

**SECTION 13**

**PLANT OPERATIONS**

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**SECTION 13 PLANT OPERATIONS**

**13.1 SUMMARY DESCRIPTION**

Plant personnel are qualified and experienced to perform plant operations and plant maintenance that are necessary for safe operation of the plant.

Training programs are scheduled to maintain sufficient licensed operators and a competent supporting technical staff. Plant activities are conducted in accordance with Quality Assurance, Emergency, and Security Plans and written procedures implemented in response to regulatory requirements. Inspection and testing are conducted in accordance with a program which meets regulatory requirements.

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## **13.2 ORGANIZATION, RESPONSIBILITIES, AND QUALIFICATIONS**

### **13.2.1 Organization**

The Prairie Island Nuclear Generating Plant organization is shown in Figure 13.2-2. The Nuclear Management Company LLC (NMC) corporate organizational relationship to the onsite organization is shown on Figure 13.2-3. Individual responsibilities of key members of the site and plant organizations are outlined below.

By license amendment, dated August 7, 2000, the NRC made NMC the licensee authorized to use and operate Prairie Island Nuclear Generating Plant Units 1 and 2. NSP retains ownership of the facility and NSP's entitlement to capacity and energy from the units was not affected by the transfer of operating authority. NMC does not own any portion of Prairie Island Nuclear Generating Plant Unit 1 or 2.

NMC is equally owned by Alliant Energy Nuclear, LLC, NSP Nuclear Corporation, WEC Nuclear Corporation, and WPS Nuclear Corporation. NMC provides services in connection with the operation and eventual decommissioning of licensed nuclear facilities on behalf of and for the benefit of the owner utilities.

In support of the individual responsibilities of plant personnel, an onsite Plant Operating Review Committee (further described in Section 13.6.2), provides multi-discipline review of various plant activities.

The onsite organization includes the technically trained personnel necessary to support all aspects of plant operations.

### **13.2.2 Duties and Responsibilities of the Operating Staff Personnel**

The responsibilities and duties of key site and plant operating staff personnel are summarized in this section for the purpose of explaining the conduct of operations of the plant organization.

#### **13.2.2.1 Site Vice President**

This position reports directly to the Senior Vice President. This position is responsible for the overall management of PI site activities, ensuring compliance with regulatory requirements and optimizing both human and nuclear assets.

Positions reporting to the Site Vice President include: the Business Support Manager, the Strategic Planning Manager, the Director Site Operations, the Performance Manager, the Human Resource Manager, the Communications Manager, the Nuclear Oversight Manager, and the Nuclear Safety Assurance Manager.

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**13.2.2.1.1 Plant Manager**

The Plant Manager has the overall full-time onsite responsibility for the safe, effective and efficient operation of the plant and for compliance with the requirements of the operating license. The Plant Manager is responsible for selecting and maintaining a qualified staff of technical, operational and maintenance personnel.

The Plant Manager reports directly to the Director Site Operations.

**13.2.2.1.1.1 Site Engineering Director**

The Site Engineering Director reports directly to the Director Site Operations. This individual directs and coordinates the activities of Engineering Managers having technical cognizance over the reactor core and associated systems, electrical systems, instrument and control systems, turbine systems, safety systems, and specialized programs and projects.

**13.2.2.1.1.2 Engineering Plant and Systems Manager**

The Engineering Plant and Systems Manager reports to the Site Engineering Director and is responsible for managing the Engineering Supervisors who provide technical support for operation and maintenance of the plant mechanical and electrical systems, reactor core, fuel handling, storage systems, Special Nuclear Material (SNM) accountability, and instrumentation systems, as generally outlines in Section 7, with the exception of incore instrumentation and computer systems.

**13.2.2.1.1.3 Engineering Programs Manager**

The Engineering Programs Manager reports to the Site Engineering Director and is responsible for managing the Engineering Supervisors who provide technical support for operation and maintenance of the plant.

**13.2.2.1.1.4 Engineering Design Manager**

The Engineering Design Manager reports to the Site Engineering Director and is responsible for managing the Engineering Supervisors who provide technical support for operation and maintenance of the plant.

**13.2.2.1.1.5 Deleted**

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**13.2.2.1.2 Radiation Protection and Chemistry Manager**

The Radiation Protection and Chemistry Manager reports to the Plant Manager, and is responsible for plant chemistry and the radiation safety of the plant. This individual coordinates radiation protection group activities with operations and maintenance personnel. This individual is also responsible for the coordination of the Emergency and Hospital Assistance Plans with outside agencies. This individual provides technical direction for operation of the plant waste disposal systems, all plant effluent releases and the packaging and shipping of radioactive material.

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**13.2.2.1.3 Maintenance Manager**

The Maintenance Manager reports directly to the Plant Manager. This individual directs, coordinates and supervises the maintenance staff so that all mechanical and electrical components and systems are maintained and properly repaired and so that routine inspections, maintenance, and repairs required by NSP policies and facility license are carried out. The Maintenance Manager is responsible for briefing maintenance personnel on operations and radiation protection policies.

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**13.2.2.1.4 Operations Manager**

The Operations Manager reports to the Plant Manager, and is responsible for the direction and coordination of the activities of the Shift Managers to ensure plant operations are conducted in accordance with established administrative policies and operating procedures. The Operations Manager coordinates work activities with the Maintenance Manager and the Radiation Protection and Chemistry Manager, and obtains technical assistance from the Plant Engineering Sections. The Operations Manager is also responsible for scheduling all of the work of plant operators and assuring that shifts always meet the staffing requirements of the Technical Specifications.

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**13.2.2.1.4.1 Shift Managers**

The Shift Managers report to the Operations Manager. The Shift Manager will hold a Senior Reactor Operator License and is the senior management representative on shift. This individual may also be degreed and serve as the Shift Technical Advisor.

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**13.2.2.1.4.2 Shift Supervisors**

The Shift Supervisor reports directly to the Shift Manager. The Shift Supervisor directs and coordinates operational, maintenance and plant security activities during his shift. The Shift Supervisor has the primary management responsibility for safe operation of the plant under all conditions during his shift. The Shift Supervisor maintains the broadest perspective of operational conditions affecting the safety of the plant as a matter of highest priority at all times when on duty.

**13.2.2.1.4.3 Shift Technical Advisor**

The Shift Technical Advisor supports shift operations during transients and normal operation. During transients and accidents, the Shift Technical Advisor assesses critical safety function status, ascertains whether core damage has occurred, and makes recommendations to the shift supervisor for appropriate corrective actions to restore plant parameters to acceptable values. During normal operation, the Shift Technical Advisor functions as the Work Control Center Senior Reactor Operator. In this capacity, the Shift Technical Advisor reviews, approves, and restores plant maintenance activities to assure equipment isolations are properly performed; assures that proposed work activities preserve plant and personnel safety; and verify that appropriate return to service and post maintenance testing are performed.

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**13.2.2.1.6** This section has been deleted.

**13.2.2.1.7** This section has been deleted.

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**13.2.2.2.1** This section has been deleted.

**13.2.2.2.2** This section has been deleted.

**13.2.2.3 Security Manager**

The Security Manager reports to the NMC Director Security, and has overall responsibility for implementation of the Site Security Plan and Contingency Plan. This individual directs and coordinates the activities of Security group personnel.

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**13.2.2.4 Supply Chain Manager**

This position reports to NMC Director, Supply Chain. The position is responsible for procurement, warehousing, and issue of materials at the plant site. Responsibilities include overall responsibility for the establishment and implementation of the site procurement, materials and inventory control processes.

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**13.2.2.5 Nuclear Oversight Manager**

This position reports to the Director Nuclear Oversight. The position is responsible for auditing the implementation of and adherence to the Quality Assurance Plan at the site level, implementing inspection activities, human performance evaluation, operating experience assessment, and trending.

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**13.2.3 Qualification of Plant Personnel**

The minimum qualifications of plant technical and operating personnel are specified in Technical Specifications Section 5.3, Plant Staff Qualifications.

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### **13.3 PERSONNEL EXPERIENCE AND TRAINING**

#### **13.3.1 General**

The minimum qualifications of plant technical and operating personnel are specified in Technical Specifications Section 5.3, Plant Staff Qualifications.

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#### **13.3.2 Training and Retraining Program**

Northern States Power Company is a member of the National Academy for Nuclear Training. Training and retraining programs, based on a systems approach to training, have been accredited by the Institute of Nuclear Power Operations (INPO) (Reference 5).

By letter dated April 8, 1988, NSP committed to conduct STA training in accordance with the National Academy for Nuclear Training accredited STA training program. Item I.A.2.1, titled "Immediate Upgrading of Reactor Operator and Senior Reactor Operator Training and Qualifications", and item II.B.4, titled "Training for Mitigating Core Damage", were resolved with the NRC in correspondence dated 12/30/80, 8/21/81, 4/16/82 and 12/14/82.

The Plant Manager is responsible for the overall conduct and administration of the plant training program. Implementation responsibilities are delegated as follows. The Training Process Manager is responsible for ensuring that training processes follow the systematic approach to training as described in the INPO accreditation criteria. General Superintendents of the major disciplines are responsible for the development and implementation of the training programs. Included in these programs is a simulator certification program, which meets 10CFR55 and Regulatory Guide 1.149; and operation, maintenance and modification of a site specific simulator.

#### **13.3.3 Promotion of Personnel**

NMC management is responsible for training and maintaining a qualified staff of technical and operations personnel. Every effort is made to promote plant personnel from within the plant organization consistent with the training and experience requirements of the assigned position.

#### **13.3.4 Personnel Behavior**

The "Fitness for Duty Program" applies to all nuclear generation personnel, including all badged contract workers and craft union personnel hired by NSP or its contractors or its agents.

It recognizes that fatigue, stress, illness and temporary physical impairments, as well as drug and alcohol abuse, can have a negative effect on a worker's fitness and jeopardize safe operations.

All personnel badged for unescorted access to the plant are subject to random drug and alcohol testing and are trained to be observant of co-worker or visitor behavior that may indicate a fitness for duty concern. Supervisors are trained to be observant of employee behavior that might indicate excessive fatigue or unhealthy behavior patterns and to bar employees from working if they appear unfit for duty.

As of January 3, 1991 Northern States Power Company certified implementation of the fitness for duty program in accordance with the requirements of 10 CFR Part 26 (Reference 7).

In accordance with NUREG-0737, Item I.A.1.3, overtime restrictions have been established. The overtime restrictions followed the guidelines of Generic Letter 82-12 except for deviations that were approved by the Staff (Reference 1).

## **13.4 OPERATIONAL PROCEDURES**

### **13.4.1 General**

A preoperational test program was conducted to assure that all systems and equipment function properly. The initial preoperational and startup test programs are described in Appendix J. Westinghouse and Pioneer Service and Engineering (PS&E) provided written procedures and technical direction for these programs. The plant operating staff participated in the preparation and execution of these tests.

Detailed written procedures, including the applicable check-off sheets and instructions have been prepared in accordance with the Technical Specifications and ANSI N18.7-1976. Subsequent to implementation of NMC-1, Quality Assurance Topical Report, such procedures are prepared in accordance with the Technical Specification and NMC-1. Plant operations are conducted in accordance with these procedures.

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### **13.4.2 Procedure Development**

The original operations procedures were written by members of the plant staff with the technical assistance of Westinghouse and were reviewed by the Operations Committee.

Procedures are periodically updated to reflect plant modifications and improvements in methods of operation as operating experience accumulates.

Detailed written plant operating procedures and special written one-of-a-kind plant operating procedures covering areas listed in accordance with Technical Specifications Plant Operating Procedures are periodically necessary. These are prepared by qualified personnel and are reviewed by the Plant Operating Review Committee.

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Maintenance and test procedures, checklists, and other necessary records to satisfy routine inspections, preventive maintenance programs, and license requirements, have been and will continue to be developed by qualified personnel.

### **13.4.3 Emergency Plan**

The Emergency Plan for the plant consists of a document referred to as the Prairie Island Generating Plant Emergency Plan. This Plan was submitted according to 10CFR50 emergency planning regulations. Subsequent revisions to the plan are issued and reported to the NRC in accordance with 10CFR Part 50.54(q).

The NRC has concluded that onsite and offsite emergency preparedness is adequate and that the emergency plans have been upgraded in accordance with NUREG-0737 Item III.A.2.1 (Reference 2).

The Emergency Plan identifies the location of primary and backup Emergency Operations Facilities (EOF). The location of the EOFs was found acceptable by the NRC in a letter dated October 27, 1983.

The Emergency Plan is dependent upon the Emergency Plan Implementing Procedures for implementation. Revisions to procedures are issued and reported to the NRC in accordance with 10CFR50 Appendix E, Section V.

#### **13.4.4 Security Plan**

The security plan for the plant consists of documents referred to as the Prairie Island Nuclear Generating Plant Security Plan as approved by the NRC. The security plan is periodically revised to meet changing requirements and the current revision is maintained on file on site. Revisions to the security plan, not requiring prior NRC approval, are issued and reported to the NRC in accordance with 10CFR50.54(p).

#### **13.4.5 Quality Assurance Plan**

NMC nuclear plant operational and support activities are conducted under the NMC Quality Assurance Topical Report, NMC-1. NMC-1 is the top-level policy document that establishes the manner in which quality is to be achieved and presents NMC's overall philosophy regarding achievement and assurance of quality. NMC-1 responds to and satisfies the requirements of Appendix B of 10 CFR Part 50. NMC-1, Revision 0 was submitted for NRC review on October 31, 2003 and received NRC approval via Safety Evaluation Reports dated January 13, 2005 and March 24, 2005. NMC-1 is periodically revised to meet changing requirements. Revisions are submitted for NRC review according to 10 CFR 50.54(a).

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#### **13.4.6 Inservice Inspection and Testing Program**

The Prairie Island Inservice Inspection and Testing Program (for system pressure retaining components, pumps and valves) are established in accordance with Section XI of the ASME Code in compliance with 10CFR50.55a(g). Where it is not practical or possible to meet the requirements of the Code, relief requests are submitted for NRC review.



**13.5 OPERATIONAL RECORDS AND REPORTING REQUIREMENTS****13.5.1 Records of Initial Tests**

All preoperational procedures, test data, and reports are kept on file at the plant site.

Complete records of the plant startup tests (submitted to the NRC for Units 1 and 2 on 10/31/74 and 5/15/75 respectively) are kept at the plant site in the test file. These records include :

- a. Startup test procedures. This is the final, as run, test procedure, including approvals and data sheets.
- b. Pertinent recorder charts and log sheets.
- c. Test reports - This includes any reports prepared by NSP, Westinghouse or PS&E.

**13.5.2 Routine Operation**

Operating, maintenance and testing records and logs are kept on file in accordance with the Federal Regulations and NMC policy.

**13.5.3 Abnormal Operation**

In the event of any unusual, unexplained, or potentially unsafe occurrence, appropriate members of the plant staff are assigned to conduct an investigation and prepare a report. Instructions for conducting investigation and the report format are outlined in plant directives. A complete file of investigation reports is maintained.

**13.5.4 Reporting Requirements**

Reports are submitted to the Commission to satisfy the requirements of Title 10, Code of Federal Regulation, and the Prairie Island Technical Specifications.

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## **13.6 OPERATIONAL REVIEW AND AUDITS**

Review and audit of facility operations are performed according to the NMC Quality Assurance Topical Report, NMC-1. NMC-1 is the top-level policy document that establishes the manner in which quality is to be achieved and presents NMC's overall philosophy regarding achievement and assurance of quality.

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### **13.7 EMERGENCY PROCEDURES**

After the Three Mile Island accident, Westinghouse and the Owners Group developed Emergency Response Guidelines to improve plant specific Emergency Procedures. These guidelines were submitted to, reviewed by and approved by the NRC Staff (References 3 and 4). Completion of the NRC Staff review of the Procedure Generation Package (PGP) for the Prairie Island Emergency Operating Procedures (EOP) was documented in a NRC Safety Evaluation transmitted by Reference 6.

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## **13.8 MAINTENANCE PROCEDURES**

Maintenance work requests and their associated procedures shall be reviewed as required by the Quality Assurance Topical Report, NMC-1.

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### **13.9 TECHNICAL REQUIREMENTS MANUAL**

The Technical Requirements Manual (TRM) is a licensee-controlled document that provides a location for items removed from the Technical Specifications because they do not meet the criteria of 10CFR50.36.

For purposes of making changes to the TRM: (1) evaluation of the changes follow a similar process as changes to the USAR itself, i.e., non-editorial changes are evaluated against the criteria of 10CFR50.59, (2) summaries of 50.59 evaluations will be submitted to the NRC, and (3) the changed pages will not be submitted to the NRC.

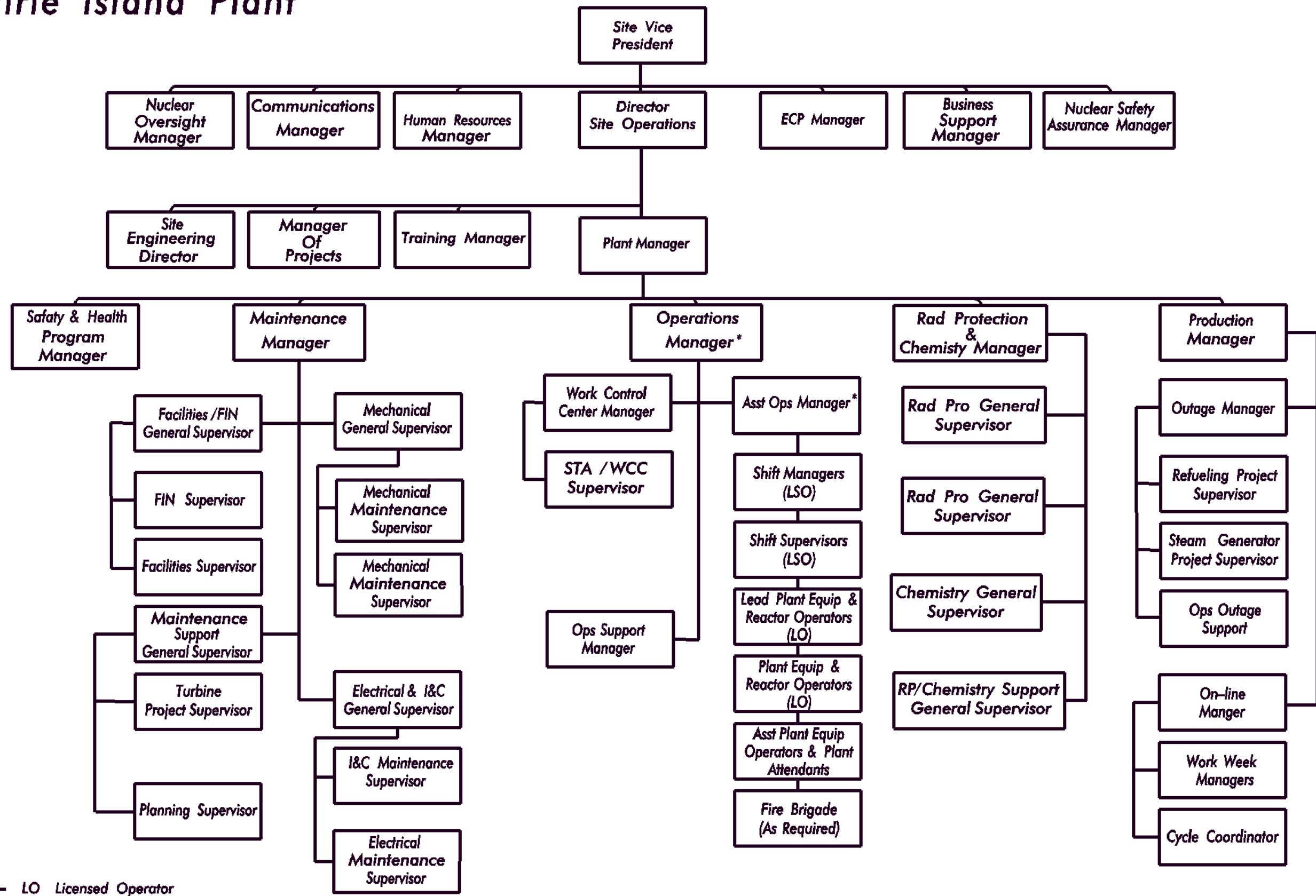
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**13.10 REFERENCES**

- |     |   |        |
|-----|---|--------|
| 1.  | Letter, D B Vassallo (NRC) to D M Musolf (NSP), "Request for Deviation from Overtime Restrictions", March 17, 1983. (18347/1746)  | 01-101 |
| 2.  | Letter, R A Clark (NRC) to D M Musolf (NSP), "NUREG-0737 Item III.A.2.1 Emergency Plan Upgrade to Meet Rule", May 13, 1983. (18349/1377)  | 01-101 |
| 3.  | Letter, D G Eisenhut (NRC) to D M Musolf (NSP), "Safety Evaluation of Emergency Response Guidelines (Generic Letter 83-22)", June 3, 1983. (18349/1626)   | 01-101 |
| 4.  | Letter, T M Novak (NRC) to D B Butterfield (WOG), "Supplemental Safety Evaluation Report by the Office of Nuclear Reactor Regulation in the Matter of Westinghouse Owners Group Emergency Response Guidelines", December 26, 1985.  | 01-101 |
| 5.  | Letter, D M Musolf (NSP) to the Director of NRR (NRC), "NRC Licensed Operator Training Program and Licensed Operator Requalification Program", March 21, 1988. (30405/0752)   | 01-101 |
| 6.  | Letter, D C Dilanni (NRC) to T M Parker (NSP), "Safety Evaluation for the Prairie Island Nuclear Generating Plant Units 1 and 2 Procedure Generating Package", February 14, 1990. (30814/0234)  | 01-101 |
| 7.  | Letter, C E Larson (NSP) to the Director of NRR (NRC), "Certification of Compliance to 10 CFR 26 Fitness for Duty Program", January 3, 1990. (30814/0007)   | 01-101 |
| 8.  | Deleted   |        |
| 9.  | Letter, C F Lyon (NRC) to M D Wadley (NSP), "Order Approving the Transfer of Operating Authority Under Facility Operating Licenses for Prairie Island Nuclear Generating Plant...", May 15, 2000. (3726/2758)   | 01-101 |
| 10. | Letter, T J Kim (NRC) to M B Sellman (NMC), "Prairie Island Nuclear Generating Plant, Units 1 & 2, and Prairie Island Independent Spent Fuel Storage Installation - Issuance of Conforming Amendments re: Transfer of Operating Authority Under the Facility Operating Licenses and Materials License from Northern States Power Company to Nuclear Management Company, LLC (TAC Nos. MA7275 and MA7276), August 7, 2000. (3752/2124) | 01-101 |

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# Prairie Island Plant

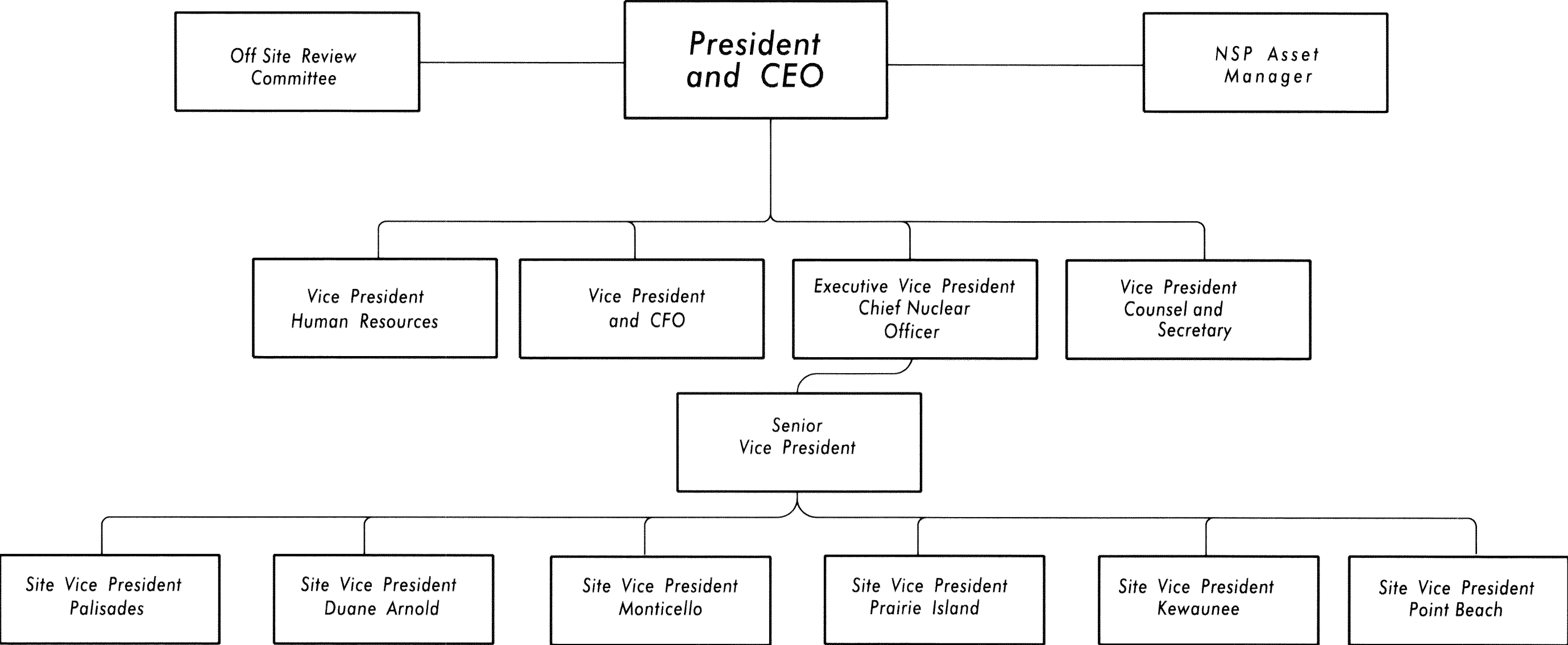


Code: — LO Licensed Operator  
— LSO Licensed Senior Operator  
— FLSO Formerly Licensed Senior Operator or Licensed Senior Operator

\* One Management Individual holding a Senior License shall be assigned to the Operations Group. This Individual shall be assigned for approximately a two year period & not be assigned to a rotating shift.

PRAIRIE ISLAND PLANT FUNCTIONAL ORGANIZATION PRAIRIE ISLAND SAFETY ANALYSIS REPORT			
DRN V. SHOCKLETON	DATE 10-20-05	NORTHERN STATES POWER COMPANY PRAIRIE ISLAND NUCLEAR GENERATING PLANT REV 000 000001A	SCALE: NONE
CHECKED	CAD FILE UN3202.DGN		FIGURE 13.2-2 REV. 28

# NMC Corporate Organization



NMC CORPORATE ORGANIZATION RELATIONSHIP TO ON-SITE  
OPERATING ORGANIZATION PRAIRIE ISLAND SAFETY ANALYSIS REPORT

DWN V. SHACKLETON	DATE 10-19-05	NORTHERN STATES POWER COMPANY	SCALE: NONE
CHECKED	CAD FILE U13203.DGN	PRAIRIE ISLAND NUCLEAR GENERATING PLANT RED WING MINNESOTA	FIGURE 13.2-3 REV. 28