming items shall not be used to fulfill a safety related and fire protection related function until the discrepancy is satisfactorily resolved.

### **17.3 Maintenance Inspection**

Equipment, components or parts found nonconforming in a manner that could significantly affect its ability to fulfill its safety related and fire protection related function shall be identified as a nonconforming item and shall be segregated or otherwise controlled to prevent inadvertent use or installation when physical segregation is not practical. Nonconforming items shall not be used until the discrepancy is satisfactorily resolved.

### **17.4 Disposition of Nonconforming Items**

1. Measures shall be established which assure that nonconforming items are disposed of in a manner which prohibits their inadvertent use or installation. Provisions shall be made for reviewing the nonconformance and correcting discrepancies by repair or rework if appropriate.

2. The acceptability of such rework or repair of materials, parts, components, systems, and structures shall be verified by reinspection and retesting the item as originally inspected and tested or by a method which is equivalent to the original inspection and testing method. Inspection, testing, rework, and repair procedures shall be documented.
3. Normally, nonconforming safety related and fire protection related items shall not be installed prior to satisfactory resolution of outstanding discrepancies. In exceptional cases nonconforming items may be installed provided specific action is taken, which assures the item is not utilized to fulfill a safety function, prior to resolution of the discrepancy.

### **17.5 Nonconformance Documentation**

1. Nonconformance reports shall be initiated for significant deviations from specified requirements. Such reports shall identify the nonconforming item, describe the nonconformance, the disposition of the nonconformance, and the inspection requirements. Nonconformances shall be reviewed and approved.
2. Nonconformance reports shall be periodically analyzed to show quality trends and the results of this review shall be reported to the appropriate level of management for review and assessment.

### **17.6 Reporting**

Measures shall be established which assure that defects as defined in 10CFR21 and failures to comply with the Atomic Energy Act of 1954, as amended, or any applicable rule, regulation, order or license of the NRC relating to a substantial safety hazard are reported in accordance with the applicable requirements of 10CFR21.

## **18.0 Corrective Action**

### **18.1 General Requirements**

1. Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, discrepancies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude recurrence.
2. The identification of the condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management.

### **18.2 Operating Occurrences and Events**

1. Monticello - Measures shall be established which assure that operating occurrences and events that could have a significant safety effect are investigated, reviewed, and reported as required by the Technical Specifications. Such measures shall assure that appropriate corrective action is taken and that the event or occurrence is reported to responsible levels of management. Corrective action includes provisions which preclude recurrence.
2. Prairie Island - Measures shall be established which assure that operating occurrences and events that could have a significant safety effect are investigated and reviewed in accordance with the requirements of this document, and reported as required by the Technical Specifications. Such measures shall assure that appropriate corrective action is taken and that the event or occurrence is reported to responsible levels of management. Corrective action includes provisions which preclude recurrence.

### **18.3 Administrative Control Discrepancies**

Measures shall be established which assure that significant discrepancies identified during quality assurance program audits are reported to those responsible for the activity and to appropriate levels of management. These measures shall include corrective action designed to preclude recurrence of the discrepancies identified and verification of implementation.

## **19.0 Quality Assurance Records**

### **19.1 General Requirements**

1. Sufficient records shall be maintained to furnish evidence of activities affecting quality. These records shall include at least the following:
  - a. Operating logs and the results of reviews, inspections, tests, audits, monitoring of work performance and material analysis.
  - b. The records shall also include closely related data such as qualifications of personnel, procedures, and equipment.
  - c. Inspection and test records shall, as a minimum, identify the inspector or data recorder, the type of observation, the results, the acceptability, and the action taken in connection with any deficiencies noted.
2. Records shall be identifiable and retrievable.
3. Requirements shall be established concerning record retention, such as duration, location, and assigned responsibility which are consistent with applicable regulatory requirements.

### **19.2 Operating Records**

Measures shall be established which assure that records as they apply to plant operation are generated and retained as required by Section 19.12, the Monticello Technical Specifications or other regulatory requirements.

### **19.3 Plant Modification Records**

Measures shall be established which assure that adequate records are generated and retained to reconstruct plant modifications that are safety related or fire protection related.

### **19.4 Plant Maintenance Records**

Measures shall be established which assure that records pertaining to maintenance of plant safety related and fire protection related structures, equipment and components are generated and retained.

### **19.5 Personnel Qualification Records**

Measures shall be established which assure personnel qualification records are generated and retained.

## **19.6 Procurement Records**

Measures shall be established which assure that safety related, fire protection related, or 10CFR71 related procurement documents and associated documents are generated and retained.

## **19.7 Surveillance Test Records**

Measures shall be established which assure that records associated with Surveillance Testing, including Inservice Inspections, are generated and retained.

## **19.8 Audit Reports**

Measures shall be established which assure records pertaining to audits of quality activities are generated and retained.

## **19.9 Radioactive Material Control**

Measures shall be established which assure that records associated with radioactive material control are generated and maintained.

## **19.10 Drawings**

Measures shall be established which assure that records of drawing changes made to plant safety related and fire protection related structures, equipment and components are generated and retained.

## **19.11 Records Management**

1. Records management systems shall be established which assure that the required records are collected, stored, and maintained in accordance with ANSI N45.2.9-1974. Such records shall at least be stored in insulated filing devices (rated 350-1 hour by UL as to fire resistance only) located in areas having combustible loading of less than 5 lb/sq ft, or duplicate records shall be maintained in remote locations. Specific records shall be identified in implementing or source documents. Identification shall indicate records required by Technical Specifications, committed to standards, and other regulatory documents.
2. Records management systems shall be established which assure that those records used to demonstrate program implementation are collected, stored, and maintained in accordance with good records management practices. Such systems shall assure that these records are made available to auditors and inspectors in a timely manner.

## 19.12 Operating Records Requirements

### 1. Records Retained for Five Years

Records and logs relative to the following items shall be retained for at least five years:

- a. Normal plant operation including such items as power level, period of operation at each level, fuel exposure and shutdowns.
- b. Written shift supervisory and reactor logs.
- c. Periodic checks, inspections, tests and calibrations of components and systems, as related to Technical Specifications
- d. Reviews of changes made to procedures or equipment or reviews of tests and experiments.
- e. Principal maintenance activities, including inspection, repairs and substitution or replacement of principal items of equipment pertaining to nuclear safety.
- f. Records of changes to plant procedures and records of special tests and experiments.
- g. Records of wind speed and direction.
- h. Records of individual plant staff members showing qualifications, training and re-training.
- i. Reportable occurrences.

### 2. Records Retained for the Life of the Plant

Records and logs relative to the following items shall be retained for the life of the plant:

- a. Liquid and airborne radioactive releases to the environs.
- b. Radiation exposures for all plant personnel, visitor and contract personnel.
- c. Off-site environmental monitoring surveys.
- d. Fuel accountability including new and spent fuel inventories and transfers and fuel assembly histories.

- e. Radioactive shipments.
- f. Plant radiation and contamination surveys.
- g. Changes made to the plant as it is described in the Final Safety Analysis Report, reflected in updated, corrected and as-built drawings.
- h. Cycling beyond normal limits for those components that have been designed to operate safely for a limited number of cycles beyond such limits.
- i. Reactor coolant system in-service inspections.
- j. Minutes of meetings of the Off-Site Review Committee.
- k. Records of the service lives of all safety related snubbers, including the date at which the service life commences and associated installation and maintenance records.

## **20.0 Audits**

### **20.1 General Requirements**

A comprehensive system of planned and periodic audits shall be carried out to verify compliance with all aspects of the Operational Quality Assurance Program and to determine the effectiveness of the program. The audits shall be performed in accordance with written procedures or checklists by appropriately trained personnel not having direct responsibility in the areas being audited. Audit results shall be documented and reviewed by management having responsibility in the area audited. Follow-up action, including re-audit of discrepant areas, shall be taken where indicated.

### **20.2 Required Audits**

Measures shall be established which assure that the provisions of the Operational Quality Assurance Program are audited periodically. In addition, an overall audit shall be performed periodically which determines the adequacy of the program with respect to requirements contained in the Operational Quality Assurance Plan. This overall audit shall be performed by an organization other than that responsible for administration or implementation of the program.

### **20.3 Audit Schedules**

1. Required audits shall be performed with a frequency adjusted to objective evaluation of plant functional area performance provided that the maximum audit interval does not exceed two years, except where audit intervals are defined by regulation, commitment, or by Appendix C, Section 14, for fire protection audits.
2. Special audits may be scheduled on the initiative of Nuclear Oversight personnel based upon suspected or known discrepancies or as directed by management.
3. Appropriate audit schedules shall be prepared each year.

### **20.4 Audit Procedures**

Required audits shall be performed in accordance with appropriate audit procedures. Checklists may be used as audit procedures or in conjunction with audit procedures. Procedures shall include auditing requirements at various levels of the Operational Quality Assurance Program.

## **20.5 Audit Reports**

1. Reports of the results of each audit shall be prepared. These reports shall include a description of the area audited, identification of individuals responsible for implementation of the audited provisions and for performance of the audit, identification of discrepant areas, and recommended corrective action as appropriate.
2. Audit reports shall be distributed to the appropriate management level and to those individuals responsible for implementation of audited provisions.
3. Audit reports and associated nonconformance reports shall be periodically analyzed for quality trends and the results reported to the appropriate level of management for review and assessment.

## **20.6 Corrective Action**

Measures shall be established which assure that discrepancies identified by audits or other means are resolved. These measures shall include notification of the manager responsible for the discrepancy, recommended corrective action, and verification of satisfactory resolution. Discrepancies shall be resolved by the manager responsible for the discrepancy. Line management shall resolve disputed discrepancies.

## **21.0 Off-Site Review Committee (OSRC)**

### **21.1 General Requirements**

The Off-Site Review Committee provides the independent review of plant operations from a nuclear safety standpoint. Audits of plant operation are conducted under the cognizance of the OSRC. Monticello and Prairie Island shall each have an Off-Site Review Committee.

### **21.2 Membership**

1. The OSRC shall consist of at least five (5) persons.
2. The OSRC Chair, not having line responsibility for plant operation, shall be appointed by the NMC Chief Nuclear Officer. Other OSRC members shall be appointed by the NMC Chief Nuclear Officer or by such other person as that position may designate. The Chair shall appoint a Vice Chair from the OSRC membership to act in the Chair's absence.
3. No more than two members of the OSRC shall be from groups holding line responsibility for operation of the plant.
4. An OSRC member may appoint an alternate to serve in his absence, with concurrence of the Chair. No more than one alternate shall serve on the OSRC at any one time. The alternate member shall have voting rights.

### **21.3 Qualifications**

1. The OSRC members should collectively have the capability required to review activities in the following areas: nuclear power plant operations, nuclear engineering, chemistry and radiochemistry, metallurgy, instrumentation and control, radiological safety, mechanical and electrical engineering, quality assurance practices, and other appropriate fields associated with the unique characteristics of the nuclear power plant.
2. When the nature of a particular problem dictates, special consultants will be utilized, as necessary, to provide expert advice to the OSRC.

### **21.4 Meeting Frequency**

The OSRC shall meet on call by the Chair but not less frequently than twice a year.

## 21.5 Quorum

1. No less than a majority of the permanent members or their alternates, including the OSRC Chair or Vice Chair.
2. No more than a minority of the quorum shall be from groups holding line responsibility for the operation of the plant.

## 21.6 Responsibilities

The following subjects should be reported to or reviewed by the OSRC:

1. Written evaluations of (1) changes in the facility, (2) changes to procedures, and (3) tests or experiments completed without prior NRC approval under the provisions of 10 CFR 50.59 to verify that such changes, tests or experiments did not involve a change in the Appendix A Technical Specifications or require prior NRC approval in accordance with 10 CFR 50.59.
2. Proposed changes to procedures, changes in the facility, tests and experiments which may involve a change in the Appendix A Technical Specifications or require prior NRC approval in accordance with 10 CFR 50.59. Matters of this kind shall be referred to the OSRC following their review by the onsite operating organization.
3. Proposed changes in Appendix A Technical Specifications or proposed license amendments relating to nuclear safety.
4. Violations of applicable codes, regulations, orders, Appendix A Technical Specifications, and license requirements or internal procedures or instructions having nuclear safety significance.
5. Significant operating abnormalities or deviations from normal and expected performance of plant safety related structures, systems, or components.
6. Investigation of all Reportable Events and events requiring Special Reports to the Commission.
7. Revisions to the Facility Emergency Plan and the Fire Protection Program.
8. Operations Committee minutes to determine if matters considered by that Committee require prior NRC approval in accordance with 10CFR 50.59.
9. Other nuclear safety matters referred to the OSRC by the Operations Committee, plant management or company management.

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10. All recognized indications of an unanticipated deficiency in some aspect of design or operation of safety related structures systems, or components.
11. Reports of special inspections and audits conducted in accordance with Appendix C, Section 14.0.
12. Changes to the Offsite Dose Calculation Manual (ODCM).
13. Review of investigative reports of unplanned releases of radioactive material to the environs.

## **21.7 Audit**

The operation of the nuclear power plant shall be audited formally under the cognizance of the OSRC to assure safe facility operation.

1. Audits of selected aspects of plant operation, as delineated in Paragraph 4.5 of ANSI N18.7-1976, shall be performed with a frequency commensurate with their nuclear safety significance and in a manner to assure that an audit of all nuclear safety related activities is completed within a period of two years. The audits shall be performed in accordance with appropriate written instructions and procedures.
2. Audits of aspects of plant radioactive effluent treatment and radiological environmental monitoring shall be performed as follows:
  - a. Implementation of the Offsite Dose Calculation Manual at least once every two years.
  - b. Implementation of the Process Control Program for solidification of radioactive wastes at least once every two years.
  - c. The Radiological Environmental Monitoring Program and the results thereof, including quality controls, at least once every year.
3. Periodic review of the audit program should be performed by the OSRC at least twice a year to assure its adequacy.
4. Written reports of the audits shall be reviewed by the Director Nuclear Oversight NMC, by the OSRC at a scheduled meeting, and by members of management having responsibility in the areas audited.

## **21.8 Authority**

The OSRC shall be advisory to the NMC Chief Nuclear Officer.

## **21.9 Records**

Minutes shall be prepared and retained for all scheduled meetings of the Off-Site Review Committee. The minutes shall be distributed within one month of the meeting to the NMC Chief Nuclear Officer, each member of the OSRC and others designated by the Chair or Vice Chair. There shall be a formal approval of the minutes.

## **21.10 Procedures**

A written charter for the OSRC shall be prepared that contains:

1. Subjects within the purview of the group.
2. Responsibility and authority of the group.
3. Mechanisms for convening meetings.
4. Provisions for use of specialists or subgroups.
5. Authority to obtain access to the nuclear power plant operating record files and operating personnel when assigned audit functions.
6. Requirements for distribution of reports and minutes prepared by the group to others in the NMC organization.

## 22.0 Operations Committee (OC)

### 22.1. Membership

- 13 | 1. The Operations Committee shall consist of at least six (6) appointed regular members drawn from the key supervisors of the onsite staff.
- 14 | a. For Prairie Island, the key supervisors include, at least, the following positions: Plant Manager, Operations Manager, Maintenance Manager, Radiation Protection Manager, and plant engineering supervisors.
2. Alternates to the regular members shall be designated in writing by the Chair to serve on a temporary basis. No more than two alternates shall participate as voting members of the Operations Committee at any one time.
- 15 | 3. The Plant Manager shall appoint a regular member as Chair of the OC and shall appoint a regular member to act as Chair in his absence. This appointee may be designated the Vice/Acting Chair.
- 16 |

### 22.2 Meeting Frequency

The Operations Committee will meet on call by the Chair or as requested by individual members and at least monthly.

### 22.3 Quorum

A majority of the membership, including the Chair or the Vice Chair.

### 22.4 Responsibilities

The following subjects shall be reviewed by the Operations Committee:

1. Proposed tests and experiments and their results.
2. Modifications to plant systems or equipment as described in the Updated Safety Analysis Report and having nuclear safety significance or require prior NRC approval in accordance with 10 CFR 50.59.
3. Proposals which would effect permanent changes to normal and emergency operating procedures and any other proposed changes or procedures that will affect nuclear safety as determined by the Plant Manager.
4. Proposed changes to the Technical Specifications or operating licenses.

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5. All reported or suspected violations of Technical Specifications, operating license requirements, administrative procedures, or operating procedures. Results of investigations, including evaluation and recommendations to prevent recurrence will be reported in writing to the Chief Nuclear Officer NMC and to the Chair of the Off-Site Review Committee.
6. Investigations of all Reportable Events and events requiring Special Reports to the Commission.
  - a. The following actions shall be taken for Reportable Events (Monticello only):
    1. The Commission shall be notified by a report submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50.
    2. Each Reportable Event shall be reviewed by the Operations Committee and the results of this review shall be submitted to the Off-Site Review Committee and the corporate officer with direct responsibility for the plant.
7. Drills on emergency procedures (including plant evacuation) and adequacy of communication with offsite support groups.
8. Procedures required by Technical Specifications
  - a. Prairie Island: Procedures required by Technical Specifications, including implementing procedures of the Emergency Plan, the Security Plan, and the Security Contingency Plan (except as exempted in Section 8.4-4.c), shall be reviewed initially and periodically with a frequency commensurate with their safety significance but at an interval of not more than two years. Maintenance work orders and their associated procedures shall be reviewed per the requirements of Section 8.4-5.
  - b. Monticello: All procedures required by Technical Specifications, including implementing procedures of the Emergency Plan and the Security Plan (except as exempted in Section 8.4-3.d), shall be reviewed with a frequency commensurate with their safety significance but at an interval of not more than two years.
9. Special reviews and investigations, as requested by the Off-Site Review Committee.
10. Review of investigative reports of unplanned releases of radioactive material to the environs.

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11. All changes to the Process Control Program (PCP); and the Offsite Dose Calculation Manual (ODCM).
12. The review of 10 CFR 50.59 evaluations for procedures or procedure changes to verify that such actions do not require prior NRC approval. (Prairie Island only)
13. Fire Protection Program and implementing procedures and the submittal of recommended changes to the Off-Site Review Committee. (Prairie Island only)

**22.5 Authority**

The OC shall be advisory to the Plant Manager. In the event of a disagreement between the recommendations of the OC and the Plant Manager, the course determined by the Plant Manager to be the more conservative will be followed. A written summary of the disagreement will be sent to the Site Vice President and the Chair of the OSRC for review.

**22.6 Records**

Minutes shall be recorded for all meetings of the OC and shall identify all documentary material reviewed. The minutes shall be distributed to each member of the OC, the Chair and each member of the Off-Site Review Committee, the Chief Nuclear Officer NMC and others designated by the OC Chair or Vice Chair.

**22.7 Procedures**

A written charter for the OC shall be prepared that contains:

1. Responsibility and authority of the group
2. Content and method of submission of presentations to the Operations Committee
3. Mechanism for scheduling meetings
4. Provision for meeting agenda
5. Use of subcommittees
6. Review and approval, by members, of OC actions
7. Provision for distribution of minutes

## APPENDIX A

### Monticello Structures, Systems, and Components Subject to Appendix B of 10CFR50

#### 1. STRUCTURES

Reactor Building  
Plant Control and Cable Spreading Structure  
Off Gas Stack  
Intake Structure (Service Water pump area)  
Diesel Generator Building  
Diesel Fuel Oil Day Tank Rooms  
Turbine Building (parts which house, support and/or protect safety related equipment)  
Off Gas Compressor and Storage Building (parts which house, support and/or protect safety related equipment)  
Emergency Filtration Train (EFT) Building  
Underground Duct Bank (EFT 3<sup>rd</sup> Floor to Reactor Building)

#### 2. MECHANICAL SYSTEMS AND COMPONENTS

##### 2.1 Reactor Coolant System

Reactor Vessel  
Reactor Vessel Support Skirt  
Reactor Vessel Stabilizer  
Recirculation System Piping  
Recirculation System Pumps and Valves  
Main Steam Piping (to and including outermost containment isolation valve)  
Main Steam Safety/Relief Valves  
Main Steam Safety/Relief Valve Discharge Piping  
Feedwater Piping (to and including outermost containment isolation valve)  
Control Rod Drive Housing Supports

##### 2.2 Reactor Vessel Internals

Fuel Assemblies  
Core Support Structure  
Jet Pumps  
Control Rods  
Liquid Poison Pipe  
Core Spray Sparger

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**2.3 Control Rod Drive System**

Control Rod Drives  
Control Rod Drives Accumulators  
Scram Discharge Volume  
Scram Piping

**2.4 Standby Liquid Control System**

SLC Tank  
SLC Pumps  
SLC Explosive Valves  
SLC Piping

**2.5 Primary Containment**

Drywell  
Torus  
Drywell Vent Piping/Vacuum Breakers  
Torus Ring Header and Downcomers  
Containment Penetrations  
Containment Piping and Valves (to and including outermost isolation valve)

**2.6 Secondary Containment**

RB Ventilation Isolation Dampers  
Standby Gas Treatment Filters and Fans

**2.7 Residual Heat Removal System**

RHR Piping, Pumps and Valves  
RHR Heat Exchangers (shell side)

**2.8 Core Spray System**

Core Spray Piping, Pumps, and Valves

**2.9 High Pressure Coolant Injection System**

HPCI Steam Piping and Valves Inside Containment (to and including outermost isolation valve)  
HPCI Steam Supply and Exhaust Piping and Valves (outside containment)  
HPCI Pump-Turbine  
HPCI Injection Piping and Valves  
HPCI Suction Piping

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**2.10 Reactor Core Isolation Cooling System**

RCIC Steam Piping and Valves Inside Containment (to and including outermost isolation valve)  
RCIC Steam Supply and Exhaust Piping and Valves (outside containment)  
RCIC Pump-Turbine  
RCIC Injection Piping and Valves  
RCIC Suction Piping

**2.11 Service Water System**

Emergency Service Water Pumps  
Emergency Service Water Piping and Valves  
RHR Service Water Pumps  
RHR Heat Exchanger (tube side)  
RHR Service Water Piping and Valves  
EFT Emergency Service Water Pumps, Piping, and Valves

**2.12 Reactor Water Cleanup System**

RWCU Piping and Valves (to and including outermost isolation valve)

**2.13 Spent Fuel Storage Systems**

Spent Fuel Pool

**2.14 Diesel Generator Support System**

Air Start System from Receivers to Air Start Solenoids  
Fuel Oil System from Day Tank to Injectors  
Diesel Coolers and Associated Piping and Valves (water side)  
Diesel Fuel Oil

**2.15 Heating and Ventilating System**

Emergency Filtration Train (EFT) for Control Room and EFT Building

**2.16 Combustible Gas Control System**

**SECTION 2 NOTES:**

1. Mechanical components included within each mechanical system include hangers (up to and including the first anchor supporting a safety related section of piping), fittings, flanges, vessels, tanks, etc. as necessary to perform the system safety functions.

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**3. ELECTRICAL SYSTEMS AND COMPONENTS**

**3.1 4160 Volt Bus 16**

Breaker 152-602, 601, 609, 610, Feed Breaker 408  
RHR Service Water Pump B Motor  
RHR Service Water Pump D Motor  
RHR Pump B Motor  
RHR Pump D Motor  
Core Spray Pump B Motor  
480 Volt Load Center 104  
No. 12 CRD Pump Feed Breaker 152-606

**3.2 4160 Volt Bus 15**

Breaker 152-502, 501, 509, 510, 511, Feed Breaker 308  
RHR Service Water Pump A Motor  
RHR Service Water Pump C Motor  
RHR Pump A Motor  
RHR Pump C Motor  
Core Spray Pump A Motor  
480 Volt Load Center 103  
No. 11 CRD Pump Feed Breaker 152-506

**3.3 480 Volt Switchgear Load Center 104**

480 V MCC 142 (1) (Essential)  
480 V MCC 143A (1)  
480 V MCC 143B (1)  
480 V MCC 144 (1)

**3.4 480 Volt Switchgear Load Center 103**

480 V MCC 133A (1)  
480 V MCC 133B (1)  
480 V MCC 134 (1)

**3.5 Diesel Generator No. 11 (1)**

**3.6 Diesel Generator No. 12 (1)**

**3.7 250 V DC (Division 1) Distribution Panel D31 (1)**

**3.8 250 V DC (Division 2) Distribution Panel D100 (1)**

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- 3.9 125 V DC (Division 1) Distribution Panel D-11 (1)
- 3.10 125 V DC (Division 2) Distribution Panel D-21 (1)
- 3.11 125/250 V DC Batteries and Chargers that power Distribution Panels D31, D100, D-11 and D-21
- 3.12 120/240 Volt AC Instrumentation Distribution Panel (1)

**SECTION 3 NOTES:**

- 1. For those electrical systems or components designated with the Note (1) above, quality assurance electrical program requirements are applicable only to those portions of systems as defined in Section 2 as necessary to perform the system safety function.
  - 2. Electrical components included within each electrical system include power source, breaker, control circuit, cable, relaying and operating device (motor, solenoid, heater, relay, etc.) as necessary to perform the system safety function.
  - 3. Certain components are excluded from the quality assurance program requirements if they meet the criteria described in Section 5.
- 
- 4. INSTRUMENTATION SYSTEMS AND COMPONENTS
  - 4.1 Reactor Protection System
  - 4.2 Primary Containment Isolation System
  - 4.3 High Pressure Coolant Injection System Initiation and Isolation
  - 4.4 Reactor Core Isolation Cooling System Initiation and Isolation
  - 4.5 Core Spray System Initiation
  - 4.6 Low Pressure Coolant Injection System Initiation
  - 4.7 Automatic Blowdown System
  - 4.8 Neutron Monitoring System (IRM and APRM)
  - 4.9 Standby Gas Treatment System Initiation
  - 4.10 Off-Gas Pre-treatment Radiation Monitor

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**4.11 EFT System Initiation and Operation**

**4.12 Combustible Gas Control System**

**SECTION 4 NOTES:**

1. For those instrumentation systems designated above, quality assurance instrumentation program requirements are applicable only to those portions of systems defined in Section 2 as necessary to perform the system safety function.
2. Instrumentation components included within each instrumentation system include power supply, sensors, relays, wiring and final operating device (solenoid, relay, etc.) as necessary to perform the system safety function.
3. Certain components are excluded from the quality assurance program requirements if they meet the criteria described in Section 5.

**5. ELECTRICAL AND INSTRUMENTATION SYSTEM COMPONENT EXCLUSION CRITERIA**

- 5.1 Any component of an electrical system in Section 3 or instrumentation system in Section 4 is excluded from the quality assurance program requirements if it meets the following criteria:
  - a. A failure of the component by electrical shorting, open circuiting, grounding or mechanical failure would not render the system incapable of performing its intended safety function.
  - b. A failure of the fluid pressure boundary of the component would not render the system incapable of performing its intended safety function.
- 5.2 Small spare parts having no traceability, such as commercial off-the-shelf items, may be purchased as nonsafety-related and then qualified for use in equipment requiring quality assurance. Examples of such items are resistors, capacitors, switches, indicators, coils, wire, connectors, solid state devices and miscellaneous hardware.

## APPENDIX B

### Prairie Island Structures, Systems, and Components Subject to Appendix B of 10CFR50

#### 1. REACTOR SYSTEM AND FUEL

##### 1.1 Reactor Vessel and Coolant System

Reactor vessel  
Reactor vessel support  
Reactor vessel internals  
Full length control rod drive mechanism housing  
Reactor vessel penetration pressure retaining attachments  
Steam generator (tube side and shell side)  
Pressurizer, including instrumentation, piping, and components  
Reactor coolant hot and cold leg piping, fittings  
Surge pipe, fittings  
Loop bypass line  
Temperature detector bypass manifold  
Reactor coolant thermowell  
Reactor coolant thermowell boss  
Safety valves  
Relief valves  
Reactor coolant system boundary valves  
Control rod drive mechanism head adapter plugs  
Reactor coolant pump  
• Pump casing  
• Main flanges  
• Thermal barrier  
• Seal housing  
• Pressure retaining bolting  
Reactor coolant pump motor  
• Shaft coupling  
• Flywheel  
Reactor coolant pump internals  
RCC thimble plug (rod control clusters)  
Primary and secondary sources  
Electric modules with safety function  
Cable with safety function

##### 1.2 Fuel Assemblies

Fuel assemblies, sub-assemblies, components and materials, including fuel material

2. REACTIVITY CONTROL SYSTEMS

Drive mechanisms including:

- Control rod cluster drive shaft assembly, including latch assembly
- Reactor trip breakers
- Control rods and rod cluster assemblies
- Control rod guide tube
- Control rod drive housing
- Electric modules with safety function
- Cable with safety function

3. CHEMICAL AND VOLUME CONTROL SYSTEM

Regenerative heat exchanger  
Letdown heat exchanger  
Reactor coolant filter  
Volume control tank  
Positive displacement charging pump pressure boundary  
Seal water filter  
Letdown orifices and letdown valves  
Excess letdown heat exchanger  
Seal water heat exchanger  
Boric acid tanks  
Boric acid transfer pump  
Boric acid filter  
Reactor coolant pump seal and bypass orifice  
Piping, inboard of isolation valves  
Electric modules with safety function  
Cable with safety function  
Heat tracing

4. INCORE INSTRUMENTATION

Thimble guide tubes  
Seal table

5. BORON RECYCLE SYSTEM

Recycle holdup tanks, piping and valves associated with gaseous radioactive waste

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**6. EMERGENCY CORE COOLING SYSTEM**

Accumulators  
High head safety injection pumps  
Piping, inboard of isolation valves  
Motors, electric modules, with safety function  
Cable with safety function

**7. CONTAINMENT SPRAY SYSTEM**

Refueling water storage tank  
Spray additive tank  
Spray pumps  
Spray rings and nozzles  
Piping and valves  
Pump motors  
Electric modules with safety function  
Cable with safety function

**8. RESIDUAL HEAT REMOVAL SYSTEM**

Pumps and motors  
Heat exchanger  
Piping and valves with safety function  
Electric modules with safety function  
Cable with safety function

**9. SPENT FUEL POOL COOLING SYSTEM**

Piping and valves whose failure could result in significant release of pool water

**10. CONTAINMENT FAN COOLER SYSTEM**

Ductwork  
Fans  
Dampers  
Fan coolers  
Electric modules with safety function  
Cable with safety function

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**11. WASTE PROCESSING SYSTEM**

Gaseous and liquid waste piping and valves forming part of containment boundary  
Systems handling gaseous radioactive materials  
Electric modules with safety function  
Cable with safety function

NOTE: The Waste Gas Disposal System shall be maintained in accordance with the guidance established in Regulatory Guide 1.143, Revision 1, October 1979.

**12. SAMPLING SYSTEMS**

Valves and piping from the reactor coolant system up to the second isolation valve outside containment  
Valves and piping to the first isolation valve from other safety related systems

**13. STEAM GENERATOR BLOWDOWN**

Piping from steam generator to containment isolation valves

**14. REACTOR PROTECTION SYSTEM**

Electrical modules  
Cable

**15. PROCESS RADIATION MONITORS**

Radiation Monitors, including electric modules and cable with a safety function, associated with the Shield Building, Auxiliary Building, Spent Fuel Pool and Control Room Ventilation Systems

**16. CONTAINMENT HYDROGEN CONTROL SYSTEM**

Piping and valves with safety function  
Electric modules and cable

**17. REACTOR VESSEL SERVICE EQUIPMENT**

Containment polar crane  
Vessel head handling equipment  
Crane structural supports  
Crane electrical, cable, controls and instrumentation with safety function

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**18. REFUELING EQUIPMENT**

Spent fuel cask  
Auxiliary Building crane  
Auxiliary Building crane structural supports  
Crane electrical, cable controls and instrumentation with safety function  
Fuel transfer tube  
Spent Fuel Bridge Crane  
Manipulator Crane

**19. FUEL STORAGE**

New fuel racks  
Spent fuel racks  
Spent fuel pool structure and enclosure  
Spent fuel storage casks  
Independent spent fuel storage installation concrete pads

**20. CONTROL ROOM PANELS**

Electric modules, with safety function  
Cable with safety function

**21. LOCAL PANELS AND RACKS**

Electric modules with safety function  
Cable with safety function

**22. MAIN STEAM SYSTEM**

Main steam piping and valves from steam generators up to and including piping restraints  
downstream of the main steam isolation valves  
Main steam piping and valves from main steam lines to auxiliary feedwater pump turbine  
Steam line flow restrictor  
Safety and relief valves  
Piping to first isolation valves and safety and relief valve discharge  
Electric modules with safety function  
Cable with safety function

**23. FEEDWATER SYSTEM**

Feedwater piping and valves inside containment structure up to and including first  
isolation valve outside containment structure  
Electric modules with safety function  
Cable with safety function

24. AUXILIARY FEEDWATER SYSTEM

Piping and valves supplying auxiliary feedwater from and including containment isolation valves to connections with feedwater lines  
Auxiliary feedwater pumps (turbine and motor-driven)  
Piping and valves supplying auxiliary feedwater from the cooling water system  
Electric modules with safety function  
Cable with safety function

25. COOLING WATER SYSTEMS

Component cooling water systems (essential)

- Piping (except to turbine building and non-essential equipment)
- Heat exchangers, with safety function
- Pumps
- Pump motors
- Surge tank
- Valves, isolation
- Valves, other, with safety function
- Electric modules with safety function
- Cable with safety function

Cooling water systems (essential)

- Piping (except to turbine building and non-essential equipment)
- Diesel engine pumps
- 121 Motor Driven Cooling Water Pump
- Strainers, with safety function
- Valves, isolation

Valves, other, with safety function

Screen wash systems, with safety function

Traveling screens, with safety function

Electric modules with safety function

Cable with safety function

Diesel engine pump auxiliaries as follows:

- Diesel oil storage tanks
- Day tanks
- Fuel oil transfer pumps and motors
- Fuel oil piping and valves with a safety function
- Starting air compressors
- Air receivers
- Starting air piping and valves with a safety function
- Cooling water piping and valves with a safety function
- Electric modules with safety function
- Cable with safety function
- Diesel engine, lubricating oil and jacket cooling systems

Diesel fuel oil

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**26. INSTRUMENT AIR SYSTEM**

Piping and valves associated with containment penetration

**27. DIESEL GENERATOR (D1, D2, D5, D6)**

Diesel oil storage tanks

Day tanks

Pumps and motors, fuel oil transfer

Diesel filter

Valves, with safety function

Piping/Supports except vent and fill piping downstream of last valve

Cooling water system pipe and valves

Diesel generator jacket cooling water system components with a safety function

Diesel generator lubricating oil system components with a safety function

Air intake and exhaust, and components with a safety function

Electric modules with safety function

Cable with safety function

Diesel fuel oil

Compressor (D1 and D2 only)

Air receivers

Compressor Piping/Supports and valves from receiver to diesel generator

Compressor Piping between compressor and receiver (D1 and D2 only)

28. ELECTRICAL SYSTEMS

Switchgear, transformers, motor control centers, load centers, batteries and chargers, and associated equipment with safety function

NOTE: Point of interface with onsite electric power systems (i.e., at point of interface with Class 1E breakers which isolate main Class 1E onsite buses from the offsite power system; and including components and circuitry interfaces that affect the proper performance of such interfacing breaker).

4,160 - 480 V switchgear from engineered safety systems (ESF), including ESF buses  
4,160 - 480 V transformers (ESF load centers)  
480 - 120/208 V transformers (control room and ESF area emergency lighting)  
480 V switchgear (ESF load centers)  
480 V motor control and motor control centers  
125 V station batteries and racks (control and vital instrumentation power supplies)  
125 V dc panels and switchgear (vital dc power distribution)  
120 V ac instrument bus panels (vital instrumentation ac power distribution)  
Containment penetration assemblies  
Main control board  
Radiation monitor panel  
Hot shutdown panel  
Control room air conditioning control panel  
Post LOCA Hydrogen control panel  
Emergency communications  
Diesel generator and accessories  
Diesel generator control panels  
Relay boards and racks  
Wire and cable raceway system  
Underground electrical duct bank system  
Cable system (power, control and instrumentation)  
Instrument racks  
Electrical supports  
Heat tracing/freeze protection

29. INSTRUMENTATION AND CONTROL SYSTEM COMPONENTS

Reactor trip system  
Engineered safety features (ESF) actuation system  
Systems required for safe shutdown  
Safety related instruments, tubing and fittings

30. HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS (HVAC)

Control and Relay Room HVAC System

- Air handling units
- Fans, ductwork and dampers
- Filters
- Chillers and chilled water pumps

Auxiliary Building Special Ventilation System

- Fans, ductwork and dampers
- Filters

Screenhouse Ventilation System

- Fans and dampers associated with diesel engine ventilation

Shield Building Ventilation System

- Fans, ductwork and dampers
- Filters

Battery Room Special Ventilation System

- Fans, ductwork and dampers

Spent Fuel Pool Special Ventilation System

- Exhaust fans, ductwork, dampers
- Exhaust filters

D1/D2 Diesel Generator Rooms Cooling System

- Fans, ductwork and dampers

Auxiliary Building Normal Ventilation System

- Ductwork and dampers associated with steam exclusion

Turbine Building Ventilation System

- Ductwork and dampers associated with steam exclusion

D5/D6 Building Heating, Ventilation, Cooling and Exhaust Systems with safety functions

Electric modules with safety function

Cable with safety function

HVAC sensors and monitors having safety function

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**31. CIVIL STRUCTURES AND FOUNDATIONS**

Containment and structures  
Containment airlocks  
Containment isolation (valves, piping, canisters)  
Containment penetrations  
Shield building  
Auxiliary building  
Control room  
Diesel generator room (D1 and D2)  
Radwaste building  
Cooling water intake structure  
Electrical tunnels, with safety function  
Pipe tunnels, with safety function  
Shielding structures  
Turbine Building (housing emergency diesel generator, cooling water pipes, batteries,  
safeguards switchgear, auxiliary feedwater pumps)  
D5/D6 Building

**32. OTHER**

- A. Fire protection system piping associated with the safeguards ventilation exhaust filters and containment penetration
- B. Turbine building crane  
Crane structural support  
Crane electrical, cable, controls and instrumentation with safety function

## APPENDIX C

### Nuclear Plant Fire Protection Program

#### 1.0 Policy Statement

The Operational Quality Assurance Plan is implemented through a system of Administrative Control Directives (Directives). This system shall be used to implement the requirements of the operating nuclear power plant fire protection program. The basic requirements of the fire protection program are specified in this appendix to the Operational Quality Assurance Plan.

#### 2.0 Organization

##### 2.1 General Requirements

1. NMC shall be responsible for the establishment and implementation of the fire protection program. NMC may delegate to other organizations the work of establishing and implementing the fire protection program, or any part thereof, but shall retain responsibility for the program.
2. The authority and duties of persons and organizations involved in the fire protection program shall be clearly established and delineated in writing.
3. To assure adherence to the fire protection program, management measures shall be established which provide that the individual or group assigned the responsibility for checking, auditing, inspecting, or otherwise verifying that an activity has been correctly performed is qualified and does not have responsibility for performing or directly supervising the work except that:
  - a. The individual or group assigned the responsibility for auditing is independent of the individual or group directly responsible for performing the specific activity.

##### 2.2 Fire Protection Organization Summary

The NMC organization is summarized in Section 3.0 of the Operational Quality Assurance Plan. In addition to that summary, the following additional responsibilities shall pertain to the fire protection program.

1. Director Nuclear Oversight NMC
  - a. Scheduling and assuring completion of independent off-site fire protection inspections and audits.

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2. Monticello and Prairie Island Site Vice Presidents
  - a. Routine inspection of the plant for fire hazards.
  - b. Establishing plant fire brigades.
  - c. Ensuring that fire brigade members receive required training and physical evaluations.
  - d. Coordinating fire drills and determining their effectiveness.
  - e. Establishing cooperation with the local fire department, including joint drills and training sessions to familiarize fire department personnel with plant access routes, layout, equipment, and special hazards.
  - f. Establishing storage requirements to insure no additional fire hazards are created.
  - g. Establishing a surveillance program for fire protection systems and fire fighting equipment.
  - h. Establishing a system to control nonconforming items.
  - i. Reviewing required work processes for fire hazards and possible reduction of fire protection system effectiveness.
  - j. Reviewing modifications to determine if they would cause an unreviewed fire hazard or reduce the effectiveness of the fire protection systems.
  - k. Establishing a fire salvage program (when required).
  - l. Reviewing purchase requisitions that are related to fire protection.
  - m. Developing instructions for fighting fires in specific areas and identifying effects of fires in specific areas.
  - n. Preparing news release information for NMC's Communications Department.
  - o. Procurement of equipment for the fire brigades.
  - p. Establishing a policy for the security actions to be taken by the guard force during a fire.
  - q. Establishing a training program for the fire brigades.

### 2.3 Fire Protection Engineer

1. A fire protection engineer (or engineering consultant) shall be used to provide the following types of services:
  - a. Review of design for a significant modification to a fire protection system.
  - b. Review of proposed plant modifications which would introduce major hazards not analyzed in the Fire Hazards Analysis.
  - c. Triennial independent fire protection inspections (see Section 14.2).
2. The fire protection engineer (or engineering consultant) shall meet the following qualifications:
  - a. A graduate of an engineering curriculum of accepted standing who has completed not less than six years of engineering attainment indicative of growth in engineering competency and achievement, three of which shall have been in responsible charge of fire protection engineering work, or
  - b. A member in the Society of Fire Protection Engineers.

## 3.0 Nuclear Plant Fire Brigades

### 3.1 Monticello

1. A fire brigade shall be established in accordance with the requirements of 10CFR50, Appendix R, Section III.H, and the requirements listed below:
  - a. Fire brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours, in order to accommodate the unexpected absence of fire brigade members. Under this circumstance, immediate action shall be taken to restore the fire brigade to within the minimum requirements.

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**3.2 Prairie Island**

1. A fire brigade of five persons shall be on-site at all times in addition to the minimum shift crew complement needed to safely shut down the unit(s).
  - a. Fire brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours, in order to accommodate the unexpected absence of fire brigade members. Under this circumstance immediate action shall be taken to restore the fire brigade to within the minimum requirements.
2. Each fire brigade shall have an appointed leader. This leader shall not be the Shift Supervisor.
3. All new members of the fire brigades shall have an initial physical examination for strenuous physical activity as experienced in fire fighting. Annual follow-up physical examinations shall include respiratory protection qualification testing which screens all respirator users (including fire brigade members) for cardiopulmonary deficiencies. Physical examinations shall be conducted by a physician. A program shall be established by NMC's corporate physician to ensure that all respirator users, when subject to even the most severe working conditions, are physically fit to wear a respirator. The program shall include pulse, blood pressure, and spirometry testing, and a medical history review in which the possibility of past or present heart disease is determined. The program shall be administered by nursing personnel who will perform the necessary cardiopulmonary screening function.

**4.0 Fire Protection Training**

**4.1 Monticello and Prairie Island**

1. Level I fire protection training shall be general training given to operations and maintenance personnel assigned to nuclear power plants. Following initial training, these topics shall be reviewed at least annually with required personnel. Level I shall cover, as a minimum, the following areas:
  - a. Basic principles of fire chemistry and physics.
  - b. Fire hazards.
    - 1) Common fire hazards.
    - 2) Combustibles, general.

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- 3) Flammable liquids.
    - 4) Flammable gases.
  - c. Fire detection systems.
  - d. Types of extinguishing systems.
  - e. Special fire hazards associated with nuclear power plants.
  - f. Emergency Plan with emphasis on fire emergency.
2. Basic instruction in fire protection shall be given to contractor personnel before granting them unescorted access to safety related areas of the plant.

**4.2 Monticello**

- 1. Fire brigade training shall be conducted in accordance with the requirements of 10CFR50, Appendix R, III.I.

**4.3 Prairie Island**

- 1. Level II fire protection training shall be given to all fire brigade members. An initial training program with annual retraining shall be conducted. Retraining shall repeat all Level II subject material over a period of approximately two years. Level II shall include a detailed treatment of the subject matter in Level I. In addition, the following items shall be covered:
  - a. The identification and location of fire hazards and associated types of fires that could occur in the plant.
  - b. The identification and location of fire fighting equipment in each fire area.
  - c. Familiarization with layout of the plant including access and egress routes in each area.
  - d. The proper use of fire fighting equipment.
  - e. Methods of fighting each type of fire.
  - f. Review of the plant fire fighting strategies with specific coverage of each individual's responsibilities.

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- g. Proper use of communication, lighting, ventilation and emergency breathing equipment.
  - h. Considerations of radiation and contamination in fire areas.
- 2. Level III training shall be presented to the fire brigade leaders. Initial training with annual retraining shall be provided. Included will be a detailed review of Level I and II training and the following additional material:
  - a. The direction and coordination of fire fighting activities.
  - b. The proper method of fighting fire inside buildings and confined areas.
  - c. Evaluation of fire hazards.
- 3. Training Documentation

Classroom training sessions, practice sessions, and drills for the fire brigade shall be documented. The following should be included in the documentation for persons participating:

- a. Name.
- b. Date.
- c. Summary of what was done.
- d. Evaluation by observer.

## **5.0 Drills and Practice**

### **5.1 Monticello**

- 1. Fire protection drills and practices shall be conducted in accordance with the requirements of 10CFR50, Appendix R, Section III.I, and the requirements listed below:
  - a. A meeting shall be held after each drill to discuss the drill and the need to repeat portions of the training program that are applicable to the type of drill performed.
  - b. Preplanned strategies, and the proficiency of brigade members and control room operators in their use shall be tested during drills.

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- c. Each year, one drill, conducted with any fire brigade, shall involve the local on-duty fire department.

**5.2 Prairie Island**

**1. Drills**

- a. Drills shall be scheduled so that each fire brigade will participate in at least four drills per year. The following types of drills shall be scheduled:
  - 1) Involve local on-duty fire department. This shall be done at least once a year, with any fire brigade.
  - 2) At three year intervals, a randomly selected, announced drill shall be critiqued by qualified individuals independent of NMC's staff.
  - 3) Back shift, conducted by the fire brigade leader on duty at the time. This shall be scheduled at least once per year for each brigade.
- b. Except as required above, drills may be announced and may involve only the shift fire brigade members (to preclude the disruption of essential plant activities).
- c. All drills shall be preplanned and critiqued. A meeting shall be held after each drill to discuss the drill and the need to repeat portions of the training program that are applicable to the type of drill performed.
- d. To the extent practical, fire brigade members shall use protective equipment, suppression systems, and other equipment used to fight an actual fire during all drills. Preplanned strategies shall be tested during drills as well as the proficiency of brigade members and Control Room operators in their use.

**2. Practice**

- a. Practice sessions shall be held at least once every year. These sessions shall involve actually fighting fires which are similar to those which might be encountered in the plant. These sessions shall include:
  - 1) Use of fire fighting equipment.
  - 2) Use of breathing equipment under strenuous conditions.

- 3) Extinguishment of fire.
  - 4) Best method by which to approach each type of fire, to the extent possible.
- b. Brigade members missing a practice session shall be rescheduled to attend a later session with another brigade. If this is not possible, they shall be required to review the training material covered during the practice session.

## 6.0 Control of Combustibles and Ignition Sources

### 6.1 Monticello

1. Control of combustibles and ignition sources shall be in accordance with the requirements of 10CFR50, Appendix R, Section III.K, and the requirements listed below:
  - a. All areas containing safety related equipment or cables shall be surveyed once each working day for fire hazards by a member of the plant staff.
  - b. Storage of combustible materials shall be permitted only in posted areas or in approved cabinets and containers.
  - c. Transient combustibles in any safety related area, or area containing safe shutdown equipment, shall be limited to the equivalent of 2 gallons of combustible liquid. Use of larger amounts of combustible material shall be governed by written procedures which specify augmented fire protection measures.
  - d. A person designated as a fire watch and equipped to prevent and combat fire shall be assigned to safety related areas where cutting, welding, grinding and open flame work is involved.
  - e. The fire watch shall remain in the assigned area for 30 minutes after work involving the cutting, welding, grinding, or open flame is completed.
    - 1) When excessive radiation exposure to the fire watch is a concern, alternate fire watch measures may be implemented if these alternate measures address how to detect, prevent and combat a fire in the fire watch area.

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- f. Where feasible, all movable combustible material below or within 35 feet of cutting, welding, grinding, or open flame work shall be removed, and all immovable combustibles below or within 35 feet shall be protected.
- g. Smoking shall be prohibited in all safety related areas, except those specifically designated by the plant management.

**6.2 Prairie Island**

**1. Permanent and Temporary Storage**

- a. Measures shall be established to minimize fire hazards in areas containing safety related equipment or equipment required to safely shut down the reactor(s) which:
  - 1) Govern the handling and limitation of the use of ordinary combustible materials, combustible and flammable gases and liquids, high efficiency particulate air and charcoal filters, dry ion exchange resins, or other combustible supplies in safety related areas.
  - 2) Govern the removal from the area of all waste, debris, scrap, oil spills, or other combustibles resulting from the work activity immediately following completion of the activity, or at the end of each work shift, whichever comes first.
  - 3) Govern the handling of transient fire loads such as combustible and flammable materials during maintenance, modification, or refueling operations.
  - 4) Govern the use of specific combustibles in safety related areas.
    - a) All wood used in safety related areas during maintenance, modification, or refueling operations (such as laydown blocks or scaffolding) shall be treated with a flame retardant.
    - b) All untreated wood in safety related areas (during operations other than maintenance, modification or refueling) shall be limited to less than 2 cubic feet per area.
    - c) Equipment or supplies (such as new fuel) shipped in untreated combustible packing containers may be unpacked in safety related areas if required for valid operating reasons. However, all combustible materials shall be removed from the area immediately following the unpacking.

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- d) Large amounts of combustible material shall not be left unattended during lunch breaks, shift changes, or other similar periods.
    - e) Loose combustible packing material such as wood or paper and excelsior shall be placed in metal containers with tight-fitting self-closing metal covers.
  - b. All areas containing safety related equipment or cables shall be surveyed once each working day for fire hazards by a member of the plant staff. Storage of combustible materials shall be permitted only in posted areas or in approved cabinets and containers. Unnecessary transient combustibles shall not be stored in areas containing safety related equipment or areas containing safe shutdown equipment or other essential auxiliary equipment area (e.g., HVAC equipment room).
  - c. Transient combustibles in any safety related area or area containing safe shutdown equipment shall be limited to the equivalent of 2 gallons of combustible liquid. Use of larger amounts of combustible material shall be governed by written procedures which specify augmented fire protection measures.
- 2. Cutting, Welding, Grinding and Open Flame
  - a. Cutting, welding, grinding and open flame work in safety related areas shall be administratively controlled. A person designated as fire watch and equipped to prevent and combat fire shall be assigned to safety related areas where cutting, welding, grinding and open flame work is involved. The fire watch shall remain in these assigned areas for 30 minutes after the work involving the cutting, grinding or open flame is completed.
    - 1) When excessive radiation exposure to the fire watch is a concern, alternate fire watch measures may be implemented if these alternate measures address how to detect, prevent and combat a fire in the fire watch area.
  - b. Where feasible, all movable combustible material below or within 35 feet of cutting, welding, grinding, or open flame work shall be removed and all immovable combustibles below or within 35 feet shall be protected.

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- c. Smoking shall be prohibited in all safety related areas, except those specifically designated by the plant management.
- d. Fire barrier penetration leak testing shall be done with approved and reviewed procedures. Permission to do this leak testing shall be obtained from the Shift Supervisor.

## **7.0 Fire Fighting Procedures**

### **7.1 Monticello**

Fire fighting procedures shall be established in accordance with the requirements of 10CFR50, Appendix R, Section III.K.

### **7.2 Prairie Island**

- 1. Fire fighting procedures or instructions shall be developed to cover the following areas:
  - a. Discovery of fire including:
    - 1) Notification.
    - 2) Attempts to extinguish fire.
  - b. Action of Control Room operator including:
    - 1) Announcement.
    - 2) Sounding of fire alarm.
    - 3) Who to notify.
  - c. Selection and delineation of responsibilities of fire brigade members.
  - d. Coordination of off-site fire department activities.
  - e. Actions of security guards during a fire emergency.
  - f. Delineation of responsibilities of other plant personnel.

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- g. Instructions and preplanned strategies for fighting fires in specific areas of the plant when the general instructions are not adequate. These instructions shall include:
  - 1) Identification of combustibles in area.
  - 2) Identification of safe shutdown equipment in area and alternate equipment available for performing that function.
  - 3) Fire suppression equipment available in the area.
  - 4) Information showing ventilation control (power sources), access hallways, stairs, and doors.
  - 5) Identification of plant systems that should be managed to reduce the damage potential from a fire in the area.
  - 6) Identification of radiological and toxic hazards in the area.
  - 7) Ventilation system lineups to minimize spread of smoke and to remove smoke from the area.
  - 8) Identification of actions which must be coordinated with operations personnel.

- 2. Instructions and preplanned strategies shall be tested during drills.

## **8.0 Modification Control (Monticello and Prairie Island)**

- 8.1 Review of modifications for possible impact on plant fire protection provisions shall be performed if determined required by a designated member of the plant technical staff. The following guidelines shall be used in making this determination:

- 1. Could the modification present a hazard not considered in the Fire Hazards Analysis? Will additional analysis be required?
- 2. Could the modification have the potential to interfere with installed fire protection equipment or does it modify existing fire protection equipment?
- 3. Could the fire protection system require modification because of the change?

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8.2 If a fire protection review is required, the individual assigned to perform the review shall use the following as a guide:

1. Does the modification reduce the fire protection provisions for safety related or "safe shutdown" equipment?
2. Will it be necessary to do a fire hazards analysis?
3. Does the design present an obstruction to installed fire protection equipment?
4. Will the installation of the equipment temporarily remove a fire protection system from service?
5. Does the modification involve thermal stress relieving and, if so, have precautions been taken?
6. Will any fire barriers be affected by the modification?

8.3 A modification shall be allowed to proceed only after satisfactory resolution of these concerns.

**9.0 Procurement Control (Monticello and Prairie Island)**

9.1 Underwriters Laboratories (UL) and Factory Mutual (FM) directories shall be reviewed to determine if the item is listed as being UL or FM approved. If the item is listed, a manufacturer shall be identified and the item procured in accordance with NMC's procurement process for nuclear plants.

The one exception for not buying an item that is UL or FM listed is if it is a replacement of original equipment or NMC standard type, then it shall be identified as such and procured from the original supplier or manufacturer. As a minimum, the item or equipment shall, by appropriate testing, meet NFPA standards.

9.2 If the item is not listed by UL or FM, the following process shall be used:

1. An evaluation shall be made to determine the compatibility of the item to the existing system or component, or
2. If the item has been manufactured for a long period of time, and
  - a. The item is standardized, and

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- b. The item has a satisfactory performance history, and
  - c. Appropriate receipt inspection is identified in the procurement documents, then an evaluation is unnecessary. The fact that the supplier and item meets these requirements shall be documented in the procurement files.
- 9.3 Parts of components and equipment that have UL or FM approval as a unit shall be procured as follows:
  - 1. The part shall be manufactured by the original manufacturer of the component or equipment whenever possible.
  - 2. The model number of the component or equipment shall be identified.
  - 3. The specific part number shall be identified.
  - 4. Documentation from the supplier shall be requested that indicates the part delivered meets the specification of the part used in the original component or equipment. If the part has been changed, the manufacturer shall be asked to indicate any changes in the operation of the component or equipment. In lieu of this documentation, the acceptance of the part shall be based on inspection or testing.
- 9.4 All purchase requisitions pertaining to fire protection systems and equipment shall be reviewed by an individual designated by the Plant Manager.
- 10.0 Instructions, Procedures, and Drawings (Monticello and Prairie Island)
  - 10.1 The system of Administrative Control Directives (ACDs) shall be used to delineate responsibilities and requirements for the fire protection program.
  - 10.2 Departmental instructions and procedures shall be revised or issued to implement the fire protection program responsibilities and requirements contained in the ACDs.
  - 10.3 Fire protection maintenance, modifications, inspections, tests, administrative controls, drills, and training shall be prescribed by written instructions, procedures, and drawings.

### **11.0 Surveillance and Inspection (Monticello and Prairie Island)**

- 11.1** The Fire Protection Program specifies the surveillance and inspection requirements for the fire protection system. Surveillance shall be scheduled, performed, and documented in accordance with standard directives governing the surveillance testing program.
- 11.2** Procedures shall be developed to assure adequate preventive maintenance of fire protection equipment, including fire suppression water system pumps and hydrants.

### **12.0 Conditions Adverse to Fire Protection (Monticello and Prairie Island)**

- 12.1** Administrative Control Directives shall establish criteria for housekeeping.
- 12.2** Work control process procedures shall be used to correct equipment failure, malfunctions, deficiencies, and defective components of fire protection systems.
- 12.3** As part of the training process, site personnel shall be instructed on how to identify fire hazards and report them to their supervisor.

### **13.0 Records (Monticello and Prairie Island)**

Site instructions and Corporate directives establish nuclear plant records, creation, and retention requirements. Fire protection records requirements shall be included in the scope of these instructions and directives.

### **14.0 Audits (Monticello and Prairie Island)**

- 14.1** In addition to normal quality assurance audits (at least biennial), an independent fire protection and loss prevention inspection and audit shall be performed annually at each plant utilizing either qualified off-site NMC personnel or an outside fire protection engineer or engineering consultant (annual independent inspection).
- 14.2** An inspection and audit by an outside qualified fire protection engineer or engineering consultant (see Section 2.3) shall be performed at each plant at least every three years (triennial independent inspection).
- 14.3** Inspection and audit results shall be reported to levels of management having fire protection program responsibilities in those areas audited or inspected.

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## APPENDIX D

### Revision 25 Change Summary

This appendix summarizes the changes made in Revision 25 to the Operational Quality Assurance Plan. The intent of this appendix is to fulfill the requirements for identifying changes in accordance with 10CFR50.54(a)(3), Conditions of Licenses. This appendix is not a part of the Operational Quality Assurance Plan.

**Change Number** identifies the change number next to the sideline on the affected pages.

**Page** identifies the page numbers containing the change.

**Reason (R)** identifies the reason for the change.

**Basis (B)** identifies the basis for concluding that the revised program incorporating the change continues to satisfy 10CFR50, Appendix B and the quality assurance program description commitments previously accepted by the NRC.

<u>Change Number</u>	<u>Page(s)</u>	<u>Reason (R): Basis (B):</u>
1	-i-	R: Revision number updated to 25. B: Not required; editorial item.
2	9	R: Figure 1 reformatted to reflect the current organization with QA responsibilities. B: As there are title changes, and responsibility reassignment changes only, it does not reduce previous commitments.

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<u>Change Number</u>	<u>Page(s)</u>	<u>Reason/ Basis</u>
3	24	<p>R: Removed the term “and temporary changes” and corrected reference for the review and approval requirements for required procedures and procedure changes.</p> <p>B: This change was overlooked in OQAP revision 24, and supports the Monticello license amendment, dated August 15, 2001. Temporary changes are currently addressed in Section 8.4-3.e. Since procedure review and approval requirements had been previously relocated from the Technical Specifications to OQAP section 8.4-3, the reference to tech specs was deleted, and a cross reference to Section 22.4.8 was added which identifies OC review requirements for procedures. As there was no change in the requirements, it does not reduce previous commitments.</p>
4	25	<p>R: Added “those” to the first sentence of Section 8.4-3.e.i.</p> <p>B: The wording was edited for clarity; it does not reduce previous commitments.</p>
5	26	<p>R: Deleted Section 8.4-5.a.ii., “Standby and redundant equipment”. The remaining bullets were renumbered accordingly.</p> <p>B: Removal of Section 8.4-5.a.ii does not represent a reduction in committal because “Standby and redundant equipment” are enveloped by “Engineered Safeguards and equipment as required by the facility License and the Technical Specifications” as specified in Section 8.4-5.a.i.</p>
6	26	<p>R: Changed wording from “below” to “in Section 8.4-5.a.i through iv.”</p> <p>B: This is an editorial item to update the reference to the correct paragraph, which had been renumbered in the previous revision. It does not reduce previous commitments.</p>

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<u>Change Number</u>	<u>Page(s)</u>	<u>Reason/ Basis</u>
7	26	<p>R: Change terminology from “superintendent” to “plant management”.</p> <p>B: Editorial decision to use the generic term “plant management” to account for title change for management designated by Plant Manager. It does not reduce previous commitments.</p>
8	26	<p>R: Changed the reference “8.4-5.a” to “8.4-5.b.i”</p> <p>B: This is an editorial item to update the reference to correct paragraph. The old reference paragraph had been renumbered in the previous revision. It does not reduce previous commitments.</p>
9	35	<p>R: Added the term “or ASNT CP-189, as required by...” to Section 12.13.</p> <p>B: This change was made to satisfy the ASME Code, Section XI requiring specific NDE qualification standards. Newer Code year standards, which may apply when inspection intervals are changed, references CP-189. This is not a reduction in commitment.</p>
10	50	<p>R: Added “s” to the term “shutdown.”</p> <p>B: Editorial item; not required. It does not reduce previous commitments.</p>
11	51	<p>R: Changed the term “live” to “life”.</p> <p>B: Not required; This corrects a typographical error. It does not reduce previous commitments.</p>
12	55	<p>R: Removed the term “Facility Security Plan” from Section 21.6-7.</p> <p>B: The OSRC responsibility for reviewing the Security Plan was removed due to the sensitivity of safeguarded information in the Facility Security Plan. This change does not reduce the plan’s effectiveness as the plan is currently required to be reviewed by the Operations Committee. It does not reduce previous commitments</p>

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<u>Change Number</u>	<u>Page(s)</u>	<u>Reason/ Basis</u>
13	58	<p>R: Added “appointed” to first bullet in Section 22.1.</p> <p>B: The wording was edited for clarity in describing how members are selected for the Operations Committee. It does not reduce previous commitments.</p>
14	58	<p>R: Title changes from “General Superintendent Plant Operations” to “Operations Manager”; from “General Superintendent Plant Maintenance” to “Maintenance Manager”; from “General Superintendent Radiation Protection and Chemistry” to “Radiation Protection Manager.”</p> <p>B: These are title changes only. It does not reduce previous commitments.</p>
15	58	<p>R: Changed the wording “The Plant Manager shall serve as Chair of the OC...” to “The Plant Manager shall appoint a regular member as Chair of the OC...”.</p> <p>B: This change is an organizational change only; this does not constitute a reduction in the commitment.</p>
16	58	<p>R: Change the word “Vice” to “Vice/Acting” in the second sentence in Section 22.1-3.</p> <p>B: The second sentence was edited for clarity; the regular OC member appointed to act in the OC Chair’s absence may be referred to as the Vice Chair or Acting Chair. Prairie Island uses the term “Acting Chair” to refer to the regular member appointed to act as the OC Chair in the Chair’s absence. It does not reduce previous commitments.</p>
17	59	<p>R: Corrected reference for security procedures exempted from OC review criteria.</p> <p>B: This change was overlooked in OQAP revision 24, and supports the Monticello license amendment, dated August 15, 2001. The original reference was to Technical Specification 6.5.F. Since this technical specification section was relocated to OQAP section 8.4-3.d, the reference was appropriately changed. As this is a reference change, it does not reduce previous commitments.</p>

**Operational Quality Assurance Plan**  
**Revision 25 Appendix D**

<u>Change Number</u>	<u>Page(s)</u>	<u>Reason/ Basis</u>
18	65	<p>R: Changed component description from "SJAЕ Off-Gas Radiation Monitor" to "Off-Gas Pre-treatment Radiation Monitor" in Appendix A.</p> <p>B: The new wording was used to satisfy a LAR for Monticello Main Condenser Off-Gas Technical Specification Change; it does not reduce previous commitments.</p>