

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-282; 50-306  
Licenses No: DPR-22; DPR-60

Reports No: 50-282/97010(DRS); 50-306/97010(DRS)

Licensee: Northern States Power Company

Facility: Prairie Island Nuclear Generating Plant

Location: 1717 Wakonade Dr. East  
Welch, MN 55089

Dates: May 19 - 29, 1997

Inspector: Robert D. Jickling, Emergency Preparedness Analyst

Approved by: James R. Creed, Chief, Plant Support Branch 1  
Division of Reactor Safety

## EXECUTIVE SUMMARY

### Prairie Island Nuclear Generating Plant NRC Inspection Reports 50-282/97010; 50-305/97010

This inspection included a review of the Emergency Preparedness (EP) program, an aspect of Plant Support. This was an announced inspection conducted by a regional emergency preparedness analyst.

Emergency response facilities, equipment, and supplies were in an excellent state of operational readiness. Interviews with emergency response organization personnel demonstrated very good to excellent knowledge of emergency implementing procedures and responsibilities. Management support was strong.

- The overall effectiveness of the licensee's emergency preparedness facilities, equipment, training, and organization was very good. (Sections P2.1, P3, P5, and P6)
- Licensee personnel appropriately declared an Unusual Event during an actual activation of the EP Plan. Emergency classification was correct and offsite notifications were timely. (Section P1.1)
- The extensive planning and flood preparation by the EP Coordinator and plant personnel were effective. The numerous flood planning meetings and interface strengthened contacts already established with the offsite agencies for emergency preparedness and made it possible to rapidly accomplish all the activities conducted during the floods. (Section P1.2)
- The emergency response facilities were in excellent material condition and in a state of operational readiness. Several pieces of equipment and instruments were demonstrated to be fully functional by the EP staff. (Section P2.1)
- Interviews with key emergency response organization personnel demonstrated very good knowledge of the emergency implementing procedures and responsibilities. (Section P5)
- Management support for the EP program was strong, as demonstrated through discussions with the EP Coordinator, and the recent program upgrades and enhancements. The EP staff was proactive in maintaining and improving the program and responsive to identified issues. (Section P6)
- The audits of EP activities satisfied the requirements of 10 CFR 50.54(t) and were very good in scope and detail. (Section P7)
- The inspector completed Temporary Instruction 2515/134 "Onshift Dose Assessment Capabilities" and verified that the licensee's capabilities met requirements. (Section P9)

## Report Details

### IV. Plant Support

#### **P1 Conduct of Emergency Preparedness (EP) Activities**

##### **P1.1 Actual Emergency Plan Activations**

###### **a. Inspection Scope (82701)**

The inspector reviewed records and documentation packages regarding plant response for an actual emergency event which occurred during 1996.

###### **b. Observations and Findings**

An Unusual Event was declared at 3:05 p.m. on June 29, 1996, when both units tripped due to generator lockouts when severe storms caused the loss of three of five offsite power lines for the plant. The Shift Manager requested the callout of the Emergency Response Organization (ERO) to assist the Control Room for the event. The Unusual Event was terminated at 10:35 a.m. on June 30, 1996, when the licensee secured the diesel generators and restored the required minimum number of offsite power sources.

The event was reviewed and a detailed evaluation package was compiled by the EP Coordinator. The package contained an evaluation of the plant personnel's event response, ERO callout time reports, Quality Services Observation Reports, offsite notification forms, control room logs, procedure checklists, and areas for improvement.

###### **c. Conclusions**

The inspector concluded that the licensee appropriately implemented the emergency plan in declaring the Unusual Event. The emergency classification was made correctly and offsite notifications were timely. The evaluation performed by the EP Coordinator was very thorough and provided an excellent assessment of the plant's response to the actual event, identified issues and corrective actions, and provided important feedback to management.

##### **P1.2 1997 Flood Preparations**

###### **a. Scope (82701)**

In mid February 1997, the National Weather Service issued a moderate to severe Spring flood forecast for the Prairie Island Nuclear Generating Plant (PINGP) area. The EP Coordinator and other PINGP personnel began preparation for Spring floods with a number of offsite agency meetings and then initiated the actions agreed upon at the meetings.

b. Observations and Findings

On February 27, the National Weather Service predicted a Spring flood forecast crest of 685.8 feet. As a result of the forecast, the first Red Wing/Goodhue County Flood Meeting with State of Minnesota, Goodhue County, City of Red Wing, Prairie Island Indian Community, and Treasure Island Casino personnel was held. A decision was made at the meeting to move up the start date of the Sturgeon Lake Road construction from early April to early March. The purpose of this construction was to elevate the primary island access road approximately six feet above existing road levels.

In March, plant staff held two flood meetings which included discussions of historical flood levels, current flood forecasts, and changes to the plant's flood procedure. By the end of March, the National Weather Service began issuing three day flood forecasts. Construction to elevate Sturgeon Lake Road six feet was started.

In early April, plant staff initiated daily flood meetings in which additional details were developed for the flood procedure. A second Red Wing/Goodhue County Flood Meeting was conducted and included the sharing of the flood preparation work that was underway by each of the participants' agencies. Road construction did not restrict PINGP employees, residents, or Casino patrons. The construction company ensured continued access to the island throughout the forecasted flood level crest. Housing alternatives were identified for commuting Wisconsin residents in case U.S. Highway 63 or U.S. Highway 10 were closed due to high water.

On April 9, alternative transportation was arranged in case the new road construction was to fail and consisted of two pontoon boats, boat docks, and onsite and offsite transportation. The Operations Committee approved an Emergency Planning Special Order which would institute partial augmentation of onshift personnel in the event of a declaration of an Unusual Event. River level was 683.8 feet, approximately 4.8 feet below the lowest current point on Sturgeon Lake Road. The PINGP Emergency Plan classification level for an Unusual Event was identified at a river elevation of 686 feet. The Alert classification level of 692 feet was also the Technical Specification level required for the reactor to be shutdown.

On April 10, the Plant Manager issued an information letter to residents near the plant and to tribal representatives concerning PINGP flood planning, and informing the residents that the road project should provide access to the island, and that alternate transportation had been arranged in case the new road was lost. The EP Coordinator also transmitted a description of emergency planning considerations to the Minnesota Department of Public Safety and the tribal representative.

On April 12 and 13, the river crested at an elevation of 685 feet and by April 14, the river had lowered to 684.8 feet.

Lessons learned from the planning and actions taken for the predicted floods was incorporated into the EP program and included:

- a new EP implementing procedure for an emergency and flooding conditions
- surveillance needs for various onsite monitoring locations
- monitoring of offsite communications switch boxes
- alternative transportation considerations
- public information for island residents
- flood protection for greenhouse equipment
- onsite housing arrangements if the highways are closed

c. Conclusions

The extensive planning and flood preparation by the EP Coordinator and plant personnel were effective. Significant additions and changes to plant procedures resulted from lessons learned. The numerous flood planning meetings and interface strengthened contacts already established with the offsite agencies for emergency preparedness and made it possible to rapidly accomplish the numerous activities conducted during the floods.

**P2 Status of EP Facilities, Equipment, and Resources**

**P2.1 Material Condition of Emergency Response Facilities**

a. Inspection Scope (82701)

The inspector evaluated the material condition of the Control Room, Technical Support Center (TSC), Operational Support Center (OSC), Emergency Operations Facility (EOF), and EOF Counting Room. The field survey team kits were also inspected. The licensee demonstrated the operability of several pieces of equipment, including radiological survey equipment, communications equipment, field survey team vehicles, and computer terminals.

b. Observations and Findings

Copies of the Emergency Plan Implementing Procedures (EPIPs) were current and available in the Control Room. The TSC and field survey team kits were in a state of operational readiness. The facility status boards, and equipment were in excellent material condition. The OSC was in excellent material condition and the newly added electronic dosimetry and radiation protection information computers were available and functional. The EOF was in excellent material condition and radiological instruments and equipment were calibrated, functional, and in very good order. The dose assessment computers and printers were verified operable. Communications systems were functional in the TSC and EOF. A new 800 megahertz radio system had been installed in the ERFs which provided an improved on and offsite communications capability.

EP staff demonstrated the operability of offsite field survey team vehicles, new 800 megahertz radios, radiological survey equipment, various communications lines, the new TSC cordless microphone and speaker system, and computer terminals for display of plant data and dose assessment programs for onshift, TSC, and EOF meteorological and dose assessment information.



The inspector reviewed records for the Public Alert Notification System (PANS) sirens for 1996 and 1997. Reported annual operability for 1996 was 96.6 percent. The reported twelve month rolling operability average for 1997 was currently 96.5 percent. Siren operability exceeded the minimum acceptability limit of greater than or equal to 90 percent.

c. Conclusions

The emergency response facilities were in excellent material condition and in a state of operational readiness. Numerous pieces of equipment and instruments were operated by the EP staff and verified to be functional. The PANS sirens had been appropriately maintained in 1996 and 1997, as indicated by the reported operability averages.

P3 **EP Procedures and Documentation**

a. Inspection Scope (82701)

The inspector reviewed and evaluated a selection of Emergency Plan sections and EIPs. They included Emergency Plan Section 4, Revision 18, "Emergency Conditions," EP Plan Section 6, Revision 18, "Emergency Measures," EIP F3-3, Revision 14, "Responsibilities During a Notification of Unusual Event," EIP F3-5, Revision 19, "Emergency Notifications," and EIP F3-5.3, Revision 4, "Response To Railroad Grade Crossing Blockage."

b. Observations and Findings

Emergency Plan Section 4, Revision 18, added a statement that Annex A contained a summary of the Emergency Classifications and Emergency Action Level (EAL) scheme with examples of initiating conditions. Section 6 identified the State of Wisconsin Department of Emergency Management will be notified that the Shift Emergency Communicator (SEC) and that the Mdewankaton Indian Community Representatives would be notified via the Treasure Island Casino Security Dispatch Center. Section 6.3, "Summary of Site Response Actions," identified that the State and local offsite authorities were to be promptly informed of emergency conditions as soon as discovered. EIP F3-4, Revision 24, "Responsibilities During An Alert, Site Area, Or General Emergency," appropriately identified that State, local, and Northern States Power (NSP) personnel are to be notified immediately. A note indicated that the NRC notification is required as soon as practical but no later than one hour after the declaration of the emergency.

EIP F3-3, Revision 14, clearly identified that the Shift Manager could augment the onsite staff or activate the ERO as he deemed necessary. EIP F3-5.3 effectively identified the normal and emergency procedures for contacting the railroad company in the event of blockage of the plant's access.

c. Conclusions

The EIPs were clear and easy to use. Current copies of the EIPs and Emergency Plan were available in all the emergency response facilities. No problems were identified in the procedures or documents reviewed.

**P5 Staff Training and Qualification in EP**

a. Inspection Scope (82701)

The inspector interviewed five key ERO personnel, reviewed training attendance records, ERO Training Records and the Emergency Notification Duty Roster, dated April 30, 1997. Also, selected training instructor's guides were reviewed by the inspector, including CP-10-17-00-01, "TSC Walkthrough" and "EOF Walkthrough." Additionally, a portion of the Severe Accident Management Guidance (SAMG) training provided to plant management and personnel was observed by the inspector.

b. Observations and Findings

Interviews with key ERO personnel included an EOF Emergency Manager, Control Room Emergency Director, TSC Emergency Director, and two Security Lieutenants identified as SECs. Interviewed personnel generally demonstrated very good knowledge of emergency procedures and their responsibilities. They indicated that the EP and training programs were very good and that staff were always looking for ways to improve the program.

The TSC Emergency Director demonstrated knowledge of the NRC's and Department of Energy's incident response. Federal incident response information had been incorporated in the licensee's training lesson plans for TSC Coordinators, Emergency Managers, Emergency Directors, Radiological Protection Support Supervisors, Radiological Emergency Coordinators, OSC Coordinators, and Technical Support Supervisors.

The May 1, 1997, ERO Training List printouts were reviewed and compared to the Emergency Notification Duty Roster. Records and documents indicated all ERO personnel reviewed were currently qualified for their positions.

The inspector observed a portion of SAMG training pertaining to severe accident progression and phenomena which was conducted on May 22, 1997. The instructor was very knowledgeable and effectively presented the material. Handout materials and projected graphics were of high quality. Questions from the audience were answered effectively.

c. Conclusions

Overall, EP training was considered effective. Training and drill critique documentation was available. Critique forms were adequately detailed. Training records were complete. Interviewed ERO personnel demonstrated very good to excellent knowledge of their ERO responsibilities, emergency procedures, and an

adequate knowledge of NRC and Federal incident response. SAMG training was effective and detailed.

**P6 EP Organization and Administration (82701)**

a. Inspection Scope (82701)

The inspector discussed the current station organization and changes to the EP program with the EP Coordinator.

b. Observations and Findings

The EP Coordinator reported to the General Superintendent of Radiation Protection and Chemistry, who reported to the Plant Manager. Discussion with the EP Coordinator indicated that management support for the EP program was very good under the current plant organization.

Strong management support to the EP program was indicated by several equipment upgrades as well as other enhancements to the program. Upgrades and enhancements included the new 800 megahertz plant radios (also installed in the field survey team vehicles), additional emergency facility walkthroughs and drills, SAMG procedures and training, additional long range pagers for selected ERO management personnel, dosimetry monitoring computers added to the OSC, new radiological survey meters and information forms for the field survey teams, and the revised EAL format and classification procedure.

The EP staff displayed a proactive attitude, which was demonstrated by the extensive flood preparations, program enhancements, and upgrades. Also, interviewed key ERO personnel indicated that the EP Coordinator and staff has been responsive to issues identified in training, drills, and exercises.

c. Conclusions

Management support to the EP program has been strong as indicated by discussions with the EP Coordinator and the program upgrades. The EP staff was proactive in maintaining and improving the program and responsive to identified issues.

**P7 Quality Assurance in EP Activities**

**P7.1 Audits (82701)**

a. Inspection Scope (82701)

The inspector reviewed Quality Services audits for 1996 and 1997. Numerous observation reports had been performed during the years covering different areas of the EP program and were compiled by the EP Coordinator.



b. Observations and Findings

The 1996 and 1997 audits and observation reports by Quality Services for the 12 month review of the EP program met the requirements of 10 CFR 50.54 (t). The method used to assess the adequacy of the States and local government interfaces with the licensee was accomplished by attending quarterly Radiological Emergency Planning (REP) meetings with the States of Wisconsin and Minnesota, Counties of Dakota, Goodhue/City of Red Wing, and Pierce, Indian Community, and casino representatives. The auditors observed the interfaces between the licensee and offsite agencies at these REP meetings. Additionally, the Quality Services Department provided telephone surveys of some of the offsite agencies to verify their observations from the meetings.

c. Conclusions

The licensee's 1996 and 1997 Observation Reports of EP activities were effective and satisfied the requirements of 10 CFR 50.54(t). The observation reports appropriately documented program activities and numerous elements of the EP Program and were of very good scope and detail. Strengths and weaknesses were identified. Corrective actions from previous year's findings were tracked.

**P8 Miscellaneous EP Issues**

- P8.1 (Open) Inspection Followup Item 50-282/96006-09; 50-306/96006-09: During the 1996 emergency exercise, the OSC Coordinator was unable to ascertain the status of emergency response teams from the team status board. Appropriate corrective actions were in progress and discussed with the EP Coordinator. This item will remain open pending observation of the July 21, 1998, Evaluated Emergency Exercise.
- P8.2 (Open) Inspection Followup Item 50-282/96006-10; 50-306/96006-10: During the 1996 emergency exercise, the EOF communicators did not initially transmit a protective action recommendation change notification form to the State Emergency Operations Center. Thorough corrective actions were in progress and discussed with the EP Coordinator. This item will remain open pending observation of the July 21, 1998, Evaluated Emergency Exercise.
- P8.3 (Open) Inspection Followup Item 50-282/96006-11; 50-306/96006-11: During the 1996 emergency exercise, the EOF staff was slow to recognize that the General Emergency classification had been met without needing a safety injection to occur. Corrective actions including procedure changes and training were in progress and discussed with the EP Coordinator. This item will remain open pending observation of the July 21, 1998, Evaluated Emergency Exercise.

**P9 Temporary Instruction (TI) 2515/134 Onshift Dose Assessment**

The inspector discussed onshift dose assessment capability and provisions with licensee personnel, reviewed the Emergency Plan and EPIPs, and inspected the equipment utilized for dose assessment. The Emergency Plan and EPIPs contained provisions for onshift dose assessment. Necessary equipment and personnel

training were available and provided. Personnel were knowledgeable of their responsibilities and how to perform dose assessment. The acceptance criteria for the TI were met and this TI is closed. Documentation as to these findings is attached as Attachment A.

#### **X1 Exit Meeting Summary**

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on May 23, 1997. The licensee acknowledged the findings presented. The inspector reviewed documentation regarding the 1997 island flooding and telephoned the licensee with his findings on May 29, 1997.

The inspector 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

J. Sorensen, Plant Manager  
D. Schuelke, General Superintendent Radiation Protection and Chemistry  
M. Ladd, Training Issues Manager  
J. Hill, Quality Manager  
M. Agen, Emergency Preparedness Coordinator  
J. Payton, Sr. Technical Instructor  
J. Leveille, Licensing Engineer  
L. Hoskins, Sr. Quality Specialist  
D. Schlitz, Quality Specialist

## INSPECTION PROCEDURES USED

IP 82701 Operational Status of the Emergency Preparedness Program  
TI 2515/134 Temporary Instruction, Onshift Dose Assessment

## ITEMS OPENED, CLOSED, AND DISCUSSED

### OPEN

None

### CLOSED

None

### DISCUSSED

- 50-282/306-96006-09 IFI OSC Coordinator was unable to ascertain the status of emergency response teams from the team status board.
- 50-282/306-96006-10 IFI EOF Communicators did not initially transmit a protective action recommendation notification form to the State EOC.
- 50-282/306-96006-11 IFI EOF staff was slow to recognize that the General Emergency classification had been met without needing a safety injection.

## LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
EAL	Emergency Action Level
ENS	Emergency Notification System
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EP	Emergency Preparedness
EPIC	Emergency Plan Implementing Procedure
ERO	Emergency Response Organization
HPN	Health Physics Network
IP	Inspection Procedure
IR	Inspection Report
IFI	Inspection Followup Item
NRC	Nuclear Regulatory Commission
NSP	Northern States Power
OSC	Operational Support Center
PINGP	Prairie Island Nuclear Generating Plant
REP	Radiological Emergency Planning
SAMG	Severe Accident Management Guidance
SEC	Shift Emergency Communicators
TI	Temporary Instruction
TS	Technical Specification
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
USAR	Updated Safety Analysis Report

FORM FOR DOCUMENTATION OF ON-SHIFT DOSE ASSESSMENT CAPABILITY

Prairie Island/Units 1&2/ 50-282; 50-306

Northern States Power Company

10/03/96

SITE/UNIT/DOCKET #s

LICENSEE

DATE

4.01 DOSE ASSESSMENT COMMITMENT IN EMERGENCY PLAN					
Acceptance Criteria (Refer to page 1 of this Appendix for further detail on the acceptance criteria)	Person(s) Contacted	Position Title(s)	Plan Section containing commitment	Revision No. and Date	Meets acceptance criteria?
Section 4.01 Item 1 Emergency Plan contains commitment for on-shift dose assessment capability.	Mel Agen	EP Coordinator	Sections 5.3.1; 5.3.3; 6.4.1	Rev. 17 4/96	Yes
Section 4.01 Item 2 Emergency Plan contains commitment for backup dose assessment capability.	Mel Agen	EP Coordinator	Section 6.4.1	Rev. 17 4/96	Yes
04.02 ON-SHIFT DOSE ASSESSMENT EMERGENCY PLAN IMPLEMENTING PROCEDURE					
	Person(s) contacted	Position Title(s)	Procedure/Indication	Revision No. and Date	Meets acceptance criteria?
Section 4.02 Item 1 Procedure initiates dose assessment	Mel Agen	EP Coordinator	F3-1, section 4.3.6	Rev. 13 3/95	Yes
Section 4.02 Item 2 Indications initiate dose assessment	Mel Agen	EP Coordinator	F3-13	Rev. 14 12/95	Yes
Section 4.02 Item 3 Procedure for performing dose assessment available.	Mel Agen	EP Coordinator	F3-13.0 through F3-13.3	Rev. 4; 7/92 Rev. 5; 7/92 Rev. 1; 5/87 Rev. 8; 9/95	Yes
04.03 ON-SHIFT DOSE ASSESSMENT TRAINING					
	Person(s) contacted	Position Title(s)	Personnel Trained (Title/#)		Meets acceptance criteria?
Section 4.03 Item 1 On-shift Personnel trained for dose assessment	Mel Agen	EP Coordinator	Shift Rad Protection Specialist; 8	n/a	Yes

Inspector: Thomas Ploski, Region III, DRS, Plant Support Br. 1