

March 13, 2000

Mr. M. Wadley  
President, Nuclear Generation  
Northern States Power Company  
414 Nicollet Mall  
Minneapolis, MN 55401

Dear Mr. Wadley:

SUBJECT: NRC PRAIRIE ISLAND RADIATION SAFETY INSPECTION REPORT  
50-282/2000002(DRS); 50-306/2000002(DRS)

On February 18, 2000, the NRC completed an inspection at your Prairie Island Nuclear Generating Plant, Units 1 and 2. The results of this inspection were discussed on February 18, 2000, with Mr. Don Shuelke and other members of your staff. The enclosed report presents the results of that inspection. Based on the results of this inspection, no significant inspection findings or violations were identified.

The inspection was an examination of activities under your license as they relate to radiation protection and to compliance with the Commission's rules and regulations and with the conditions of your license. Within those areas, the inspection consisted of a selective examination of procedures and representative records, interviews with personnel, and observation of activities in progress. Specifically, this inspection evaluated the occupational radiation safety program and focused on access control to radiologically significant areas and radiation monitoring instrumentation.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

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Wayne Slawinski, Acting Chief  
Plant Support Branch

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

Enclosure: Inspection Report 50-282/2000002(DRS);  
50-306/2000002(DRS)

See Attached Distribution

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M. Wadley

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

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

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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: 50-282/2000002(DRS); 50-306/2000002(DRS)

Licensee: Northern States Power Company

Facility: Prairie Island Nuclear Generating Plant, Units 1 & 2

Location: 1717 Wakonade Drive East  
Welch, MN 55089

Dates: February 14-18, 2000

Inspectors: John E. House, Senior Radiation Specialist  
Mark W. Mitchell, Radiation Specialist

Approved by: Wayne Slawinski, Acting Chief, Plant Support Branch  
Division of Reactor Safety

# 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**

Prairie Island Nuclear Generating Plant, Units 1 & 2  
NRC Inspection Report 50-282/2000002(DRS); 50-306/2000002(DRS)

The report covers a 1-week period of announced inspection by two regional radiation specialists. This inspection focused on occupational radiation safety and included a review of the access control program, radiation worker practices, and radiological instrumentation.

### **RADIATION SAFETY**

#### **Cornerstone: Occupational Radiation Safety**

- There were no inspection findings identified or documented.

## Report Details

### 2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

#### 2OS1 Access Control

##### .1 Plant Walkdowns and Radiological Boundary Verifications

###### a. Inspection Scope

The inspectors performed walkdowns of the radiologically controlled area (RCA) to verify the adequacy of radiological boundaries and postings. Specifically, the inspectors performed confirmatory radiation measurements in the Reactor, Auxiliary, and Radwaste Buildings to verify that radiologically significant work areas (high radiation areas (HRAs), radiation areas, and airborne radioactivity areas) were properly posted and controlled.

###### b. Observations and Findings

There were no findings identified and documented during this inspection.

##### .2 Reviews of Radiation Work Permits

###### a. Inspection Scope

The inspectors reviewed radiation work permits (RWPs) and electronic dosimeter (ED) alarm set points for both dose rate and accumulated dose to verify that adequate work controls were in place to maintain worker exposures ALARA (as-low-as-is-reasonably-achievable).

###### b. Observations and Findings

There were no findings identified and documented during this inspection.

##### .3 Reviews of Radiologically Significant Work

###### a. Inspection Scope

The inspectors reviewed the conduct of radiologically significant work activities in the RCA. Specifically, the inspectors verified the adequacy of radiological controls (e.g., radiation work permits and ALARA reviews), surveys, and ALARA pre-job briefings for the following work activities:

- (1) Reactor containment entry at power; and
- (2) Post-Accident Sampling System (PASS) grab sampling during training exercise.

b. Observations and Findings

There were no findings identified and documented during this inspection.

2OS3 Radiation Monitoring Instrumentation

.1 Source Tests and Calibration of Radiological Instrumentation

a. Inspection Scope

The inspectors verified that area radiation monitors (ARMs) were located as described in the Updated Final Safety Analysis Report and that the ARMs were appropriately calibrated. The inspectors reviewed calibration records for selected portable radiation survey instruments and continuous air monitors, and observed source checks of tool monitors and whole body friskers. In addition, the inspectors observed the use of instrumentation during collection of a liquid PASS sample during a training exercise.

b. Observations and Findings

There were no findings identified and documented during this inspection.

.2 Radiation Protection Technician Instrument Use

a. Inspection Scope

The inspectors verified the calibration of selected radiation survey instruments and observed radiation protection (RP) technicians' selection and operational checks of portable radiation survey instruments for several jobs requiring technician job coverage.

b. Observations and Findings

There were no findings identified and documented during this inspection.

2OS4 Radiation Worker Performance

a. Inspection Scope

During work evolutions (Section 2OS1.3), the inspectors observed radiological control practices of personnel within the RCA.

b. Observations and Findings

There were no findings identified and documented during this inspection.

#### **4. OTHER ACTIVITIES**

##### 4OA1 Identification and Resolution of Problems

###### a. Inspection Scope

The inspectors reviewed the licensee's self-assessments and audits, which had been performed during the previous 12-months. In addition, the inspectors reviewed condition reports (CRs) concerning RP technician performance, radiation worker practices, radiological instrumentation, and control of HRAs, which had been initiated since January of 1999.

###### b. Observations and Findings

There were no findings identified and documented during this inspection.

##### 4OA5 Management Meetings

###### .1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. D. Shuelke and other members of licensee management at the conclusion of the inspection on February 18, 2000. The licensee acknowledged the findings presented and did not identify any information discussed as proprietary.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

H. Aadahl, Radiation Protection Technician  
T. Beard, Corporate Health Physicist  
M. Egan, Chemistry Supervisor  
J. Human, Operator  
A. Johnson, General Superintendent, Radiation Protection and Chemistry  
G. Secrist, Radiation Protection Technician  
P. Wildenborg, Health Physicist

## ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

None

### Closed

None

### Discussed

None

## LIST OF ACRONYMS USED

ALARA	As-Low-As-Is-Reasonably-Achievable
ARMs	Area Radiation Monitors
CR	Condition Report
DRS	Division of Reactor Safety
ED	Electronic Dosimeter
HRA	High Radiation Area
NRC	Nuclear Regulatory Commission
PASS	Post Accident Sampling System
RCA	Radiologically Controlled Area
RP	Radiation Protection
RWP	Radiation Work Permit

## LIST OF DOCUMENTS REVIEWED

### Assessments and Audits

Northern States Power Company Internal Audit Report AG 1998-S-1;  
Northern States Power Company Internal Audit Report AG 1999-S-2;  
Observation Report 2000023 "Dry Cask TN-40-11 Post-Loading Activities;"  
Radiation Protection Program Annual Self-Assessment 1999.

### Instrument Calibrations and Quality Control Tests

PINGP 722 (Revision 8), "Meter Calibration AM-2 Area Monitor;"  
PINGP 1192 (Revision 2), "Survey Meter Calibration Data Sheet, Neutron Meter Rem-500;"  
PINGP 701 (Revision 7), "Meter Calibration RO-2/RSO-5 Ion Chamber;"  
PINGP 683 (Revision 8), "Calibration Data Sheet NNC Friskall;"  
PINGP 1030 (Revision 4) "Meter Calibration Data Sheet AM-33-1 CAM;"  
PINGP 1022 (Revision 4) "Meter Calibration Data Sheet AM-3D CAM;"  
RP 189 "Continuous Air Monitor Checks (weekly);"  
RP 190 "Daily and Weekly Portal Monitor Checks."

### Radiation Work Permits

RWP 01 "General Tours;"  
RWP 06 "Containment at Power Entry."

### Miscellaneous

Handheld Frisker Calibration Records for 1999;

### Condition Report Forms

Condition Report 19993250, "Laundry Monitor Calibration Found Past Due;"  
Condition Report 19992582, "Failure of Safety System on JL Shepherd Irradiator;"  
Condition Report 19993220, "Respirator Removed and Put Back On In A Contaminated Area;"  
Condition Report 19993015, "Survey Map For BA Transfer Pump Area Not Updated Since January 7, 1999;"  
Condition Report 19993316, "Radiation Survey Maps Not Updated In Months;"  
Condition Report 19993014, "Survey Map At Recombiner Room Did Not Have A Survey Date;"  
Condition Report 19993302, "Individual Exit Aux Bldg And Didn't Take Paperwork Through Friskall Monitor With Him."

## Procedures

PINGP F3 (Revision 16), "Onsite Emergency Organization;"

PINGP F5 (Revision 24), " Fire Fighting;"

  PINGP (Revision 3), "NNC Tool Monitor Calibration;"

PINGP 1210 (Revision 6), "Charging SCBA Bottles;"

PINGP 1601 (Revision 9), "Monthly Respiratory Protection Checks;"

PINGP 1524 (revision 9), "NNC Friskall Description, Operation and Calibration;"

RPIP 1224 (Revision 2), "Calibration and Manager's Menu operations for Fastscan WBC;"

RPIP 1510 (Revision 5), "Integral Tool Monitor Description, Operation and Calibration;"

PINGP F3-23-1E (Revision 3), "U-1 Post-Accident Primary Hydrogen, Radiogas, and Liquid Sampling;"

PINGP SP 1027 (Revision 19), "Radiation Monitoring Calibration;"

PINGP SP 1783.2 (Revision 5), "NMC Rad Monitor Electronic Calibration."