Xcel Energy®

Prairie Island Nuclear Generating Plant
1717 Wakonade Drive East
Welch, MN 55089

December 20, 2013

L-PI-13-102
10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Prairie Island Nuclear Generating Plant Units 1 and 2
Docket Numbers 50-282 and 50-306
Renewed License Nos. DPR-42 and DPR-60

License Amendment Request (LAR) to Revise Staff Augmentation Times in the Prairie Island Nuclear Generating Plant (PINGP) Emergency Plan

Pursuant to 10 CFR 50.90, Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), proposes revisions to the Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2, Emergency Plan that increase the staff augmentation times for certain Emergency Response Organization (ERO) functions from 30 minutes and 60 minutes to 90 minutes. The proposed changes result in an increase in activation time of the PINGP Emergency Response Facilities (ERFs). An increase in activation time is considered a reduction in effectiveness. Therefore, in accordance with 10 CFR 50.54(q)(4), NSPM requests NRC review and approval of the proposed Emergency Plan changes. Additional proposed changes include formally defining "facility activation" and editorial changes to clarify Plan sections discussing the response times for the Monticello Radiation Protection Support Group (RPSG) and other segments of the Monticello and Prairie Island Offsite Emergency Response Organization.

The proposed changes are necessary to address concerns regarding ERO personnel response delays related to demographic changes and security improvements since the Emergency Plan was last approved by the NRC in the area of staffing. The increases in staff augmentation times are justified by an on-shift staffing analysis performed to meet the requirements of 10 CFR 50 Appendix E.IV.A.9. The on-shift staffing analysis supporting this proposed change assumes an increase in the on-shift staff for the major tasks of offsite dose assessment and in-plant surveys in Table 1 of the Emergency Plan. The staffing analysis also justifies removal of the collateral duties of the on-shift staff for the major tasks of repairs and corrective action and radiation protection. The

on-shift staffing analysis, along with the implementation of additional on-shift staff, provides assurance that appropriate staff is available for effective emergency response. With implementation of the proposed changes, the PINGP Emergency Plan will continue to meet 10 CFR 50.54(q)(2), the requirements of 10 CFR 50 Appendix E, and the planning standards in 10 CFR 50.47(b).

Enclosure 1 to this letter provides NSPM's evaluation of the proposed changes. Attachment 1 to Enclosure 1 provides marked-up pages of the affected Emergency Plan. Attachment 2 to Enclosure 1 provides clean copy pages of the affected Emergency Plan with revision bars in the right-hand margin. Enclosure 2 to this letter provides the Prairie Island Augmentation Staffing Analysis (the on-shift staffing analysis) that supports the proposed changes in augmentation times.

NSPM evaluated the proposed changes in accordance with 10 CFR 50.92 and concluded that the changes involve no significant hazards consideration. Additionally, NSPM has determined that the proposed amendment does not authorize a significant change in the types or total amounts of effluent release or result in any significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed amendment meets the categorical exclusion requirements of 10 CFR 51.22(c)(9) and an environmental impact assessment need not be prepared. In accordance with 10 CFR 50.91, NSPM is notifying the State of Minnesota of this LAR by transmitting a copy of the letter and enclosures to the designated State Official.

NSPM requests NRC approval of this change within one calendar year of the submittal date. Upon NRC approval, NSPM requests 90 days to implement the associated changes.

Please contact Lynne Gunderson at 612-396-0173 with any questions or if additional information is required.

Commitment Summary:

This letter makes no new commitments and no revisions to existing commitments.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 20, 2013.

Kevin Davison
Site Vice President, Prairie Island Nuclear Generating Plant
Northern States Power Company - Minnesota

Enclosures

cc: Administrator, Region III, USNRC
Project Manager, PINGP, USNRC
Resident Inspector, PINGP, USNRC
State of Minnesota

ENCLOSURE 1

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
UNITS 1 AND 2

Evaluation of the Proposed Changes

License Amendment Request (LAR) for Revision to Staff Augmentation Times in the Prairie Island Nuclear Generating Plant (PINGP) Emergency Plan

ATTACHMENTS:
1. Marked-Up Pages of Emergency Plan Sections 1.0, 2.0, 5.0, and 6.4.2
2. Clean Copy Pages of Emergency Plan Sections 1.0, 2.0, 5.0, and 6.4.2

1.0 SUMMARY DESCRIPTION

Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter “NSPM”), proposes revisions to the Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2, Emergency Plan. Completion of an on-shift staffing analysis of the Emergency Response Organization (ERO) determined that changes can be made to increase the staff augmentation times for certain ERO response functions from 30 minutes and 60 minutes to 90 minutes. The on-shift staffing analysis is provided in Enclosure 2 of this License Amendment Request (LAR). Additional changes are proposed to add a definition for Facility Activation and editorial clarifications of expected response time for the Monticello Radiation Protection Support Group (RPSG) and other segments of the Monticello and Prairie Island Offsite Emergency Response Organization during an emergency.

The increase in the staff augmentation response times results in an increase in facility activation times for the NSPM Emergency Response Facilities (ERFs). Therefore, the changes in staff augmentation response times are considered a reduction in Emergency Plan effectiveness as defined in 10 CFR 50.54(q)(1)(iv). In accordance with 10 CFR 50.54(q)(4), changes to a licensee's emergency plan that reduce the effectiveness of the plan may not be implemented without prior Nuclear Regulatory Commission (NRC) approval and are submitted as license amendment requests (LAR) in accordance with 10 CFR 50.90.

2.0 DETAILED DESCRIPTION

2.1 Proposed Changes

Brief descriptions of the associated Emergency Plan proposed changes are provided below along with a discussion of the justification for each change. The specific wording changes are provided in Attachments 1 and 2 to this enclosure as marked-up and clean copy Emergency Plan pages, respectively.

a. Section 1.0, “Definitions,” is revised to add definition 1.10 for Facility Activation. PINGP’s Emergency Plan currently does not define facility activation time nor does it have an approved alternative from the NRC definition. This change defines PINGP’s emergency response facility activation time by adding this definition and by defining in Section 5.3 that activation time is measured from the time of emergency declaration. The definition is acceptable because it aligns with NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, (Reference 4) and NRC Inspection Procedure (IP) 71114.01, “Exercise Evaluation,” (Reference 1). NUREG-0654, Section II.B.5, defines the measurement of augmentation time from the declaration of the emergency (clock start). The Inspection Procedure allows activation times to

either be defined by licensee commitments or, in the absence of an approved alternative, the NRC's expectation.

b. The third paragraph in Section 2.0, "Scope and Purpose," is revised to update the expected time that plant staff will be augmented by other segments of the Monticello and Prairie Island Offsite Emergency Response Organization. The time of approximately "1 to 2 hours" will be changed to "2 to 3 hours". This time is revised to be consistent with Note 2 of Table 1 in the Prairie Island Emergency Plan, which states that Monticello Radiation Protection Group (RPG) will arrive within approximately two to three hours to augment and relieve the Prairie Island RPG of offsite surveys. This change is acceptable as it aligns the Offsite Emergency Response Organization response time with the response time described in Table 1, Note 2.

c. The second paragraph of Section 5.3, "Plant Emergency Organization," is revised to reflect the 90 minute augmentation response and incorporates the new definition of Facility Activation as being measured from the time of emergency declaration. This change is acceptable based on both the new on-shift staffing analysis performed to support the change from 30 minute and 60 minute responders to 90 minute responders and the NUREG-0654 and IP guidance for measurement of Facility Activation.

d. Table 1, "Guidance for Augmentation of Plant Emergency Organization," is changed extensively as shown in Attachments 1 and 2 of this enclosure. The proposed changes are summarized below:

- The 30 minute and 60 minute capability columns are removed and replaced with the 90 minute capability column.

- Major Functional Area of Notification/Communication is changed:
  - Under the Major Task of Notify State, Local and Federal Personnel and Maintain Communication, Position Title or Expertise of the Shift Emergency Coordinator (SEC), the 30 minute and 60 minute capabilities are removed and the 90 minute capability is set at three (3).

- Major Functional Area of Radiological Accident Assessment and Support of Operational Accident Assessment under Position Title or Expertise is changed:
  - Under the Major Task of Offsite Dose Assessment, the Chemistry Technician is added as a Position Title or Expertise. One (1) Chemistry Technician position is added to the on-shift staff and the 30 minute capability is removed. The 90 minute capability will be based on the Radiological Emergency Coordinator (REC) position, described below.

- Under the Major Task of Offsite Dose Assessment, Position Title or Expertise of the (REC), the 30 minute capability is removed (replaced with the new on-shift Chemistry Technician) and the 90 minute capability is set to one (1).
- Under the Major Task of Offsite Surveys, the Radiation Protection (RP) Specialist Position, the 30 minute and 60 minute capabilities are removed and the 90 minute capability is set to four (4).
- Under the Major Task of In-plant Surveys, the Plant Operators and/or RP Specialist adds one (1) position on-shift for a total of two (2) on-shift positions. Additionally, the 30 minute and 60 minute capabilities are removed and the 90 minute capability is set to one (1).

- Major Functional Area of Plant System Engineering, Repair and Corrective Actions is changed:
  - Under the Major Task of Technical Support, Position Title or Expertise of Core/Thermal, the 30 minute capability is removed. The 90 minute capability is set to one (1).
  - Under the Major Task of Repair and Corrective Actions, Mechanical Maintenance, the on-shift minimum of one (1) as a collateral duty position is removed, the 60 minute capability is removed, and the 90 minute capability is set to one (1).
  - Under the Major Task of Repair and Corrective Actions, Electrical Maintenance, the on-shift minimum of one (1) as a collateral duty is removed, the 30 minute and 60 minute capability are removed, and the 90 minute capability is set at two (2).
  - Under the Major Task of Repair and Corrective Actions, Instrument Control, the 30 minute capability is removed, and the 90 minute capability is set to one (1).

- Major Functional Area of Protective Actions (In-Plant), is changed:
  - For positions of Radiation Protection Specialist and/or Plant Operators, the on-shift minimum of one (1) and two (2) as collateral duties are removed, the 30 minute and 60 minute capabilities are removed, and the 90 minute capability is set to three (3).

- For the TOTAL number of positions, the on-shift capability increases from 18 to 20, the 30 minute and 60 minute capability totals (9 and 15) are removed, and the 90 minute capability total is set to 23.

- The last portion of Note (3) that states, “during the first hour of the emergency”, is deleted.

The above proposed changes to Table 1 of the PINGP Emergency Plan are acceptable as demonstrated by the on-shift staffing analysis performed out to 90 minutes. The on-shift staffing analysis is attached as Enclosure 2 of this LAR.

e. Table 2, “Primary and Secondary Responsibilities of Plant Emergency Organization,” is revised regarding Offsite Dose Assessment. Offsite Dose Assessment has been changed to a primary rather than a secondary responsibility for the Chemistry Technician. The Table is proposed to indicate “P” rather than “S”. The proposed change is acceptable as demonstrated by the on-shift staffing analysis performed out to 90 minutes and with the addition of one Chemistry Technician on-shift staff position. The on-shift staffing analysis is provided in Enclosure 2 of this LAR.

f. Section 5.3.3, “Plant Shift Organization,” Section G, “Radiation Protection Specialist,” is revised to change the number of Radiation Protection Specialists (RPS) onsite at all times from two to three. This change is acceptable as demonstrated by the on-shift staffing analysis performed out to 90 minutes with the addition of one RP Specialist on-shift staff position. The on-shift staffing analysis is attached as Enclosure 2 of this LAR.

g. Section 5.3.3, “Plant Shift Organization,” Section H, “Chemistry Technician,” is revised as follows:
   - The number of Chemistry Technicians onsite at all times is changed from one to two.
   - The text is clarified that one Chemistry Technician is responsible for chemistry and radiochemistry.
   - The text is clarified that the second Chemistry Technician performs the dose assessment function until relieved by the augmented ERO.

   These changes are acceptable as demonstrated by the on-shift staffing analysis performed out to 90 minutes with the addition of one Chemistry Technician on-shift staff position. The on-shift staffing analysis is attached as Enclosure 2 to the LAR.

h. In Section 5.4, “EOF Organization,” the second paragraph discusses the time period at which the EOF will be staffed and ready to assume emergency responsibilities from the TSC. This text is revised from “about 1 hour of notification” to “90 minutes of the Classification of an ALERT or higher.” Additionally, the last sentence of this paragraph is deleted. These changes are acceptable as demonstrated by the on-shift staffing analysis, which includes two additional on-shift staff. The on-shift staffing analysis is attached as Enclosure 2 to the LAR.

i. Section 5.6.2, “Monticello Radiation Protection Group Support,” is revised to be consistent with Note 2 of Table 1 in the Emergency Plan, which states that Monticello Radiation Protection Group (RPG) will arrive within approximately two to three hours to augment and relieve the Prairie Island RPG of offsite surveys. This change is acceptable as it aligns the Monticello RPG response with that described in Table 1, Note 2.

j. In Section 6.4.2, “Radiological Surveys,” the third paragraph describes Radiological Survey Team activation during normal working hours and off hours. This paragraph will be revised to eliminate the discussion of normal working and off hours activation. The paragraph will describe that the teams will be activated and respond within 90 minutes of declaration of the emergency. This change is acceptable as demonstrated by the on-shift analysis. On-shift personnel are capable of performing surveys until relieved by the 90 minute responders.

2.2 Reason for Proposed Changes

The proposed change is needed to address concerns regarding ERO staff augmentation personnel capability to respond safely to the site in 30 minutes or 60 minutes. Area demographic changes and site security improvements driven by post-September 11, 2001, requirements have impacted emergency responder transit times to the ERFs resulting in challenges in meeting the augmentation times established in the last Emergency Plan that the NRC reviewed in the area of staffing (Revision 2).

In 2011, the Commission amended 10 CFR Part 50 Appendix E, Section IV.A, “Organization,” (i.e., Enhanced Emergency Preparedness new rule making) to address concerns regarding the assignment of tasks or responsibilities to on-shift ERO personnel that would potentially overburden them and prevent the timely performance of their emergency plan functions. The final rule better ensures sufficient on-shift staff by limiting the assignment of responsibilities that the on-shift ERO members would likely perform concurrently with their assigned emergency plan functions. NRC Staff guidance (Reference 3) recommends that a staffing analysis be performed to ensure the on-shift staff can carry out their assigned emergency response functions until the augmenting ERO arrives. NEI 10-05 (Reference 2), Section 2.14, “Changes to ERO Response Times,” supports the use of the staffing analysis methodology to address modifications to augmentation times. The rule change and the issuance of staffing analysis guidance documents (References 2 and 3) provided a good opportunity for NSPM to reevaluate the PINGP ERO on-shift, 30 minute, and 60 minute capability commitments to determine if a change to 90 minute capability was appropriate.

Area Demographics

The area surrounding PINGP experienced significant population growth within the 10-mile Emergency Planning Zone (EPZ) since the last NRC approved Emergency Plan (Revision 2 in 1982) in the area of staffing. The table below provides a comparison of the area’s approximate population in the EPZ since 1980.

Year	**1980**	**1990**	**2000**	**2010**
Population (approximate)	22,314	26,659	28,847	30,475
Percent Increase from previous 10-year data point	--	19.47%	8.21%	5.64%

As a result of increased population, it can be assumed commute times to the plant site from surrounding communities have increased. The impact that local population growth has on response time for ERO members depends on factors that vary widely with conditions ranging from time of the day to season of the year. Any increase in travel time without corresponding relaxation in facility activation time increases the perceived pressure to achieve timeliness, with a potential for reduction in driving safety for individuals responding to the emergency.

Security Enhancements

Significant improvements have been made to the physical security of the PINGP site since September of 2011. Among these are vehicle delay barriers outside the plant Protected Area (PA) and relocation of the main employee parking lot farther from the facility. As a result, personnel transit time to the PA has increased by several minutes. Additional security measures at the Site Access Facility (SAF) and the point of PA access may also add several minutes of delay, depending on the time of the day and the conditions of traffic on site. The delays from security changes may potentially impact ERO augmenting staff response times.

2.3 PINGP Emergency Plan Background

PINGP is a two unit plant site located on the west bank of the Mississippi River approximately 26 miles southeast of the Twin Cities metropolitan area in Minnesota. The facility is owned and operated by NSPM. Each unit at PINGP employs a two-loop pressurized water reactor designed and supplied by Westinghouse Electric Corporation. The initial PINGP application for a Construction Permit and Operating License was submitted to the Atomic Energy Commission (AEC) in April 1967. The Final Safety Analysis Report (FSAR) was submitted for application of an Operating License in January 1971. Unit 1 began commercial operation in December 1973 and Unit 2 began commercial operation in December 1974.

The PINGP was designed and constructed to comply with the licensee's understanding of the intent of the AEC General Design Criteria (GDC) for Nuclear Power Plant Construction Permits, as proposed on July 10, 1967. PINGP was not licensed to NUREG-0800, "Standard Review Plan (SRP)."

PINGP has four ERFs augmenting the on-shift staff: the Technical Support Center (TSC), the Operational Support Center (OSC), the Emergency Operations Facility (EOF) and the Joint Information Center (JIC). During an emergency, the Shift Manager initially assumes the responsibility as Emergency Director (ED). Emergency response by on-shift staff is directed by the ED from the control room (CR) until relieved by an augmenting staff with the subsequent activation of ERFs.

PINGP uses four standard levels of emergency classification as described in NUREG-0654, Revision 1. Augmentation of the on-shift staff for an Unusual Event is optional and is left to the discretion of the ED. At the Alert or higher emergency classification levels, all of the ERFs are activated. The associated augmenting personnel are notified to report to their assigned facilities. A facility is declared activated by its respective manager once minimum required staffing has been achieved such that the facility is capable of performing its assigned functions.

The last PINGP Emergency Plan reviewed and approved by the NRC in the area of staffing was Revision 2. Revision 2 was approved by NRC Safety Evaluation Report (SER) dated December 27, 1982. As approved by NRC, the PINGP Emergency Plan, Revision 2, contained 30 minute and 60 minute augmentation time goals for minimum staffing positions and met the intent of the guidance of NUREG-0654, Revision 1. These time goals were shown in PINGP Emergency Plan, Revision 2, Figure 5-3, "Guidance for Augmentation of Onsite Emergency Organization." The Emergency Plan, Revision 2, Figure 5-3, provided the site commitment to meet the guidance for on-shift staffing and augmentation goals established in Table B-1 of NUREG-0654, Revision 1. In 1982 and today, activation of the TSC, the EOF, and the OSC occurs at the Alert (or higher) emergency. The JIC is currently activated at the Alert (or higher) level. Therefore, all ERFs are currently activated at the Alert (or higher) classification level.

The current revision of the Emergency Plan on the date of this submittal is Revision 49. Revision 49 incorporates modifications made pursuant to the provisions of 10 CFR 50.54(q) including the revisions based on the staffing analyses performed to show compliance with the Enhanced Emergency Preparedness Rule Making published in the Federal Register on November 23, 2011.

This LAR does not correct past performance deficiencies related to staffing. Following an Alert on January 7, 2012, the following two self-revealed green findings with associated non-cited violations (NCV) of NRC requirements were identified:

- A Green Finding and associated NCV for failure to initiate Emergency Response Data System (ERDS) within the one hour as required by Appendix E: The ERDS system was placed into service at 80 minutes instead of the required 60 minutes. Attempts to activate began at 62 minutes, two minutes after the required time. It was determined that the connection failure was in the Beta testing of the new Virtual Private Network (VPN) and supporting software interfering with the ERDS modem. This has been corrected. Additionally, the ERDS activation was reassigned to the SEC, an on-shift position, to ensure it was performed in 60 minutes. ERDS activation by the SEC was evaluated in the compliance on-shift staffing analysis and was found acceptable. The function assignment is not changed by this LAR.

- A Green Finding and associated NCV for failure to follow and maintain the Emergency Plan in that five thirty-minute responders failed to augment in

a timely manner: Four RP Specialists and the REC failed to augment the on-shift staff in a timely manner during the Alert. NSPM's interim corrective measures in January 2012 included temporarily adding two RP Specialist on-shift, which increased the on-shift compliment to four. The failure of the REC position to augment in a timely manner was attributed to individual performance. In December 2012, the compliance on-shift staffing analysis justified that two on-shift RP Specialists were adequate to respond to scenarios until relieved by the augmented ERO. Subsequent drill performance provides assurance that the 30 minute and 60 minute augmented staffing can be met.

Therefore, performance deficiencies related to the January 7, 2012 Alert have been resolved by the site and this LAR is not correcting any outstanding performance deficiencies.

3.0 TECHNICAL EVALUATION

3.1 Proposed Changes

As shown in Attachments 1 and 2 to this Enclosure, this LAR proposes to:

A. Add a definition for Facility Activation (new Emergency Plan Section 1.10) and provide the time at which it is measured from (updated Emergency Plan Section 5.3). As stated in Section 2.0 of this LAR, these changes define PINGP's emergency response facility activation time. The definition aligns with NUREG-0654, Revision 1 (Reference 4) and NRC Inspection Procedure 71114.01 (Reference 1). This change is not supported by the analyses described in 3.2 nor the technical improvements described in 3.3.

B. Revise Section 2.0 to be consistent with Note 2 of Table 1 in the Prairie Island Emergency Plan, which states that Monticello Radiation Protection Group (RPG) will arrive within approximately two to three hours to augment and relieve the Prairie Island RPG of offsite surveys. This change is made for consistency within the Emergency Plan and is not supported by the analyses described in 3.2 or the technical improvements described in 3.3.

C. Revise ERO staff augmentation times from 30 minutes and 60 minutes to 90 minutes. The proposed change to 90 minute response time capability revises text in Tables 1 and 2 and in Sections 5.3, 5.3.3.G, 5.3.3.H, 5.4, and 6.4.2 of the Emergency Plan. All of the changes are acceptable based on the On-shift staffing analysis and functional analysis discussed in Section 3.2 below and fully supported by the staffing analysis provided in Enclosure 2. Finally, these changes are also supported by improvements in technology since the last NRC approval of the Emergency Plan (Revision 2). The improvements in technology

increase the capabilities of the on-shift staff. The improvements are described in Section 3.3 below.

D. Revise Section 5.6.2, “Monticello Radiation Protection Group Support,” to be consistent with the expected response from Monticello as noted in Table 1, note (2). This change is made for consistency within the Emergency Plan and is not supported by the analyses described in 3.2 or the technical improvements described in 3.3.

3.2 On-Shift Staffing and Functional Analysis

The requirements in 10 CFR 50 Appendix E and in 10 CFR 50.47 (b) establish emergency planning standards that require 1) adequate staffing; 2) satisfactory performance of key functional areas and critical tasks; and 3) timely augmentation of the response capability. The proposed change will increase the time for the ERO personnel to respond to their assigned duties, which increases the time for ERF activation. The increase in staff augmentation times necessitates a greater emphasis on the capabilities of on-shift personnel to demonstrate that no degradation or loss of function will result due to the increase in augmentation times. Therefore, NSPM performed an on-shift staffing analysis to ensure the on-shift staff is capable of carrying out assigned emergency plan functions until augmenting responders arrive.

For the proposed changes in staff augmentation times it was demonstrated by table top exercise that the on-shift staff could perform the required functions until augmenting staff arrived at 90 minutes from the declared Alert or higher Emergency Classification. If degradation or loss of function was identified during the tabletop, the conflict was documented in the on-shift staffing analysis and resolved in a functional analysis. The on-shift staffing analysis demonstrated no degradation or loss of function as long as two on-shift staff positions were added in the area of radiological accident assessment.

The on-shift staffing analysis that supports this proposed increase in staff augmentation response time is described in Section II of Enclosure 2 of this LAR. The analysis was performed to meet the requirements discussed in the Enhanced Emergency Preparedness Rulemaking published in the Federal Register on November 23, 2012 and the new rule itself (10 CFR 50 Appendix E.IV.A.9). Additionally, the methodology described in NEI 10-05, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” (Reference 2) was used to perform the analysis. The NEI 10-05 guidance was endorsed by the NRC in NSIR/DPR-ISG-01, “Interim Staff Guidance, Emergency Planning for Nuclear Power Plants,” (Reference 3) as an acceptable means of performing staffing analyses for compliance with the Enhanced Emergency Preparedness Rulemaking. The analysis performed for this LAR was based on the on-shift staffing analysis performed to demonstrate compliance with the new rule.

A functional analysis was also performed. The results of the on-shift staffing analysis for completion of functions associated with the 30 minute and 60 minute responders were tabulated and all conflicts dispositioned. The functional analysis and dispositions of the

conflicts are documented in Section III, “Functional Analysis,” Tables E through H of Enclosure 2.

The on-shift staffing analysis in Enclosure 2 concluded that with the addition of two personnel on-shift, the 30 minute and 60 minute staff augmentation times could be extended to 90 minutes with no loss of function (i.e., functions could still be performed successfully and without conflicts). The report concluded the following positions must be added to the on-shift staff to support the increase in staff augmentation time to 90 minutes:

1. The addition of a one Chemistry Technician (a total of 2 for the position following LAR implementation) to resolve the conflict between chemistry sampling and dose assessment. The second Chemistry Technician will assume responsibility for dose assessment and allow the first Chemistry Technician to continue with chemistry sampling and communication responsibilities. This additional position allows the 30 minute REC position to be extended to 90 minute capability.

2. The addition of one RP Specialist (now a total of 3 for the position following LAR implementation) to resolve the conflict between required survey functions. The third RP Specialist on-shift will provide needed support for surveys in assembly areas as well as in-plant locations. With this addition to the on-shift staff, the remaining RP Specialists can be extended to 90 minute capability.

The report also concluded that two additional functions were no longer needed on-shift. These on-shift functions are the mechanical maintenance and the electrical maintenance functions. The on-shift staffing analysis concluded these functions could be extended to 90 minutes without loss of function.

Therefore, the on-shift staffing analysis demonstrates that the proposed increase in augmentation response times, along with the increase in on-shift staff, ensures the PINGP Emergency Plan will continue to meet 10 CFR 50.54(q)(2), the requirements of 10 CFR 50 Appendix E, and the planning standards of 10 CFR 50.47(b).

3.3 Supporting Information

Improvements in technology have enabled the on-shift staff to assess plant conditions quickly and efficiently, and with less distraction. The improvements help minimize the impact on the performance of the major tasks that may result from the proposed change in augmentation times. The following describes technological advancements that have occurred since the last NRC approval of the Emergency Plan (Revision 2) in 1982. The technology advancements result in increased capabilities of on-shift personnel.

Emergency Response Computer System (ERCS)

The ERCS provides a means for personnel to quickly monitor critical plant parameters from a single workstation. The ERCS software collects and

processes selected field data for display to plant personnel. This data is displayed in a concise and consistent format on displays in the CR, TSC, EOF and Backup EOF. This information, in its multiple forms, is used to assist personnel in the proper implementation of Emergency Procedures during an accident condition. The system also provides CR personnel with access to relevant information to assist them during operational transients.

The ERCS software is composed of three distinct but fully integrated software packages: the Plant Monitoring System (PMS), the Safety Assessment System (SAS), and the Emergency Response Data System (ERDS).

The design criteria for the ERCS were based on the requirements of NUREG-0737, Supplement 1, regarding the need for a Safety Parameter Display System (SPDS) and the upgrading of ERFs. The requirements specified for the SPDS are met or exceeded by a system of displays provided by the ERCS. The parameters on the SPDS displays are provided by the SAS software. Emergency Response Facilities upgrade requirements are met by providing the ERCS driven displays in the CR, TSC, EOF, and the Backup EOF. Regulatory Guide 1.97 information is provided by the ERCS to all the display locations. The Plant Process Computer System (PPCS) requirements are met by application programs as part of the PMS.

Dose Assessment

Dose assessment is currently performed by on-shift Chemistry Technicians using the RASCAL dose model rather than manual calculation methods. The RASCAL application is available on any local area network (LAN) computer or ERF dose assessment computer. Specifically designed ERCS displays have been developed for obtaining the necessary plant, radiological effluent, area radiation monitor, and meteorological information that is used by the Chemistry Technician in RASCAL.

The improvements to the dose assessment program require minimal user interface to produce results quickly. Radiological dose assessment has benefited from technological advances that make its use simpler and less time consuming.

Radiological Work Control

Enhancements in electronic controls of Radiation Work Permits and dosimetry permit real time assessment and dose control for radiation workers. This limits the need for direct monitoring by RP Specialists.

Automated Call-out Systems

Enhancements in automated call-out and paging systems have resulted in streamlined processes for activation of the ERO. A single phone call initiates rapid notification of all ERO members in lieu of individual sequenced phone calls.

Improvements Summary

The improvements in technology since the last approval of the Emergency Plan (Revision 2) have resulted in an increase in the on-shift efficiencies. In aggregate, these improvements support the proposed change in augmentation times by ensuring that major functions and tasks are completed more efficiently with fewer burdens on the CR staff. Therefore, the technology improvements also support that there would be no significant degradation or loss of any functional task as a result of the proposed increase in augmentation times.

3.4 Conclusions

The proposed changes continue to support all of the functional areas of the Emergency Plan, continue to ensure the protection of the health and safety of the public and site personnel, and will not present a significant burden to the on-shift personnel. Although the ERO staffing augmentation response time is being increased, resulting in an increased ERF activation time, the emergency response functions identified in the Emergency Plan will continue to be performed by the on-shift staff until relieved by augmented ERO responders and will not result in a reduction of the capability of the ERO to effectively respond to the emergency. Therefore, the proposed increase in augmentation response times, along with the increase in on-shift staff, ensures the PINGP Emergency Plan will continue to meet 10 CFR 50.54(q)(2), the requirements of 10 CFR 50 Appendix E, and the planning standards of 10 CFR 50.47(b).

4.0 REGULATORY ANALYSIS

4.1 Applicable Regulatory Requirements/Criteria

Title 10 Code of Federal Regulations 50.47(b)(1) and (2):

(b) The onsite and, except as provided in paragraph (d) of this section, offsite emergency response plans for nuclear power reactors must meet the following standards:

(1) Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and

each principal response organization has staff to respond and to augment its initial response on a continuous basis.

(2) On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.

The existing Emergency Plan includes onsite and offsite emergency response plans that meet the requirements listed above. This LAR proposes to increase the current staff augmentation response times from 30 minute and 60 minutes to 90 minutes. Implementation of two on-shift staff positions supports this change. With the addition of the on-shift staff, the Emergency Plan will continue to have onsite and offsite emergency response plans that meet 10 CFR 50.47(b).

Title 10 Code of Federal Regulations 50.54(q):

(q) Emergency Plans

(1)(iv) *Reduction in effectiveness* means a change in an emergency plan that results in reducing the licensee's capability to perform an emergency planning function in the event of a radiological emergency.

(2) A holder of a license under this part, or a combined license under part 52 of this chapter after the Commission makes the finding under § 52.103(g) of this chapter, shall follow and maintain the effectiveness of an emergency plan that meets the requirements in Appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

(4) The changes to a licensee's emergency plan that reduce the effectiveness of the plan as defined in paragraph (q)(1)(iv) may not be implemented without prior approval by the NRC. A licensee desiring to make such a change after February 21, 2012 shall submit an application for an amendment to its license. In addition to the filing requirements of §§ 50.90 and 50.91, the request must include all emergency plan pages affected by that change and must be accompanied by a forwarding letter identifying the change, the reason for the change, and the basis for concluding that the licensee's emergency plan, as revised, will continue to meet the requirements in Appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

The existing PINGP Emergency Plan meets the planning standards of 10 CFR 50.47(b) and 10 CFR 50 Appendix E as required by 10 CFR 50.54(q)(2). This LAR proposes to

increase the current staff augmentation response times from 30 minutes and 60 minutes to 90 minutes. Implementation of two additional on-shift staff positions allows for the response time increase. This proposed change to 90 minutes is considered a reduction in effectiveness as defined in 10 CFR 50.54(q)(1)(iv) and requires submittal based on 10 CFR 50.54(q)(4). Therefore, NSPM is submitting this LAR pursuant to 10 CFR 50.90.

With the addition of the on-shift staff, the Emergency Plan will continue to meet the requirements of 10 CFR 50.54(q)(2) by maintaining the effectiveness of the Emergency Plan such that it meets the requirements of 10 CFR 50 Appendix E, and the planning standards of 10 CFR 50.47(b).

Title 10 Code of Federal Regulations Part 50 Appendix E:

A. Organization
The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization and the means for notification of such individuals in the event of an emergency.

A.9 By December 24, 2012, for nuclear power reactor licensees, a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.

The existing PINGP Emergency Plan includes a description of the organization, including definition of authorities, responsibilities and duties of individuals. The current Emergency Plan (Revision 49) is in compliance with the new rule (10 CFR 50 Appendix E.IV.A.9). This LAR proposes to increase the current staff augmentation response times from 30 minute and 60 minutes to 90 minutes. A staffing analysis has been performed to demonstrate continued compliance with 10 CFR 50 Appendix E.IV.A.9. The staffing analysis and implementation of two additional on-shift staff positions demonstrate acceptability of this increase in staff augmentation times. The proposed changes to the Emergency Plan will continue to describe the authorities, responsibilities and duties of these individuals. Therefore, with the changes proposed in the LAR, the requirements of 10 CFR 50 Appendix E continue to be met.

NUREG-0654/FEMA-REP-1, Revision 1 (Reference 4)

NUREG-0654/FEMA-REP-1, Revision 1, Section II.B.5 states:

> "Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, 'Minimum Staffing Requirements for Nuclear Power Plant Emergencies.' The minimum on-shift

> staffing levels shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1."

NUREG-0654 states general guidance concerning the onsite emergency organization to allow licensees some flexibility in the number of on-shift staff required by emergency plans for response to emergency events. NUREG-0654 guidance recommends that there be, in addition to on-shift personnel, 30-minute and 60-minute responders. The augmented ERO responders assume many managerial, engineering, and administrative duties from the on-shift personnel, allowing them to focus more fully on plant operations. NUREG-0654 also provides the guidance that augmentation time be measured from the declaration of the emergency.

The current PINGP Emergency Plan staffing in Table 1 meets the intent of NUREG-0654, Table B-1. This LAR proposes to increase the current staff augmentation response times from 30 minutes and 60 minutes to 90 minutes. The proposed changes have been evaluated in a staffing analysis performed to meet 10 CFR 50 Appendix E.IV.9, using the methodology of NEI 10-05 (Reference 2), which was endorsed by NRC in NSIR/DPR-ISG-01 (Reference 3). The proposed changes to the Emergency Plan are based on the on-shift staffing analysis but continue to meet the intent of NUREG-0654, Table B-1 (i.e., continues to cover the emergency functional areas in Table B-1). Additionally, the LAR proposes to measure Facility Activation time (i.e., augmentation time) from the time of declaration of the emergency. This change is in alignment with NUREG-0654, Section II.B.5.

Conclusion

NSPM has evaluated the proposed change against the applicable regulatory requirements and acceptance criteria. The proposed Emergency Plan changes continue to assure that regulatory requirements and emergency planning standards associated with emergency response are met.

4.2 Precedent

Entergy Nuclear Operations submitted a LAR in June 2013 for the Palisades Nuclear Plant to increase staff augmentation times (ADAMS Accession No. ML13176A405). However, no regulatory decisions have been made regarding the Palisades LAR at time of this NSPM submittal. NSPM is not aware of any final regulatory decisions that have been made regarding LARs that increase staff augmentation times since the Enhanced Emergency Preparedness Rule Making was published in the Federal Register on November 23, 2012. The rule made changes to10 CFR 50 Appendix E.IV.A.9 and directed a detailed analysis be performed to ensure on-shift staffing was adequate to perform critical functions. Prior to the rule change, staff augmentation time increases were not justified using on-shift staffing analyses.

4.3 No Significant Hazards Consideration Determination

In accordance with the requirements of 10 CFR 50.90, Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), requests an amendment to facility Renewed Operating Licenses DPR-42 and DPR-60, for the Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2, to revise the Emergency Plan. Completion of an on-shift staffing analysis of the Emergency Response Organization (ERO) determined that changes can be made to increase the staff augmentation times for certain ERO response functions from 30 minutes and 60 minutes to 90 minutes. NSPM proposes to revise the ERO staff augmentation response times in the PINGP Emergency Plan.

NSPM has evaluated the proposed amendment against the standards in 10 CFR 50.92 and has determined that the operation of the PINGP in accordance with the proposed amendment presents no significant hazards. NSPM's evaluation against each of the criteria in 10 CFR 50.92 follows.

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed increase in staff augmentation times has no effect on normal plant operation or on any accident initiator or precursors and does not impact the function of plant structures, systems, or components (SCCs). The proposed change does not alter or prevent the ability of the Emergency Response Organization to perform their intended functions to mitigate the consequences of an accident or event. The ability of the emergency response organization to respond adequately to radiological emergencies has been demonstrated as acceptable through a staffing analysis as required by 10 CFR 50 Appendix E.IV.A.9.

   Therefore, the proposed Emergency Plan changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The proposed change does not impact the accident analysis. The change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed), a change in the method of plant operation, or new operator actions. The proposed change does not introduce failure modes that could result in a new accident, and the change does not alter assumptions made in the safety analysis. This proposed change increases the staff augmentation

response times in the Emergency Plan, which are demonstrated as acceptable through a staffing analysis as required by 10 CFR 50 Appendix E.IV.A.9. The proposed change does not alter or prevent the ability of the Emergency Response Organization to perform their intended functions to mitigate the consequences of an accident or event.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

Margin of safety is associated with confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure) to limit the level of radiation dose to the public. The proposed change is associated with the Emergency Plan staffing and does not impact operation of the plant or its response to transients or accidents. The change does not affect the Technical Specifications. The proposed change does not involve a change in the method of plant operation, and no accident analyses will be affected by the proposed change. Safety analysis acceptance criteria are not affected by this proposed change. The revised Emergency Plan will continue to provide the necessary response staff with the proposed change. A staffing analysis and a functional analysis were performed for the proposed change on the timeliness of performing major tasks for the functional areas of Emergency Plan. The analysis concluded that an increase in staff augmentation times, with the addition of two on-shift positions, would not significantly affect the ability to perform the required Emergency Plan tasks. Therefore, the proposed change is determined to not adversely affect the ability to meet 10 CFR 50.54(q)(2), the requirements of 10 CFR 50 Appendix E, and the emergency planning standards as described in 10 CFR 50.47 (b).

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above evaluation, the NSPM has determined that operation of the facility in accordance with the proposed change does not involve a significant hazards consideration as defined in 10 CFR 50.92(c), in that it does not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

5.0 ENVIRONMENTAL CONSIDERATION

NSPM has determined that the proposed change would not revise a requirement with respect to installation or use of a facility or component located within the restricted area, as defined in 10 CFR 20, nor would it change an inspection or surveillance requirement. The proposed amendment does not involve (i) a significant hazards consideration, or (ii) authorize a significant change in the types or a significant increase in the amounts of any effluent that may be released offsite, or (iii) result in a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for a categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, NSPM concludes that pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. NRC Inspection Manual, Inspection Procedure 71114.01, “Exercise Evaluation,” May 29, 2012.

2. NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0, dated June 2011.

3. NSIR/DPR-ISG-01, "Interim Staff Guidance, Emergency Planning for Nuclear Power Plants," Revision 0, November 2011.

4. NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency, November 1980.

ENCLOSURE 1, ATTACHMENT 1

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

LICENSE AMENDMENT REQUEST

License Amendment Request (LAR) for Revision to Staff Augmentation Times in the Prairie Island Nuclear Generating Plant (PINGP) Emergency Plan (EP)

MARKED-UP PAGES OF EMERGENCY PLAN SECTIONS 1.0, 2.0, 5.0 AND 6.4.2

(38 pages follow)

1.0 DEFINITIONS

Listed below are some terms in this plan along with the definitions that should be applied to these terms when they are used in this plan.

1.1 Assessment Action - Actions taken during or after an accident to obtain and process information necessary to make decisions regarding emergency measures.

1.2 Corrective Actions - Emergency measures taken to terminate an emergency situation at or near the source in order to prevent or minimize a radioactive release, e.g., shutting down equipment, firefighting, repair and damage control, etc.

1.3 Emergency Action Level (EAL) – A predetermined, site-specific, observable threshold for a plant Initiating Condition (IC) that places the plant in a given emergency class. An EAL can be: an instrument reading; an equipment status indicator; a measurable parameter (onsite or offsite); a discrete, observable event; results of analyses; entry into specific emergency operating procedures; or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

1.4 Emergency Class: - One of a minimum set of names or titles, established by the Nuclear Regulatory Commission (NRC), for grouping of normal nuclear power plant conditions according to (1) their relative radiological seriousness, and (2) the time sensitive onsite and off site radiological emergency preparedness actions necessary to respond to such conditions. The existing radiological emergency classes, in ascending order of seriousness, are called: Notification of Unusual Event (UE), Alert, Site Area Emergency (SAE), and General Emergency (GE).

1.5 Emergency Director (ED) - The Plant Manager or designee. This individual has overall responsibility and authority for managing the emergency effort within the plant. This person will also manage efforts external to the plant until the Emergency Operations Facility (EOF) Organization can relieve the ED of external tasks.

1.6 Emergency Manager (EM) - A designated member of site management. This person has the authority and responsibility for the management of (NSPM) Northern States Power Company – Minnesota overall response to an emergency. The EM will assume command and control at the Emergency Operations Facility and direct the NSPM response efforts.

1.7 Emergency Planning Zones - a defined area around the plant to facilitate emergency planning by state and local authorities, to assure that prompt and effective actions are taken to protect the public in the event of a release of radioactive material. It is defined for:

1.7.1 Plume Exposure Pathway - a 10 mile radius around the plant where the principal exposure source is: (1) whole body exposure to gamma radiation from the plume and from deposited material; and (2) internal exposure from the inhaled radionuclides deposited in the body (Short Term Exposure).

1.7.2 Ingestion Exposure Pathway - a 50 mile radius around the plant where the principal exposure would be from the ingestion of contaminated water or foods such as milk or fresh vegetables (Long Term Exposure). The ingestion exposure pathway includes the plume exposure pathway.

1.8 Emergency Worker - Any individual involved in mitigating the consequences of an emergency situation and/or minimizing or preventing exposure to the offsite population. The emergency worker category includes emergency workers at the plant as well as individuals who are engaged in public service emergency activities - firemen, policemen, medical support, and certain public officials. These are people who voluntarily place themselves as emergency workers.

1.9 Exclusion Area - The area surrounding the plant that is under direct Prairie Island Nuclear Generating Plant control. This includes the Corps of Engineering land north of plant and the islands located in the Mississippi River east of plant. It is sized such that any individual located on its boundary would not exceed 25 REM whole body or 300 REM thyroid from I-131 for two hours immediately following the design basis accident (approximately 2340 feet out to boundary).

1.10 Facility Activation – An Emergency Response Facility is activated when the minimum staff per Table 1 is available and the facility is ready to assume its assigned functions under the Emergency Plan and relieve the on-shift staff of those functions. (Although the facility may be ready, the on-shift relief may be postponed in the interest of completing critical tasks prior to turnover.)

~~**1.10**~**1.11** Initiating Condition (IC): - One of a predetermined subset of nuclear power plant conditions when either the potential exists for a radiological emergency, or such an emergency has occurred.

~~1.11~~1.12 Northern States Power Company – Minnesota (NSPM) d/b/a Xcel Energy - Operator of the Prairie Island Nuclear Generating Plant.

~~1.12~~1.13 Protective Actions - Emergency measures taken before or after a release of radioactive materials in order to prevent or minimize radiological exposures to the population.

~~1.13~~1.14 Protective Action Guides (PAG) – Projected dose to individuals, that warrants protective action prior to and/or following a radioactive release.

~~1.14~~1.15 Recovery Actions - Actions taken after an emergency to restore the plant to normal.

~~1.15~~1.16 Xcel Energy - Operating Utility of Northern States Power Company – Minnesota.

2.0 SCOPE AND PURPOSE

In accordance with license conditions, 10CFR Part 50, and NRC guidance, the Northern States Power Company – Minnesota (NSPM) has developed and implemented a radiological emergency response plan for the Prairie Island Nuclear Generating Plant (PINGP) and a joint off-site plan for the PINGP and the Monticello Nuclear Generating Plant. As asset owner NSPM, and Xcel Energy, the operating utility, retain all owner obligations.

This Emergency Plan is applicable to Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2.

In any emergency situation at Prairie Island, the initial response to activate the Emergency Plan is accomplished by the plant staff and, if needed, immediate actions may be required by local support agencies. The plant, during initial stages of the emergency situation, must function independently coordinating both onsite and offsite activities. It is expected that within approximately ~~1~~ 2 to ~~2~~ 3 hours, the plant staff will be augmented by other segments of the overall Monticello & Prairie Island (MT & PI) Offsite Emergency Response Organization (EOF staff, Monticello Field Teams and other company support staff). The augmented response organization will assume those tasks external (offsite) to the plant, thus allowing the plant staff to be responsible for all onsite activities. This plan covers the actions and responsibilities of the PINGP Emergency Organization and the Emergency Operations Facility Organization.

The purpose of the plan is to describe the following:

2.1 Organization and actions within the plant to control and limit the consequences of an accident.

2.2 Organization and actions controlling site and offsite activities in the event of an uncontrolled release of radioactive material. This includes notification of and coordination with required offsite support agencies.

2.3 Identifying and evaluating the consequences of accidents that may occur and affect the public and plant personnel.

2.4 Describing the protective action levels and actions that are required to protect the public and plant personnel in the event of an accident.

2.5 Consideration necessary for the purpose of reentry and short-term recovery.

2.6 Arrangements required for medical support in the event of injury.

2.7 Arrangements required for fire fighting support in the event of major fires requiring outside support.

2.8 The training necessary to assure adequate response to emergencies.

The Emergency Plan is dependent upon various standing plant operating, abnormal operating, emergency operating, plant safety, radiological control and security procedures and the Emergency Plan Implementing Procedures for the implementation of the plant's response to the spectrum of emergency situations.

PINGP has procedures in place that implement on-site protective actions and personnel accountability during security events that are appropriate for plant and environmental conditions.

Coordination between plant, state, local and tribal authorities is defined in the Minnesota and Wisconsin state emergency operations plans, Goodhue, Dakota and Pierce county emergency plans and the Prairie Island Indian Community's emergency plan. Goodhue, Dakota and Pierce Counties have, formulated for their respective areas, individual evacuation plans which are included in the respective state plans.

Monticello & Prairie Island (MT & PI) offsite response is detailed in the Corporate Nuclear Emergency Plan.

5.0 ORGANIZATIONAL CONTROL OF EMERGENCIES

5.1 Normal Site Organization

The normal site organization is comprised of the plant organization and several other site support organizations. The normal site organization can be accessed on the Prairie Island web page. Responsibilities and authorities of the various functional groups are delineated in plant Administrative Work Instructions.

5.2 Normal Plant Organization

The normal plant operating crew is staffed and qualified to perform all actions that may be necessary to initiate immediate protective actions and to implement the emergency plan and is designated as the responsible group for such actions. The normal plant organization can be accessed on the Prairie Island web page.

The Plant Manager has overall responsibility for the safe, efficient operation of the plant and for compliance with operating license requirements. The Plant Manager **SHALL** select, train and supervise a qualified staff.

The Shift Manager reports directly to the Assistant Operations Manager who reports directly to the Operations Manager who reports directly to the Plant Manager. The Shift Manager is responsible for the direction and coordination of the Shift Supervisors on his/her shift to perform operations in accordance with the administrative controls and operating procedures. The Shift Manager coordinates activities with other plant groups as required to maintain the safe operation of the plant.

The Shift Supervisor reports to the Shift Manager. The Shift Supervisor is the single focal point for directing and coordinating the operations group, maintenance group and the plant security activities during his/her shift. The Shift Supervisor **SHALL** assume the primary management responsibility for the safe operation of the plant under all conditions during his/her shift. The responsibility and authority of the Shift Supervisor **SHALL** be to maintain the broadest perspective of operational conditions affecting the safety of the plant as a matter of highest priority at all times when on duty in the Control Room.

5.3 Plant Emergency Organization

A plant emergency organization is designated to augment the normal operating crew. Provisions have been made for rapid assignment of plant personnel to the plant emergency organization during emergency situations. The Prairie Island Plant Emergency Organization is shown in Figure 1.

Various areas of responsibility are assigned to segments of the plant staff during emergency situations as depicted in Table 1 and Table 2. Table 1 shows the personnel available on-shift and the capability for additional personnel ~~within 30 minutes and 60 minutes of notification. Table 1 follows the guidance established by Table B-1 in NUREG 0654.~~to augment the on-shift staff within 90 minutes. Augmentation will be measured from the time of Declaration to Facility Activation.

5.3.1 Direction and Coordination

During the initial stages of an emergency condition at Prairie Island Nuclear Generating Plant, the Emergency Director has overall coordinating authority for Northern States Power Company – Minnesota (NSPM). The Emergency Director alone has the authority and responsibility to immediately initiate any emergency actions, including providing protective action recommendations to offsite authorities responsible for implementing offsite emergency measures.

When the Emergency Operations Facility (EOF) Organization is activated, the Emergency Manager (EM) and EOF staff will relieve the Emergency Director of all offsite responsibilities as soon as practical and assume the responsibility for the management of NSPM's overall response to the emergency. The Emergency Director can then direct the plant's efforts towards management of the onsite responsibilities.

The Shift Supervisor, of the affected unit, until properly relieved, **SHALL** remain in the Control Room at all times during accident situations, to direct the activities of control room operators.

Twenty-four (24) hour coverage for the Emergency Director position is provided by the Duty Shift Manager who assumes the responsibility of the interim Emergency Director at the onset of any emergency condition. If necessary, the Shift Supervisor of the unaffected unit may function as an alternate Emergency Director backing up the Shift Manager.

Figure 1 Prairie Island Plant Emergency Organization

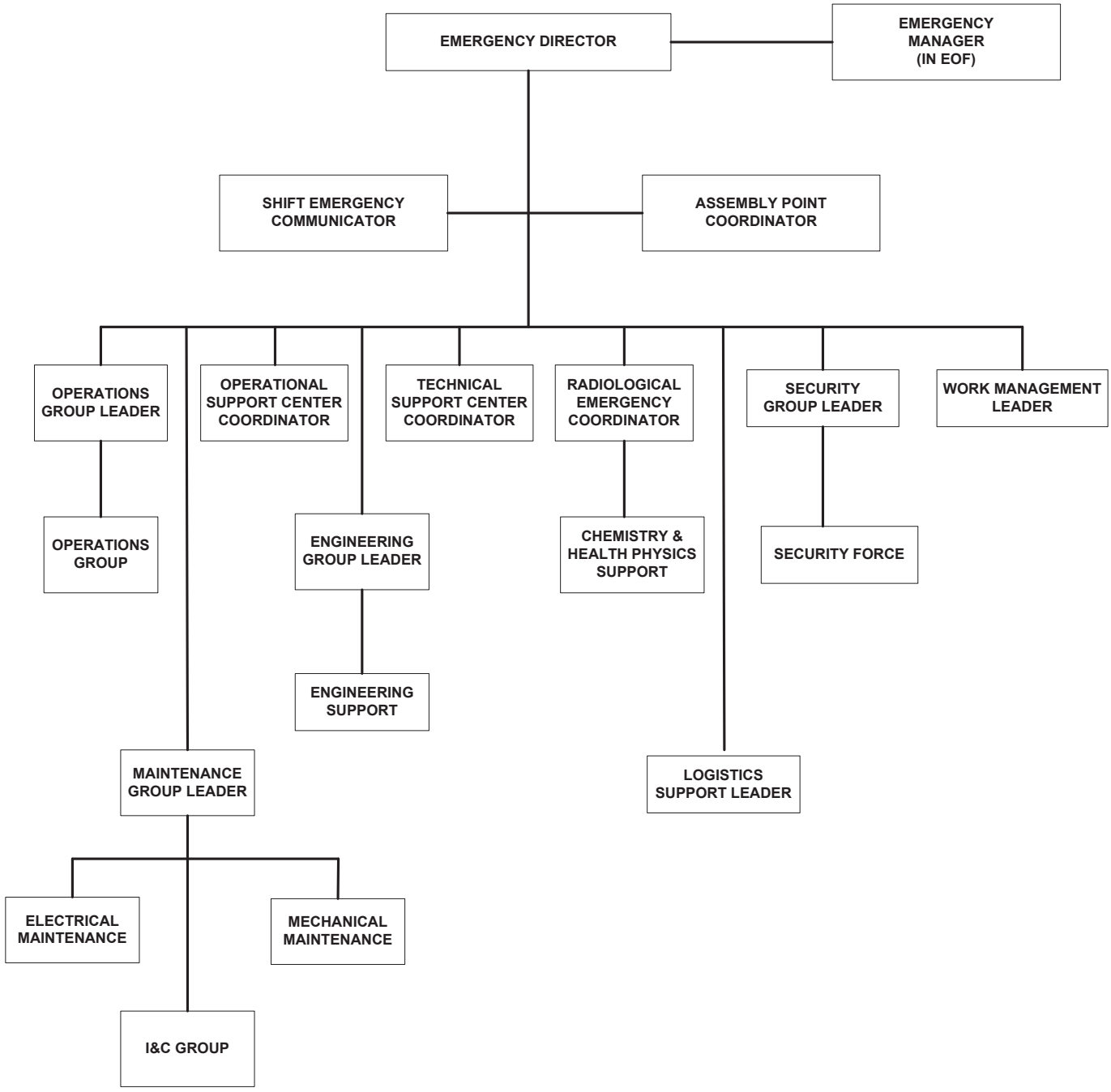


Table 1 Guidance for Augmentation of Plant Emergency Organization

Major Functional Area	Major Tasks	Position Title or Expertise	On-Shift	Capability for Additions ~~30 min~~	Capability for Additions ~~60~~ 90 min
Plant Operations and Shift Supervisor (SRO): Assessment of Control Room Reactor Operational Aspects		Shift Manager/ED	1		
		Unit Supervisors	2	~~-~~	-
		Reactor Operators (RO):	4	~~-~~	-
		Auxiliary Operators:	6	~~-~~	-
Notification/ Communication	Notify State, local and Federal personnel & maintain communication	Shift Emergency Communicator:	1	~~1~~	~~2~~3
Radiological Accident Assessment and Support of Operational Accident Assessment	Emergency Operations Facility (EOF) Director	Emergency Manager (as per duty roster):	-	~~-~~	1
	Offsite Dose Assessment	Chemistry Technician / Radiological Emergency Coordinator (REC):	~~-~~1	~~1~~	~~-~~1
	Offsite Surveys	Radiation Protection Specialist:	-	~~2~~	~~2~~ 4 (2)
	Onsite Surveys (out-of-plant)	Radiation Protection Specialist:	1	~~-~~	1
	In-plant Surveys	Plant Operators and/or Radiation Protection Specialist:	~~1~~ 2 (1,3)	~~1~~	1

Table 1 Guidance for Augmentation of Plant Emergency Organization

Major Functional Area	Major Tasks	Position Title or Expertise	On-Shift	Capability for Additions ~~30 min~~	Capability for Additions ~~60~~ 90 min
	Chemistry/ Radiochemistry	Chemistry Technician:	1	~~-~~	1
Plant System Engineering, Repair and Corrective Actions	Technical Support	Shift Technical Advisor	1	~~-~~	-
		Core/Thermal:	-	~~1~~	~~-~~1
		Electrical:	-	~~-~~	1
		Mechanical:	-	~~-~~	1
	Repairs and Corrective Actions	Mechanical Maintenance:	~~1~~(1)	~~-~~	1
		Rad Waste Operator:	-	~~-~~	1
		Electrical Maintenance:	~~1~~(1)	~~1~~	~~1~~2
		Instrument Control:	-	~~1~~	~~-~~1
Protective Actions (In-Plant)	Radiation Protection: a. Access Control b. HP Coverage for repair, corrective actions, search and rescue, first-aid & firefighting c. Personnel monitoring d. Dosimetry	Radiation Protection Specialist and/or Plant Operators:	~~1~~ ~~2~~(1,3)	~~1~~ ~~-~~	~~2~~3 -

Table 1 Guidance for Augmentation of Plant Emergency Organization

Major Functional Area	Major Tasks	Position Title or Expertise	On-Shift	Capability for Additions ~~30 min~~	~~60~~ 90 min
Fire Fighting			Fire Brigade per F5	Local Support	
Rescue Operations and First Aid			2(1)	Local Support	
Site Access Control and Personnel Accountability	Security, firefighting communications, personnel accountability	Security Personnel:	As per Security Plan		
		TOTAL	~~18~~20	~~9~~	~~15~~23

(1) May be provided by shift personnel assigned other functions.
(2) Monticello RPG will arrive within approximately 2-3 hours to augment and relieve the Prairie Island RPG of offsite surveys.
(3) Chemistry Technicians are cross-trained in Radiation Protection and chemistry/radiochemistry. The non-licensed plant operators are fully trained to conduct post-accident in-plant surveys~~, during the first hour of the emergency~~.

The above table was developed in accordance with 10 CFR 50 Appendix E. This staffing analysis is documented in F3-1.1, Emergency Plan On-Shift Staffing Analysis.

Table 2 Primary and Secondary Responsibilities of Plant Emergency Organization

P = Primary S = Secondary	Emerg Director	Shift Technical Advisor	SEC	REC	TSC Coord	OSC Coord	Assem Pt Coord	Operations Grp	Shift Supv	Chemistry Technician	Security	Fire Brigade	Radiation Protection Specialists	Maintenance	I&C	Engineers	Admin Servs		
Plant Operations	P							P	P										
Emerg Direction & Control	P																		
Notification and Comm	S		P		S	S					S								
Offsite Dose Assessment	S			P						~~S~~P			P						
Offsite Surveys	S			P									P						
Onsite (Out-of-Plt) Surveys	S			P				S					P						
In-Plant Surveys	S			P				S		P			P						
Chem-Radiochemistry	S			P						P			P						
Protective Action Recommendations	P			P															
Over-exposure Authorization	P			P															
Technical Support	S	P		S	P											P			
Repair and Corrective Actions	S			S	P	P		P						P	P	S			
Radiation Protection	S			P						P			P						
Fire Fighting	S							P				P		S					
First-Aid	S					P		P			P		P	S	S				
Search & Rescue	P					P		S			S	P	P	S	S				
Site Access Control	S										P								
Accountability	S						S				P								
Logistics Support	S																P		

The Shift Manager **SHALL** be relieved of the Emergency Director responsibilities when the designated Emergency Director arrives onsite. The Plant Manager or Designee **SHALL** be the designated Emergency Director and will be available with a pager on a twenty-four (24) hour basis. When the Plant Manager is unavailable, (e.g., out of town), the designated Emergency Director responsibility will be passed onto another Plant Manager designee who is a member of senior plant management. Specific personnel assignments to the Emergency Director position are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

The Shift Manager **SHALL** start the tasks assigned to the Emergency Director, (e.g., notification, activating onsite centers, etc.). These tasks **SHALL** be accomplished promptly and cannot wait for the designated individual to arrive at the plant site.

The Emergency Director's responsibilities are as follows:

A. Activation of onsite emergency organization -

1. Direct the activation of the onsite emergency response centers and monitor their habitability, and

2. Coordinate response of the plant onsite emergency organization.

B. Personnel accountability - During a plant evacuation the Emergency Director **SHALL** account for all personnel onsite within thirty minutes of the Site Area or General Emergency requiring the evacuation so that a search for missing personnel can be conducted. A continuous personnel accountability **SHALL** be maintained throughout the emergency. This responsibility may be delegated to a designated individual with assistance from the security force.

C. Radiological monitoring - The Emergency Director **SHALL** direct radiological monitoring of all personnel onsite and at the onsite assembly area, for contamination and/or excessive exposure. This responsibility may be delegated to the Radiation Protection Specialists or to a qualified operations member.

D. Exposure - The Emergency Director **SHALL** be responsible to authorize overexposures in excess of the normal limits (this responsibility may not be delegated).

E. Radiation Survey Teams - The Emergency Director **SHALL** direct the Radiation Survey Teams to obtain the necessary onsite and offsite samples and/or radiation surveys. This responsibility may be delegated to the Radiological Emergency Coordinator.

F. Offsite Dose Projections - The Emergency Director **SHALL** be responsible to project dose rates to the offsite population. This responsibility may be delegated to the Radiological Emergency Coordinator.

G. Protective Action - The Emergency Director **SHALL** be responsible for authorizing offsite Protective Action Recommendations (this responsibility may not be delegated and is relinquished to the Emergency Manager when the EOF is activated and operational).

H. Notification - The Emergency Director **SHALL** be responsible to ensure that the necessary offsite notifications are initiated and completed. This responsibility may be delegated to the Shift Emergency Communicator (SEC). The SEC may designate offsite communications to a qualified Communicator.

1. Immediate (within 15 minutes)

The initial notification message to State, local and tribal authorities, from the plant, **SHALL** contain the following information:

a Class of emergency
b Whether radioactivity is being released and in what form (liquid or gas)
c Potentially affected populace and area, if any
d Necessity of protective measures
e Brief description of the event

Other information, i.e., meteorological data, etc., are available to these authorities via the follow-up notification messages.

2. Subsequent Messages

The plant will continue to provide updating information to offsite authorities. As soon as possible after the initial notification of an Alert, Site Area, or General Emergency, as much of the following information that is known and appropriate will be forwarded to offsite authorities:

a Location of incident
b Name and telephone number of caller
c Date/time of incident
d Class of emergency
e Type of release (airborne, liquid, surface spill) and estimated duration
f Estimate of noble gas, iodine, and particulate release rates
g Prevailing weather conditions (wind speed, wind direction, temperature, atmospheric stability class, precipitation, if any)
h Actual or projected dose rates at site boundary
i Projected dose rate and integrated dose at 2, 5 and 10 miles and the Sectors affected.
j Survey results of offsite dose rates or any surface contamination
k Plant emergency response actions in progress
l Request for onsite support from offsite support organizations
m Prognosis for worsening or termination of event based on plant information

To provide ease in supplying the aforementioned information, a standardized form is used and incorporated into the implementing procedures.

I. Protracted Emergency Shift Coverage - The Emergency Director, with assistance from and coordination with other group Managers and Supervisors, **SHALL** ensure that work force requirements for all subsequent work shifts are determined and the necessary personnel are scheduled for the specific time period.

5.3.2 Plant Emergency Organization Coordinators

A. Technical Support Center Coordinator

The Technical Support Center (TSC) Coordinator **SHALL** be responsible for the general activation, operation and coordination of activities in the Technical Support Center (TSC). Specific personnel assignments to the TSC Coordinator are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

The responsibilities of the TSC Coordinator are:

1. Establish and verify radiological monitoring for the TSC;
2. Assist personnel performing the accountability check;
3. Coordinate activities of plant and non-plant personnel located in the TSC;
4. Periodically update personnel located in the TSC with appropriate information;
5. Maintain any necessary status boards;
6. Ensure technical guidance is provided to the Emergency Director and Control Room Operators on plant operations;
7. Establish or ensure that communications are established between all onsite emergency facilities and the EOF.
8. Ensure the Emergency Response Data System data link is established with the NRC’s emergency center.

B. Operational Support Center Coordinator

The Operational Support Center Coordinator **SHALL** be responsible for the general activation, operation, and coordination of activities in the Operational Support Center (OSC). Specific personnel assignments to the OSC Coordinator are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

The responsibilities of the OSC Coordinator are:

1. Establish and verify radiological monitoring for the OSC and the Control Room;

2. Coordinate activities of plant personnel located in the OSC to support plant operations as requested by the Control Room and TSC.

3. Assist personnel performing the accountability check in the OSC and the Control Room.

4. Maintain the communication systems in the OSC. A person may be designated to act as a communicator.

5. Periodically update personnel located in the OSC with appropriate information.

6. Control the use of equipment located in the emergency locker.

C. Assembly Point Coordinator

The Assembly Point Coordinator **SHALL** be responsible for the general operation of the assembly area. Specific personnel assignments to the Assembly Point Coordinator are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

The responsibilities of the Assembly Point Coordinator are:

1. Verify that radiological monitoring has been established for the Assembly Point.

2. Coordinate activities of all personnel (plant and non-plant) located at the Assembly Point.

3. Assist the Emergency Director in performing the accountability check, as necessary.

4. Maintain the communication systems. A person may be designated as the communicator, if necessary.

5. Control the use of equipment located in the Emergency Locker.

6. Update all personnel with appropriate information when directed by the Emergency Director.

7. Provide instructions to personnel when they are released from the assembly point for reentry or transport offsite.

D. Radiological Emergency Coordinator

The Radiological Emergency Coordinator (REC) **SHALL** be responsible for radiological accident assessment, onsite and offsite. The REC should report to the Technical Support Center when the TSC is activated. Upon activation of the EOF, the Radiation Protection Support Supervisor will assume responsibility for the offsite activities. The offsite survey teams will initially be comprised of individuals from the Prairie Island Plant. Upon activation of the EOF, the offsite survey teams will be comprised of individuals from the Monticello Nuclear Generating Plant. The REC should transfer the responsibility for offsite accident assessment to the Radiation Protection Support Supervisor at the EOF. Specific personnel assignments to the Radiological Emergency Coordinator are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

The responsibilities of the REC are:

1. Offsite dose assessment
2. Formulating offsite protective action recommendations
3. Offsite surveys
4. Onsite surveys
5. Chemistry
6. Radiochemistry
7. Onsite Radiation Protection for:
   - a Access Control
   - b Damage control and repair
   - c Search and rescue
   - d First-aid
   - e Personnel monitoring and decontamination
   - f Dosimetry

5.3.3 Plant Shift Organization

The following groups comprise the plant's shift organization. Brief descriptions of their emergency responsibilities are included.

A. Operations Group

The Operations Group consists of the Operations Manager, Asst. Operations Manager, Shift Managers, Shift Technical Advisors, Shift Supervisors, and all operators.

The Operations Group **SHALL** have responsibility for:

1. Plant Operations and assessment of operational aspects of the emergency.

2. Rad Waste equipment operation

3. Emergency radiation surveys

4. Short term damage control and repair for electrical, mechanical, and I&C equipment.

B. Security Group

The Security Group consists of the Security Manager, the Security Staff, and the contract Security Force.

The Security Force **SHALL**:

1. Carry out the plant security and Access Control program.
2. Maintain strict personnel accountability onsite.
3. Assist communications efforts when necessary.
4. Assist in first aid treatment.

C. Shift Manager

The Shift Manager (SM) **SHALL** be onsite continuously. The Shift Manager **SHALL** assume overall coordination and control in the Control Room and provide direction as necessary to the Shift Supervisor.

The Shift Manager **SHALL**:

1. Assume the duties of the interim Emergency Director until relieved by the designated Emergency Director. Portions of the E-Plan implementation may be delegated to other members of the plant staff as the condition of the plant dictate.

2. Assess the emergency condition, event evaluation, and safety related aspects of the plant.

D. Shift Technical Advisors

Provide technical and engineering support in the area of accident assessment.

E. Shift Emergency Communicator (SEC)

The Shift Emergency Communicator (SEC) **SHALL** be onsite continuously. The SEC is responsible for initial notification to the offsite agencies and maintaining communications during emergency conditions. The SEC may designate offsite communications to a qualified Communicator.

NOTE:	1. When the EOF Organization is activated and the EOF is functional, communications with the offsite agencies and personnel will be maintained by the EOF personnel. 2. As the emergency organization is activated, additional communicators from TSC support personnel should augment the plant staff to assist in communication efforts.

F. Fire Brigade

The Fire Brigade should consist of:

1. Brigade Chief - Unit 1 Turbine Building APEO or as designated by the Shift Manager.

2. Assistant Chief - Any Qualified APEO.

NOTE:	Usually the APEO from the affected building SHALL fulfill the duties of the Brigade Chief in his absence.

3. Fire Fighters - BOP Operators.

4. Runner - As designated to accompany fire department, operate equipment, bring additional equipment to fire scene.

The Fire Brigade **SHALL** be responsible for firefighting and primary responders for Search and Rescue, as necessary.

The Red Wing Fire Department should provide emergency assistance and **SHALL** be called immediately on report of fire. Other plant personnel on site may be called on for emergency work or called to plant for emergency service.

G. Radiation Protection Specialist

The Radiation Protection Organization consists of ~~two~~ three Radiation Protection Specialists (RPS) onsite at all times. The RPS is responsible for conducting routine and special surveys, maintaining Access Control, writing RWP's and providing job coverage as required. Qualified operations personnel on-shift are also trained to perform radiation surveys during emergency conditions.

H. Chemistry Technician

~~One~~ Two Chemistry Technician~~s is~~ are onsite at all times. ~~The~~ One Chemistry Technician is responsible for chemistry~~,~~ and radiochemistry~~, dose assessments, and offsite dose projections~~. The second Chemistry Technician performs the dose assessment function until relieved by the augmented ERO. The Chemistry Technician~~s is~~ are also cross-trained to support the Radiation Protection Specialist functions described in Section G above.

5.3.4 Plant Emergency Staff Augmentation Groups

A. Maintenance Group

The Maintenance Group consists of all mechanical maintenance personnel, all plant electricians and I&C Specialists. The onsite Emergency Organization includes the Maintenance Manager, who should report to the Technical Support Center (TSC); and the Maintenance Supervisors (mechanical, electrical and I&C), and designated Electricians who should report to the Operational Support Center (OSC). The mechanical, electrical and I&C maintenance staff in the OSC can be further augmented or decreased as emergency conditions dictate.

The Mechanical, Electrical, and I&C Maintenance Group **SHALL** have responsibility for:

1. Supporting the repair and corrective actions for the mechanical, electrical, and I&C systems in support of emergency response and recovery actions.

2. Supporting the Search and Rescue effort.

B. Radiation Protection Group and Chemistry Group

The Radiation Protection and Chemistry Groups consists of the Radiation Protection Manager & Chemistry Manager and all members of the Radiation Protection and Chemistry Groups. Radiation Protection and Chemistry Managers and other designated group members should report to the Technical Support Center. Other Radiation Protection Specialists and Chemistry Technicians should report to the Operational Support Center.

The responsibilities of the Radiation Protection and Chemistry Groups are:

1. Offsite Dose Assessment

2. Offsite Surveys

3. Onsite Surveys

4. Chemistry

5. Radiochemistry

6. Radiation Protection for:

   a Access Control
   b Damage control and repair
   c Search and rescue
   d First aid
   e Fire fighting
   f Personnel monitoring and decontamination
   g Dosimetry

C. Engineering Group

The Engineering Group consists of Systems, Programs, Design and Equipment Reliability.

Upon activation of the onsite emergency organization, Systems and Programs Engineering Managers and designated engineers assigned to the emergency organization should report to the Technical Support Center. Other designated engineers may be requested to further augment engineering support in the TSC.

The Engineering Group **SHALL** have responsibility for:

1. Providing technical support for plant system engineering on electrical/mechanical systems.

2. Providing technical support for operating radioactive waste control systems.

3. Providing core parameter analysis to determine current core status.

4. Providing plant parameter trending and analysis utilizing the Emergency Response Computer System (ERCS).

5. Projecting possible loss of key equipment and its consequences.

6. Providing technical support for emergency repairs and corrective actions on electrical/mechanical systems.

7. Update TSC staff of potential problems and developments.

D. Logistics Support Group

The Logistics Support Group consists of Business Support Group (Administration Services and Document Control), Plant Services, and Site Materials.

Business Support Group **SHALL** supply logistical support in their area of expertise. Personnel in these areas may be called in to provide support for emergency response on an “as needed” basis.

Site Materials **SHALL** provide assistance in retrieving the parts necessary for an emergency response.

Plant Services **SHALL** support an emergency response by providing necessary assistance by the Nuclear Plant Service Attendants.

5.4 EOF Organization

The EOF (Emergency Operations Facility) Organization consists of a Direction and Control Group and three subordinate groups. The EOF Organization is staffed by personnel from the site's Engineering and Project Management groups and Prairie Island Training Center staff. The Prairie Island EOF Organization is shown in Figure 2.

The EOF should be staffed and ready to assume its emergency responsibilities from the TSC within ~~about 1 hour of notification~~90 minutes of Classification of an ALERT or higher. Transfer of these responsibilities from the TSC to the EOF will be coordinated between the TSC and EOF and depend on the status of the TSC's emergency response. ~~Actual transfer of offsite emergency response responsibilities to the EOF should occur within 60 to 90 minutes of notification.~~

5.4.1 EOF Direction and Control

The Emergency Manager is responsible for overall direction and control of NSPM's emergency response effort. Designated members of management staff the Emergency Manager position in the EOF. Specific personnel assignments to the Emergency Manager position are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory. The Emergency Manager relieves the Emergency Director of the following responsibilities:

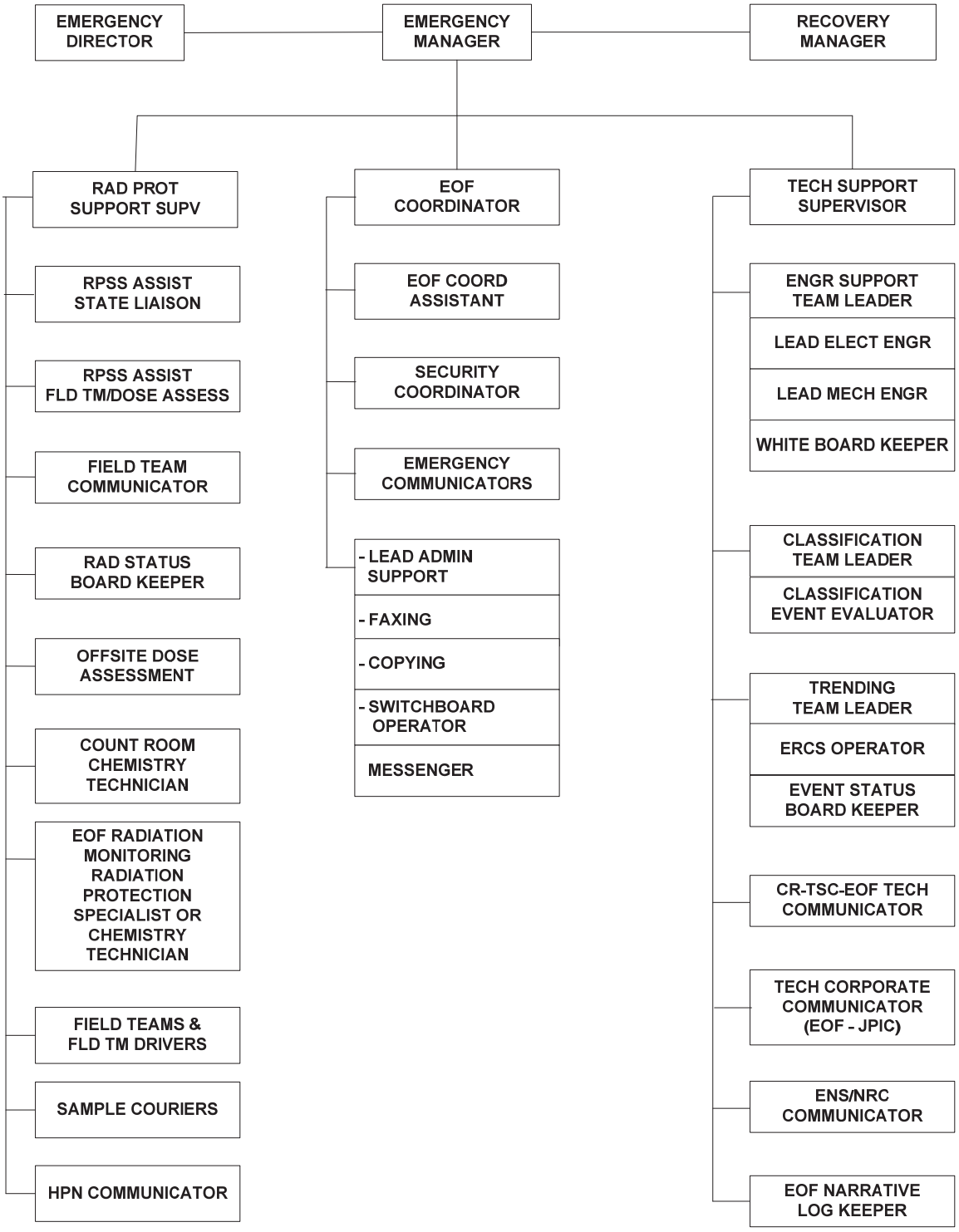
A. Off-site dose projections and coordination and direction of the utility off-site radiological monitoring teams.

B. Authorization of emergency classification changes. The Emergency Director retains the primary responsibility for re-classifications and makes recommendations to the Emergency Manager who has the responsibility to review and authorize the new classification.

C. Authorization of offsite Protective Action Recommendations.

D. Communications with off-site authorities including Federal, State, Local and Tribal authorities and MT & PI Offsite executive management located at the Minnesota State Emergency Operations Center.

Figure 2 Prairie Island EOF Organization



Other responsibilities of the Emergency Manager include:

A. Coordinate the emergency response efforts of other offsite support personnel assisting the plant organization.

B. Obtain and coordinate the services of outside consultants and vendors.

C. Advise utility management on matters related to emergency response efforts and needed resources to support the effort.

5.4.2 EOF Technical Support Group

The EOF Technical Support Group consists of select personnel from the site's Engineering and Project Management groups and Training Center staff. The Technical Support Supervisor is staffed by senior personnel and reports to the Emergency Manager. The Technical Support Group is responsible for trending critical parameters, engineering evaluation in support of the TSC Engineering Group, technical assessment and advising the Emergency Manager on technical matters related to the event.

5.4.3 EOF Radiation Protection Support Group

The EOF Radiation Protection Support Group is staffed by select personnel from the Training Center, plant Radiation Protection and Chemistry Groups and Emergency Plan Group. The Radiation Protection Support Supervisor position is staffed by senior personnel qualified in radiation assessment and reports to the Emergency Manager. The Radiation Protection Support Group includes plant Chemistry personnel for off-site dose projection and EOF Count Room operation and Nuclear Plant Service Attendants who function as sample couriers and drivers for off-site radiological monitoring teams. Radiation Protection Support Group responsibilities include:

A. Direction and coordination of the utility off-site radiological monitoring teams.

B. Off-site dose projection.

C. EOF Count Room activation and operation.

D. EOF habitability, personnel monitoring and decontamination (as necessary).

E. Communications with state assessment groups on matters related to dose projections and off-site protective action recommendations.

F. Staffing the Health Physics Network (HPN) and communications with the NRC (as necessary).

The Radiation Protection Support Supervisor advises the Emergency Manager on matters related to actual or potential radiological impact on the environment, off-site protective action recommendations, and EOF habitability.

5.4.4 EOF General Support Staff

The EOF General Support Staff consists of the EOF Coordinator, emergency communicators, administrative and security support personnel. The EOF Coordinator position is staffed by senior Training Center or site Engineering and Project Management personnel and reports to the Emergency Manager. The EOF Coordinator is responsible for activation and operation of the EOF and assists the Emergency Manager with administrative duties. The emergency communicators, EOF Security Coordinator and Administrative Staff report to the EOF Coordinator. The emergency communicators are responsible for communications with offsite agencies as directed by the Emergency Manager. The Administrative Staff is responsible for emergency document control, recording and document distribution at the EOF. An EOF Coordinator Assistant is responsible for general logistics support and assisting the EOF Coordinator. The EOF Security Coordinator reports to the EOF Coordinator. Responsibilities of EOF Security include EOF access and dosimetry issuance to EOF personnel.

5.5 Recovery Organization

The establishment of the Recovery Organization will be dependent upon the nature and severity of the event or plant conditions. In general terms, an Unusual Event or Alert may be terminated without establishing a special Recovery Organization while a Site Area Emergency or General Emergency will probably necessitate the establishment of a Recovery Organization. The Recovery Organization will manage the overall recovery or post-accident outage plans as work is done to return the plant to a normal operational or shutdown status.

The Recovery Manager is mainly responsible for management of the recovery phase and will perform their initial tasks as directed by the Emergency Manager. The Recovery Manager will report to the Emergency Operations Facility and begin to prepare for the transition to Recovery, as necessary. If Recovery is imminent, the Recovery Manager will establish a recovery or post-accident outage organization following the site's plant event recovery protocols.

5.6 Augmentation of Plant and EOF Emergency Organizations

5.6.1 Offsite Support Response

The emergency response plan for Prairie Island NGP is designed to be initially implemented independent of any offsite support. However, the onsite effort will be augmented with offsite support resources as described in the MT & PI Offsite Nuclear Emergency Plan.

It is the purpose of the offsite support organization to augment the onsite response effort with offsite support resources as soon as practical and as needed by the Prairie Island Site staff. Such areas of support include: Government Agency Interface, Logistics Support, News Media Interface and Utility Executive Management Interface.

5.6.2 Monticello Radiation Protection Group Support

The Monticello Nuclear Generating Plant is located approximately 100 miles northwest of Prairie Island NGP. The Monticello Radiation Protection and Chemistry Groups are available for supporting the Prairie Island Radiation Protection Group with personnel and equipment during any emergency condition at Prairie Island. Designated individuals from the Monticello plant would arrive at Prairie Island in approximately two to three hours with all the equipment necessary to assume responsibility for offsite monitoring. The Prairie Island Radiation Protection Group may then dedicate their activities to onsite responsibilities. The Monticello Radiation Survey Teams will be under the control of the Radiation Protection Support Supervisor (RPSS), as directed by the Emergency Manager, as soon as the EOF has been activated.

5.6.3 Westinghouse Support

Westinghouse emergency assistance is available on a twenty-four hour per day, seven day per week basis. Westinghouse will activate all appropriate features of the Westinghouse Emergency Response Plan to support the plant needs. When activated, the Westinghouse Emergency Response Plan becomes a functioning organization, comprised of individuals with unique technical, managerial and communication skills and experience, necessary to:

A. Make an early assessment of the situation

B. Provide early assistance to the utility

C. Mobilize appropriate Westinghouse critical skills and functions

D. Initiate timely, accurate communications to involved and interested parties

A Site Response Team may be dispatched to the site to obtain a first hand assessment of actual conditions and establish communications from the site to the Westinghouse response center, as deemed necessary.

5.6.4 Local Support Services

A. Fire Fighting

The Red Wing Fire Department will provide assistance in the event of a fire occurring at the plant. The duties and responsibilities of the Plant Fire Brigade, insuring complete coordination with the Fire Department, are covered in the Operations Manual, Section F5, Fire Fighting.

B. Hospital and Medical Support

Medical support and treatment for non-radiological injuries is provided by the Mayo Clinic Health System, both of which are located in Red Wing, Minnesota. Radiological related injuries are treated at the medical center which is the primary treatment facility. Emergency plans have been prepared, and training of medical center personnel is accomplished on an annual basis.

Regions Hospital in St. Paul, Minnesota is designated as the definitive care center for Prairie Island Nuclear Generating Plant. Regions Hospital may be used for radiation casualties, severe burn casualties, and other non-radiation injuries with use of an appropriate medical air transport service.

C. Ambulance Service

The Red Wing Ambulance Service will provide service to the Prairie Island Nuclear Generating Plant. Training and participation in drills ensures that personnel involved in the transportation of radiation victims are knowledgeable in use of proper procedures and handling methods. Procedures are covered in the Operations Manual, Section F4, Medical Support and Casualty Care.

5.7 Coordination with Governmental Response Organizations

5.7.1 Minnesota Division of Homeland Security and Emergency Management (HSEM)

The Minnesota Division of Homeland Security and Emergency Management has the responsibility for notification and coordination of Minnesota State Agencies in the event of a major emergency at Prairie Island.

The MN HSEM is notified by Prairie Island NGP. In the event of an emergency situation at the plant, the MN duty officer will immediately call the MN Department of Health, the Governor's Authorized Representative and other state agencies with emergency assignments to coordinate the implementation of any emergency procedures. The state agencies responsible for emergency procedures have established a system of twenty-four hour communications.

5.7.2 Minnesota Department of Health (MDH)

The Minnesota Department of Health (MDH) is responsible for providing radiological expertise in the State Emergency Operations Center in conjunction with the MN HSEM.

The Minnesota Department of Health will interpret data and participate in recommending protective actions to the Governor's Authorized Representative.

5.7.3 Wisconsin Emergency Management

The Wisconsin Emergency Management (WEM), has the responsibility for notification and coordination of Wisconsin state agencies in the event of a major emergency at Prairie Island NGP.

In the event of an emergency situation at the plant, Prairie Island NGP will notify the WEM duty officer who will notify the Wisconsin Department of Health Services (Radiation Protection Section) and other state agencies with emergency assignments, to coordinate the implementation of any emergency procedures. The state agencies responsible for emergency procedures have established a system of twenty-four hour communications.

5.7.4 Wisconsin Department of Health Services (DHS)

The Wisconsin Department of Health Services (DHS) is responsible to prevent exposure to ionizing radiation in amounts which are detrimental to health according to nationally accepted standards.

The Wisconsin DHS, Radiation Protection Section, is responsible for coordination of radiation response activities in the State of Wisconsin. In the event of an emergency at Prairie Island NGP, DHS, Radiation Protection Section will be concerned with monitoring the air and water about the plant to assure that the public is not exposed to levels of radioactive pollutants potentially detrimental to public health. DHS's facilities are located in Madison, Wisconsin.

Due to the distance and time required for the Wisconsin Radiation Protection Response Team to arrive at the affected area, the State of Minnesota Department of Health, will provide mutual support to Wisconsin, as spelled out in the letter of agreement in the Wisconsin State emergency operations plan.

5.7.5 Goodhue, Dakota and Pierce County Sheriffs

The Sheriff's Departments will notify all necessary local civil support groups in the event of an accident. The Sheriff is responsible for protection of the general public and can provide personnel and equipment for evacuation, relocation and isolation.

5.7.6 Goodhue, Dakota, Pierce County and City of Red Wing Emergency Management

The Goodhue, Dakota, Pierce County and City of Red Wing Emergency Management Organizations have the responsibility for notification and providing direction to residents in the event of a major emergency that affects their respective area of responsibility.

5.7.7 Prairie Island Indian Community

The Prairie Island Indian Community has an Emergency Operations Plan that includes the description of tribal responsibilities during a nuclear plant declared event. The Prairie Island Nuclear Generation Plant conducts emergency notifications to the Treasure Island Casino security dispatch center who, in turn, notifies appropriate members of the Prairie Island Indian Community and their organization.

5.7.8 Minnesota State Patrol

The Minnesota (MN) State Patrol has the responsibility to protect the general public by providing personnel and equipment to re-route traffic in the event of an emergency situation. Plans have been made for re-routing federal and state highways. Signs and equipment required for re-routing will be stored in the areas where they would be needed to facilitate highway closings. The MN Department of Transportation would be notified by the MN State Patrol to erect the signs.

5.7.9 Minnesota Department of Transportation

The MN Department of Transportation will assist the MN State Patrol in blocking and re-routing traffic around the plant site. In addition to the necessary personnel; vehicles, signals, and barriers for setting up and maintaining detour routes are available.

5.7.10 Canadian Pacific Railway-CP Railway (Soo Line)

In an emergency situation, CP Rail will make every reasonable effort to expedite unblocking the road/railroad crossing near Prairie Island NGP. The dispatcher will also provide routing assistance during an emergency at Prairie Island NGP.

5.7.11 Burlington Northern Santa Fe (BNSF) Railway

The dispatcher will provide routing assistance during an emergency at Prairie Island NGP as per the Minnesota State emergency operations plan.

5.7.12 Department of the Army, Corps of Engineers, Lock & Dam #3

The Corps of Engineers at Lock & Dam #3 will be notified by the Minnesota Duty Officer of an emergency at Prairie Island NGP. The Lock and Dam personnel will notify all tows within radio range of impending evacuations and assist in evacuation of personnel at the Lock and Dam.

NOTE:	**A complete description of response capabilities, organizational resources, activation plans, designations of emergency operations centers and letters of agreement are available in Minnesota and Wisconsin's state emergency operations plans.**

5.7.13 Nuclear Regulatory Commission (NRC)

The basic responsibilities of the NRC are to monitor, assess, and, if necessary, direct the utility to take actions to protect the health and safety of the public. For a radiological incident at a commercial power plant, the NRC is the Lead Federal Agency (LFA). The LFA is responsible for coordinating all Federal onscene actions. The NRC will coordinate Federal assistance to States and local organizations.

A principal role of the LFA is to assist the State in interpretation and analysis of technical information as a basis for making decisions about protective actions. This assistance will begin early in an incident from the NRC Operations Center in Rockville, MD, and later, from the utility's emergency operations facility on scene. The NRC is an independent reviewer of the actions the utility is taking to correct the initiating and related problems. The NRC will assess actual or potential offsite impacts as well, and will make an independent evaluation of Protective Action Recommendations, if necessary. As the LFA, the NRC has the responsibility for coordinating the release of Federal information to the media and others. The NRC will conduct most public information activities from the utility's Joint Information Center (JIC). The NRC also will keep the White House and Congress informed on all aspects of the event.

The NRC is responsible for giving the best possible advice at a given time to the States and will not limit its involvement to presenting a series of options.

The NRC also administers the Price-Anderson Act to ensure that the public that is affected by the event has adequate financial assistance to address most emergency needs.

5.7.14 Department of Energy (DOE)

Among its responsibilities as a support agency, DOE will coordinate the offsite radiological monitoring and assessment for the Lead Federal Agency (LFA) and the State during the initial phases of the emergency. It will maintain a common set of offsite radiological data and provide an appropriate interpretation of the data to the LFA and the State. DOE will manage the Federal Radiological Monitoring and Assessment Center (FRMAC), which is a multi-agency facility. DOE will conduct environmental monitoring, including air, ground, and water.

Their immediate objective is to rapidly dispatch a Radiological Assistant Program (RAP) Team to the scene to assess the hazard to the public and make recommendations to the authorities for the protection of the public. The Planning Chief in the State EOC is the designated Minnesota authority to request RAP assistance, as stated in the Minnesota state plan, and the Wisconsin DH, Radiation Section, is the designated Wisconsin authority to request RAP assistance for Wisconsin, as stated in the Wisconsin state plan.

6.4.2 Radiological Surveys

The Radiation Protection Group **SHALL** be responsible for all radiological surveys and personnel monitoring both onsite and offsite. The non-licensed operators of the Operations Group are also trained to conduct post-accident in-plant surveys during the first hour of the emergency. The Emergency Director has the responsibility for directing all radiation safety during the emergency.

The Radiation Protection Specialists may be divided into three emergency Radiation Survey Teams. Two teams are assigned offsite duties such as radiation surveys, air samples, or liquid sampling. The two offsite survey teams will conduct a search for the plume and obtain dose rates, and iodine, particulate or gaseous samples at pre-designated sample locations. Plume exposure pathway maps with pre-designated sample locations are contained in the emergency survey kits. The third team is assigned duties onsite such as radiation surveys, sampling (airborne or liquid) and sample analysis using the equipment available onsite and/or the EOF Count Room facility. Silver zeolite adsorbers are used to collect airborne iodine samples, both onsite and offsite. Silver zeolite adsorbers eliminate the problem of entrapped noble gases on the iodine adsorber, allowing a much lower detection sensitivity. Iodine samples may be analyzed in the EOF Counting Room.

The Radiation Survey Teams are activated via the ERO Auto Dial System and/or the ERO Pager Network or the telephone system. ~~If the emergency occurs during normal working hours, the teams will be activated and respond within 10 minutes. If the emergency occurs during off hours, the~~ The teams will be activated and respond within ~~thirty~~ ninety (~~30~~90) minutes of declaration. Designated Emergency Lockers contain emergency survey kits, which include portable instruments, battery operated air samplers, liquid sampling equipment, and communication equipment.

After the initial offsite surveys are completed, the teams assigned offsite duties may be relieved by Monticello Radiation Protection Specialists who will continue to perform any offsite surveys assigned by the Emergency Manager. The Prairie Island Survey Team members may concentrate their efforts and resources to onsite responsibilities.

ENCLOSURE 1, ATTACHMENT 2

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

LICENSE AMENDMENT REQUEST

License Amendment Request (LAR) for Revision to Staff Augmentation Times in the Prairie Island Nuclear Generating Plant (PINGP) Emergency Plan (EP)

CLEAN COPY PAGES OF EMERGENCY PLAN SECTIONS 1.0, 2.0, 5.0 AND 6.4.2

(38 pages follow)

1.0 DEFINITIONS

Listed below are some terms in this plan along with the definitions that should be applied to these terms when they are used in this plan.

1.1 Assessment Action - Actions taken during or after an accident to obtain and process information necessary to make decisions regarding emergency measures.

1.2 Corrective Actions - Emergency measures taken to terminate an emergency situation at or near the source in order to prevent or minimize a radioactive release, e.g., shutting down equipment, firefighting, repair and damage control, etc.

1.3 Emergency Action Level (EAL) – A predetermined, site-specific, observable threshold for a plant Initiating Condition (IC) that places the plant in a given emergency class. An EAL can be: an instrument reading; an equipment status indicator; a measurable parameter (onsite or offsite); a discrete, observable event; results of analyses; entry into specific emergency operating procedures; or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

1.4 Emergency Class: - One of a minimum set of names or titles, established by the Nuclear Regulatory Commission (NRC), for grouping of normal nuclear power plant conditions according to (1) their relative radiological seriousness, and (2) the time sensitive onsite and off site radiological emergency preparedness actions necessary to respond to such conditions. The existing radiological emergency classes, in ascending order of seriousness, are called: Notification of Unusual Event (UE), Alert, Site Area Emergency (SAE), and General Emergency (GE).

1.5 Emergency Director (ED) - The Plant Manager or designee. This individual has overall responsibility and authority for managing the emergency effort within the plant. This person will also manage efforts external to the plant until the Emergency Operations Facility (EOF) Organization can relieve the ED of external tasks.

1.6 Emergency Manager (EM) - A designated member of site management. This person has the authority and responsibility for the management of (NSPM) Northern States Power Company – Minnesota overall response to an emergency. The EM will assume command and control at the Emergency Operations Facility and direct the NSPM response efforts.

1.7 Emergency Planning Zones - a defined area around the plant to facilitate emergency planning by state and local authorities, to assure that prompt and effective actions are taken to protect the public in the event of a release of radioactive material. It is defined for:

1.7.1 Plume Exposure Pathway - a 10 mile radius around the plant where the principal exposure source is: (1) whole body exposure to gamma radiation from the plume and from deposited material; and (2) internal exposure from the inhaled radionuclides deposited in the body (Short Term Exposure).

1.7.2 Ingestion Exposure Pathway - a 50 mile radius around the plant where the principal exposure would be from the ingestion of contaminated water or foods such as milk or fresh vegetables (Long Term Exposure). The ingestion exposure pathway includes the plume exposure pathway.

1.8 Emergency Worker - Any individual involved in mitigating the consequences of an emergency situation and/or minimizing or preventing exposure to the offsite population. The emergency worker category includes emergency workers at the plant as well as individuals who are engaged in public service emergency activities - firemen, policemen, medical support, and certain public officials. These are people who voluntarily place themselves as emergency workers.

1.9 Exclusion Area - The area surrounding the plant that is under direct Prairie Island Nuclear Generating Plant control. This includes the Corps of Engineering land north of plant and the islands located in the Mississippi River east of plant. It is sized such that any individual located on its boundary would not exceed 25 REM whole body or 300 REM thyroid from I-131 for two hours immediately following the design basis accident (approximately 2340 feet out to boundary).

1.10 Facility Activation – An Emergency Response Facility is activated when the minimum staff per Table 1 is available and the facility is ready to assume its assigned functions under the Emergency Plan and relieve the on-shift staff of those functions. (Although the facility may be ready, the on-shift relief may be postponed in the interest of completing critical tasks prior to turnover.)

1.11 Initiating Condition (IC): - One of a predetermined subset of nuclear power plant conditions when either the potential exists for a radiological emergency, or such an emergency has occurred.

1.12 Northern States Power Company – Minnesota (NSPM) d/b/a Xcel Energy - Operator of the Prairie Island Nuclear Generating Plant.

1.13 Protective Actions - Emergency measures taken before or after a release of radioactive materials in order to prevent or minimize radiological exposures to the population.

1.14 Protective Action Guides (PAG) – Projected dose to individuals, that warrants protective action prior to and/or following a radioactive release.

1.15 Recovery Actions - Actions taken after an emergency to restore the plant to normal.

1.16 Xcel Energy - Operating Utility of Northern States Power Company – Minnesota.

2.0 SCOPE AND PURPOSE

In accordance with license conditions, 10CFR Part 50, and NRC guidance, the Northern States Power Company – Minnesota (NSPM) has developed and implemented a radiological emergency response plan for the Prairie Island Nuclear Generating Plant (PINGP) and a joint off-site plan for the PINGP and the Monticello Nuclear Generating Plant. As asset owner NSPM, and Xcel Energy, the operating utility, retain all owner obligations.

This Emergency Plan is applicable to Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2.

In any emergency situation at Prairie Island, the initial response to activate the Emergency Plan is accomplished by the plant staff and, if needed, immediate actions may be required by local support agencies. The plant, during initial stages of the emergency situation, must function independently coordinating both onsite and offsite activities. It is expected that within approximately 2 to 3 hours, the plant staff will be augmented by other segments of the overall Monticello & Prairie Island (MT & PI) Offsite Emergency Response Organization (EOF staff, Monticello Field Teams and other company support staff). The augmented response organization will assume those tasks external (offsite) to the plant, thus allowing the plant staff to be responsible for all onsite activities. This plan covers the actions and responsibilities of the PINGP Emergency Organization and the Emergency Operations Facility Organization.

The purpose of the plan is to describe the following:

2.1 Organization and actions within the plant to control and limit the consequences of an accident.

2.2 Organization and actions controlling site and offsite activities in the event of an uncontrolled release of radioactive material. This includes notification of and coordination with required offsite support agencies.

2.3 Identifying and evaluating the consequences of accidents that may occur and affect the public and plant personnel.

2.4 Describing the protective action levels and actions that are required to protect the public and plant personnel in the event of an accident.

2.5 Consideration necessary for the purpose of reentry and short-term recovery.

2.6 Arrangements required for medical support in the event of injury.

2.7 Arrangements required for fire fighting support in the event of major fires requiring outside support.

2.8 The training necessary to assure adequate response to emergencies.

The Emergency Plan is dependent upon various standing plant operating, abnormal operating, emergency operating, plant safety, radiological control and security procedures and the Emergency Plan Implementing Procedures for the implementation of the plant's response to the spectrum of emergency situations.

PINGP has procedures in place that implement on-site protective actions and personnel accountability during security events that are appropriate for plant and environmental conditions.

Coordination between plant, state, local and tribal authorities is defined in the Minnesota and Wisconsin state emergency operations plans, Goodhue, Dakota and Pierce county emergency plans and the Prairie Island Indian Community's emergency plan. Goodhue, Dakota and Pierce Counties have, formulated for their respective areas, individual evacuation plans which are included in the respective state plans.

Monticello & Prairie Island (MT & PI) offsite response is detailed in the Corporate Nuclear Emergency Plan.

5.0 ORGANIZATIONAL CONTROL OF EMERGENCIES

5.1 Normal Site Organization

The normal site organization is comprised of the plant organization and several other site support organizations. The normal site organization can be accessed on the Prairie Island web page. Responsibilities and authorities of the various functional groups are delineated in plant Administrative Work Instructions.

5.2 Normal Plant Organization

The normal plant operating crew is staffed and qualified to perform all actions that may be necessary to initiate immediate protective actions and to implement the emergency plan and is designated as the responsible group for such actions. The normal plant organization can be accessed on the Prairie Island web page.

The Plant Manager has overall responsibility for the safe, efficient operation of the plant and for compliance with operating license requirements. The Plant Manager **SHALL** select, train and supervise a qualified staff.

The Shift Manager reports directly to the Assistant Operations Manager who reports directly to the Operations Manager who reports directly to the Plant Manager. The Shift Manager is responsible for the direction and coordination of the Shift Supervisors on his/her shift to perform operations in accordance with the administrative controls and operating procedures. The Shift Manager coordinates activities with other plant groups as required to maintain the safe operation of the plant.

The Shift Supervisor reports to the Shift Manager. The Shift Supervisor is the single focal point for directing and coordinating the operations group, maintenance group and the plant security activities during his/her shift. The Shift Supervisor **SHALL** assume the primary management responsibility for the safe operation of the plant under all conditions during his/her shift. The responsibility and authority of the Shift Supervisor **SHALL** be to maintain the broadest perspective of operational conditions affecting the safety of the plant as a matter of highest priority at all times when on duty in the Control Room.

5.3 Plant Emergency Organization

A plant emergency organization is designated to augment the normal operating crew. Provisions have been made for rapid assignment of plant personnel to the plant emergency organization during emergency situations. The Prairie Island Plant Emergency Organization is shown in Figure 1.

Various areas of responsibility are assigned to segments of the plant staff during emergency situations as depicted in Table 1 and Table 2. Table 1 shows the personnel available on-shift and the capability for additional personnel to augment the on-shift staff within 90 minutes. Augmentation will be measured from the time of Declaration to Facility Activation.

5.3.1 Direction and Coordination

During the initial stages of an emergency condition at Prairie Island Nuclear Generating Plant, the Emergency Director has overall coordinating authority for Northern States Power Company – Minnesota (NSPM). The Emergency Director alone has the authority and responsibility to immediately initiate any emergency actions, including providing protective action recommendations to offsite authorities responsible for implementing offsite emergency measures.

When the Emergency Operations Facility (EOF) Organization is activated, the Emergency Manager (EM) and EOF staff will relieve the Emergency Director of all offsite responsibilities as soon as practical and assume the responsibility for the management of NSPM's overall response to the emergency. The Emergency Director can then direct the plant's efforts towards management of the onsite responsibilities.

The Shift Supervisor, of the affected unit, until properly relieved, **SHALL** remain in the Control Room at all times during accident situations, to direct the activities of control room operators.

Twenty-four (24) hour coverage for the Emergency Director position is provided by the Duty Shift Manager who assumes the responsibility of the interim Emergency Director at the onset of any emergency condition. If necessary, the Shift Supervisor of the unaffected unit may function as an alternate Emergency Director backing up the Shift Manager.

Figure 1 Prairie Island Plant Emergency Organization

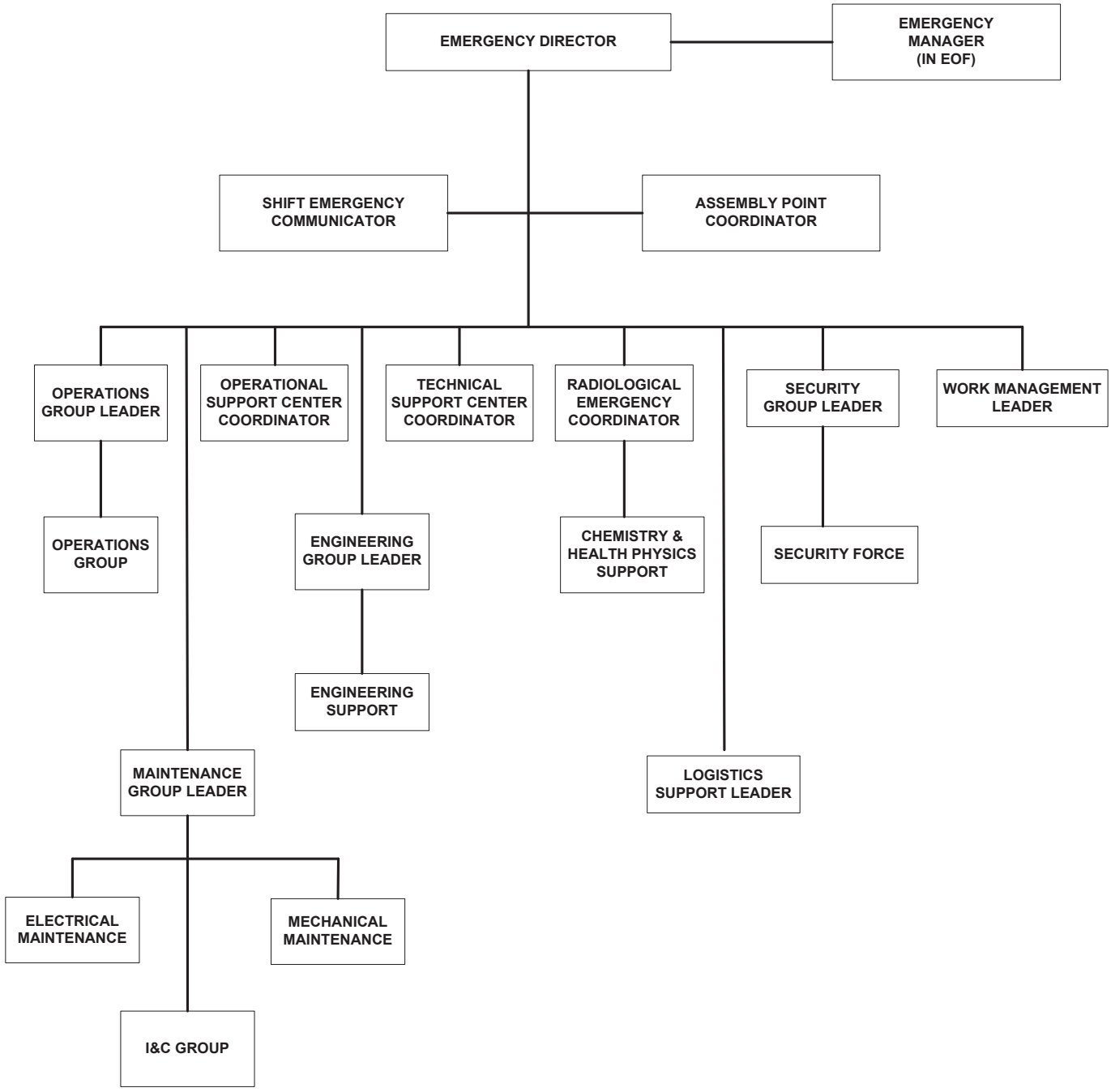


Table 1 Guidance for Augmentation of Plant Emergency Organization

Major Functional Area	Major Tasks	Position Title or Expertise	On-Shift	Capability for Additions 90 min
Plant Operations and Shift Supervisor (SRO): Assessment of Control Room Reactor Operational Aspects		Shift Manager/ED	1	
		Unit Supervisors	2	-
		Reactor Operators (RO):	4	-
		Auxiliary Operators:	6	-
Notification/ Communication	Notify State, local and Federal personnel & maintain communication	Shift Emergency Communicator:	1	3
Radiological Accident Assessment and Support of Operational Accident Assessment	Emergency Operations Facility (EOF) Director	Emergency Manager (as per duty roster):	-	1
	Offsite Dose Assessment	Chemistry Technician / Radiological Emergency Coordinator (REC):	1	1
	Offsite Surveys	Radiation Protection Specialist:	-	4 (2)
	Onsite Surveys (out-of-plant)	Radiation Protection Specialist:	1	1
	In-plant Surveys	Plant Operators and/or Radiation Protection Specialist:	2 (1,3)	1

Table 1 Guidance for Augmentation of Plant Emergency Organization

Major Functional Area	Major Tasks	Position Title or Expertise	On-Shift	Capability for Additions 90 min
	Chemistry/ Radiochemistry	Chemistry Technician:	1	1
Plant System Engineering, Repair and Corrective Actions	Technical Support	Shift Technical Advisor	1	-
		Core/Thermal:	-	1
		Electrical:	-	1
		Mechanical:	-	1
	Repairs and Corrective Actions	Mechanical Maintenance:	-	1
		Rad Waste Operator:	-	1
		Electrical Maintenance:	-	2
		Instrument Control:	-	1
Protective Actions (In-Plant)	Radiation Protection: a. Access Control b. HP Coverage for repair, corrective actions, search and rescue, first-aid & firefighting c. Personnel monitoring d. Dosimetry	Radiation Protection Specialist and/or Plant Operators:	- -	3 -

Table 1 Guidance for Augmentation of Plant Emergency Organization

Major Functional Area	Major Tasks	Position Title or Expertise	On-Shift	Capability for Additions 90 min
Fire Fighting			Fire Brigade per F5	Local Support
Rescue Operations and First Aid			2(1)	Local Support
Site Access Control and Personnel Accountability	Security, firefighting communications, personnel accountability	Security Personnel:	As per Security Plan	
		TOTAL	20	23

(1) May be provided by shift personnel assigned other functions.
(2) Monticello RPG will arrive within approximately 2-3 hours to augment and relieve the Prairie Island RPG of offsite surveys.
(3) Chemistry Technicians are cross-trained in Radiation Protection and chemistry/radiochemistry. The non-licensed plant operators are fully trained to conduct post-accident in-plant surveys.

The above table was developed in accordance with 10 CFR 50 Appendix E. This staffing analysis is documented in F3-1.1, Emergency Plan On-Shift Staffing Analysis.

Table 2 Primary and Secondary Responsibilities of Plant Emergency Organization

P = Primary
S = Secondary

	Emerg Director	Shift Technical Advisor	SEC	REC	TSC Coord	OSC Coord	Assem Pt Coord	Operations Grp	Shift Supv	Chemistry Technician	Security	Fire Brigade	Radiation Protection Specialists	Maintenance	I&C	Engineers	Admin Servs		
Plant Operations	P							P	P										
Emerg Direction & Control	P																		
Notification and Comm	S		P		S	S					S								
Offsite Dose Assessment	S			P						P			P						
Offsite Surveys	S			P									P						
Onsite (Out-of-Plt) Surveys	S			P				S					P						
In-Plant Surveys	S			P				S		P			P						
Chem-Radiochemistry	S			P						P			P						
Protective Action Recommendations	P			P															
Over-exposure Authorization	P			P															
Technical Support	S	P		S	P											P			
Repair and Corrective Actions	S			S	P	P		P						P	P	S			
Radiation Protection	S			P						P			P						
Fire Fighting	S							P				P		S					
First-Aid	S					P		P			P		P	S	S				
Search & Rescue	P					P		S			S	P	P	S	S				
Site Access Control	S										P								
Accountability	S						S				P								
Logistics Support	S																P		

The Shift Manager **SHALL** be relieved of the Emergency Director responsibilities when the designated Emergency Director arrives onsite. The Plant Manager or Designee **SHALL** be the designated Emergency Director and will be available with a pager on a twenty-four (24) hour basis. When the Plant Manager is unavailable, (e.g., out of town), the designated Emergency Director responsibility will be passed onto another Plant Manager designee who is a member of senior plant management. Specific personnel assignments to the Emergency Director position are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

The Shift Manager **SHALL** start the tasks assigned to the Emergency Director, (e.g., notification, activating onsite centers, etc.). These tasks **SHALL** be accomplished promptly and cannot wait for the designated individual to arrive at the plant site.

The Emergency Director's responsibilities are as follows:

A. Activation of onsite emergency organization -

1. Direct the activation of the onsite emergency response centers and monitor their habitability, and

2. Coordinate response of the plant onsite emergency organization.

B. Personnel accountability - During a plant evacuation the Emergency Director **SHALL** account for all personnel onsite within thirty minutes of the Site Area or General Emergency requiring the evacuation so that a search for missing personnel can be conducted. A continuous personnel accountability **SHALL** be maintained throughout the emergency. This responsibility may be delegated to a designated individual with assistance from the security force.

C. Radiological monitoring - The Emergency Director **SHALL** direct radiological monitoring of all personnel onsite and at the onsite assembly area, for contamination and/or excessive exposure. This responsibility may be delegated to the Radiation Protection Specialists or to a qualified operations member.

D. Exposure - The Emergency Director **SHALL** be responsible to authorize overexposures in excess of the normal limits (this responsibility may not be delegated).

E. Radiation Survey Teams - The Emergency Director **SHALL** direct the Radiation Survey Teams to obtain the necessary onsite and offsite samples and/or radiation surveys. This responsibility may be delegated to the Radiological Emergency Coordinator.

F. Offsite Dose Projections - The Emergency Director **SHALL** be responsible to project dose rates to the offsite population. This responsibility may be delegated to the Radiological Emergency Coordinator.

G. Protective Action - The Emergency Director **SHALL** be responsible for authorizing offsite Protective Action Recommendations (this responsibility may not be delegated and is relinquished to the Emergency Manager when the EOF is activated and operational).

H. Notification - The Emergency Director **SHALL** be responsible to ensure that the necessary offsite notifications are initiated and completed. This responsibility may be delegated to the Shift Emergency Communicator (SEC). The SEC may designate offsite communications to a qualified Communicator.

1. Immediate (within 15 minutes)

The initial notification message to State, local and tribal authorities, from the plant, **SHALL** contain the following information:

a Class of emergency
b Whether radioactivity is being released and in what form (liquid or gas)
c Potentially affected populace and area, if any
d Necessity of protective measures
e Brief description of the event

Other information, i.e., meteorological data, etc., are available to these authorities via the follow-up notification messages.

2. Subsequent Messages

The plant will continue to provide updating information to offsite authorities. As soon as possible after the initial notification of an Alert, Site Area, or General Emergency, as much of the following information that is known and appropriate will be forwarded to offsite authorities:

a Location of incident
b Name and telephone number of caller
c Date/time of incident
d Class of emergency
e Type of release (airborne, liquid, surface spill) and estimated duration
f Estimate of noble gas, iodine, and particulate release rates
g Prevailing weather conditions (wind speed, wind direction, temperature, atmospheric stability class, precipitation, if any)
h Actual or projected dose rates at site boundary
i Projected dose rate and integrated dose at 2, 5 and 10 miles and the Sectors affected.
j Survey results of offsite dose rates or any surface contamination
k Plant emergency response actions in progress
l Request for onsite support from offsite support organizations
m Prognosis for worsening or termination of event based on plant information

To provide ease in supplying the aforementioned information, a standardized form is used and incorporated into the implementing procedures.

I. Protracted Emergency Shift Coverage - The Emergency Director, with assistance from and coordination with other group Managers and Supervisors, **SHALL** ensure that work force requirements for all subsequent work shifts are determined and the necessary personnel are scheduled for the specific time period.

5.3.2 Plant Emergency Organization Coordinators

A. Technical Support Center Coordinator

The Technical Support Center (TSC) Coordinator **SHALL** be responsible for the general activation, operation and coordination of activities in the Technical Support Center (TSC). Specific personnel assignments to the TSC Coordinator are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

The responsibilities of the TSC Coordinator are:

1. Establish and verify radiological monitoring for the TSC;
2. Assist personnel performing the accountability check;
3. Coordinate activities of plant and non-plant personnel located in the TSC;
4. Periodically update personnel located in the TSC with appropriate information;
5. Maintain any necessary status boards;
6. Ensure technical guidance is provided to the Emergency Director and Control Room Operators on plant operations;
7. Establish or ensure that communications are established between all onsite emergency facilities and the EOF.
8. Ensure the Emergency Response Data System data link is established with the NRC’s emergency center.

B. Operational Support Center Coordinator

The Operational Support Center Coordinator **SHALL** be responsible for the general activation, operation, and coordination of activities in the Operational Support Center (OSC). Specific personnel assignments to the OSC Coordinator are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

The responsibilities of the OSC Coordinator are:

1. Establish and verify radiological monitoring for the OSC and the Control Room;

2. Coordinate activities of plant personnel located in the OSC to support plant operations as requested by the Control Room and TSC.

3. Assist personnel performing the accountability check in the OSC and the Control Room.

4. Maintain the communication systems in the OSC. A person may be designated to act as a communicator.

5. Periodically update personnel located in the OSC with appropriate information.

6. Control the use of equipment located in the emergency locker.

C. Assembly Point Coordinator

The Assembly Point Coordinator **SHALL** be responsible for the general operation of the assembly area. Specific personnel assignments to the Assembly Point Coordinator are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

The responsibilities of the Assembly Point Coordinator are:

1. Verify that radiological monitoring has been established for the Assembly Point.

2. Coordinate activities of all personnel (plant and non-plant) located at the Assembly Point.

3. Assist the Emergency Director in performing the accountability check, as necessary.

4. Maintain the communication systems. A person may be designated as the communicator, if necessary.

5. Control the use of equipment located in the Emergency Locker.

6. Update all personnel with appropriate information when directed by the Emergency Director.

7. Provide instructions to personnel when they are released from the assembly point for reentry or transport offsite.

D. Radiological Emergency Coordinator

The Radiological Emergency Coordinator (REC) **SHALL** be responsible for radiological accident assessment, onsite and offsite. The REC should report to the Technical Support Center when the TSC is activated. Upon activation of the EOF, the Radiation Protection Support Supervisor will assume responsibility for the offsite activities. The offsite survey teams will initially be comprised of individuals from the Prairie Island Plant. Upon activation of the EOF, the offsite survey teams will be comprised of individuals from the Monticello Nuclear Generating Plant. The REC should transfer the responsibility for offsite accident assessment to the Radiation Protection Support Supervisor at the EOF. Specific personnel assignments to the Radiological Emergency Coordinator are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

The responsibilities of the REC are:

1. Offsite dose assessment
2. Formulating offsite protective action recommendations
3. Offsite surveys
4. Onsite surveys
5. Chemistry
6. Radiochemistry
7. Onsite Radiation Protection for:
   - a Access Control
   - b Damage control and repair
   - c Search and rescue
   - d First-aid
   - e Personnel monitoring and decontamination
   - f Dosimetry

5.3.3 Plant Shift Organization

The following groups comprise the plant's shift organization. Brief descriptions of their emergency responsibilities are included.

A. Operations Group

The Operations Group consists of the Operations Manager, Asst. Operations Manager, Shift Managers, Shift Technical Advisors, Shift Supervisors, and all operators.

The Operations Group **SHALL** have responsibility for:

1. Plant Operations and assessment of operational aspects of the emergency.

2. Rad Waste equipment operation

3. Emergency radiation surveys

4. Short term damage control and repair for electrical, mechanical, and I&C equipment.

B. Security Group

The Security Group consists of the Security Manager, the Security Staff, and the contract Security Force.

The Security Force **SHALL**:

1. Carry out the plant security and Access Control program.
2. Maintain strict personnel accountability onsite.
3. Assist communications efforts when necessary.
4. Assist in first aid treatment.

C. Shift Manager

The Shift Manager (SM) **SHALL** be onsite continuously. The Shift Manager **SHALL** assume overall coordination and control in the Control Room and provide direction as necessary to the Shift Supervisor.

The Shift Manager **SHALL**:

1. Assume the duties of the interim Emergency Director until relieved by the designated Emergency Director. Portions of the E-Plan implementation may be delegated to other members of the plant staff as the condition of the plant dictate.

2. Assess the emergency condition, event evaluation, and safety related aspects of the plant.

D. Shift Technical Advisors

Provide technical and engineering support in the area of accident assessment.

E. Shift Emergency Communicator (SEC)

The Shift Emergency Communicator (SEC) **SHALL** be onsite continuously. The SEC is responsible for initial notification to the offsite agencies and maintaining communications during emergency conditions. The SEC may designate offsite communications to a qualified Communicator.

NOTE:	1. When the EOF Organization is activated and the EOF is functional, communications with the offsite agencies and personnel will be maintained by the EOF personnel. 2. As the emergency organization is activated, additional communicators from TSC support personnel should augment the plant staff to assist in communication efforts.

F. Fire Brigade

The Fire Brigade should consist of:

1. Brigade Chief - Unit 1 Turbine Building APEO or as designated by the Shift Manager.

2. Assistant Chief - Any Qualified APEO.

NOTE:	Usually the APEO from the affected building SHALL fulfill the duties of the Brigade Chief in his absence.

3. Fire Fighters - BOP Operators.

4. Runner - As designated to accompany fire department, operate equipment, bring additional equipment to fire scene.

The Fire Brigade **SHALL** be responsible for firefighting and primary responders for Search and Rescue, as necessary.

The Red Wing Fire Department should provide emergency assistance and **SHALL** be called immediately on report of fire. Other plant personnel on site may be called on for emergency work or called to plant for emergency service.

G. Radiation Protection Specialist

The Radiation Protection Organization consists of three Radiation Protection Specialists (RPS) onsite at all times. The RPS is responsible for conducting routine and special surveys, maintaining Access Control, writing RWP's and providing job coverage as required. Qualified operations personnel on-shift are also trained to perform radiation surveys during emergency conditions.

H. Chemistry Technician

Two Chemistry Technicians are onsite at all times. One Chemistry Technician is responsible for chemistry and radiochemistry. The second Chemistry Technician performs the dose assessment function until relieved by the augmented ERO. The Chemistry Technicians are also cross-trained to support the Radiation Protection Specialist functions described in Section G above.

5.3.4 Plant Emergency Staff Augmentation Groups

A. Maintenance Group

The Maintenance Group consists of all mechanical maintenance personnel, all plant electricians and I&C Specialists. The onsite Emergency Organization includes the Maintenance Manager, who should report to the Technical Support Center (TSC); and the Maintenance Supervisors (mechanical, electrical and I&C), and designated Electricians who should report to the Operational Support Center (OSC). The mechanical, electrical and I&C maintenance staff in the OSC can be further augmented or decreased as emergency conditions dictate.

The Mechanical, Electrical, and I&C Maintenance Group **SHALL** have responsibility for:

1. Supporting the repair and corrective actions for the mechanical, electrical, and I&C systems in support of emergency response and recovery actions.

2. Supporting the Search and Rescue effort.

B. Radiation Protection Group and Chemistry Group

The Radiation Protection and Chemistry Groups consists of the Radiation Protection Manager & Chemistry Manager and all members of the Radiation Protection and Chemistry Groups. Radiation Protection and Chemistry Managers and other designated group members should report to the Technical Support Center. Other Radiation Protection Specialists and Chemistry Technicians should report to the Operational Support Center.

The responsibilities of the Radiation Protection and Chemistry Groups are:

1. Offsite Dose Assessment

2. Offsite Surveys

3. Onsite Surveys

4. Chemistry

5. Radiochemistry

6. Radiation Protection for:

   a Access Control
   b Damage control and repair
   c Search and rescue
   d First aid
   e Fire fighting
   f Personnel monitoring and decontamination
   g Dosimetry

C. Engineering Group

The Engineering Group consists of Systems, Programs, Design and Equipment Reliability.

Upon activation of the onsite emergency organization, Systems and Programs Engineering Managers and designated engineers assigned to the emergency organization should report to the Technical Support Center. Other designated engineers may be requested to further augment engineering support in the TSC.

The Engineering Group **SHALL** have responsibility for:

1. Providing technical support for plant system engineering on electrical/mechanical systems.

2. Providing technical support for operating radioactive waste control systems.

3. Providing core parameter analysis to determine current core status.

4. Providing plant parameter trending and analysis utilizing the Emergency Response Computer System (ERCS).

5. Projecting possible loss of key equipment and its consequences.

6. Providing technical support for emergency repairs and corrective actions on electrical/mechanical systems.

7. Update TSC staff of potential problems and developments.

D. Logistics Support Group

The Logistics Support Group consists of Business Support Group (Administration Services and Document Control), Plant Services, and Site Materials.

Business Support Group **SHALL** supply logistical support in their area of expertise. Personnel in these areas may be called in to provide support for emergency response on an “as needed” basis.

Site Materials **SHALL** provide assistance in retrieving the parts necessary for an emergency response.

Plant Services **SHALL** support an emergency response by providing necessary assistance by the Nuclear Plant Service Attendants.

5.4 EOF Organization

The EOF (Emergency Operations Facility) Organization consists of a Direction and Control Group and three subordinate groups. The EOF Organization is staffed by personnel from the site's Engineering and Project Management groups and Prairie Island Training Center staff. The Prairie Island EOF Organization is shown in Figure 2.

The EOF should be staffed and ready to assume its emergency responsibilities from the TSC within 90 minutes of Classification of an ALERT or higher. Transfer of these responsibilities from the TSC to the EOF will be coordinated between the TSC and EOF and depend on the status of the TSC's emergency response.

5.4.1 EOF Direction and Control

The Emergency Manager is responsible for overall direction and control of NSPM's emergency response effort. Designated members of management staff the Emergency Manager position in the EOF. Specific personnel assignments to the Emergency Manager position are found in the MT & PI Nuclear Emergency Preparedness Telephone Directory. The Emergency Manager relieves the Emergency Director of the following responsibilities:

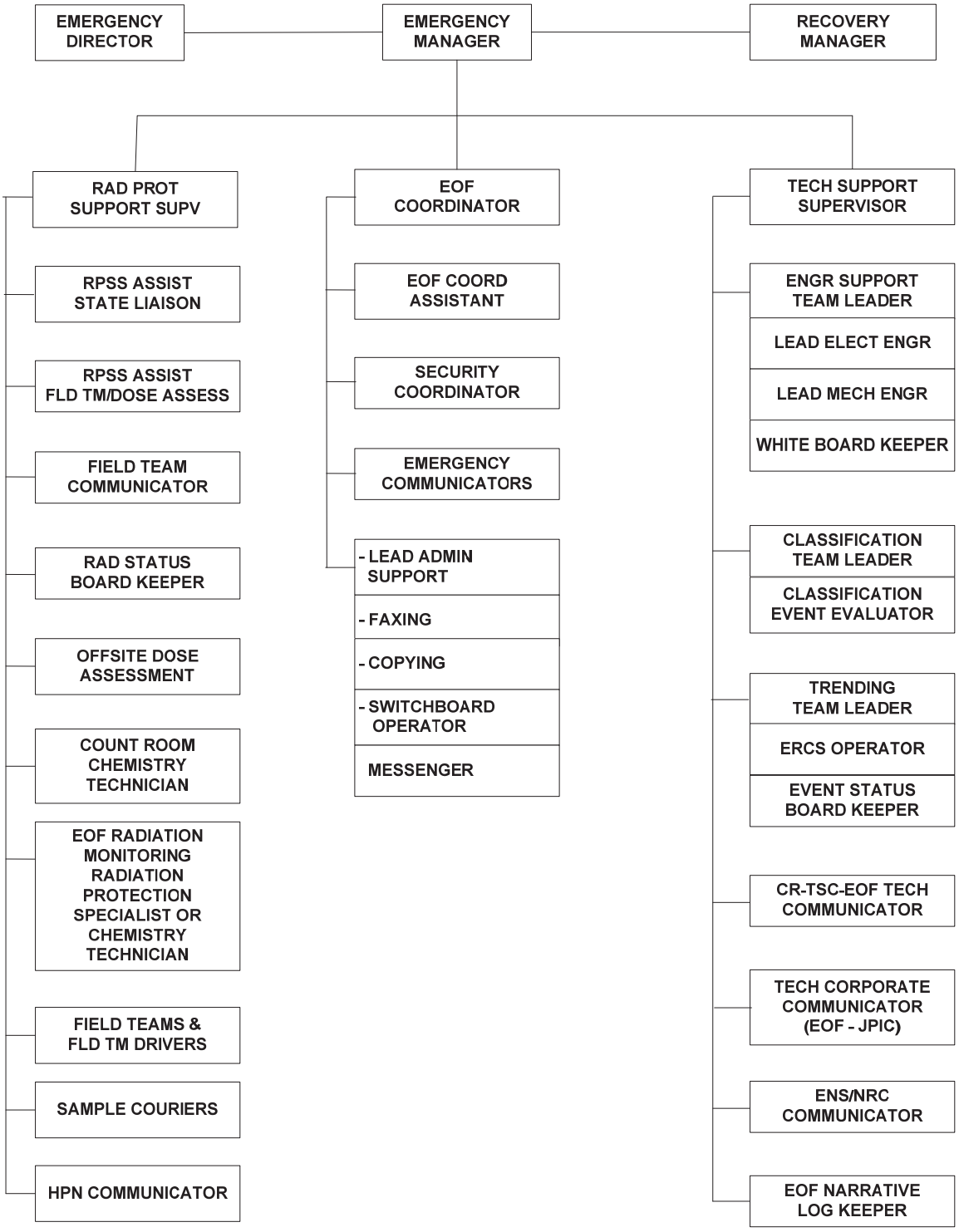
A. Off-site dose projections and coordination and direction of the utility off-site radiological monitoring teams.

B. Authorization of emergency classification changes. The Emergency Director retains the primary responsibility for re-classifications and makes recommendations to the Emergency Manager who has the responsibility to review and authorize the new classification.

C. Authorization of offsite Protective Action Recommendations.

D. Communications with off-site authorities including Federal, State, Local and Tribal authorities and MT & PI Offsite executive management located at the Minnesota State Emergency Operations Center.

Figure 2 Prairie Island EOF Organization



Other responsibilities of the Emergency Manager include:

A. Coordinate the emergency response efforts of other offsite support personnel assisting the plant organization.

B. Obtain and coordinate the services of outside consultants and vendors.

C. Advise utility management on matters related to emergency response efforts and needed resources to support the effort.

5.4.2 EOF Technical Support Group

The EOF Technical Support Group consists of select personnel from the site's Engineering and Project Management groups and Training Center staff. The Technical Support Supervisor is staffed by senior personnel and reports to the Emergency Manager. The Technical Support Group is responsible for trending critical parameters, engineering evaluation in support of the TSC Engineering Group, technical assessment and advising the Emergency Manager on technical matters related to the event.

5.4.3 EOF Radiation Protection Support Group

The EOF Radiation Protection Support Group is staffed by select personnel from the Training Center, plant Radiation Protection and Chemistry Groups and Emergency Plan Group. The Radiation Protection Support Supervisor position is staffed by senior personnel qualified in radiation assessment and reports to the Emergency Manager. The Radiation Protection Support Group includes plant Chemistry personnel for off-site dose projection and EOF Count Room operation and Nuclear Plant Service Attendants who function as sample couriers and drivers for off-site radiological monitoring teams. Radiation Protection Support Group responsibilities include:

A. Direction and coordination of the utility off-site radiological monitoring teams.

B. Off-site dose projection.

C. EOF Count Room activation and operation.

D. EOF habitability, personnel monitoring and decontamination (as necessary).

E. Communications with state assessment groups on matters related to dose projections and off-site protective action recommendations.

F. Staffing the Health Physics Network (HPN) and communications with the NRC (as necessary).

The Radiation Protection Support Supervisor advises the Emergency Manager on matters related to actual or potential radiological impact on the environment, off-site protective action recommendations, and EOF habitability.

5.4.4 EOF General Support Staff

The EOF General Support Staff consists of the EOF Coordinator, emergency communicators, administrative and security support personnel. The EOF Coordinator position is staffed by senior Training Center or site Engineering and Project Management personnel and reports to the Emergency Manager. The EOF Coordinator is responsible for activation and operation of the EOF and assists the Emergency Manager with administrative duties. The emergency communicators, EOF Security Coordinator and Administrative Staff report to the EOF Coordinator. The emergency communicators are responsible for communications with offsite agencies as directed by the Emergency Manager. The Administrative Staff is responsible for emergency document control, recording and document distribution at the EOF. An EOF Coordinator Assistant is responsible for general logistics support and assisting the EOF Coordinator. The EOF Security Coordinator reports to the EOF Coordinator. Responsibilities of EOF Security include EOF access and dosimetry issuance to EOF personnel.

5.5 Recovery Organization

The establishment of the Recovery Organization will be dependent upon the nature and severity of the event or plant conditions. In general terms, an Unusual Event or Alert may be terminated without establishing a special Recovery Organization while a Site Area Emergency or General Emergency will probably necessitate the establishment of a Recovery Organization. The Recovery Organization will manage the overall recovery or post-accident outage plans as work is done to return the plant to a normal operational or shutdown status.

The Recovery Manager is mainly responsible for management of the recovery phase and will perform their initial tasks as directed by the Emergency Manager. The Recovery Manager will report to the Emergency Operations Facility and begin to prepare for the transition to Recovery, as necessary. If Recovery is imminent, the Recovery Manager will establish a recovery or post-accident outage organization following the site's plant event recovery protocols.

5.6 Augmentation of Plant and EOF Emergency Organizations

5.6.1 Offsite Support Response

The emergency response plan for Prairie Island NGP is designed to be initially implemented independent of any offsite support. However, the onsite effort will be augmented with offsite support resources as described in the MT & PI Offsite Nuclear Emergency Plan.

It is the purpose of the offsite support organization to augment the onsite response effort with offsite support resources as soon as practical and as needed by the Prairie Island Site staff. Such areas of support include: Government Agency Interface, Logistics Support, News Media Interface and Utility Executive Management Interface.

5.6.2 Monticello Radiation Protection Group Support

The Monticello Nuclear Generating Plant is located approximately 100 miles northwest of Prairie Island NGP. The Monticello Radiation Protection and Chemistry Groups are available for supporting the Prairie Island Radiation Protection Group with personnel and equipment during any emergency condition at Prairie Island. Designated individuals from the Monticello plant would arrive at Prairie Island in approximately two to three hours with all the equipment necessary to assume responsibility for offsite monitoring. The Prairie Island Radiation Protection Group may then dedicate their activities to onsite responsibilities. The Monticello Radiation Survey Teams will be under the control of the Radiation Protection Support Supervisor (RPSS), as directed by the Emergency Manager, as soon as the EOF has been activated.

5.6.3 Westinghouse Support

Westinghouse emergency assistance is available on a twenty-four hour per day, seven day per week basis. Westinghouse will activate all appropriate features of the Westinghouse Emergency Response Plan to support the plant needs. When activated, the Westinghouse Emergency Response Plan becomes a functioning organization, comprised of individuals with unique technical, managerial and communication skills and experience, necessary to:

A. Make an early assessment of the situation

B. Provide early assistance to the utility

C. Mobilize appropriate Westinghouse critical skills and functions

D. Initiate timely, accurate communications to involved and interested parties

A Site Response Team may be dispatched to the site to obtain a first hand assessment of actual conditions and establish communications from the site to the Westinghouse response center, as deemed necessary.

5.6.4 Local Support Services

A. Fire Fighting

The Red Wing Fire Department will provide assistance in the event of a fire occurring at the plant. The duties and responsibilities of the Plant Fire Brigade, insuring complete coordination with the Fire Department, are covered in the Operations Manual, Section F5, Fire Fighting.

B. Hospital and Medical Support

Medical support and treatment for non-radiological injuries is provided by the Mayo Clinic Health System, both of which are located in Red Wing, Minnesota. Radiological related injuries are treated at the medical center which is the primary treatment facility. Emergency plans have been prepared, and training of medical center personnel is accomplished on an annual basis.

Regions Hospital in St. Paul, Minnesota is designated as the definitive care center for Prairie Island Nuclear Generating Plant. Regions Hospital may be used for radiation casualties, severe burn casualties, and other non-radiation injuries with use of an appropriate medical air transport service.

C. Ambulance Service

The Red Wing Ambulance Service will provide service to the Prairie Island Nuclear Generating Plant. Training and participation in drills ensures that personnel involved in the transportation of radiation victims are knowledgeable in use of proper procedures and handling methods. Procedures are covered in the Operations Manual, Section F4, Medical Support and Casualty Care.

5.7 Coordination with Governmental Response Organizations

5.7.1 Minnesota Division of Homeland Security and Emergency Management (HSEM)

The Minnesota Division of Homeland Security and Emergency Management has the responsibility for notification and coordination of Minnesota State Agencies in the event of a major emergency at Prairie Island.

The MN HSEM is notified by Prairie Island NGP. In the event of an emergency situation at the plant, the MN duty officer will immediately call the MN Department of Health, the Governor's Authorized Representative and other state agencies with emergency assignments to coordinate the implementation of any emergency procedures. The state agencies responsible for emergency procedures have established a system of twenty-four hour communications.

5.7.2 Minnesota Department of Health (MDH)

The Minnesota Department of Health (MDH) is responsible for providing radiological expertise in the State Emergency Operations Center in conjunction with the MN HSEM.

The Minnesota Department of Health will interpret data and participate in recommending protective actions to the Governor's Authorized Representative.

5.7.3 Wisconsin Emergency Management

The Wisconsin Emergency Management (WEM), has the responsibility for notification and coordination of Wisconsin state agencies in the event of a major emergency at Prairie Island NGP.

In the event of an emergency situation at the plant, Prairie Island NGP will notify the WEM duty officer who will notify the Wisconsin Department of Health Services (Radiation Protection Section) and other state agencies with emergency assignments, to coordinate the implementation of any emergency procedures. The state agencies responsible for emergency procedures have established a system of twenty-four hour communications.

5.7.4 Wisconsin Department of Health Services (DHS)

The Wisconsin Department of Health Services (DHS) is responsible to prevent exposure to ionizing radiation in amounts which are detrimental to health according to nationally accepted standards.

The Wisconsin DHS, Radiation Protection Section, is responsible for coordination of radiation response activities in the State of Wisconsin. In the event of an emergency at Prairie Island NGP, DHS, Radiation Protection Section will be concerned with monitoring the air and water about the plant to assure that the public is not exposed to levels of radioactive pollutants potentially detrimental to public health. DHS's facilities are located in Madison, Wisconsin.

Due to the distance and time required for the Wisconsin Radiation Protection Response Team to arrive at the affected area, the State of Minnesota Department of Health, will provide mutual support to Wisconsin, as spelled out in the letter of agreement in the Wisconsin State emergency operations plan.

5.7.5 Goodhue, Dakota and Pierce County Sheriffs

The Sheriff's Departments will notify all necessary local civil support groups in the event of an accident. The Sheriff is responsible for protection of the general public and can provide personnel and equipment for evacuation, relocation and isolation.

5.7.6 Goodhue, Dakota, Pierce County and City of Red Wing Emergency Management

The Goodhue, Dakota, Pierce County and City of Red Wing Emergency Management Organizations have the responsibility for notification and providing direction to residents in the event of a major emergency that affects their respective area of responsibility.

5.7.7 Prairie Island Indian Community

The Prairie Island Indian Community has an Emergency Operations Plan that includes the description of tribal responsibilities during a nuclear plant declared event. The Prairie Island Nuclear Generation Plant conducts emergency notifications to the Treasure Island Casino security dispatch center who, in turn, notifies appropriate members of the Prairie Island Indian Community and their organization.

5.7.8 Minnesota State Patrol

The Minnesota (MN) State Patrol has the responsibility to protect the general public by providing personnel and equipment to re-route traffic in the event of an emergency situation. Plans have been made for re-routing federal and state highways. Signs and equipment required for re-routing will be stored in the areas where they would be needed to facilitate highway closings. The MN Department of Transportation would be notified by the MN State Patrol to erect the signs.

5.7.9 Minnesota Department of Transportation

The MN Department of Transportation will assist the MN State Patrol in blocking and re-routing traffic around the plant site. In addition to the necessary personnel; vehicles, signals, and barriers for setting up and maintaining detour routes are available.

5.7.10 Canadian Pacific Railway-CP Railway (Soo Line)

In an emergency situation, CP Rail will make every reasonable effort to expedite unblocking the road/railroad crossing near Prairie Island NGP. The dispatcher will also provide routing assistance during an emergency at Prairie Island NGP.

5.7.11 Burlington Northern Santa Fe (BNSF) Railway

The dispatcher will provide routing assistance during an emergency at Prairie Island NGP as per the Minnesota State emergency operations plan.

5.7.12 Department of the Army, Corps of Engineers, Lock & Dam #3

The Corps of Engineers at Lock & Dam #3 will be notified by the Minnesota Duty Officer of an emergency at Prairie Island NGP. The Lock and Dam personnel will notify all tows within radio range of impending evacuations and assist in evacuation of personnel at the Lock and Dam.

NOTE:	**A complete description of response capabilities, organizational resources, activation plans, designations of emergency operations centers and letters of agreement are available in Minnesota and Wisconsin's state emergency operations plans.**

5.7.13 Nuclear Regulatory Commission (NRC)

The basic responsibilities of the NRC are to monitor, assess, and, if necessary, direct the utility to take actions to protect the health and safety of the public. For a radiological incident at a commercial power plant, the NRC is the Lead Federal Agency (LFA). The LFA is responsible for coordinating all Federal onscene actions. The NRC will coordinate Federal assistance to States and local organizations.

A principal role of the LFA is to assist the State in interpretation and analysis of technical information as a basis for making decisions about protective actions. This assistance will begin early in an incident from the NRC Operations Center in Rockville, MD, and later, from the utility's emergency operations facility on scene. The NRC is an independent reviewer of the actions the utility is taking to correct the initiating and related problems. The NRC will assess actual or potential offsite impacts as well, and will make an independent evaluation of Protective Action Recommendations, if necessary. As the LFA, the NRC has the responsibility for coordinating the release of Federal information to the media and others. The NRC will conduct most public information activities from the utility's Joint Information Center (JIC). The NRC also will keep the White House and Congress informed on all aspects of the event.

The NRC is responsible for giving the best possible advice at a given time to the States and will not limit its involvement to presenting a series of options.

The NRC also administers the Price-Anderson Act to ensure that the public that is affected by the event has adequate financial assistance to address most emergency needs.

5.7.14 Department of Energy (DOE)

Among its responsibilities as a support agency, DOE will coordinate the offsite radiological monitoring and assessment for the Lead Federal Agency (LFA) and the State during the initial phases of the emergency. It will maintain a common set of offsite radiological data and provide an appropriate interpretation of the data to the LFA and the State. DOE will manage the Federal Radiological Monitoring and Assessment Center (FRMAC), which is a multi-agency facility. DOE will conduct environmental monitoring, including air, ground, and water.

Their immediate objective is to rapidly dispatch a Radiological Assistant Program (RAP) Team to the scene to assess the hazard to the public and make recommendations to the authorities for the protection of the public. The Planning Chief in the State EOC is the designated Minnesota authority to request RAP assistance, as stated in the Minnesota state plan, and the Wisconsin DH, Radiation Section, is the designated Wisconsin authority to request RAP assistance for Wisconsin, as stated in the Wisconsin state plan.

6.4.2 Radiological Surveys

The Radiation Protection Group **SHALL** be responsible for all radiological surveys and personnel monitoring both onsite and offsite. The non-licensed operators of the Operations Group are also trained to conduct post-accident in-plant surveys during the first hour of the emergency. The Emergency Director has the responsibility for directing all radiation safety during the emergency.

The Radiation Protection Specialists may be divided into three emergency Radiation Survey Teams. Two teams are assigned offsite duties such as radiation surveys, air samples, or liquid sampling. The two offsite survey teams will conduct a search for the plume and obtain dose rates, and iodine, particulate or gaseous samples at pre-designated sample locations. Plume exposure pathway maps with pre-designated sample locations are contained in the emergency survey kits. The third team is assigned duties onsite such as radiation surveys, sampling (airborne or liquid) and sample analysis using the equipment available onsite and/or the EOF Count Room facility. Silver zeolite adsorbers are used to collect airborne iodine samples, both onsite and offsite. Silver zeolite adsorbers eliminate the problem of entrapped noble gases on the iodine adsorber, allowing a much lower detection sensitivity. Iodine samples may be analyzed in the EOF Counting Room.

The Radiation Survey Teams are activated via the ERO Auto Dial System and/or the ERO Pager Network or the telephone system. The teams will be activated and respond within ninety (90) minutes of declaration. Designated Emergency Lockers contain emergency survey kits, which include portable instruments, battery operated air samplers, liquid sampling equipment, and communication equipment.

After the initial offsite surveys are completed, the teams assigned offsite duties may be relieved by Monticello Radiation Protection Specialists who will continue to perform any offsite surveys assigned by the Emergency Manager. The Prairie Island Survey Team members may concentrate their efforts and resources to onsite responsibilities.

ENCLOSURE 2

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
UNITS 1 AND 2

LICENSE AMENDMENT REQUEST

License Amendment Request (LAR) to Revise Staff Augmentation Times in the Prairie Island Nuclear Generating Plant (PINGP) Emergency Plan

PRAIRIE ISLAND AUGMENTATION STAFFING ANALYSIS (ON-SHIFT STAFFING ANALYSIS)

(42 pages follow)

December 2013

Prairie Island Augmentation Staffing Analysis

Augmentation Staffing Analysis
Prairie Island Nuclear Plant
Dec. 2013

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Augmentation Staffing Analysis
Prairie Island Nuclear Plant
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I. PURPOSE

On June 19, 2013, an On-shift Staffing Analysis (OSA) was performed at Prairie Island Nuclear Generating Plant (PINGP) to determine whether critical functions can be adequately performed by on-shift resources if augmentation times are revised from the current 30 and 60 minute requirement to 90 minutes. Table A lists the positions and response times reviewed for this analysis.

In November 2011, the NRC published revised Emergency Preparedness Regulations in the Federal Register (Reference 76 FR 72560) for 10 CFR 50 Appendix E.IV.A.9, that required for the first time that the on-shift staffing component identified in the site Emergency Plan be supported by a detailed staffing analysis. No specific guidance as to the methodology for performance of this detailed analysis was addressed in the regulation. NSIR/DPR-ISG-01, "Interim Staff Guidance, Emergency Planning for Nuclear Power Plants," Revision 0, dated November 2011 (Reference 2), provided specific details as to the scenarios required to be analyzed and endorsed NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0, dated June 2011 (Reference 3) as an acceptable means of performing the required analysis. NEI 10-05 remains the only methodology endorsed at this time. Northern States Power Minnesota (NSPM) appropriately conducted and documented the analysis in Emergency Plan Implementing Procedure F.3-1.

Additionally, NEI 10-05, Section 2.14, "Changes to ERO Response Times," supports the use of this methodology to address modifications to augmentation times.

> "Although developed to meet the requirements of 10 CFR 50, Appendix E, Section IV.A.9, the staffing assessment methodology may be used to evaluate proposed changes to on-shift staffing levels or augmented ERO response times. For example, an analysis could be performed with a desired response time for the augmenting ERO (e.g., 90 minutes), and the results then used to support the basis for changing a staffing or augmentation time commitment."

The analysis performed for this License Amendment Request was based on the current analysis that was performed to demonstrate compliance with 10 CFR 50 Appendix E.IV.A.9. The compliance analysis determined the staffing identified in Table A was sufficient to perform the required functions until augmented in accordance with existing Emergency Plan requirements. The scenarios were then examined to determine dependence on augmented response. Those scenarios dependent on augmented response in less than 90 minutes were then selected for reanalysis (See Table C). Gaps identified in the June 2013 analysis requiring resolution to support augmentation relief to 90 minutes were designated in NEI 10-05 Table 1 as requiring additional Time Motion Study. In the June 2013 OSA, the time motion study was replaced by the proposed changes to the on-shift staffing resulting in a final on-shift staff increasing from 18 personnel to 20. Table B lists the proposed on-shift and 90 minute augmentation requirements resulting from the analysis. The proposed on-shift staffing in Table B is supported by the OSA analysis. The proposed 90 minute column is supported by the accompanying functional analysis.

Table A – Current On-shift, 30 Minute and 60 Minute Augmentation Requirements			
Position Title	**On Shift**	**30 minute relief**	**60 minute relief**
Shift Manager/Emergency Director (ED)	1		
Unit Supervisors	2		
Reactor Operators	4		
Aux Operators	6		
Shift Emergency Communicator (SEC)	1	1	2
Emergency Manager			1
Rad Emergency Coordinator (REC)		1	
Radiation Protection (RP) Specialist	2	4	6
Chemistry Technician	1		1
Technical Support – STA	1		
Technical Support – Core/Thermal		1	
Technical Support – Electrical			1
Technical Support – Mechanical			1
Mechanical Maintenance			1
Radiological (Rad) Waste Operator			1
Electrical Maintenance		1	1
Instrument Control		1	
Total	**18**	**9**	**15**

Table B – Proposed On-shift and 90 Minute Augmentation Requirements		
Position Title	**On Shift**	**90 minute relief**
Shift Manager / ED	1	
Unit Supervisors	2	
Reactor Operators	4	
Aux Operators	6	
Shift Emergency Communicator (SEC)	1	3
Emergency Manager		1
Rad Emergency Coordinator (REC)		1
RP Specialist	3	9
Chemistry Technician	2	1
Technical Support – STA	1	
Technical Support – Core/Thermal		1
Technical Support – Electrical		1
Technical Support – Mechanical		1
Mechanical Maintenance		1
Electrical Maintenance		2
Instrument Control		1
Rad Waste Operator		1
Total	**20**	**23**

II. ANALYSIS METHODOLOGY

a. Event Determination

A review of PINGP F3-1.1, “Emergency Plan On-shift Staffing Analysis,” (i.e. the initial compliance OSA) was conducted to determine which events would require further on-shift staffing analysis to support a License Amendment Request (LAR) to extend existing

staff augmentation response times from 30 and 60 minutes to 90 minutes. The initial staffing analysis performed to demonstrate compliance with the current requirements identified a number of scenarios that the existing minimum staff resolved prior to any augmented relief. For those scenarios where the initial staffing analysis did not depend on augmented responders, repeating the analysis at this time was not required.

The following scenarios were determined to require further analysis to support the revised augmentation period:

Event # 5 – Accidental Release – Waste Gas Tank

Event # 6 – Steam Generator Tube Rupture

Event # 9 – Large Break LOCA with release and resulting PARs

Table C summarizes the review of events required for this analysis.

Table C – Events Requiring Analysis To Support Extended ERO Augmentation Response

Analysis #	Summary Description of Event or Accident	Reference Document(s)	Analysis Required?
1	Land and/or waterborne HOSTILE ACTION directed against the Protected Area by a HOSTILE FORCE. Assume adversary characteristics defined by the Design Basis Threat (DBT).	ISG IV.C	The initial Compliance OSA did not require augmented personnel response.
2	Locked Pump Rotor	USAR Chapter 14.4.8	Event not classified, further analysis not required.
3	Fuel Handling	USAR Chapter 14.5.1	The initial Compliance OSA did not require augmented personnel response.
4	Accidental Release of Radioactive Liquids	USAR Chapter 14.5.2	The initial Compliance OSA did not require augmented personnel response.
5	Accidental Release – Waste Gas Tank	USAR Chapter 14.5.3	Event requires further analysis to support LAR.
6	Steam Generator Tube Rupture	USAR Chapter 14.5.4	Event requires further analysis to support LAR.
7	Rupture of a Steam Pipe	USAR Chapter 14.5.5	Event not classified, further analysis not required.

Table C – Events Requiring Analysis To Support Extended ERO Augmentation Response			
Analysis #	**Summary Description of Event or Accident**	**Reference Document(s)**	**Analysis Required?**
8	Rupture of a Control Rod Drive Mechanism Housing (RCCA Ejection)	USAR Chapter 14.5.6	Response actions and on-shift resources required for this event are comparable to those for Event #9. However, Event #9 is more limiting due to additional actions and resources required to perform them. Therefore, this event is bounded by Event #9.
9	Large Break LOCA with release and resulting PARs	USAR Chapter 14.6	Event requires further analysis to support LAR.
10	Small Break LOCA	USAR Chapter 14.7	Response actions and on-shift resources required for this event are comparable to those for Event #9. However, Event #9 is more limiting due to additional actions and resources required to perform them. Therefore, this event is bounded by Event #9.
11	ATWS	USAR Chapter 14.8 (Not designated as Condition IV Event)	The initial Compliance OSA did not require augmented personnel response.
12	Response actions for an “aircraft probable threat” in accordance with 10 CFR 50.54(hh)(1) and as discussed in RG 1.214	ISG IV.C	The initial Compliance OSA did not require augmented personnel response.
13	Control room fire leading to evacuation and remote shutdown, as referenced in IN 95-48.	ISG IV.C	The initial Compliance OSA did not require augmented personnel response.
14	Station Blackout (Current Licensing Basis)	ISG IV.C	The initial Compliance OSA did not require augmented personnel response.

Table C – Events Requiring Analysis To Support Extended ERO Augmentation Response			
Analysis #	**Summary Description of Event or Accident**	**Reference Document(s)**	**Analysis Required?**
15	Appendix R Fire Response	ISG IV.C	The initial Compliance OSA did not require augmented personnel response.
16	SAMG Response	ISG IV.C	The initial Compliance OSA did not require augmented personnel response.

b. Conduct of On-shift Staffing Analysis

A multi-disciplined team of subject matter experts from PINGP was assembled on June 19, 2013, to provide input into the on-shift staffing analysis of the identified events. This team consisted of two Senior Reactor Operators, a Chemistry Technician, a Radiological Emergency Coordinator (REC), and Emergency Planning staff and Consultants. The team provided analysis support as follows:

Table D – On-shift Staffing Analysis Team	
Team Member	**Subject Matter Expertise**
Senior Reactor Operator	EOP actions (Licensed/Non-Licensed Operator action)
	Abnormal Procedure actions (Licensed/Non-Licensed Operator action)
	Operating Procedure actions (Licensed/Non-Licensed Operator action)
	Emergency Director (E Plan) actions
Chemistry Technician	Chemistry Response actions
	RP Response actions
	Dose Assessment actions
REC	RP Response actions
	Dose Assessment actions
	Offsite Survey Team actions
Emergency Planning	Emergency Plan response actions

Using the guidance in Reference 3, the team performed a tabletop procedural analysis of on-shift actions required for response to the events identified in Table C. This review was conducted by the team in the PINGP Emergency Operations Facility (EOF), which

enabled the team to have access to procedures and other support documents. Each event was analyzed separately and documented in the NEI 10-05 event analysis tables.

The on-shift staffing analysis was conducted by first reviewing the event described in Table C, providing the team with a basic understanding of the event and resulting emergency classification(s). The Shift Manager (SM)/Control Room Supervisor (CRS) reviewed EOP, AOP, and other operating procedure actions and identified them to the team. Specific resources and time needed to perform initial event response actions were identified and documented as per the guidance in NEI 10-05. The team determined when other on-shift resources, such as Chemistry or RP, would be required and identified the time required to perform expected actions. The Emergency Plan functions for the event were reviewed and assigned to the on-shift resource responsible for performance of the identified function and documented as per NEI 10-05. Finally, the on-shift resources and their actions were summarized in NEI 10-05, Table 1.

c. Event Summaries

i. Analysis #5 Accidental Release – Waste Gas Tank

Initial Conditions:

Time: Wednesday @ 2200

Unit 1 100% Power @ EOC

RCS Temp 560 °F T_{av}
RCS Pressure 2235 psig

Sequence of Events:

2200 121 Gas Decay Tank Ruptures

Vent Header Pressure drops

Local indications of 121 Gas Decay Tank = 0 psig

2201 Alarms are received on the following rad monitors
1R0030 – Aux Building Vent Gas
1R0037 – Aux Building Vent Gas
1R0055 – Aux Building East Area Rad Monitor

2204 Operators enter EOP/AOPs

2205 Emergency Plan initiated

2210 Initial Emergency Classification determined

2215 ERO activation initiated

2235 Initial notification to offsite agencies initiated

Analysis #5: Accidental Release – Waste Gas **ECL: Alert**

TABLE 1 – On-shift Positions

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
1.	Shift Manager	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L1 T5/L1 T5/L2 T5/L3 T5/L4 T5/L5	NO	NO
2.	Unit Supervisor (SRO #1)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L2	NO	NO
3.	Unit Supervisor (SRO #2)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L3 T5/L5 T5/L10 T5/L13	NO	NO
4.	Shift Technical Advisor (STA)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L4	NO	NO
5.	RP Specialist (RO #2)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L5	NO	NO
6.	RP Specialist (RO #4)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L6	NO	NO
7.	Auxiliary Operator (AO #1)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L7	NO	NO

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Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
8.	Shift Emergency Communicator (SEC)	PINGP E-Plan, Table 1, Rev 47	90	T5/L6 T5/L8 T5/L9 T5/L11 T5/L14	NO	NO
9.	RP Specialist (RP #1)	PINGP E-Plan, Table 1, Rev 47	90	T4/L3	NO	NO
10.	RP Specialist (RP #2)	PINGP E-Plan, Table 1, Rev 47	90	T4/L1	NO	NO
11.	Chemistry Technician	PINGP E-Plan, Table 1, Rev 47	90	T4/L5	NO	NO
12.	CAS Operator	PINGP E-Plan, Table 1, Rev 47	N/A	T5/L15	NO	NO

Notes: None

TABLE 2 - Plant Operations & Safe Shutdown Analysis # 5
Two Units - One Control Room (Shared) Applicable to unit 1
Minimum Operations Crew Necessary to Implement AOPs and EOPs, or SAMGs if applicable

Line	Generic Title/Role	On-shift Position	Task Performance Validation
1.	Shift Manager	Shift Manager	Operator Training
2.	Shift Supervisor	Unit Supervisor – U1 (SRO #1)	Operator Training
3.	Shift Supervisor	Unit Supervisor – U2 (SRO #2)	Operator Training
4.	Shift Technical Advisor	Shift Technical Advisor (STA)	Operator Training
5.	Reactor Operator (BOP)	Reactor Operator – U1 BOP (RO #2)	Operator Training
6.	Reactor Operator (BOP)	Reactor Operator – U2 BOP (RO #4)	Operator Training
7.	Auxiliary Operator	Auxiliary Operator (AO #1)	Operator Training

Notes: See Table 2A for AOP/EOP actions

Augmentation Staffing Analysis
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Prairie Island Timing Template – Table 2A

Scenario: #5 Title: Accidental Release - Waste Gas

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
ARG C47022	Hi Rad Train A and B alarms	RO#2	X																	
	Verify alarms at panel – 1R0030, 37	RO#2	X																	
C47048 1R-30	Verify automatic actions	RO#2	X																	
	Notify RP	RO#4	X																	
	Dispatch AO	RO#4	X																	
	Page SM, SS and SEC to CR	SRO#1	X																	
C4708 1R-37	Verify automatic actions	RO#2		X																
N/A	Review ERCS and notify SS of Area Alarm on 1R-55	RO#2		X																
F3-9	Local evacuation of Aux Building	SRO#2 CAS		X																
N/A	SM, STA and SEC respond to CR	SM STA		X																
F3-2	Classify Event (Alert)	SM STA		X																
N/A	Assist SM with PINGP 577	SEC			X															
F3-5 PINGP 580 PINGP 1384	Notify Offsite Agencies and activate ERO	SEC				X														
PINGP 666	NRC Notification Form Completion	SRO#2					X													
PINGP 1125	Perform Alert actions	SM				X														
PINGP 666	Notify NRC using ENS	SRO#2							X											
N/A	Investigate source of rad leak until Aux Bldg Evacuation	AO#1	X																	

TABLE 3 – Firefighting Analysis # 5

Line	Performed By	Task Analysis Controlling Method
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A

Notes: No Fire Brigade response required for this event.

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TABLE 4 – Radiation Protection and Chemistry Analysis # 5

Line	Position Performing Function/Task	Performance Time Period After Emergency Declaration (minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	In-Plant Survey On-shift Position: RP Specialist #2				Report to OSC for further direction.														
2.	Out of Plant Survey On-shift Position: RP Specialist																		
3.	Personnel Monitoring On-shift Position: RP Specialist #1		X																
4.	Job Coverage On-shift Position:																		
5.	Offsite Radiological Assessment On-shift Position: Chemistry Technician						X												
6.	Other Site-Specific RP Specialist – Describe: On-shift Position:																		
7.	Chemistry function/task #1 – Describe: On-shift Position: Chemistry Technician																		
8.	Chemistry function/task #2 – Describe: On-shift Position: Chemistry Technician																		

TABLE 5 – Emergency Plan Implementation Analysis # 5

Line	Function/Task	On-shift Position	Task Analysis Controlling Method
1.	Declare the Emergency Classification Level (ECL)	Shift Manager	EP/Ops Training and EP Drill Program
2.	Approve Offsite Protective Action Recommendations	Shift Manager	EP/Ops Training and EP Drill Program
3.	Approve content of State/Local notifications	Shift Manager	EP/Ops Training and EP Drill Program
4.	Approve extension to allowable dose limits	Shift Manager	EP/Ops Training and EP Drill Program
5.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	SRO #2/Shift Manager	EP/Ops Training and EP Drill Program
6.	ERO notification	SEC	EP/Ops Training and EP Drill Program
7.	Abbreviated NRC notification for DBT event	N/A	EP/Ops Training and EP Drill Program
8.	Complete State/Local notification form	SEC	EP/Ops Training and EP Drill Program
9.	Perform State/Local notifications	SEC	EP Training and EP Drill Program
10.	Complete NRC event notification form	SRO #2	EP/Ops Training and EP Drill Program
11.	Activate ERDS	SEC	EP/Ops Training and EP Drill Program
12.	Offsite radiological assessment	N/A	N/A
13.	Perform NRC notifications	SRO #2	EP/Ops Training and EP Drill Program
14.	Perform other site-specific event notifications (e.g., INPO, ANI, etc.)	SEC	EP/Ops Training and EP Drill Program
15.	Personnel accountability	CAS	EP/Security Training and EP Drill Program

Notes: EAL RA1.2 – Alert Classification (One or more plant effluent monitors detect an airborne or liquid radioactive material release that exceeds 200 times the monitor alarm setpoint for 15 minutes or longer.)

ii. Analysis #6 Steam Generator Tube Rupture

Initial Conditions:

Time: Wednesday @ 2100

Unit 2 100% Power

RCS Temp 560 °F T_{av}
RCS Pressure 2235 psig

Sequence of Events:

2105 U2 Condenser air ejector radiation monitor, 2R0015, begins to increase

2106 Slight increase observed in 22 S/G level

2R0019 SG Blowdown Monitor reading 1,000 cpm and increasing
Alarm received in Control Room
Flash Tank Valves closed
Discharge to River closed

2R0052, U2 MS B Steam Line Rad monitor reading 25 mR/hr and increasing

Pressurizer level observed to be decreasing

2107 Control operators initiate actions to increasing pressurizer level and troubleshoot S/G tube leakage

2110 Rx manually trip on low pressurizer level

SI initiated

Analysis #6: Steam Generator Tube Rupture **ECL: Alert**

TABLE 1 – On-shift Positions

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
1.	Shift Manager	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L1 T5/L1 T5/L2 T5/L3 T5/L4 T5/L5	NO	NO
2.	Unit Supervisor (SRO #1)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L2 T5/L5 T5/L10 T5/L13	NO	NO
3.	Unit Supervisor (SRO #2)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L3	NO	NO
4.	Shift Technical Advisor (STA)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L4	NO	NO
5.	Reactor Operator (RO #2)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L5	NO	NO
6.	Reactor Operator (RO #3)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L6	NO	NO
7.	Reactor Operator (RO #4)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L7	NO	NO
8.	Auxiliary Operator (AO #1)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L8	NO	NO

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Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
9.	Auxiliary Operator (AO #4)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L9	NO	NO
10.	Auxiliary Operator (AO #6)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L10	NO	NO
11.	Shift Emergency Communicator (SEC)	PINGP E-Plan, Table 1, Rev 47	90	T5/L6 T5/L8 T5/L9 T5/L11 T5/L14	NO	NO
12.	RP Specialist (RP #1)	PINGP E-Plan, Table 1, Rev 47	90	T4/L1 T4/L4	NO	NO
13.	RP Specialist (RP #2)	PINGP E-Plan, Table 1, Rev 47	90	T4/L4	NO	NO
14.	Chemistry Technician	PINGP E-Plan, Table 1, Rev 47	90	T4/L5 T4/L7	NO	YES

Notes: The time motion study identified in Line 14 was subsequently resolved by the addition of an additional on-shift Chemistry Technician.

TABLE 2 - Plant Operations & Safe Shutdown Analysis # 6
Two Units - One Control Room (Shared) Applicable to unit 2
Minimum Operations Crew Necessary to Implement AOPs and EOPs, or SAMGs if applicable

Line	Generic Title/Role	On-shift Position	Task Performance Validation
1.	Shift Manager	Shift Manager	Operator Training
2.	Shift Supervisor	Unit Supervisor – U1 (SRO #1)	Operator Training
3.	Shift Supervisor	Unit Supervisor – U2 (SRO #2)	Operator Training
4.	Shift Technical Advisor	Shift Technical Advisor (STA)	Operator Training
5.	Reactor Operator (BOP)	Reactor Operator – U1 BOP (RO #2)	Operator Training
6.	Reactor Operator (OATC)	Reactor Operator – U2 OATC (RO #3)	Operator Training
7.	Reactor Operator (BOP)	Reactor Operator – U2 BOP (RO #4)	Operator Training
8.	Auxiliary Operator	Auxiliary Operator (AO #1)	Operator Training
9.	Auxiliary Operator	Auxiliary Operator (AO #4)	Operator Training
10.	Auxiliary Operator	Auxiliary Operator (AO #6)	Operator Training

Notes: See Table 2A for AOP/EOP actions

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Prairie Island Timing Template – Table 2A

Scenario: #6 Title: Steam Generator Tube Rupture

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																	
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
C47022 C4AOP2	Respond to radiation monitor alarms; enter tube leak procedure	RO#3 RO#4 SRO#2	X																	
N/A	Page SM, STA, and SEC to control room	SRO#1	X																	
2E-0	Rx Trip/SI Response	RO#3 RO#4 SRO#2		X																
2E-0, Att J	MSR Isolation	AO#4 AO#6		X																
2E-0, Att L	Verify Cat 1 Vent Doors Closed	AO#1		X																
F3-2	Review EALs	SM STA		X																
PINGP 577	Assist with completion of Event Notification form (State/County)	SEC		X																
F3-2	Classify event	SM STA				X														
PINGP 580 PINGP 1384	Notify offsite agencies and activate ERO	SEC					X													
PINGP 666	Complete NRC Notification Form and notify NRC	SRO#1					X													
2E-3	SGTR response actions (includes reset of SI)	RO#3 RO#4 SRO#2 STA				X														
	S/D diesels and cooling water pumps	AO#4 AO#6										X								
2E-0	Attachment L (validate SI alignment/realign equipment)	RO#2		X																
PINGP 1125	Perform initial Alert Actions and plant PA announcements	SM					X													
	Alert Actions – notify	SM						X												

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Prairie Island Timing Template – Table 2A

Scenario: #6 Title: Steam Generator Tube Rupture

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
	RP/Chem for onsite sampling and dose calculations																			
2ES-3.1	Post-trip S/G cooldown actions	RO#2 RO#3 RO#4 SRO#2 STA SM													X					
2ES-3.1, Step 4	Sample S/G and RCS for boron	Chem Tech													X					

TABLE 3 – Firefighting Analysis # 6

Line	Performed By	Task Analysis Controlling Method
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A

Notes: No Fire Brigade response required for this event.

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TABLE 4 – Radiation Protection and Chemistry Analysis # 6

Line	Position Performing Function/Task	Performance Time Period After Emergency Declaration (minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	In-Plant Surveys via ERCS On-shift Position: RP Specialist #1		X																
2.	Out of Plant Survey On-shift Position:																		
3.	Personnel Monitoring On-shift Position:																		
4.	Job Coverage On-shift Position: RP Specialist #1 & RP Specialist #2					Report to the OSC for further instructions.													
5.	Offsite Radiological Assessment On-shift Position: Chemistry Technician							X											
6.	Other Site-Specific RP – Describe: On-shift Position:																		
7.	Chemistry function/task #1 – Describe: Sample S/G and RCS for Boron On-shift Position: Chemistry Technician													X (Identified Conflict)					
8.	Chemistry function/task #2 – Describe: On-shift Position:																		

TABLE 5 – Emergency Plan Implementation Analysis # 6

Line	Function/Task	On-shift Position	Task Analysis Controlling Method
1.	Declare the Emergency Classification Level (ECL)	Shift Manager	EP/Ops Training and EP Drill Program
2.	Approve Offsite Protective Action Recommendations	Shift Manager	EP/Ops Training and EP Drill Program
3.	Approve content of State/Local notifications	Shift Manager	EP/Ops Training and EP Drill Program
4.	Approve extension to allowable dose limits	Shift Manager	EP/Ops Training and EP Drill Program
5.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	SRO#1/Shift Manager	EP/Ops Training and EP Drill Program
6.	ERO notification	SEC	EP/Ops Training and EP Drill Program
7.	Abbreviated NRC notification for DBT event	N/A	EP/Ops Training and EP Drill Program
8.	Complete State/Local notification form	SEC	EP/Ops Training and EP Drill Program
9.	Perform State/Local notifications	SEC	EP Training and EP Drill Program
10.	Complete NRC event notification form	SRO#1	EP/Ops Training and EP Drill Program
11.	Activate ERDS	SEC	EP/Ops Training and EP Drill Program
12.	Offsite radiological assessment	N/A	N/A
13.	Perform NRC notifications	SRO#1	EP/Ops Training and EP Drill Program
14.	Perform other site-specific event notifications (e.g., INPO, ANI, etc.)	SEC	EP/Ops Training and EP Drill Program
15.	Personnel accountability	N/A	EP/Security Training and EP Drill Program

Notes: EAL FA1 – Alert Classification (ANY loss or ANY Potential Loss of EITHER Fuel Clad or RCS.)

iii. Analysis #9 Large Break LOCA with release and resulting PARs

Initial Conditions:

Time: Monday @ 2200

Unit 1 100% Power @ EOC

RCS Temp 560°F T_{ave}
RCS Pressure 2235 psig

Sequence of Events:

2200	Longitudinal crack develops on A Cold leg
	LB LOCA initiated (RCS leak rate > charging pump capacity)
2200:05	Rx trip and SI initiated based on low pressurizer pressure
2200:10	Avg CETC reading 950 °F
2200:15	B Train of SI fails
	Loss of Subcooling margin indicated
2200:30	Containment pressure = 33 psia
2201	Operators enter EOP/AOPs
2202	Emergency Plan initiated
2215	Initial Emergency Classification determined
2220	ERO activation initiated
2230	Initial notification to offsite agencies initiated
2235	Conditions degrade – Containment pressure drops from 15 lbs. to 0 lbs. – reason unknown.
	General Emergency Conditions exist Release occurs PARs required

Analysis #9: Large Break LOCA with release & resulting PARS **ECL: Site Area Emergency → General Emergency**

TABLE 1 – On-shift Positions

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
1.	Shift Manager	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L1 T5/L1 T5/L2 T5/L3 T5/L4 T5/L5	No	No
2.	Unit Supervisor (SRO #1)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L2	No	No
3.	Unit Supervisor (SRO #2)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L3 T5/L5 T5/L10 T5/L13	No	No
4.	Shift Technical Advisor (STA)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L4	No	No
5.	Reactor Operator (RO #1)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L5	No	No
6.	Reactor Operator (RO #2)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L6	No	No
7.	Auxiliary Operator (AO #1)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L7	No	No
8.	Auxiliary Operator (AO #2)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L8	No	No

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Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
9.	Auxiliary Operator (AO #3)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L9	No	No
10.	Auxiliary Operator (AO #5)	PINGP E-Plan, Table 1, Rev 47	N/A	T2/L10	No	No
11.	Shift Emergency Communicator (SEC)	PINGP E-Plan, Table 1, Rev 47	90	T5/L6 T5/L8 T5/L9 T5/L11 T5/L14	No	No
12.	RP Specialist (RP #1)	PINGP E-Plan, Table 1, Rev 47	90	T4/L1 T4/L2	No	Yes
13.	RP Specialist (RP #2)	PINGP E-Plan, Table 1, Rev 47	90	T4/L2 T4/L3	No	Yes
14.	Chemistry Technician	PINGP E-Plan, Table 1, Rev 47	90	T4/L5 T4/L7	No	Yes
15.	CAS Operator	PINGP E-Plan, Table 1, Rev 47	N/A	T5/L15	No	No

Notes: The Time Motion Studies identified in this report were resolved by the addition of one additional RP Specialist and one Chemistry Technician as described in Section III of this report.

TABLE 2 - Plant Operations & Safe Shutdown Analysis # 9
Two Units - One Control Room (Shared) Applicable to unit 1
Minimum Operations Crew Necessary to Implement AOPs and EOPs, or SAMGs if applicable

Line	Generic Title/Role	On-shift Position	Task Performance Validation
1.	Shift Manager	Shift Manager	Operator Training
2.	Shift Supervisor	Unit Supervisor – U1 (SRO #1)	Operator Training
3.	Shift Supervisor	Unit Supervisor – U2 (SRO #2)	Operator Training
4.	Shift Technical Advisor	Shift Technical Advisor (STA)	Operator Training
5.	Reactor Operator (OATC)	Reactor Operator – U1 OATC (RO #1)	Operator Training
6.	Reactor Operator (BOP)	Reactor Operator – U1 BOP (RO #2)	Operator Training
7.	Auxiliary Operator	Auxiliary Operator (AO #1)	Operator Training
8.	Auxiliary Operator	Auxiliary Operator (AO #2)	Operator Training
9.	Auxiliary Operator	Auxiliary Operator (AO #3)	Operator Training
10.	Auxiliary Operator	Auxiliary Operator (AO #5)	Operator Training

Notes: See Table 2A for AOP/EOP actions

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Prairie Island Timing Template – Table 2A

Scenario: #9 Title: Large Break LOCA with release and resulting PARs

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
N/A	Page SM, STA, and SEC to control room	SRO#2	X																	
1E-0	Rx Trip/SI Response	RO#1 RO#2 SRO#1	X																	
1E-0, Att J	MSR Isolation	AO#3 AO#5	X																	
1E-0, Att L	Verify Cat 1 Vent Doors Closed	AO#1	X																	
F3-2	Review EALs	SM STA		X																
PINGP 577	Assist with completion of Event Notification form (State/County)	SEC		X																
F3-2	Classify event	SM STA			X															
1F-0	Monitor CSFTs in parallel with oversight of EOPs	STA		X																
PINGP 580 PINGP 1384	Notify offsite agencies and activate ERO	SEC				X														
PINGP 666	Complete NRC Notification Form and notify NRC	SRO#2				X														
1E-1	Response to loss of RC or Secondary Coolant	RO#1 RO#2 SRO#1			X															
1E-0	Attachment L (validate SI alignment/realign equipment)	RO#4	X																	

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Prairie Island Timing Template – Table 2A

Scenario: #9 Title: Large Break LOCA with release and resulting PARs

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																	
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1ES-1.2	Transfer to recirc procedure steps	RO#1 RO#2 SRO#1 AO#1 AO#2					X													
F3-17.2	Monitor long term recirc procedure steps	RO#2									X									
1E-1	Response to loss of RC or Secondary Coolant	RO#1 SRO#1									X									
	S/D diesels and cooling water pumps	AO#3 AO#5										X								
PINGP 1125	Perform initial SAE Actions and plant PA announcements/Plant Evacuation	SM				X														
	SAE Actions – notify RP/Chem for onsite sampling and dose calculations and post evacuation monitoring	SM					X													
EDCM-100	Chemistry complete Dose Assessment	Chem Tech					X													
PINGP 1125	SAE Actions – RP to monitor assembly area and Security Building	RP#1 RP#2				X														
F3-9	Complete evacuation accountability	CAS Operator				X														
F3-2	Review Classification	SM STA								X										
	Classify GE	SM STA										X								

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Prairie Island Timing Template – Table 2A

Scenario: #9 Title: Large Break LOCA with release and resulting PARs

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
	Page SEC to report to Control Room (from TSC)	SM										X								
PINGP 577	Complete Event Notification form	SM STA										X								
PINGP 580	Notify offsite agencies	SEC											X							
PINGP 1125	Implement GE actions of procedure	SM											X							

Indicates General Emergency Conditions Exist (Per methodology described in Reference 3, Section 2.10, “Analysis of a General Emergency Response”)

TABLE 3 – Firefighting Analysis # 9

Line	Performed By	Task Analysis Controlling Method
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A

Notes: No Fire Brigade response required for this event.

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TABLE 4 – Radiation Protection and Chemistry Analysis # 9

Line	Position Performing Function/Task	Performance Time Period After Emergency Declaration (minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	In-Plant Survey – Security Building On-shift Position: RP Specialist #1				X														
2.	Out of Plant Survey On-shift Position: RP Specialist					X (Identified Conflict)													
3.	Personnel Monitoring – Assembly Area On-shift Position: RP Specialist #2				X														
4.	Job Coverage On-shift Position:																		
5.	Offsite Radiological Dose Assessment On-shift Position: Chemistry Technician					X													
6.	Other Site-Specific RP – Describe: On-shift Position:																		
7.	Chemistry function/task #1 – Describe: Containment Sampling On-shift Position: Chemistry Technician					X (Identified Conflict)													
8.	Chemistry function/task #2 – Describe: On-shift Position:																		

TABLE 5 – Emergency Plan Implementation Analysis # 9

Line	Function/Task	On-shift Position	Task Analysis Controlling Method
1.	Declare the Emergency Classification Level (ECL)	Shift Manager	EP/Ops Training and EP Drill Program
2.	Approve Offsite Protective Action Recommendations	Shift Manager	EP/Ops Training and EP Drill Program
3.	Approve content of State/Local notifications	Shift Manager	EP/Ops Training and EP Drill Program
4.	Approve extension to allowable dose limits	Shift Manager	EP/Ops Training and EP Drill Program
5.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	SRO#2/Shift Manager	EP/Ops Training and EP Drill Program
6.	ERO notification	SEC	EP/Ops Training and EP Drill Program
7.	Abbreviated NRC notification for DBT event	N/A	EP/Ops Training and EP Drill Program
8.	Complete State/Local notification form	SEC	EP/Ops Training and EP Drill Program
9.	Perform State/Local notifications	SEC	EP Training and EP Drill Program
10.	Complete NRC event notification form	SRO#2	EP/Ops Training and EP Drill Program
11.	Activate ERDS	SEC	EP/Ops Training and EP Drill Program
12.	Offsite radiological assessment	N/A	N/A
13.	Perform NRC notifications	SRO#2	EP/Ops Training and EP Drill Program
14.	Perform other site-specific event notifications (e.g., INPO, ANI, etc.)	SEC	EP/Ops Training and EP Drill Program
15.	Personnel accountability	CAS	EP/Security Training and EP Drill Program

Notes: EAL FS1 upgraded to FG1 – The scenario as postulated meets the definition of a Site Area Emergency based on the Fission Product Barrier Criteria. The extension of the scenario to address a major release meets the requirements for classification of a General Emergency.

III. FUNCTIONAL ANALYSIS

The results of the staffing analysis for completion of functions associated with 30 and 60 minute responders are summarized in the tables below. Table E identifies by position, the results of the analysis for 30 minute responders. Table F provides a summary disposition for resolution of conflicts, if any, in order to extend the 30 minute response time to 90 minutes. Tables G and H provide summaries of analysis and dispositions for extension of 60 minute responder positions to 90 minutes.

Table E – Analysis of 30 Minute Responder Positions	
Position Title	**30 minute relief responders**
Radiological Emergency Coordinator (REC)	**1**
A conflict for the Chemistry Technician in performing the on-shift dose assessment function and required chemistry sampling if the dose assessment function is not assumed by the REC at 30 minutes in accordance with the current augmentation criteria for the LOCA scenario. The REC also assumes responsibility for a site communication with the State of Wisconsin response personnel upon arrival. This communication is not identified as a conflict in the OSA because it is an assumed duty upon arrival. The extension of the commitment to 90 minutes would not be acceptable. The responsibility will be assumed by the Chemistry Technician assuming dose assessment responsibility. The additional responder is reflected in Table B of this report.	
Radiation Protection	**4**
The June 2013 OSA for the LOCA scenario requires one additional on-shift RP Specialist responder to perform in-plant habitability. The additional responder is reflected in Table B of this report.	
Technical Support – Core/Thermal	**1**
Function can be completed by the STA for the first 90 minutes without conflicts.	
Electrical Maintenance	**1**
Function not required until after the 90 minute augmentation period.	
Instrument Control	**1**
Function not required until after the 90 minute augmentation period.	
Shift Emergency Communicator	**1**
Function can be performed by the Shift Emergency Communicator for 90 minutes without conflicts.	

Table F – Disposition of 30 Minute Responder Functions			
Function	**Performed by in Current Emergency Plan**	**Performed by in Revised Emergency Plan**	**Resolution**
Offsite Dose Assessment	REC	Chemistry Technician	A Second Chemistry Technician will be added to the on-shift staff to perform chemistry sampling and State of Wisconsin communications. With this addition, the REC position can be extended to 90 minute response.
Protective Actions	RP Specialists	RP Specialists	An additional RP Specialist will be added to the current on-shift component to support the function prior to relief by the augmented ERO. With this addition the remaining RP Specialists response positions can be extended to 90 minute response.
Core Thermal	Nuclear Engineer	STA	The existing STA can continue to support the Core Thermal Function until relieved at 90 minutes without conflicts. The Nuclear Engineer position can be extended to 90 minute response.
Repairs and Corrective Actions – Electrical Maintenance	Electrical Maintenance	Electrical Maintenance	The Electrical Maintenance position can be extended to 90 minute response.
Repairs and Corrective Actions – IC	Instrument and Control Technician	Instrument and Control Technician	The IC Maintenance position can be extended to 90 minute response.
Notification/Communication	Communicator	SEC	The on-shift SEC can perform this function without conflicts until relieved by the augmented ERO. The Communicator position can be extended to 90 minute response.

Table G – Analysis of 60 Minute Responder Positions	
Position Title	**60 minute responder**
Emergency Manager	**1**
Function can be performed by the Shift Manager for 90 minutes without any conflicts	
Radiation Protection	**6**
Function not required until after the 90 minute augmentation period.	
On-shift Dose Assessment – Chemistry Technician	**1**
Current procedural requirements require chemistry sampling be performed within the first 90 minutes. The Chemistry Technician is also assigned as the on-shift dose assessor. These two functions cannot be supported with a single individual.	
Technical Support – Electrical	**1**
Function not required until after the 90 minute augmentation period.	
Technical Support – Mechanical	**1**
Function not required until after the 90 minute augmentation period.	
Mechanical Maintenance	**1**
Function not required until after the 90 minute augmentation period.	
Electrical Maintenance	**1**
Function not required until after the 90 minute augmentation period.	
Shift Emergency Communicator	**2**
Function can be performed by the Shift Emergency Communicator for 90 minutes without conflicts.	
Rad Waste Operator	**1**
Function not required until after the 90 minute augmentation period.	

Table H – Disposition of 60 Minute Responder Functions			
Function	**Performed by in Current Emergency Plan**	**Performed by in Revised Emergency Plan**	**Resolution**
Command/Control	Emergency Manager	Emergency Manager	The Emergency Manager position can be extended to 90 minute response.
Protective Actions	RP Specialist	RP Specialist	The six RP Specialists can be extended to 90 minute response.
Chemistry	Chemistry Technician	Chemistry Technician	A second on-shift chemistry technician will be added to perform required sampling.
Plant System Engineering	Electrical Engineering	Electrical Engineering	The Electrical Engineering position can be extended to 90 minute response.
Plant System Engineering	Mechanical Engineering	Mechanical Engineering	The Mechanical Engineering position can be extended to 90 minute response.
Repairs and Corrective Actions	Mechanical Maintenance	Mechanical Maintenance	The Mechanical Maintenance position can be extended to 90 minute response.
Repairs and Corrective Actions	Rad Waste Operator	Rad Waste Operator	The Rad Waste Operator position can be extended to a 90 minute response.
Repairs and Corrective Actions	Electrical Maintenance	Electrical Maintenance	The Electrical Maintenance position can be extended to 90 minute response.

IV. CONCLUSIONS

The June 2013 OSA concluded that with the addition of on-shift personnel, the 30 minute and 60 minute responder functions can be performed successfully and without conflicts. Additionally, the 30 minute and 60 minute responder augmentation requirement can be modified by the addition of on-shift personnel allowing for extension of TSC, OSC and EOF augmentation times to 90 minutes.

The following positions will be added to the shift as follows:

1. The addition of one on-shift Chemistry Technician to resolve the conflict between chemistry sampling and dose assessment. The second Chemistry Technician will assume responsibility for chemistry sampling and allow the first Chemistry Technician to continue with dose assessment responsibilities and assume the communications with the State of Wisconsin until augmented by the REC at 90 minutes.

2. The addition of one RP Specialist to resolve the conflict between required survey functions. The third RP Specialist on shift will provide needed support for surveys in assembly areas as well as in-plant locations as required.

The revised staffing proposed in Table B of this report meets the requirements in 10 CFR 50 Appendix E.IV.9 and the Planning Standards of 10 CFR 50.47(b).

V. REFERENCES

1. NSIR/DPR-ISG-01, "Interim Staff Guidance, Emergency Planning for Nuclear Power Plants," Revision 0, November 2011.

2. NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0, dated June 2011.

VI. ACRONYM LIST

ANI	American Nuclear Insurers
AO	Auxiliary Operator
AOP	Abnormal Operating Procedure
ARG	Alarm Response Guide
ATWS	Anticipated Transient Without SCRAM (Safety Control Rod Axe Man)
Aux	Auxiliary
BOP	Balance of Plant
CAS	Central Alarm Station
CETC	Core Exit Thermocouple
CFR	Code of Federal Regulations
cpm	counts per minute

CR	Control Room
CRS	Control Room Supervisor
CSFT	Critical Safety Function Status Trees
DBT	Design Basis Threat
E Plan	Emergency Plan
EAL	Emergency Action Level
ECL	Emergency Classification Level
ED	Emergency Director
ENS	Emergency Notification System
EOC	End of Cycle
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedures
EP	Emergency Preparedness
ERCS	Emergency Response Computer System
ERDS	Emergency Response Data System
ERO	Emergency Response Organization
GE	General Emergency
IC	Instrument and Control
IN	Information Notice
INPO	Institute of Nuclear Power Operations
ISG	Interim Staff Guidance
LAR	License Amendment Request
LB LOCA	Large Break Loss of Coolant Accident
LOCA	Loss of Coolant Accident
min	minute
mins	minutes
MS	Main Steam
MSR	Moisture Separator Reheater
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OATC	Operator at the Controls
OSC	Operational Support Center
PAR	Protective Action Recommendations
psig	pounds per square inch gauge
PINGP	Prairie Island Nuclear Generating Plant
Rad	Radiological
RCCA	Rod Cluster Control Assembly
RCS	Reactor Coolant System
REC	Radiological Emergency Communicator
RG	Regulatory Guide
RO	Reactor Operator
RP	Radiation Protection
Rx	Reactor
SAE	Site Area Emergency
SEC	Shift Emergency Communicator
S/D	Shutdown
SG	Steam Generator
SGTR	Steam Generator Tube Rupture

SI	Safety Injection
SM	Shift Manager
SRO	Senior Reactor Operator
SS	Shift Supervisor
STA	Shift Technical Advisor
TMS	Time Motion Study
TSC	Technical Support Center
USAR	Updated Safety Analysis Report