

August 23, 2000

Mr. M. Wadley  
Senior Vice President and Chief Nuclear Officer  
Nuclear Management Company  
700 First Street  
Hudson, WI 54016

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT- NRC INSPECTION  
REPORT 50-282/2000009(DRP); 50-306/2000009(DRP)

Dear Mr. Wadley:

On July 1 through August 17, 2000, the NRC conducted a safety inspection at your Prairie Island Nuclear Generating Plant. The enclosed report presents the results of that inspection which were discussed at the conclusion of the inspection on August 17, 2000, with Mr. J. Sorensen and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, no significant inspection findings were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available **electronically** for public inspection in the NRC Public Document Room **or** from the *Publicly Available Records (PARS) component of NRC's document system (ADAMS)*. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,  
Original signed by  
Roger Lanksbury

Roger Lanksbury, Chief  
Reactor Projects Branch 5

Docket Nos. 50-282, 50-306  
License Nos. DPR-42, DPR-60

Enclosure: Inspection Report 50-282/2000009(DRP);  
50-306/2000009(DRP)

See Attached Distribution

M. Wadley

-2-

cc w/encl:     Site General Manager, Prairie Island  
                 Plant Manager, Prairie Island  
                 J. Bernstein, Deputy Commissioner, Minnesota  
                 Department of Public Service  
                 State Liaison Officer, State of Wisconsin  
                 Tribal Council, Prairie Island Dakota Community

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cc w/encl:     Site General Manager, Prairie Island  
                 Plant Manager, Prairie Island  
                 J. Bernstein, Deputy Commissioner, Minnesota  
                 Department of Public Service  
                 State Liaison Officer, State of Wisconsin  
                 Tribal Council, Prairie Island Dakota Community

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SRI Prairie Island

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-282, 50-306  
License Nos: DPR-42, DPR-60

Report No: 50-282/2000009(DRP); 50-306/2000009(DRP)

Licensee: Nuclear Management Company, LLC

Facility: Prairie Island Nuclear Generating Plant

Location: 1717 Wakonade Drive East  
Welch, MN 55089

Dates: July 1, 2000, through August 17, 2000

Inspectors: S. Ray, Senior Resident Inspector  
S. Thomas, Resident Inspector

Approved by: Roger Lanksbury, Chief  
Reactor Projects Branch 5  
Division of Reactor Projects

## NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

### **Reactor Safety**

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

### **Radiation Safety**

- Occupational
- Public

### **Safeguards**

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW, or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

## SUMMARY OF FINDINGS

IR 05000282-00-09, IR 05000306-00-09, on 07/01 - 08/17/2000; Nuclear Management Company, LLC; Prairie Island Nuclear Generating Plant; Units 1 & 2, Resident Operations Report.

The inspection was conducted by resident inspectors. The inspectors identified no risk significant issues.

## Report Details

Summary of Plant Status: Unit 1 and Unit 2 operated at or near full power for the entire inspection period. On August 7, 2000, operating authority for the plant and Independent Spent Fuel Storage Facility was assumed from Northern States Power Company by Nuclear Management Company after approval by the NRC on May 15, 2000.

### **1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

#### 1R04 Equipment Alignment

##### a. Inspection Scope

The inspectors performed walkdowns of two trains of safety significant systems. These walkdowns were performed to verify equipment alignment and identify any discrepancies that could impact the function of the associated systems and therefore potentially increase overall risk to the plant. The walkdowns were performed coincident with the time that the opposite train or other significant equipment was out-of-service for planned maintenance or testing. The systems were selected for this inspection based on their high importance as core damage mitigating systems for several accident sequences. The inspectors ensured that the configuration of the trains was in accordance with applicable operating checklists and that the systems could still perform their required design basis functions. The following trains were inspected:

- The D5 emergency diesel generator while the 21 auxiliary feedwater pump was unavailable during testing; and
- 4160-volt bus 25 while the 22 component cooling heat exchanger was unavailable due to maintenance.

As part of this inspection, the inspectors reviewed the following documents:

- "Daily At-Power Risk Report" for 7/6/2000, 8:00;
- Operating Procedure 2C 20.7, "D5/D6 Diesel Generator," Revision 14;
- Integrated Checklist C1.1.20.7-9, "D5 Diesel Generator Valve Status," Revision 8;
- Integrated Checklist C1.1.20.7-10, "D5 Diesel Generator Auxiliaries and Local Panels and Switches," Revision 5;
- Integrated Checklist C1.1.20.7-11, "D5 Diesel Generator Main Control Room Switch and Indicating Light Status," Revision 3;
- Integrated Checklist C1.1.20.7-12, "D5 Diesel Generator Circuit Breakers and Panel Switches," Revision 8;
- Operating Procedure 2C20.5, "Unit 2 - 4.16KV [kilovolts] System," Revision 14;
- SP [Surveillance Procedure] 2093, "D5 Diesel Generator Monthly Slow Start Test," Revision 66, completed July 11, 2000;



- SP 2118, "Verifying Paths From the Grid to Unit 2 Buses," Revision 11, completed July 11, 2000; and
- TP [Test Procedure] 2296, D5/D6 Radiator Fans Weekly Run Test," Revision 3, completed July 10, 2000.

b. Issues and Findings

There were no findings identified during this inspection.

1R05 Fire Protection

a. Inspection Scope

The inspectors conducted fire protection walkdowns focused on the control of transient combustible materials and ignition sources, the material condition of available fire detection and suppression equipment, the adequacy of compensatory measures for out-of-service or degraded fire protection equipment, and the condition and operating status of installed fire barriers. The inspectors selected the following fire areas for inspection based on their overall contribution to internal fire risk, as documented in the Individual Plant Examination of External Events (IPEEE):

- Fire Area 58, Unit 1 Auxiliary Building 695-foot elevation;
- Fire Area 70, Unit 2 Turbine Building 695-foot elevation, including Fire Detection Zone 36;
- Fire Area 70, Unit 2 Turbine Building 715-foot elevation; and
- Fire Area 74, Unit 2 Auxiliary Building 715-foot elevation.

As part of this inspection, the inspectors reviewed the following documents:

- IPEEE, NSPLMI-96001, Appendix B, "Internal Fires Analysis," Revision 1;
- Plant Safety Procedure F5 Appendix A, "Fire Strategies," Revision 6;
- Plant Safety Procedure F5 Appendix D, "Impact of Fire Outside Control/Relay Room," Revision 5; and
- Plant Safety Procedure F5 Appendix E, "Fire Protection Safe Shutdown Analysis Summary," Revision 6.

b. Issues and Findings

There were no findings identified during this inspection.

1R11 Licensed Operator Regualification

a. Inspection Scope

The inspectors observed an operating crew during an evaluated simulator training scenario involving a failed pressurizer pressure control channel, a steam generator tube leak, and a loss of all alternating current (AC) power. The inspectors evaluated the following attributes of the activity:

- communications clarity and formality;
- timeliness and appropriateness of crew actions;
- prioritization, interpretation, and verification of alarms;
- correct use and implementation of procedures;
- oversight and direction provided by the shift supervisor and shift manager;
- implementation of the emergency plan; and
- quality of the instructor's, evaluator's, and crew's critiques.

The inspectors also looked for any significant differences between the simulator and actual control room board configurations.

As part of this inspection, the inspectors reviewed Simulator Exercise Guide P9160S-001, "Pressurizer Pressure Instrument Failure; Steam Generator Tube Leak; Loss of All AC," Revision 2.

b. Issues and Findings

There were no findings identified during this inspection.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors verified the licensee's implementation of the maintenance rule for structures, systems, or components (SSCs) with performance problems. This evaluation included the following aspects:

- If the SSC was scoped in accordance with 10 CFR 50.65;
- whether the performance problem constituted a maintenance rule functional failure;
- safety significance classification;
- the proper 10 CFR 50.65 a(1) or a(2) classification for the SSC; and
- the appropriateness of the performance criteria for SSCs classified as a(2) or the appropriateness of goals and corrective actions for SSCs classified as a(1).

The inspectors reviewed the licensee's implementation of the maintenance rule requirements for the following SSCs:

- The D6 emergency diesel generator;
- the Unit 2 auxiliary feedwater (AFW) system; and
- the Unit 2 containment spray system.

The inspectors selected the D6 emergency diesel generator for evaluation because it had been identified by the licensee as a risk significant system whose performance, although meeting the licensee's performance criteria, had degraded.

The inspectors selected the Unit 2 AFW system for evaluation because of the system's impact on the overall plant risk profile and its importance as a system used to mitigate the impact of a number of reactor plant accidents.

The inspectors selected the Unit 2 containment spray system for evaluation because of the system's impact on post-accident containment integrity and because the 21 containment spray pump had recently been returned to a(2) status.

As part of this inspection, the inspectors reviewed the 1999 Annual and First Quarter Equipment Performance Report, dated May 2, 2000, Second Quarter Equipment Performance Report, dated July 28, 2000, Prairie Island Maintenance Rule System Basis Document, as well as the following work orders (WOs) and condition reports (CRs):

- WO 9905284, "Valve Operator Bent and Broken";
- WO 9911196, "Adjust D6 Load Ramp Rate";
- WO 9912278, "D6 Engine 2HT Coolant Leak";
- WO 0000234, "D6 Diesel Generator Load Changes Uncontrollably";
- WO 0003612, "D6 Starting Air Dryer Failure Alarm Won't Clear";
- WO 0004237, "D6 Fuel Rack Reading Full Open";
- CR 19993016, "D6 Failed to Load 100% Power Within 60 Seconds During SP 2307"
- CR 20002997, "D6 Governor Baseload Kilowatts Higher than Normal";
- WO 0001233, "21 AFW Pump Outboard Packing Replacement";
- WO 0003160, "Calibrate 22 AFW Pump Suction Pressure Switch";
- WO 0003083, "22 Turbine-Driven AFW Pump Suction Strainer Outlet Pressure Gage Pegged High";
- CR 20000592, "21 Motor-Driven AFW Pump Developed a Steam Leak at the Outboard Pump Seal";
- CR 20000745, "22 AFW Pump Suction Pressure Gage PI 11081 Was Over Ranged";
- CR 20002873, "AF-12-4, AFW to 21 Steam Generator Isolation was Repacked Per WO 0003727. Operator Noticed That Packing Was Visible Outside Stuffing Box";
- CR 19992785, "AFW Pump Suction Pressure Switches 17779 and 17705 Were Out of Their Specified Tolerance When Calibrated Per SP 2234";
- WO 9908484, "The 21 Containment Spray Pump Developed a Leak Between the Gasket and Gland Flange";
- WO 9905419, "Test MV-32114 [21 containment spray pump discharge motor valve] for Pressure Locking";
- WO 9905438, "Test MV-32116 [22 containment spray pump discharge motor valve] for Pressure Locking";
- WO 9901678, "Seal Leak and High Vibration on Bearing Housing on 21 Containment Spray Pump";
- WO 9901712, "21 Containment Spray Pump Bearing Housing Vibration in the Horizontal Range Reached the Alert Range During Surveillance Testing"; and
- CR 19991726, "21 Containment Spray Pump Bearing Housing Vibration in the Horizontal Range Reached the Alert Range."

b. Issues and Findings

There were no findings identified during this inspection.

### 1R13 Maintenance Risk Assessments and Emergent Work Control

#### a. Inspection Scope

All of the items the inspectors selected for risk assessment evaluations included work which isolated either a Unit 1 or Unit 2 "B" train component cooling heat exchanger. These work activities were selected based on the risk impact that removing "B" train component cooling from service, for either unit, had on its respective unit's core damage frequency. The inspectors attended operating shift turnovers, reviewed the planning, risk assessment, risk control, and observed the execution of the work associated with planned maintenance in accordance with the following WOs:

- WO 0007190, "12 Component Cooling Heat Exchanger Cooling Water Inlet Motor-Operated Valve D70 Inspection";
- WO 9900063, "22 Component Cooling Heat Exchanger Cooling Water Inlet Motor-Operated Valve D70 Inspection"; and
- WO 0003563, "Secure Travel Stop Pin for 12 Component Cooling Heat Exchanger Cooling Water Outlet Control Valve."

As part of this inspection, the inspectors performed a spot check of the status of equipment identified by the licensee's risk assessment as important to protect during the performance of this work. The inspectors also reviewed the following documents:

- "Prairie Island Weekly Planning Meeting Results" for 7/8/00 - 7/14/00;
- "Daily At-Power Risk Report" for 7/11/2000;
- "Prairie Island Weekly Planning Meeting Results" for 7/22/00 - 7/28/00;
- "Daily At-Power Risk Report" for 7/25/2000, 8:00;
- "Prairie Island Weekly Planning Meeting Results," for 1/29/00 - 8/4/00; and
- "Daily At-Power Risk Report" for 8/3/2000, 7:00.

#### b. Issues and Findings

There were no findings identified during this inspection.

### 1R15 Operability Evaluations

#### a. Inspection Scope

The inspectors reviewed a sampling of operability evaluations for safety significant systems and conditions to determine that operability was justified, that availability was assured, and that no unrecognized increase in risk had occurred. The following evaluations were reviewed:

- CR 20001132, "Loose Roller Pin in CV-31383";
- CR 20002469, "While Drilling Holes in Wall Between 122 Chiller Room and the Auxiliary Building, a Hollow Block Was Found"; and
- Safety Evaluation 338, "Furmanite Repair of SI-9-2," Addendum 2.

As part of this inspection, the inspectors reviewed the following additional documents:

- Updated Safety Analysis Report, Section 10.4.1, "Cooling Water System," Revision 21;
- NRC Safety Evaluation for Prairie Island response to IE Bulletin 80-11, "Masonry Wall Design," dated September 12, 1983; and
- Engineering Calculation ENG-ME-416, "Evaluation of SI Piping Due to the Addition of Furmanite Clamp," Revision 0.

b. Issues and Findings

There were no findings identified during this inspection.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed four post-maintenance testing activities to ensure that the testing adequately verified system operability and functional capability. These post-maintenance testing activities were selected based on the respective system's importance to mitigating core damage or protecting barrier integrity.

The inspectors observed post-maintenance testing associated with the following WOs:

- WO 0003564, "Secure Travel Stop Pin on 22 Component Cooling Heat Exchanger Cooling Water Outlet Control Valve";
- WO 9900063, "22 Component Cooling Heat Exchanger Cooling Water inlet Valve D70 Inspection"; and
- WO 0007285, "Replace the Leaking Pressure Regulator on CV-39422, 22/24 Fan Coil Unit Chilled Water Return Control Valve"; and
- WO 0003563, "Secure Travel Stop Pin for 12 Component Cooling Heat Exchanger Cooling Water Outlet Control Valve."

b. Issues and Findings

There were no findings identified during this inspection.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors verified, by witnessing surveillance testing and reviewing test data, that the equipment tested by the SPs listed below met Technical Specifications, the Updated Safety Analysis Report, Design Basis Documents, and licensee procedural requirements, and demonstrated that the equipment was capable of performing its intended safety functions. The following tests were evaluated:

- SP 2100, "21 Motor Driven AFW Pump Monthly Test," Revision 56;
- SP 2088, "Safety Injection Pump Test," Revision 39; and

- Maintenance Procedure D70.1, "Motor Operated Valve Testing Using VOTES," Revision 6, for MV-32146.

b. Issues and Findings

There were no findings identified during this inspection.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed Temporary Modification 00T072, "Fire Detectors 97-01-08 and 97-01-20 for D5 and 97-02-12 for D6 Removed From Service," to verify that the temporary modification did not affect system operability or availability. This temporary modification was chosen based on the importance of the Unit 2 emergency AC power system as a mitigating system. As part of this inspection the inspectors reviewed Plant Safety Procedure F5, Appendix A, "Fire Strategies," Revision 6, and Plant Safety Procedure F5, Appendix K, "Fire Detection and Protection Systems," Revision 4.

b. Issues and Findings

There were no findings identified during this inspection.

1EP6 Drill Evaluation

a. Inspection Scope

On August 2, 2000, the inspectors observed a licensee emergency plan drill. The inspectors observed drill activities in the simulator control room and the Emergency Operations Facility. During the performance of the drill scenario, the licensee was tasked with making three event classifications, two protective action recommendations, and five notifications. The inspectors attended a post-drill critique attended by all the lead drill controllers.

b. Issues and Findings

There were no findings identified during this inspection.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator Verification

Unplanned Scrams per 7,000 Critical Hours

a. Inspection Scope

The inspectors verified the accuracy of the Unit 1 and Unit 2 Unplanned Scrams per 7,000 Critical Hours Performance Indicator data reported by the licensee for the

2nd Quarter 1999 through 2<sup>nd</sup> Quarter 2000. This verification was accomplished through review of control room logs and NRC inspection reports for the period examined.

b. Issues and Findings

There were no findings identified during this inspection.

4OA6 Management Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. J. Sorensen and other members of licensee management on August 17, 2000. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

T. Amundson, General Superintendent Engineering  
T. Breene, Manager Nuclear Performance Assessment  
J. Goldsmith, General Superintendent Engineering, Nuclear Generation Services  
A. Johnson, General Superintendent Radiation Protection and Chemistry  
G. Lenertz, General Superintendent Plant Maintenance  
D. Schuelke, Plant Manager  
T. Silverberg, General Superintendent Plant Operations  
M. Sleight, Superintendent Security  
J. Sorensen, Site General Manager

## ITEMS OPENED, CLOSED, AND DISCUSSED

None



## LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Documents Access and Management System
AFW	Auxiliary Feedwater
CFR	Code of Federal Regulations
CR	Condition Report
DRP	Division of Reactor Projects
IPEEE	Individual Plant Examination of External Events
KV	Kilovolts
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
SP	Surveillance Procedure
SSC	Structure, System, or Component
TP	Test Procedure
WO	Work Order