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February 23, 2017

L-PI-17-005
10 CFR 50.90

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

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

Prairie Island Nuclear Generating Plant, Units 1 and 2 License Amendment Request:
Revision to Emergency Plan Staff Augmentation Response Times

In accordance with 10 CFR 50.90, Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy, hereby requests an amendment to the Prairie Island Nuclear Generating Plant (PINGP) Units 1 and 2 Renewed Facility Operating Licenses. NSPM proposes to revise the PINGP Emergency Plan (E-Plan) to increase staff augmentation times for Emergency Response Organization (ERO) response functions.

Enclosure 1 provides a detailed description and analysis of the proposed changes. Attachment 1 to Enclosure 1 provides the annotated Emergency Plan pages showing the proposed changes. Attachment 2 to Enclosure 1 provides the clean Emergency Plan pages showing the proposed changes. Attachment 3 to Enclosure 1 provides Letters of Concurrence from the state of Minnesota and the counties local to PINGP.

Enclosure 2 provides a comparison between NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, the 1982 NRC approved Emergency Plan, the current Emergency Plan, and the proposed changes to the Emergency Plan.

Approval of the proposed amendment is requested by April 30, 2018. NSPM requests 180 days to implement the amendment once NRC approval is obtained.

Please contact John Fields, at 763-271-6707, if additional information or clarification is required.

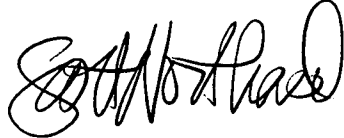
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Summary of Commitments

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 February 23 2017.

A handwritten signature in black ink, appearing to read "Scott Northard", written in a cursive style.

Scott Northard
Site Vice President, Prairie Island Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosures (2)

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

ENCLOSURE 1

**NORTHERN STATES POWER COMPANY
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2**

**LICENSE AMENDMENT REQUEST:
REVISION TO EMERGENCY PLAN STAFF AUGMENTATION RESPONSE TIMES**

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Attachments

1. Proposed Emergency Plan Changes (Mark-up)
2. Proposed Emergency Plan Changes (Clean)
3. Letter of Concurrence from State and Local Authorities

1.0 SUMMARY DESCRIPTION

Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy proposes revisions to the Prairie Island Nuclear Generating Plant, Units 1 and 2 (PINGP), Emergency Plan. The proposed revisions include:

- Extending augmented response time from 30-minutes from notification to 60 minutes from event declaration
- Extending augmented response time from 60-minutes from notification to 90 minutes from event declaration
- Addition of Facility Activation criteria for the Technical Support Center (TSC), Operations Support Center (OSC) and Emergency Operations Facility (EOF)
- Extending dispatch of two (2) offsite survey teams at 30 minutes to one (1) team at 60 minutes and one (1) team at 90 minutes from declaration of an Alert or higher classification
- Removal of references to additional Radiation Protection (RP) support coming from the Monticello Nuclear Generating Plant (MNGP) within 2 - 3 hours
- Removal of one Electrical Maintenance Responder and the Radwaste Operator (RWO) from the augmentation list
- Removal of references to performance of post-accident in-plant surveys by non-licensed plant operators

NSPM completed a functional analysis of the augmented Emergency Response Organization (ERO) positions based on the proposed extended augmentation times and completion of the Major Tasks identified by NUREG-0654/FEMA-REP-1, Revision 1 (Reference 1). The analysis determined that changes can be made to increase the staff augmentation times for ERO response functions from 30 and 60 minutes to 60 and 90 minutes, respectively¹, while maintaining the site's ability to protect public health and safety. In addition, a new staffing analysis of on-shift responsibilities resulting from impacts associated with the proposed changes was performed.

The increase in the ERO augmentation times results in an increase in facility activation times for the PINGP Emergency Response Facilities (ERF's). 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.

¹ There is one exception to the proposed staff augmentation time changing from 30 minutes to 60 minutes in the proposed changes. The I&C Maintenance 30-minute responder would be extended to 90 minutes. See discussion in section 3.2.5 for further details.

2.0 DETAILED DESCRIPTION

2.1 Proposed Changes

Brief descriptions of the associated Emergency Plan (E-Plan) proposed changes are provided below. The justification for each change is discussed in Sections 2.2 or 3.2. The specific wording changes are provided in Attachments 1 and 2 to this enclosure as marked-up and clean copy Emergency Plan pages, respectively.

Proposed Changes to the PINGP E-Plan include:

- a. Section 1.0, "Definitions," added item 1.10, definition of 'Facility Activation' to more clearly align requirements to guidance provided in NSIR/DPR-ISG-01.
- b. Section 2.0, "Scope and Purpose," removed references to field team augmentation by Monticello as other resources for long term staffing are available if needed.
- c. Section 4.1.3, "Site Area Emergency," removed reference to full mobilization of emergency personnel and dispatch of monitoring teams.
- d. Section 5.3, "Plant Emergency Organization," revised response times to reflect proposed changes to 60 and 90 minutes from time of event declaration and removed reference to Table 2 (See item i, below, for more details).
- e. Section 5.3.1, "Direction and Coordination," revised description of command and control transfer to clearly delineate the transfer of duties between Emergency Response Facilities consistent with the proposed facility activation change.
- f. Figure 1, "Prairie Island Plant Emergency Organization," was revised to reflect TSC and OSC positions including identification of positions required for facility activation.
- g. Table 1, "Guidance for Augmentation of Plant Emergency Organization," was revised to reflect proposed changes to extend response times to 60 and 90 minutes, remove the Radwaste Operator augmented position, remove references to MNGP support for offsite surveys in 2 - 3 hours, and remove reference to the performance of post-accident in plant surveys completed by licensed operators.
- h. Table 2, "Primary and Secondary Responsibilities of Plant Emergency Organization," was deleted and replaced by Figure 1 to better reflect the augmented organization. Tables were renumbered throughout the plan based on this change.
- i. Section 5.3.1.G, "Direction and Coordination," was revised to remove reference to the EOF becoming operational consistent with the addition of the facility activation definition.
- j. Section 5.3.2.D, "Radiological Emergency Coordinator," removed reference to use of Monticello personnel for long term survey support.
- k. Section 5.3.3.A, "Operations Group," removed references to performance of Radwaste equipment operations and radiation surveys consistent with removal of

the Radwaste Operator from the E-Plan and Operations involvement with post-accident surveys.

- l. Section 5.3.3.E, "Shift Emergency Communicator (SEC)," revised note to be consistent with addition of the definition for facility activation.
- m. Section 5.3.3.G, "Radiation Protection Specialist," removed reference to Operations performance of radiation surveys consistent with the proposed change to remove radiation survey performance by licensed plant operators.
- n. Section 5.4, "EOF Organization," revised to reflect 90-minute activation time consistent with extended staff augmentation change.
- o. Figure 2, "Prairie Island EOF Organization," revised chart to reflect positions required for facility activation.
- p. Section 5.6.2, "Monticello Radiation Protection Group Support," removed references to augmented support for survey teams consistent with the proposed change to remove reference to augmented RP support coming from MNGP.
- q. Section 6.1.2, "Notification Scheme," replaced references to 'activated' with 'staffed' consistent with the addition of the definition for facility activation.
- r. Section 6.3, "Summary of Site Response Actions," removed 'as needed' from line 4 under Alert consistent with the proposed change to dispatch survey teams at an Alert or higher classification.
- s. Section 6.4.2, "Radiological Surveys," removed reference to Operations Group performance of post-accident in-plant surveys, replaced requirement for dispatch of two teams within 30 minutes with the dispatch of one team within 60 minutes and a second team within 90 minutes, and removed references to MNGP Radiation Protection Specialist support consistent with several of the proposed changes described in Section 1.0 of this Enclosure.
- t. Section 7.1.1.F, "Technical Support Center," was revised to reflect the 60-minute facility activation requirement consistent with the proposed change to extend the time for response of augmented staff.
- u. Section 7.1.2, "Operational Support Center," was revised to reflect the 60-minute facility activation requirement consistent with the proposed change to extend the time for response of augmented staff.
- v. Section 7.1.3, "Emergency Operations Facility," was revised to reflect the 90-minute facility activation requirement consistent with the proposed change to extend the time for response of augmented staff.
- w. Section 7.3.2, "Assessment Equipment," was revised to remove references to RP augmentation by MNGP personnel consistent with the proposed change to remove references to RP support being provided by MNGP. Table 11 is changed to Table 10 consistent with the elimination of Table 2 and the renumbering of each table thereafter.

2.2 Reason for the Proposed Changes

The proposed changes are needed to address concerns regarding limitations on the number of ERO staff augmentation personnel available to respond to the site within 30 minutes. Significant increases in the number of ERO positions have occurred over the past several years. Currently, a total of 18 persons are identified for on-shift staffing which is an increase from the regulatory guidance provided by the NUREG-0654, Revision 1, total of 10 persons and the PINGP E-Plan, Revision 2 approved staffing level of 12 persons.

Some plant personnel live far enough away from the plant that they may be precluded from being assigned to the augmented ERO. This limits the number of eligible site personnel to support the ERO. The ERO in Revision 2 of the E-Plan consisted of 52 responders which were augmented within 60 minutes of notification to support site response to an emergency. Today, the ERO in the current E-Plan consists of 160 responders. This represents an approximately 200% increase in the number of individuals available to meet existing E-Plan requirements. Expanding augmentation times will increase the number of eligible plant personnel available to fill critical ERO positions and add valuable expertise. The proposed changes do not reduce the number of personnel expected to respond and will not be applied as permission to delay response to an event.

Extended Augmentation Times

For the PINGP E-Plan, activation of emergency response facilities (ERF's) is proposed to be required within 60 minutes for the TSC and 90 minutes for the EOF of declaration of an event of an Alert or higher classification. Facilities are considered activated when minimum staffing is achieved and that facility is ready to accept specific command and control functions. For the OSC 'activated' corresponds to the positions required in order to transfer oversight of in-plant teams from the Control Room (CR). Revised figures are being added to the PINGP E-Plan which delineates positions associated with activation. This change increases the total number of 60-minute responders, and allows for the transfer of command and control functions from the CR in advance of 60 minutes when minimum staff positions are filled in the TSC.

Addition of the Definition of Facility Activation

The addition of the definition 'Facility Activation' as it relates to Emergency Response Facilities (ERFs) standardizes the criteria to better align with NRC guidance. The proposed definition of Facility Activation is:

An Emergency Response Facility is activated when the minimum staff per Figures 1 and 2 is available and the facility is ready to assume its assigned Emergency Plan functions and relieve the on-shift staff of those functions. Although the facility may be ready, the on-shift staff relief may be postponed in the interest of completing critical tasks prior to turnover.

Currently the terms 'staffed', 'operational', 'functional' or 'activated' are used to describe ERF readiness to perform assigned duties. The proposed change defines the term 'activated' (through the Facility Activation definition) to clearly identify the positions which must be filled in the TSC and EOF so that transfer of command and control functions (Classification, Notification, Protective Action Recommendations, Dose Assessment, Emergency Exposure Authorization) can be completed and on-shift personnel can be relieved of these duties. For the Operational Support Center (OSC) 'activated' corresponds to the positions required in order to transfer oversight of in-plant teams from the CR.

Extending Dispatch Times of Survey Teams

The proposed change would extend the RP dispatch teams from two (2) offsite survey teams at 30 minutes to one (1) team at 60 minutes and one (1) team at 90 minutes from declaration of an Alert or higher classification. The first survey team can effectively track any potential plume and/or cover the necessary area to identify whether a plume exists during the early stages of an event. The second team, augmented at 90 minutes, will support continued plume tracking capability as well as sampling activities.

Removal of MNGP RP Resources

The PINGP E-Plan currently contains references to additional RP support being provided by MNGP personnel within approximately 2 - 3 hours. This commitment² was implemented to address limited staffing resources available at the site when PINGP E-Plan, Revision 2 was implemented. Currently, the site has sufficient qualified resources to fulfill the function independently. As a result, the PINGP E-Plan is being revised to remove this commitment.

Removal of Electrical Maintenance and Radwaste Operator Responders

The Electrical Maintenance Responder is currently described in Table 1 of the PINGP E-Plan as augmenting the duty Operations Staff in the functional area of repair and Corrective Actions. A detailed review of maintenance procedures indicated that more significant repair activities would not be initiated for several hours after the event occurred. Due to the time needed to stabilize the plant and assess the event, the initial phase of accidents is not expected to involve a significant need for maintenance personnel. Initial event response actions associated with troubleshooting are completed by on-shift Operations personnel.

The RWO is currently described in Table 1 of the PINGP E-Plan as augmenting the duty Operations Staff in the functional area of repair and Corrective Actions. During the completion of the On-Shift Staffing Analysis (OSA), it was noted that there were no

² The term 'commitment' used throughout this document is not to be construed as a formal NRC commitment as described in NEI 99-04, "Guidelines for Managing NRC Commitment Changes." Rather, "commitment" is used consistent with the NRCs usage of the term in RG 1.219, Revision 1, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors."

actions requiring response by the RWO for the first 90 minutes after event classification. Initial event response actions associated with troubleshooting were completed by on-shift Operations personnel. Additionally, any radiological waste processing would be performed by an auxiliary operator as part of their normal duties during the recovery phase of the event. The RWO is not required to operate, or support maintenance of, Radwaste equipment in either the PINGP Emergency Operations Procedures (EOPs) or Severe Accident Management Guidelines (SAMGs). As a result, the proposed change removed the RWO from Table 1 as a 60-minute response position.

Removal of post-accident in-plant survey by Non-Licensed Operators

Table 1 of the current PINGP E-Plan identifies that non-licensed operators are fully trained to conduct post-accident in-plant surveys for the first hour of the emergency. The addition of an RP position on-shift in 2012 negated the need for the performance of required in-plant surveys by licensed Operations personnel. This was supported by the On-Shift Staffing Analysis conducted at that time. As a result, the proposed change removes references in the PINGP E-Plan regarding the performance of in-plant surveys by non-licensed operators.

Conclusion

Maintaining an appropriate number of on-shift personnel, crediting additional on-shift staff positions, technological advances available for on-shift responders, and changing the augmentation timeliness response times to 60 and 90 minutes are practical and prudent alternate methods of ensuring effective and timely emergency response augmentation.

Details associated with the on-shift ERO, revised augmented ERO and revised key responsibilities and tasks as identified in NUREG-0654 Revision 1, are included in Section 3.2 of this enclosure.

2.3 PINGP Emergency Plan Background

The last PINGP E-Plan reviewed and approved by the NRC in the area of staffing was Revision 2. The PINGP E-Plan Revision 2, as well as Revision 0 of the Corporate Emergency Plan were approved by NRC Safety Evaluation Report (SER) dated December 27, 1982. As approved by the NRC, the PINGP E-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 E-Plan, Revision 2, Figure 5-3, "Guidance for Augmentation of Offsite Emergency Organization." The E-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 ERFs occurs at the Alert or higher declaration.

The PINGP E-Plan describes three ERFs augmenting the on-shift staff: the TSC, the OSC and the EOF. The Backup Emergency Operations Facility (BUEOF) and Joint Information Center (JIC) are described in the Corporate Emergency Plan. 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 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, the ERFs are activated.

3.0 TECHNICAL EVALUATION

3.1 Technical Analysis

This section discusses technical changes completed in plant systems, dose assessment, procedures and training which have been completed in order to better support on-shift functions and ease operator burden. An on-shift staffing analysis utilizing NEI 10-05, *Assessment of On-Shift Emergency Response Organization Staffing and Capabilities*, (Reference 2) methodology was completed and determined that the proposed changes did not result in conflicting duties for the on-shift staff.

3.1.1 Plant Computer System

In 1982, the plant computer system was the Westinghouse P250 which was available to control room personnel via single line-feed printer.

In the 1980's, the transition to the Emergency Response Computer System (ERCS) was completed. ERCS satisfied NUREG-0696/0737 requirements for a Safety Parameter Display System (SPDS)/ERF computer system.

In 2011, a system upgrade was completed which updated hardware, implemented more usable display viewer software, and included changes required to enable communications functions for paperless recorder and annunciator system revisions for the ERCS.

In 2015, the ERCS was replaced with a more modern and advanced system. Currently, the ERCS software is composed of the following integrated software packages; the Plant Monitoring System (PMS), and the Safety Assessment System (SAS).

The ERCS collects and processes field data for display to plant personnel. The data is displayed in a concise and consistent format on displays in the CR, TSC, EOF and backup EOF. Display of this data is also available to all plant personnel through the business computer network. This information, in its multiple forms is used to assist personnel in the proper implementation of Emergency Procedures during an accident condition covered by these procedures. The system also provides CR personnel with access to relevant information to assist them during operational transients. During normal operation, the system provides assistance in determining the status and performance of the core and other plant systems. The ERCS is designed with fully redundant servers, network switches and multiple independent workstations providing a high degree of availability. The design criteria for the ERCS was based on the requirements of NUREG-0737, Supplement 1 regarding the need for SPDS and the upgrading of ERFs. The replacement system continues to meet Regulatory Guide 1.97 required data collection, display, audible alarming and

data transmission functions. ERCS is powered by an uninterruptible power supply (UPS) and non-safeguards batteries. Non-safeguards diesel generators support operation when the UPS and batteries are unavailable.

Plant Monitoring System (PMS)

PMS provides the standard scan, log, alarm, display, archival and periodic reporting functions. PMS controls and maintains the ERCS data base. Field inputs, constants, setpoints, and outputs calculated by other applications are contained in this data base so that any of the standard PMS functions can be applied to any point in the system. PMS performs the following basic functions:

- Scanning and converting analog signals
- Scanning contact inputs
- Alarming
- Trending analog signals
- Visual display of input data
- Pre and post trip review data
- Sequence of events recording
- Review of data on a demand basis
- Sensor calibration information
- Periodic logs
- Archival of data

The PMS also provides plant personnel with concise and reliable information to assist in determining the status and performance of the core and provides input to the nuclear fuel performance calculations.

Safety Assessment System (SAS)

SAS processes all SPDS parameters. SAS performs necessary calculations, dose limit checking and assigns SAS quality codes to each parameter. The processed SPDS parameters are presented on a system of displays called the SAS Primary Displays. There are three types of SAS Primary Displays:

- Top Level Displays
- Trend Displays
- Critical Safety Function (CSF) Tree Displays

The SAS Primary Displays satisfy the SPDS requirements. SPDS parameters are displayed in multiple forms to assist personnel in the proper implementation of Emergency Procedures during an accident condition and during operational

transients. SAS Primary Displays group the SPDS parameters by system and safety function. Although parameters are displayed in different forms on different displays, values, units and quality are consistent throughout the system.

3.1.2 Dose Assessment

Specifically designed displays have been developed for obtaining the necessary plant, radiological effluent, area radiation monitor, and meteorological information that is used by Operations personnel on-shift through the Unified Radiological Assessment System for Consequence Analysis (RASCAL) Interface (URI) program. URI has a rapid dose assessment option provided specifically for use by qualified on-shift personnel and requires minimal data input.

3.1.2.1 Previous on-shift dose assessment

The 1982 dose assessment software, Meteorological Information and Dose Assessment System (MIDAS), used manual entry of basic meteorological data and either manual entry of radiological data or use of internally stored source terms. The system also required entry of data into multiple screens to complete required calculations. This dose assessment software was replaced by RASCAL in 2007.

3.1.2.2 Current on-shift dose assessment

RASCAL software was updated in 2014 to include the Unified RASCAL Interface (URI). The URI application is available on ERF dose assessment computers. The URI program greatly reduces the data entry needs and the number of program windows the user needs to access to perform a dose projection. It also incorporates a rapid dose projection option which allows personnel to perform dose assessments during the initial phases of a rapidly evolving event. Manual dose calculation capability is maintained as a backup to the URI system. With the use of the current dose assessment program, as well as plant status, meteorological, and radiation monitoring data, one person can perform dose assessments during emergency conditions easily and rapidly.

3.1.3 Automated Call-Out Systems

In the early 1980's, the ERO Radio Alert system and/or the telephone system were used to activate the ERO during off hours. ERO Radio Alert receivers were issued to the groups of individuals in Rad Protection, Operations and Maintenance. Once these individuals were notified, they were responsible for contacting personnel in their respective groups to respond to the site.

In 1990, key ERO members Tone Alert Radios were replaced with plant personal pagers and an automated ERO Pager Network system which was initiated by a single phone call. In 1995, the Auto Dial System, an automatic call-out process utilizing multiple out-going telephone lines was implemented. The system delivered an emergency message to plant and EOF personnel home telephones. Additionally, the site maintains cellular phones as a backup means of system activation.

Today, the off hours ERO activation continues to be accomplished using the ERO Pager Network and Auto Dial System. When activated, it will call and deliver an emergency message to the Emergency Response Organization's home and mobile telephones to staff the ERFs.

3.1.4 Procedure Improvements

3.1.4.1 Emergency Operations Procedures (EOPs)

Since the original emergency plan approval, the PINGP EOPs have been improved through internal operating experience and industry initiatives. EOPs now use a symptom-based approach that demands less assessment and interpretation of plant conditions by the operating crews. The EOPs interface well with new technology such as ERCS. For example, monitoring of Critical Safety Function Status Trees (CSFSTs) uses the ERCS to graphically display plant conditions relative to limits or required actions and provides a recommendation on which EOP applies. Overall, the improvements made to procedures greatly reduce the operator's reliance on the ERO during the initial phase of any event.

3.1.4.2 Emergency Plan Implementing Procedures (EPIPs)

In 2005, NSPM updated the classification methodology to NEI 99-01, Revision 4 for the PINGP. PINGP EALs now incorporate guidance that has simplified the classification process, including the use of an overview matrix of EAL initiating conditions and threshold values that streamlines the process of evaluating EALs against plant conditions. This allows the on-shift operators to focus on event mitigating actions without the aid of the ERO during the initial phase of any event.

3.1.5 Training Improvements

3.1.5.1 Operations Training

Training is used to strategically drive and sustain improved performance at the PINGP. Training is administered through the application of the Systematic Approach to Training (SAT) to ensure that all training is conducted to the industry-accepted standards required to achieve and maintain accreditation by the National Academy of Nuclear Training.

A dynamic reference plant simulator is used during Operations Training to provide hands on experience and practice in the operation of the nuclear CR during normal, abnormal and emergency plant conditions. "As found" simulator performance evaluations are an integral component of the requalification training cycle.

The site training procedures describe the conduct of crew specific simulator training. Evaluation scenarios are designed to be realistic and provide an opportunity for performance evaluation during a wide range of plant operating conditions including emergency conditions that require implementation of the station's PINGP E-Plan. Scenarios can vary in both length and complexity with some scenarios up to 90 minutes or more. Periodically, scenarios that were developed in accordance with the guidance specified by INPO Operations Department Standing Instruction ODSI-3, "Operations Department Guidance for Conducting Crew Performance Evaluations," are used for control room team evaluations. These scenarios provide additional challenges to the crew's ability to prioritize activities to successfully manage very complex situations. The proficiency of the CR team is evaluated in the areas of critical task performance, prioritization of activities, communications, accident mitigation, event classification, teamwork and communications.

The training and evaluation described above is performed under the Licensed Operator Requalification program.

3.1.5.2 Shift Technical Advisor (STA) Training

The Shift Technical Advisor (STA) training was developed to train the STA as an advisor to the control room team in accordance with the guidelines of NUREG-0737. In 1990 INPO developed additional training guidelines as detailed in INPO 90-003, "Guidelines for Training and Qualification of Shift Technical Advisors." The INPO guidelines describe the role of the STA and are reflected in Operations Department Instructions. The STA performs independent assessments of plant parameters, monitors status trees, provides recommendations on appropriate corrective actions to restore plant

parameters to acceptable values and assesses whether core damage has occurred or appears imminent. The STA also assists the Shift Manager with operability, risk and reportability determinations including EAL classification.

3.1.6 Increases in On-Shift Staffing

There has been an increase in on-shift staffing from that required in the NRC approved Plan in order to ensure adequate performance of the major E-Plan functions and tasks. Currently, a total of 18 persons are identified for on-shift staffing which is an increase from the regulatory guidance provided by the NUREG-0654, Revision 1 total of 10 persons and the PINGP E-Plan, Revision 2 approved staffing level of 12 persons. A comparative chart depicting on-shift and augmented staffing based on NUREG-0654 Revision 1, PINGP E-Plan Revision 2, the current PINGP E-Plan and proposed revisions is included as Enclosure 2.

3.1.7 Improvement Summary

The improvements to staffing, equipment, procedures and training that have occurred since initial approval of the PINGP E-Plan have resulted in a significant increase in the on-shift capabilities and knowledge. Based on these improvements, it is concluded that there would be no significant degradation or loss of any functional task as a result of the proposed augmentation times.

3.2 Functional Analysis

This analysis evaluates the impact of extending the augmentation times on the ability of the on-shift staff to perform the major tasks for the major functional areas of the PINGP E-Plan. The analysis demonstrates that no degradation or loss of function would occur as a result of the change.

The following is the result of the functional analysis performed for the areas as described in NUREG-0654 Revision 1, Table B-1.

3.2.1 Plant Operations and Assessment of Operational Aspects

NUREG-0654 Revision 1 assumes the on-shift staff will provide the plant operations and assessment of operational aspects functions throughout the emergency. Compared to NUREG-0654, Revision 1, the current revision of the E-Plan has two (2) additional Control Room Operator (ROs) and two (2) additional Auxiliary Operators (AOs) to support this function and to support any of the major tasks such as repair and corrective actions or operational accident assessments. These changes improve the availability of Operations personnel to perform specified functions.

In accordance with the current PINGP E-Plan, the on-shift staffing is in excess of the guidance included in NUREG-0654 Revision 1 Table B-1, as well as that prescribed in the last PINGP approved E-Plan, Revision 2 from 1982. Additional personnel have been included in the existing on-shift complement for a total on-shift staffing of 18 personnel. This represents an increase of eight (8) when compared to the regulatory guidance stated in NUREG-0654 Revision 1, Table B-1 and an increase of six (6) when compared to the last NRC approved E-Plan, Revision 2. The additional on-shift staff helps to ensure prompt response to emergency events without requiring immediate augmentation.

Therefore, the proposed increase in augmentation times will not detract from the capability of on-shift personnel to support plant operations or the assessment of operational aspects at the start of an event and until the on-shift staff is augmented.

3.2.2 Emergency Direction and Control

NUREG-0654, Revision 1 guidance indicates that the Shift Supervisor or STA assumes the emergency direction and control function as a collateral duty, where responsibility for overall direction of facility response may be transferred when ERFs are fully staffed.

- a. In Revision 2 of the PINGP E-Plan, the Shift Supervisor of the unaffected unit would assume the duties of ED and would be responsible for emergency response efforts until relieved by another ED at an Alert or higher classification. There were no time requirements established for the relief process. The E-Plan identified an EOF Coordinator with a 60-minute response time, who was responsible for filling the role of Emergency Manager at the EOF. The EOF was required to be activated within approximately two (2) hours. In Revision 13, the requirement for transfer of responsibilities to the EOF was changed to approximately 60 – 90 minutes.
- b. The current revision of the PINGP E-Plan maintains the Revision 13 commitments for staffing of the EOF Coordinator and Emergency Manager as well as transfer of responsibilities.
- c. Positions staffed in the TSC are identified in the proposed revision through the use of an organizational chart which identifies each position by title. All TSC positions have 60-minute response times. The EOF Coordinator and Emergency Manager position response times would be extended from 60 minutes to 90 minutes from event declaration. The proposed change would allow for transfer of command and control functions from the CR to the TSC approximately 60 minutes after event declaration. Offsite functions such as notification and PARs would subsequently transfer to the EOF upon activation of that facility approximately 90 minutes after declaration of the event.

The proposed revision to the PINGP E-Plan defines a facility as 'activated' by its respective manager once minimum required staffing has been achieved such that the facility is capable of performing its assigned functions. The time from emergency declaration (from a classification of Alert or higher) to the time the facility is activated is the "augmentation time" for emergency responders.

The proposed revision to PINGP E-Plan, Figure 1, identifies the following minimum staff positions in the TSC needed to support activation of that facility within 60 minutes of an Alert or higher classification:

- Emergency Director
- ERF Communicator
- Operations Group Leader
- Radiological Emergency Coordinator
- Core Thermal Engineer
- Offsite Communicator
- NRC ENS Communicator

The proposed revision to PINGP E-Plan, Figure 1, identifies the following minimum staff positions in the OSC needed to support activation of that facility within 60 minutes of an Alert or higher classification:

- OSC Coordinator
- Radiation Protection Coordinator

The proposed revision of the PINGP Emergency Plan, Figure 2, identifies minimum staff positions in the EOF which support activation of the facility within 90 minutes of an Alert or higher classification.

- Emergency Manager
- Radiation Protection Support Supervisor
- Offsite Communicator
- ENS Communicator

This change would reduce the amount of time that the Shift Manager/ED maintains responsibility for Emergency Direction and Control as the 60-minute TSC and OSC activation criteria would be initiated at the time of declaration rather than from the point of notification as is done currently.

This change is acceptable in that it identifies minimum staffing positions in the TSC and OSC which enable transfer of the command and control functions (Classification, Notification, Protective Actions and Emergency Exposure Authorization) in advance of the 60-minute activation requirement. Additionally, identification of minimum staffing positions in the EOF allows for the transfer of the Notification and Protective Action functions to the EOF in advance of the 90-minute activation requirement.

3.2.3 Notification/Communication Function

Per NUREG-0654 Revision 1, the Notification/Communication function includes major tasks to notify licensee, state, local and federal personnel and maintain communications.

Licensee Notification

- a. Revision 2 of the PINGP E-Plan identified a Shift Supervisor as being responsible for notification of the ERO. This notification was completed at an Alert or higher emergency classification for personnel assigned to respond to the TSC, OSC, EOF and Corporate Organization
- b. The current E-Plan maintains the Revision 2 commitment for notification of the ERO by the Shift Manager at an Alert or higher classification.
- c. The proposed E-Plan will maintain the notification process for augmented ERO in that personnel responding to the TSC, OSC, EOF and Corporate Organization will be activated at the Alert or higher classification.

State, Local and Federal Notification

- a. Revision 2 of the PINGP E-Plan identified notification of state/local and NRC personnel as a function of the SEC and a licensed operator or designee. The Notification function was augmented by one (1) 30-minute responder and two (2) 60-minute responders.
- b. The current PINGP E-Plan maintains the SEC and licensed operator or designee responsibilities for notification of state/local and federal personnel. The augmented organization for the State/local and federal notification functions as described in Revision 2 is also maintained.
- c. The proposed revision to the E-Plan maintains Revision 2 commitments related to performance of on-shift notification by the SEC and licensed operator or designee. The SEC position is staffed by a dedicated Security force individual on-shift that is not credited as part of the armed response force. As such, there are no conflicts between the SEC duties and any security activities associated with the Physical Security Plan or Order EA-02-026. The proposed E-Plan extends the 30-minute augmented responder to 60 minutes and adds a second 60-minute responder position such that State/local and Federal notifications are completed by separate positions in the TSC. The proposed change also extends the two (2) 60-minute responders to 90 minutes and designates them as reporting to the EOF.

Although the notification function remains with on-shift personnel for an additional 30 minutes, the use of a dedicated SEC position which exceeds the on-shift staffing levels noted in NUREG-0654, Revision 1, Table B-1. Table B-1 allows for the function to be maintained for an additional 30 minutes by shift personnel and does not result in conflicting duties assigned to on-shift resources.

Notification/Communication Function Summary

Notification of licensee personnel is initiated through an automated call-out process which is initiated by the SEC. The proposed change does not impact the call-out process or the notification of licensee personnel.

The proposed change impacts the staffing of the notification function by extending the response time of the 30-minute responder to 60 minutes. The proposed E-Plan maintains the SEC position on-shift to ensure that notification functions are completed without conflicts as noted in the site On-Shift Staffing Analysis. State/local notifications will transition from the SEC in the CR to the Offsite Communicator in the TSC upon activation of the TSC within approximately 60 minutes under the proposed revision. ENS notifications will continue to transition

from the CR to the TSC within 60 minutes as required under the current E-Plan. This approach is consistent with Industry and NRC public meeting discussions which have taken place over the last 12 - 24 months.

3.2.4 Radiological Accident Assessment and Support of Operational Accident Assessment Function

Per NUREG-0654 Revision 1, the Radiological Accident Assessment and Operational Accident Assessment functional area includes Emergency Operations Facility (EOF) Director, Offsite Dose Assessment, Offsite, On-site and Out-of-plant surveys and Chemistry/Radiochemistry major tasks.

Emergency Operations Facility (EOF) Director Major Task

Revision 2 of the PINGP E-Plan identified the TSC as the initial response facility. Accident assessment, evaluation and recovery functions were initially transitioned from the Shift Supervisor/ED in the CR to the ED in the TSC rather than to an EOF position noted in NUREG-0654 Rev 1.

Assessment, Evaluation and Recovery Task

- a. In Revision 2 of the PINGP E-Plan, the on-duty Shift Supervisor, acting as the ED was responsible for event response until relieved by a designated ED at an Alert or higher classification. No response time for the ED was identified. The Emergency Manager (EM) in the EOF would relieve the ED of offsite aspects of the event response once the EOF was activated. The EOF could be activated within approximately two (2) hours. In Revision 13, the EOF staffing time was changed to approximately one (1) hour.
- b. The current E-Plan maintains the relief process for the Shift Manager/ED to another qualified ED in the TSC. The current Plan also maintains the transfer of offsite response efforts to the EM in the EOF within approximately one (1) hour from the time of notification.
- c. In the proposed revision, an augmentation time for the ED in the TSC as well as activation criteria for the TSC within 60 minutes after declaration of an Alert or higher has been added. The response time for the EM and the activation time for the EOF has been extended to 90 minutes from declaration of an Alert or higher emergency. The proposed change maintains the process of transfer of assessment, evaluation and recovery functions from the CR to the TSC and adds a 60-minute TSC activation requirement to ensure timely transfer of these

functions from on-shift personnel.

Assessment, Evaluation and Recovery Task Summary

The proposed revision to the PINGP E-Plan establishes a clear time requirement for staffing and activating the TSC within 60 minutes of an Alert or higher event classification and extends the EOF requirement for activation to 90 minutes. The TSC activation requirement ensures timely transfer of assessment, evaluation and recovery responsibilities from the control room to the TSC. As such, extending the EOF augmentation and activation time to 90 minutes does not adversely impact the performance of this function. The proposed revision maintains and does not affect the time that the assessment, evaluation and recovery tasks are completed by the Shift Manager/ED.

Command and Control Task

- a. In Revision 2 of the PINGP E-Plan, the on-duty Shift Supervisor, acting as the ED was responsible for event response until relieved by a qualified ED at an Alert or higher classification. The EM in the EOF would relieve the ED of offsite aspects of the event response once the EOF was activated. The E-Plan included an EOF Coordinator position with a 60-minute response time, which was responsible for filling the role of EM in the EOF until relieved. The EOF could be activated within approximately two (2) hours. In Revision 13, the EOF activation time was changed to approximately one (1) hour.
- b. The current Plan maintains the sequence of transfer of command and control functions from the Control Room to the TSC and, subsequently, to the EOF at an Alert or higher classification.
- c. The proposed E-Plan includes specific facility activation times of 60 and 90 minutes respectively for the TSC and EOF. Additionally, the proposed E-Plan revises the list of specific positions in each facility which are required to be in place and ready to accept command and control functions in order for the facility to be declared 'activated' (see Figures 1 and 2). These positions are related to the command and control functions of Classification, Notification, Protective Actions and Emergency Exposure authorization based on guidance in NSIR/DPR-ISG-01. Although TSC responders as identified in the proposed E-Plan, Figure 1, are considered 60-minute responders, identification of specific positions required for facility activation will allow the site to transfer command and control functions from the CR earlier than 60 minutes from event classification thus relieving the CR staff of classification, notification, PARs and Emergency exposure authorization responsibilities. Likewise, the EOF responders identified in Figure 2, have a 90-minute response requirement;

however, once specific positions are staffed and ready to accept command and control functions, Notifications and PARs can be transitioned from the TSC to the EOF in advance of the 90-minute response requirement.

Command and Control Task Summary

The proposed revision to the PINGP E-Plan maintains the requirement for staffing the TSC, OSC and EOF at the Alert or higher event classification level and revises specific position responsibilities associated with command and control responsibilities based on guidance in NSIR/DPR-ISG-01, so that transfer of these functions may occur earlier in the response process. Although response times are being extended, the ability to perform the Command and Control major tasks such that transition of these activities occurs within 60 minutes of event declaration is maintained.

Offsite Dose Assessment Major Task

- a. In Revision 2 of the PINGP E-Plan, performance of dose assessment on-shift was the responsibility of the Shift Radiation Protection Specialist (RPS). The E-Plan identified the Radiological Emergency Coordinator (REC) as the 30-minute responder associated with this function. Revision 3 of the E-Plan specified that responsibility for dose assessment transitioned from the REC to the Radiation Protection Support Supervisor (RPSS) in the EOF following activation of the facility. In Revision 47 of the E-Plan, responsibility for on-shift dose assessment was changed from the RPS to the on-shift Chemist.
- b. The current E-Plan maintains the Revision 47 commitment for performance of the dose assessment function by the on-shift Chemist, as well as the sequence of transfer of the dose assessment function from the TSC to the EOF as noted in Revision 3.
- c. In the proposed E-Plan, the augmentation time for the REC is extended from 30 minutes to 60 minutes. This change would result in the performance of the dose assessment function by the on-shift Chemistry Technician for an additional 30 minutes.

As previously stated in section 3.1.2, specifically designed displays are available in the CR, TSC and EOF for viewing the plant, radiological effluent, area radiation monitor, and meteorological information that is critical for decision making in a post-accident situation. Dose projection software is available on ERF dose assessment computers. The current software has greatly reduced

data entry needs for performance of dose assessments resulting in easier and more rapid performance of this function.

Radiological dose assessment has benefited from technological advances that make its use simpler and less time consuming. Improvements in technology have enabled the on-shift staff to assess plant conditions quickly and efficiently, and with fewer distractions.

Improvements in dose assessment software enable performance of this major task for an additional 30 minutes without adversely impacting the function.

Offsite Surveys Major Task

- a. In Revision 2 of the PINGP E-Plan, offsite surveys were performed by two (2) individuals augmented at 30 minutes and two (2) individuals at 60 minutes following an Alert or higher classification. The E-Plan also included a commitment for provision of additional survey personnel provided by Monticello Nuclear Generating Plant (MNGP) within approximately 2 hours of notification.
- b. The current E-Plan maintains the two (2) 30-minute and (2) 60-minute responders provided in Revision 2 of the Plan as well as the provision for additional support within approximately 2 - 3 hours by MNGP personnel.
- c. In the proposed E-Plan, the total number of augmented RP Specialists is maintained and the response time is extended from 30 and 60 minutes to 60 and 90 minutes respectively. Additionally, the proposed change eliminates the commitment for survey team resources from MNGP within approximately 2 - 3 hours.

Analysis of field team monitoring functions shows that the use of in-plant and effluent monitors effectively supports event classification as well as onsite and offsite protective actions such that performance of this major task at 60 minutes does not adversely impact site response. Initial field team response involves primarily environmental radiation and contamination assessments, plume tracking and using dose assessment instrumentation. Actions include driving to and from field positions, reading dose rate instrumentation and communicating results to the TSC and/or EOF. The first survey team can effectively track any potential plume and/or cover the necessary area to identify whether a plume exists during the early stages of an event. The second team, augmented at 90 minutes, will support continued plume tracking capability as well as sampling activities.

The commitment for use of survey team resources from MNGP was implemented

to address limited staffing resources available at the site when PINGP E-Plan Revision 2 was implemented. Today, the site has sufficient resources qualified to fulfill this function independently. As a result, this commitment is no longer needed.

Initiation of environmental sampling at the lower classification level will continue to support timely performance of the function even with the extended dispatch time; therefore, this change does not adversely impact performance of the offsite survey major task and is consistent with Industry and NRC public meeting discussions which have taken place over the last 12 - 24 months.

Onsite (out of plant) Surveys Major Task

- a. Revision 2 of the PINGP E-Plan required the dispatch of onsite monitoring teams at the Alert and higher classification. Onsite monitoring was performed by augmented resources which consisted of one (1) responder at 30 minutes and one (1) at 60 minutes. In Revision 47 of the PINGP E-Plan, the 30-minute responder was replaced by an on-shift RP Specialist designated for this task.
- b. The current PINGP E-Plan maintains the Revision 47 staffing commitment for an on-shift RP Specialist for the onsite out of plant surveys task.
- c. The proposed change maintains the commitment for an on-shift RP Specialist for the onsite out of plant surveys task and for augmentation of an additional RP Specialist at 60 minutes for this task.

In Plant Surveys Major Task

- a. Revision 2 of the PINGP E-Plan identified in-plant surveys as a collateral duty of the on-shift RP Technician, and noted that the on-shift Operations personnel were trained to perform radiological surveys. This major task was augmented by one (1) individual at 30 minutes and one (1) at 60 minutes.
- b. The current E-Plan maintains the Revision 2 commitments for on-shift and augmented response performance of the in-plant survey function.
- c. The proposed change extends the response time of the 30 and 60 minute responders to 60 and 90 minutes, respectively, and deletes performance of surveys by on-shift Operations personnel. As previously stated in Section 3.1.1, benefits of the current level of computer upgrades enhance the in plant radiological monitoring capabilities. Specific enhancements include:

- Improved plant monitoring capability for Emergency functions and SPDS parameters
- Real time plant data available through trend displays.
- ERCS functions are available on any desktop computer through the plant's site-wide network.
- Easier interface when switching between graphical displays.

This approach is consistent with Industry and NRC public meeting discussions which have taken place over the last 12 - 24 months.

Chemistry/Radiochemistry Major Task

- a. Revision 2 of the PINGP E-Plan identified one (1) on-shift and one (1) augmented responder at 60 minutes for performance of this task.
- b. The current E-Plan maintains the Revision 2 commitments for on-shift and augmented staffing for this task.
- c. The proposed change maintains the current commitments for on-shift and augmented staffing for this task.

Offsite Dose Assessment, Offsite Survey, Onsite (out of plant) Surveys, In Plant Survey and Chemistry/Radiochemistry Major Task Summary

The proposed revision to the PINGP E-Plan maintains the current E-Plan commitments for the onsite (out of plant) and chemistry/radiochemistry functions. The proposed revision to the E-Plan changes the offsite dose assessment task by extending the augmentation time for the REC from 30 minutes to 60 minutes at an Alert or higher classification. This change results in dose projections being performed by the on-shift individual for an additional 30 minutes. Improvements in dose assessment software enable performance of the Offsite Dose Assessment major task by the on-shift individual for an additional 30 minutes without adversely impacting the task.

The proposed revision to the E-Plan extends the augmentation time for the 30-minute responders for the in plant surveys and offsite surveys tasks to 60 minutes from classification. Enhancements to plant radiological parameter monitoring support extension of the in plant surveys 30-minute responder without undue impact to the in plant surveys task. Maintaining the on-shift RP Specialist for onsite out of plant surveys ensures environmental surveys and samples are available to adequately support the radiological accident assessment function during the first 60 minutes of the event prior to arrival of the 60-minute offsite survey responders.

3.2.5 Plant System Engineering, Repair and Corrective Actions Function

Per NUREG-0654 Revision 1, the Plant System Engineering, Repair and Corrective Actions functional area includes Technical Support and Repair and Corrective Actions Major Tasks. NUREG-0654 Table B-1 notes that Mechanical Maintenance/Radwaste Operator and Electrical Maintenance/Instrument and Control Technician expertise may be provided by shift personnel assigned other functions.

Technical Support Major Task

- a. Revision 2 of the PINGP E-Plan included a STA on-shift position that was responsible for providing operational event evaluation and technical and engineering support to the Shift Supervisor. The STA/Core Thermal Hydraulics function was augmented at 30 minutes by a core thermal engineer as well as additional technical and engineering support which included one (1) mechanical engineer and one (1) electrical engineer augmented at 60 minutes.
- b. The current E-Plan maintains the commitments for the on-shift STA, the augmented core thermal engineer at 30 minutes and the mechanical and electrical engineers at 60 minutes.
- c. The proposed change extends the response time for the core thermal engineer from 30 minutes to 60 minutes. A review of procedural actions for this position demonstrated that failed fuel determinations as well as establishing recovery/re-entry priorities would not be required during the first 60 minutes of the event. Initial reactor core stabilization activities are performed by the Operations crew under the direction of the STA. Evaluation of the on-shift activities in accordance with 10 CFR 50 Appendix E.IV.A.9 showed that on-shift Operations personnel were able to complete required tasks without conflicts. Extending the response time for the Core Thermal Engineer to 60 minutes does not adversely impact the Technical Support major task. The on-shift STA and subsequent staffing by electrical and mechanical engineers at 60 minutes would be maintained under the proposed Plan in support of the Technical Support major task.

Repair and Corrective Actions Major Task

- a. In Revision 2 of the PINGP E-Plan, on-shift plant stabilizing functions are completed by Operations personnel. Augmented staff to address repair and corrective actions, included an electrical maintenance and an I&C responder at 30 minutes and a mechanical maintenance responder, an electrical maintenance

responder and a RWO at 60 minutes.

- b. The current E-Plan maintains the Revision 2 commitment for response of the maintenance craft at 30 and 60 minutes and the RWO at 60 minutes.
- c. The proposed changes to the E-Plan would realign maintenance response by removing the 30-minute Electrical Maintenance responder position. The 60-minute Electrical Maintenance and Mechanical maintenance responders would remain unchanged. The I&C Maintenance 30-minute responder would be extended to 90 minutes. The 60-minute RWO response position would be eliminated.

Historically, the repair functions associated with an event have been completed by Auxiliary Operations (AOs) personnel on-shift who are qualified to respond to plant events and perform actions to stabilize the plant. This practice is aligned with NUREG-0654, Revision 1, Table B-1 response for shift personnel as noted at the bottom of the table. The results of the On-Shift Staffing Analysis supported the NUREG-0654, Revision 1 position that repair and maintenance activities, if needed, can be successfully implemented by on-shift staffing resources.

Additionally, a detailed review of maintenance procedures indicated that more significant repair activities would not be initiated for several hours after the event occurred. Due to the time needed to stabilize the plant and assess the event, the initial phase of accidents is not expected to involve a significant need for maintenance personnel. The proposed change does not impact implementation of repair and corrective actions completed by on-shift resources.

The proposed change to the E-Plan would eliminate the 60-minute RWO responder. A review of PINGP procedures indicated operation of, or support for the maintenance of, Radwaste equipment was not necessary for implementation of the PINGP AOPs, EOPs and SAMGs. The performance of radiological waste processing after an event is a long-term recovery operation and would be performed by an auxiliary operator as part of their normal duties during the recovery phase of the event.

Plant System Engineering, Repair and Corrective Actions Function Summary

The Plant System Engineering, Repair and Corrective Actions functions are not adversely impacted by the proposed changes. Core Thermal Hydraulics and Repair and Corrective Actions major tasks will continue to be performed by on-shift personnel with previous additions to the Operations on-shift staffing, offsetting the elimination of the 60 minute RWO responder. Elimination of the 30-minute Electrical Maintenance position, extension of the response times from 30 to 60 minutes for the Core Thermal Engineer, and extension of the response times from 30 to 90 minutes for the I&C Maintenance position does not impact completion of this major task.

3.2.6 Protective Actions (In-Plant) Function

Per NUREG-0654 Revision 1, the Protective Actions functional area includes the Radiation Protection major task, specifically Access Control, Health Physics (HP) Coverage for repair and corrective actions, search and rescue first aid and firefighting, personnel monitoring and dosimetry. NUREG-0654 Table B-1 notes that HP Technician expertise may be provided by shift personnel assigned other functions.

- a. Revision 2 of the PINGP E-Plan identifies tasks performed for the Protective Actions function as a collateral duty of personnel assigned other on-shift duties as well as the qualification for on-shift Operations personnel for the performance of radiological surveys. Two (2) augmented responders at 30 minutes and two (2) additional responders at 60 minutes are provided for the Protective Action function. In Revision 47 of the PINGP E-Plan, one (1) of the 30-minute response positions for this function was added to the on-shift staffing requirements.
- b. The current E-Plan maintains the PINGP E-Plan, Revision 47 commitments for one (1) on-shift position, one (1) 30-minute responder and two (2) 60-minute responders for this function. The current revision also maintains the commitment to train Operations personnel to perform post-accident surveys in support of this function.
- c. The proposed E-Plan would extend the response time for the Protective Actions 30-minute responder to 60-minutes and the two (2) 60 minute responders to 90 minutes. Additionally, the commitment for training of non-licensed operators for the performance of post-accident in-plant surveys would be removed. Justification for these changes is addressed in the paragraphs below.

Access Control/Dosimetry

The performance of access control and dosimetry activities is primarily completed through the use of electronic dosimetry which is obtained prior to entry into radiologically protected areas. The electronic dosimetry is also used as a "key" to unlock turnstiles to gain access to the Radiological Protected Area (RPA). Radiation work permits (RWPs) establish the necessary preset warnings/alarms associated with the use of electronic dosimetry. Dedicated emergency electronic dosimetry is provided for use during a declared emergency, which automatically provides the electronic dosimetry with emergency dose and dose rate alarms. This assures that the teams dispatched to the in-plant areas to perform any function during a declared emergency will be afforded ample warning/alarm prior to exceeding their allowed dose or dose rate. Use of the electronic dosimetry and RWP process eliminated the

need for access control / dosimetry oversight by an HP Technician for the initial response actions to an event. Through the use of improved access control technology, extension of the Protective Actions 30-minute responder to 60 minutes does not adversely impact performance of the Access Control/Dosimetry major tasks.

HP Coverage for Repair and Corrective Actions, Search and Rescue First Aid and Firefighting

Performance of the HP Coverage for Response action activities will continue to be performed by the on-shift RP Specialist and so the functions associated with this major task will not be adversely impacted by the proposed change.

Personnel Monitoring

The performance of personnel monitoring for on-shift event responders is provided by the on-shift RP Specialist. Performance of habitability activities are associated with the emergency response facilities after they are staffed by augmented personnel. As augmentation of facility staffing and RP Technicians occurs simultaneously for each facility under the proposed change, performance of this function is not adversely impacted.

Protective Actions (In-Plant) Function Summary

The proposed change maintains the existing on-shift RP Specialist for the HP Coverage task. The proposed change extends the 30-minute and 60-minute response time for the personnel to 60 minutes and 90 minutes respectively. NSPM has implemented improvements in technology in the areas of dosimetry and access control at the PINGP which reduced the need for RP Specialist actions in each of these areas during the early stages of event response. Additionally, an extension of the response time for the RP Specialist responsible for personnel monitoring coincides with the 60-minute activation time for emergency response facilities as described in the proposed Plan. This approach is consistent with Industry and NRC public meeting discussions which have taken place over the last 12 – 24 months.

3.2.7 Firefighting Function

Per NUREG-0654 Rev 1, the Firefighting functional area is addressed by use of a Fire Brigade and managed in accordance with site Technical Specifications.

a. In Revision 2, of the PINGP E-Plan, Fire Fighting response was provided by on-

shift personnel per the requirements of the PINGP Technical Specifications and augmented by the offsite local fire department.

- b. The current E-Plan maintains the Revision 2 Firefighting function commitments.
- c. The proposed Plan does not impact this function. The current and proposed on-shift fire protection staffing was evaluated in accordance with the requirements of 10 CFR 50 Appendix E.IV.A.9 and found to be sufficient.

3.2.8 Rescue Operations and First-Aid Function

NUREG-0654 Rev 1, Table B-1 notes that this function may be provided by on-shift personnel assigned other functions.

- a. PINGP E-Plan Revision 2, provided for first aid treatment for injured personnel by qualified on-shift personnel.
- b. The current E-Plan maintains this commitment through the use of on-shift First Aid Responders.
- c. The proposed changes to the E-Plan do not impact the Rescue Operations and First Aid function.

3.2.9 Site Access Control and Personnel Accountability Function

NUREG-0654 Rev 1, the Site Access Control and Personnel Accountability functional area is addressed by Security personnel in accordance with the Site Security Plan.

- a. In PINGP E-Plan Revision 2, site access control and accountability is identified as a function of the Security personnel on-shift and is detailed in the Site Security Plan.
- b. The current E-Plan maintains this commitment through the Physical Security Plan.
- c. The proposed changes to the E-Plan also maintain this commitment, therefore, the Site Access Control and Personnel Accountability functional area is not impacted by the proposed change.

3.3 Conclusions

The proposed changes continue to support the functional areas of the E-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. Increases from the PINGP E-Plan Rev. 2 in on-shift staffing in Operations and Radiation Protection ensure performance of major tasks can be completed without conflicts. The proposed ERO staffing augmentation response time is being extended, resulting in an increased ERF activation time. However, the emergency response functions identified in the E-Plan will continue to be performed by the on-shift staff until relieved by augmented ERO responders and do 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 continues to ensure the PINGP E-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 EVALUATION

4.1 Applicable Regulatory Requirements

The regulatory requirements and guidance applicable to the proposed E-Plan changes are as follows:

10 CFR 50.47(b) states:

- (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.*

10 CFR 50.54(q)(1)(iii) states:

Emergency planning function means a capability or resource necessary to prepare for and respond to a radiological emergency, as set forth in the elements of section IV, of appendix E to this part [Part 50] and, for nuclear power reactor licensees, the planning standards of §50.47(b).

10 CFR 50.54(q)(1)(iv) states:

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.

10 CFR 50.54(q)(2) states in part:

A holder of a license under this part, ... 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).

10 CFR 50.54(q)(3) states:

The licensee may make changes to its emergency plan without NRC approval only if the licensee performs and retains an analysis demonstrating that the changes do not reduce the effectiveness of the plan and the plan, as changed, continues to meet the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

10 CFR 50.54(q)(4) states:

The changes to a licensee's emergency plan that reduce the effectiveness of the plan as defined in paragraph (q)(1)(iv) of this section 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).

10 CFR 50, Appendix E, Section IV, Part A states in part:

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. Specifically, the following shall be included:

...

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.

NSPM, as required under 10 CFR 50.54(q)(4), is hereby submitting proposed revisions to the PINGP E-Plan for NRC approval prior to implementation. The proposed changes continue to meet the provisions of 10 CFR 50.47(b) as the PINGP E-Plan will continue to have onsite and offsite emergency responsibilities and provide adequate staffing to provide facility accident responses.

Further, the current PINGP E-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). The proposed changes increase the current staff augmentation response times from 30 and 60 minutes to 60 and 90 minutes as described previously. Therefore, the proposed change to 60 and 90 minutes is considered a reduction in effectiveness as defined in 10 CFR 50.54(q)(1)(iv)

and requires submittal of license amendment request to the NRC based on 10 CFR 50.54(q)(4) in accordance with 10 CFR 50.90.

With the proposed changes the PINGP E-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).

Finally, the current PINGP E-Plan includes a description of the organization, including definition of authorities, responsibilities and duties of individuals. The current PINGP E-Plan is in compliance with 10 CFR 50 Appendix E.IV.A. This LAR proposes to increase the current staff augmentation response times from 30 and 60 minutes to 60 and 90 minutes respectively. The proposed changes to the PINGP E-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.

Conclusion

NSPM has evaluated the proposed change against the applicable regulatory requirements and acceptance criteria. The proposed E-Plan changes continue to assure that regulatory requirements are met.

4.2 Applicable Regulatory Guidance

Regulatory Guide (RG) 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors" (Reference 3), provides guidance on methods acceptable to the NRC staff for implementing specific parts of NRC regulations (i.e. 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50). RG 1.101 endorses NUREG-0654/FEMA-REP-1 (NUREG-0654), Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (Reference 1), which provides specific acceptance criteria for complying with the standards set forth in 10 CFR 50.47(b). These criteria provide a basis for NRC licensees, and state and local governments to develop acceptable radiological emergency plans and improve emergency preparedness.

Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors" (Reference 4), provides guidance on methods acceptable to the NRC staff for implementation of 10 CFR 50.54(q) as it relates to making changes to emergency response plans.

In NUREG-0654, Section II, "Planning Standards and Evaluation Criteria," Evaluation Criteria II.B.1 and II.B.5 address the 10 CFR 50.47(b)(2) planning standard. Evaluation Criteria II.B.1 specifies the onsite emergency organization of plant staff personnel for all shifts, and its relation to the responsibilities and duties of the normal shift complement. Evaluation Criteria II.B.5, states, in part:

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 offsite 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 E-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 60 and 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 10). 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. Therefore, the proposed changes continue to meet NUREG-0654, Section II.B.5 guidance.

Conclusion

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

4.3 Precedent

The proposed PINGP E-Plan changes are similar to changes approved by the NRC for other licensees. The most recent NRC approval of similar E-Plan changes occurred for NextEra Energy Point Beach, LLC in an NRC letter dated June 17, 2016 (Reference 5). The NRC has also approved similar E-Plan changes for other licensees including Susquehanna (Reference 6), Fermi (Reference 7), River Bend (Reference 8), and Watts Bar (Reference 9). Furthermore, the proposed PINGP E-Plan changes and evaluation documented herein continue to meet the standards of 10 CFR 50.47(b) and the requirements of 10 CFR 50 Appendix E.

4.4 No Significant Hazards Consideration Determination

In accordance with the requirements of 10 CFR 50.90, Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy requests an amendment to facility Renewed Operating Licenses DPR-42 and DPR-60, for Prairie Island Nuclear Generating Plant, Units 1 and 2 (PINGP) to revise the Emergency Plan. Completion of a functional 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 and 60 minutes to 60 and 90 minutes.

NSPM proposes to revise the ERO staff augmentation response times in the PINGP Emergency Plan (E-Plan). The proposed change increases the staff augmentation response time in the E-Plan and is supported by the results of the on-shift staffing analysis which determined that there were no conflicts in duties assigned to on-shift personnel.

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 (SSCs).

The proposed change does not alter or prevent the ability of the on-shift ERO to perform their intended functions to mitigate the consequences of an accident or event. The ability of the ERO to respond adequately to radiological emergencies has been demonstrated as acceptable through a staffing analysis as required by 10 CFR 50, Appendix E, Section 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 any accident analysis. The proposed 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. The proposed change increases the staff augmentation response times in the E-Plan, which are demonstrated as acceptable through a functional analysis as required by 10 CFR 50, Appendix E, Section IV.A.9. The proposed change does not alter or prevent the ability of the ERO 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 E-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 proposed revisions to the E-Plan continue to provide the necessary response staff with the proposed change.

A staffing analysis and a functional analysis were performed for the proposed change focusing on the timeliness of performing major tasks for the functional areas of E-Plan. The analysis concluded that an extension in staff augmentation times would not significantly affect the ability to perform the required E-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.

4.5 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. 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. (ADAMS Accession No. ML040420012)
2. NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0, September 2010. (ADAMS Accession No. ML102730613)
3. Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," Revision 2, October 1981. (ADAMS Accession No. ML13038A097)
4. Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors," Revision 0, November 2011. (ADAMS Accession No. ML102510626)
5. NRC Letter to NextEra Energy Point Beach, LLC, "Subject: Point Beach Nuclear Plant, Units 1 and 2 – Issuance of Amendments RE: License Amendment Request 277, Revision to Staff Augmentation Times in the Point Beach Nuclear Plant Emergency Plan (CAC Nos. MF6352 and MF6353)," dated June 17, 2016. (ADAMS Accession No. ML16118A154)
6. NRC Letter to PPL Susquehanna, LLC, "Subject: Susquehanna Steam Electric Station Units 1 and 2 – Proposed Emergency Plan Changes (TAC Nos. MB6300 and MB6301)," dated March 24, 2003. (ADAMS Accession No. ML030830543)
7. NRC Letter to Detroit Edison Company, "Subject: Fermi 2 – Issuance of Amendment RE: Staff Augmentation Times During Radiological Emergencies (TAC No. ME4761)," dated September 23, 2011. (ADAMS Accession No. ML112450464)
8. NRC Letter to Entergy Operations, Inc., "Subject: River Bend Station – Proposed Emergency Plan Changes Regarding Staff Augmentation Times (TAC No. MA9566)," dated September 28, 2001. (ADAMS Accession No. ML012710218)
9. NRC Letter to Tennessee Valley Authority, "Subject: Safety Evaluation of the Tennessee Valley Authority Proposed Radiological Emergency Plan Changes for the Watts Bar Nuclear Plant, Unit 1 (TAC No. MB9130)," dated June 24, 2004. (ADAMS Accession No. ML041810056)
10. NSIR/DPR-ISG-01, Rev. 0, "Emergency Planning for Nuclear Power Plants, dated November 2011. (ADAMS Accession No. ML113010523)

ENCLOSURE 1, ATTACHMENT 1

**NORTHERN STATES POWER - MINNESOTA
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2**

**REVISION TO STAFF AUGMENTATION TIMES IN THE
PINGP EMERGENCY PLAN**

MARKED-UP COPY PAGES OF EMERGENCY PLAN

28 pages follow

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- 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 Figures 1 and 2 is available and the facility is ready to assume its assigned Emergency Plan functions and relieve the on-shift staff of those functions. Although the facility may be ready, the on-shift staff relief may be postponed in the interest of completing critical tasks prior to turnover.
- 4-101.11** 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.

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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 to 2 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.

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4.1.2 Alert

At the Alert action level, events are in process or have occurred which involve actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. It is the lowest level when some necessity for emergency planning and response offsite is necessary. Any radioactive release will be limited to a small fraction of the EPA Protective Action Guideline exposure levels.

The purpose of the Alert action level is to: (1) assure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required; and (2) provide offsite authorities current status information, i.e., early and prompt notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized.

4.1.3 Site Area Emergency

The Site Area Emergency action level describes events that are in process or have occurred which involve actual or likely major failure of plant functions needed for protection of the public or HOSTILE ACTION that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. It reflects conditions where significant offsite releases are likely to occur or are occurring but where a core melt situation is not expected although severe fuel damage may have occurred. Any radioactive releases are not expected to exceed the EPA Protective Action Guideline exposure levels except near the site boundary.

~~In this situation full mobilization of emergency personnel in the near-site environs is warranted, as well as, dispatch of monitoring teams and associated communications.~~

The purpose of the Site Area Emergency action level is to: (1) assure that response centers are manned; (2) assure that monitoring teams are dispatched; (3) assure that personnel required for evacuation of near-site areas are at duty stations if the situation becomes more serious; (4) provide current information for and consultation with offsite authorities; and (5) provide updates for the public through offsite authorities.

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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 ~~360~~ minutes and ~~690~~ minutes of ~~event declaration~~ notification. Table 1 follows the guidance developed in accordance with 10 CFR 50 Appendix E. This staffing analysis is documented in F3-1.1, Emergency Plan On-Shift Staffing.

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.

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. If necessary, the Shift Supervisor of the unaffected unit may function as an alternate Emergency Director backing up the Shift Manager.

Twenty-four (24) hour coverage for the Emergency Director position is provided by the Duty Shift Manager who assumes the responsibility of the TSC Emergency Director at the onset of any emergency condition.

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When the Technical Support Center (TSC) and Emergency Operations Facility (EOF) Organizations are activated, the Emergency Director (ED) Manager (EM) and TSC EOF staff will relieve the Emergency Director on shift of all offsite responsibilities command and control functions as soon as practical and assume the responsibility for the management of NSPM's overall response to the emergency. The Emergency Director on shift can then direct the plant's efforts priorities for event response towards management of the onsite responsibilities. Upon activation of the EOF, responsibility for offsite functions of notification and protective action recommendations transfer from the TSC to the EOF Emergency Manager (EM). The transition of command and control functions is depicted below.

| CONTROL ROOM | TSC | EOF |
|------------------------------------|-------------------------------|------------------------------|
| <u>On Shift/Emergency Director</u> | <u>TSC Emergency Director</u> | <u>EOF Emergency Manager</u> |
| Classification | Classification | |
| Notifications | Notifications | Notifications |
| PARs | PARs | PARs |
| Emergency Exposure Controls | Emergency Exposure Controls | |

Transition of Command and Control Functions

~~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. If necessary, the Shift Supervisor of the unaffected unit may function as an alternate Emergency Director backing up the Shift Manager.~~

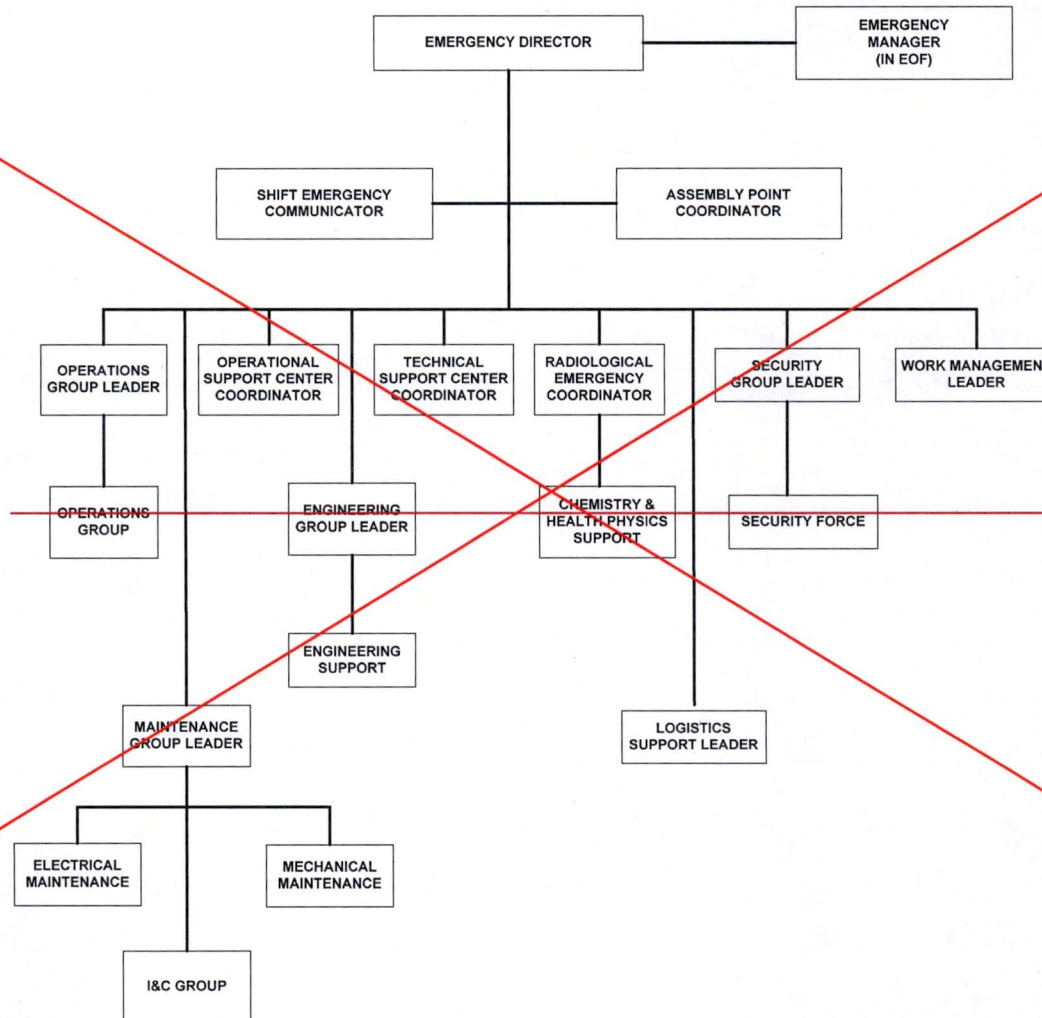
~~Twenty four (24) hour coverage for the Emergency Director position is provided by the Duty Shift Manager who assumes the responsibility of the TSC Emergency Director at the onset of any emergency condition.~~

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Figure 1 Prairie Island Plant Emergency Organization

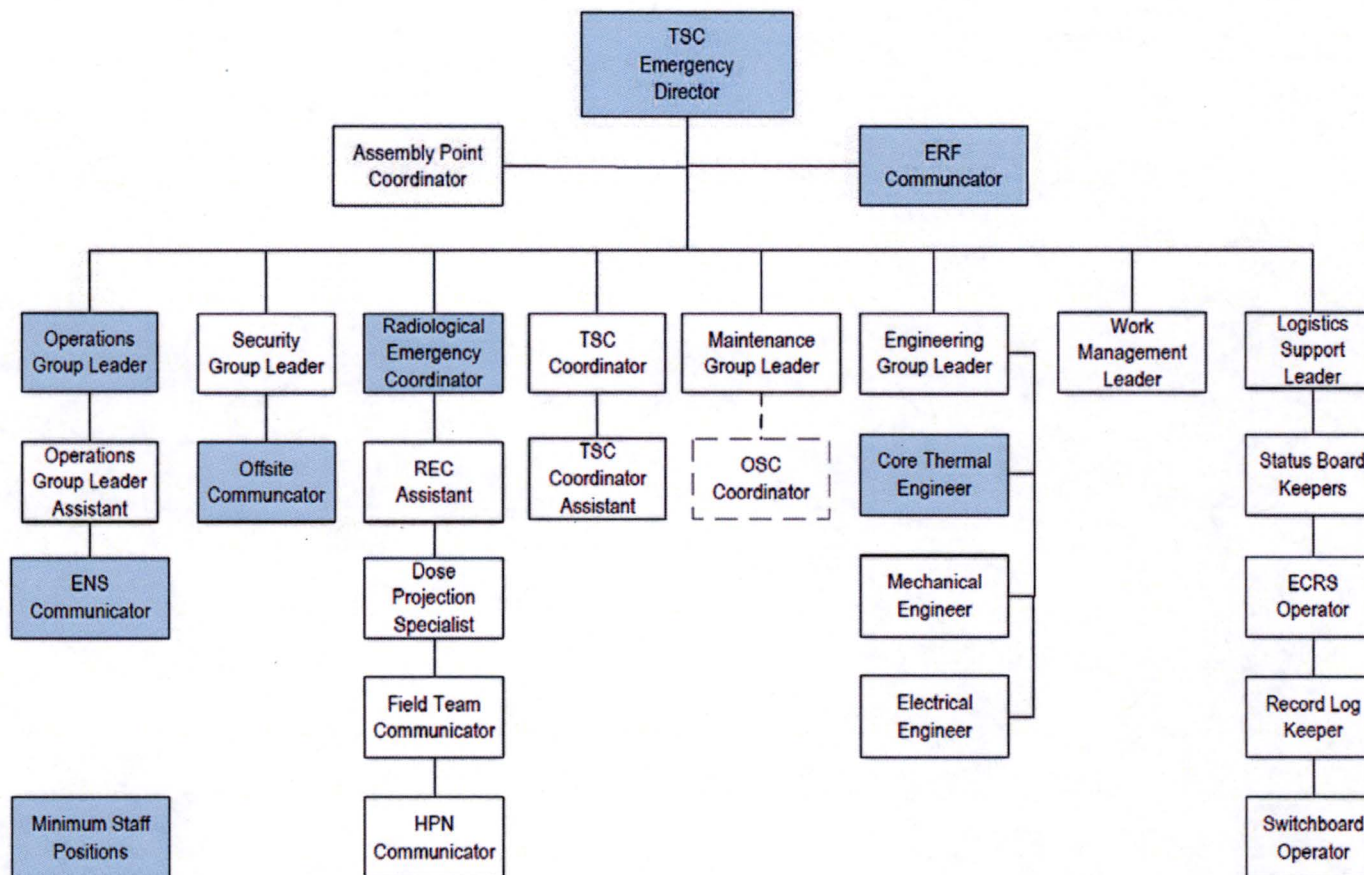
Superseded entirely.
See revised Figure 1
on next 2 pages

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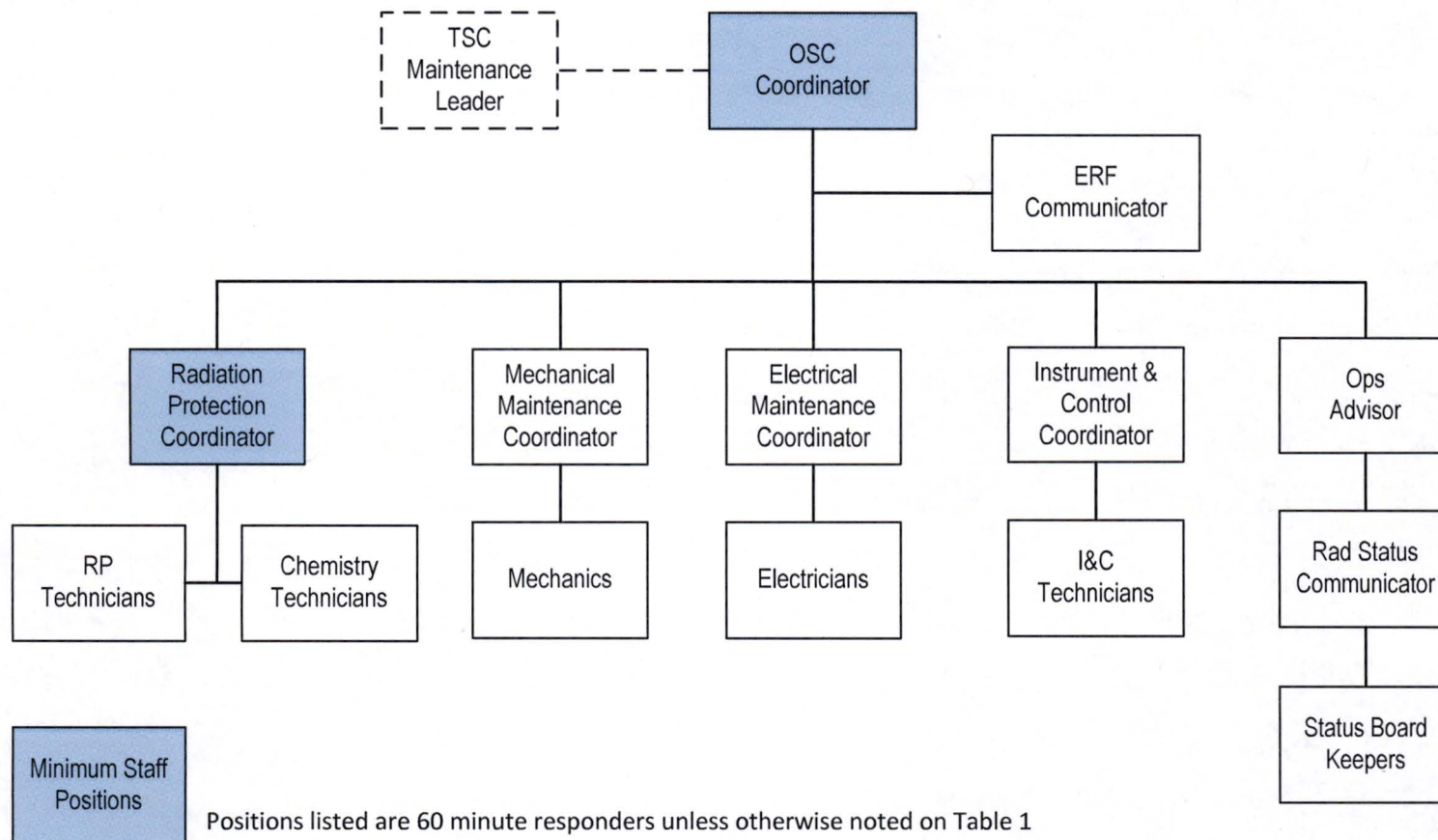
Positions listed are 60 minute responders

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Table 1 Guidance for Augmentation of Plant Emergency Organization

| Major Functional Area | Major Tasks | Position Title or Expertise | On-Shift | Capability for Additions | |
|--|--|--|----------|--------------------------|---------|
| | | | | 360 min | 690 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 |
| | | Offsite Communicator | - | 1 | 1 |
| | | ENS Communicator | - | 1 | 1 |
| Radiological Accident Assessment and Support of Operational Accident Assessment | Emergency Operations Facility (EOF) Director | Emergency Manager | - | - | 1 |
| | | (as per duty roster): Emergency Director | - | 1 | - |
| | Offsite Dose Assessment | Radiological Emergency Coordinator: | - | 1 | - |
| | | RP Support Supervisor | - | - | 1 |
| | Offsite Surveys | Radiation Protection Specialist:/ Support | - | 2 | 2 (2) |
| | Onsite Surveys (out-of-plant) | Radiation Protection Specialist: | 1 | 1- | 1 |
| | In-plant Surveys | Plant Operators and/or | | | |
| | | Radiation Protection Specialist: | 1 (1,2) | 1 | 1 |

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Table 1 Guidance for Augmentation of Plant Emergency Organization

| Major Functional Area | Major Tasks | Position Title or Expertise | On-Shift | Capability for Additions | |
|-------------------------------|---|------------------------------------|--------------------|--------------------------|---------|
| | | | | 360 min | 690 min |
| Plant System Engineering, | Chemistry/ Radiochemistry | Chemistry Technician: | 1 | 1- | -4 |
| | Technical Support | Shift Technical Advisor | 1 | - | - |
| | | Core/Thermal: | - | 1 | - |
| | | Electrical: | - | 1- | -4 |
| Repair and Corrective Actions | Repairs and Corrective Actions | Mechanical: | - | 1- | -4 |
| | | Mechanical Maintenance: | 1 ⁽¹⁾ | 1- | -4 |
| | | Rad Waste Operator: | - | - | 4 |
| | | Electrical Maintenance: | 1 ⁽¹⁾ | 1 | -4 |
| 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 | Instrument Control: | - | -4 | 1- |
| | | Radiation Protection Specialist | 1 | 1 | 12 |
| | | and/or Plant Operators: | 2 ⁽¹⁺³⁾ | - | - |
| | | | | | |

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Table 1 Guidance for Augmentation of Plant Emergency Organization

| Major Functional Area | Major Tasks | Position Title or Expertise | On-Shift | Capability for Additions | |
|--|---|-----------------------------|----------------------|--------------------------|---------------|
| | | | | 360 min | 690 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 | 149 | 915 |

⁽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.

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Table 2 — Primary and Secondary Responsibilities of Plant Emergency Organization

| | 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 | Maintenance | I&C | Engineers | Admin-Serve | | | |
|-----------------------------------|----------------|-------------------------|-----|-----|-----------|-----------|----------------|----------------|------------|----------------------|----------|--------------|----------------------|-------------|-----|-----------|-------------|--|--|--|
| Plant Operations | P | | | | | | | P | P | | | | | | | | | | | |
| Emerg Direction & Control | P | | | | | | | | | | | | | | | | | | | |
| Notification and Comm | S | | P | | S | S | | | | | S | | | | | | | | | |
| Offsite Dose Assessment | S | | | P | | | | | | S | | | 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 | | | | | |
| 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 | | | |

— P = Primary
— S = Secondary

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- 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.

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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

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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~~
- ~~4.2.~~ 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.

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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~~ TSC 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 ~~activated~~ 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.

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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 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 Chemistry Technician is onsite at all times. The Chemistry Technician is responsible for chemistry, radiochemistry, dose assessments, and offsite dose projections. The Chemistry Technician is also cross-trained to support the Radiation Protection Specialist functions described in Section G above.

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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 ~~will be activated~~~~should be staffed and ready to assume its emergency responsibilities from the TSC within about 1 hour~~~~90 minutes of when an Alert, Site Area Emergency or Genral Emergency is declared~~~~notification. 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.~~

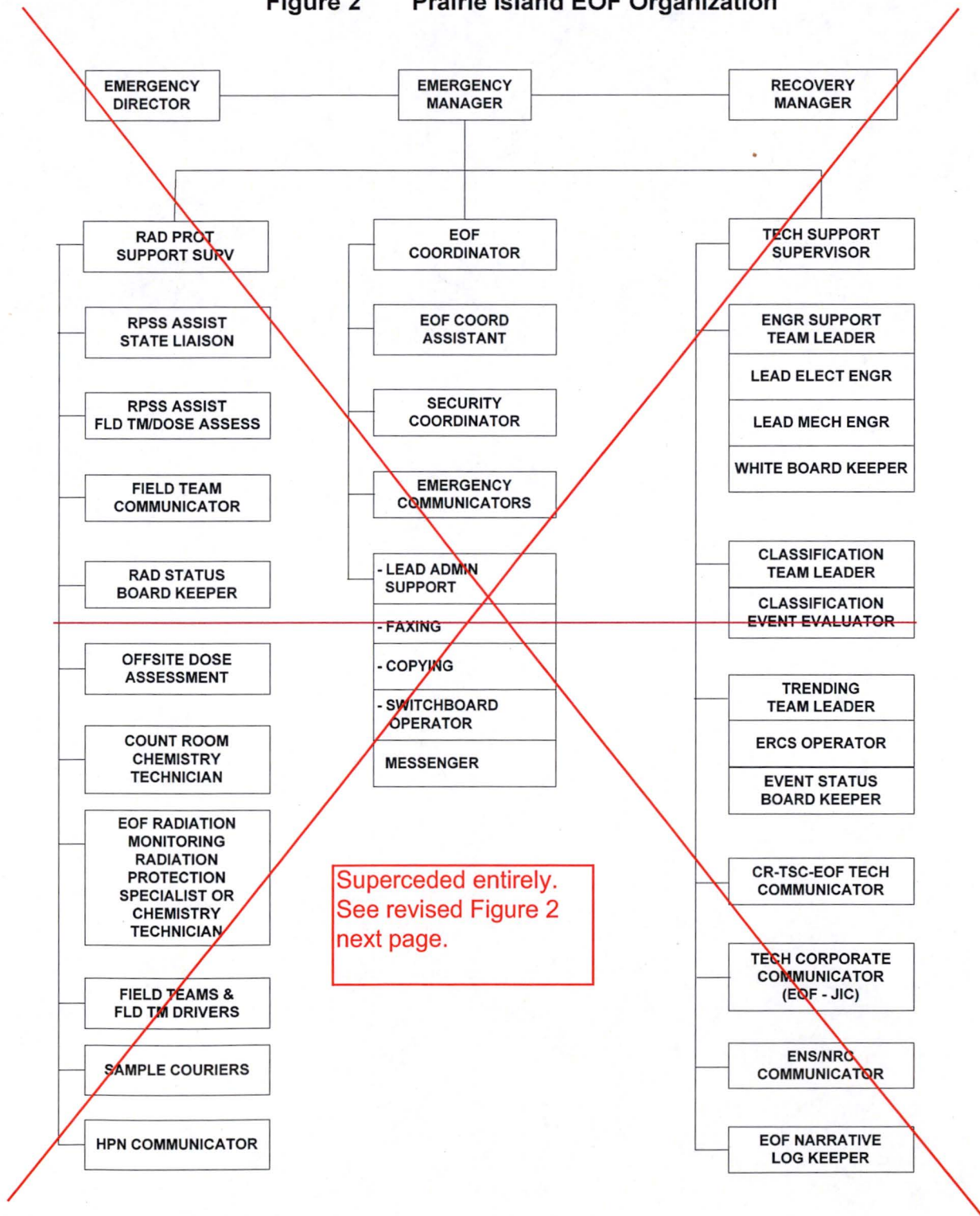
5.4.1 EOF Direction and Control

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:

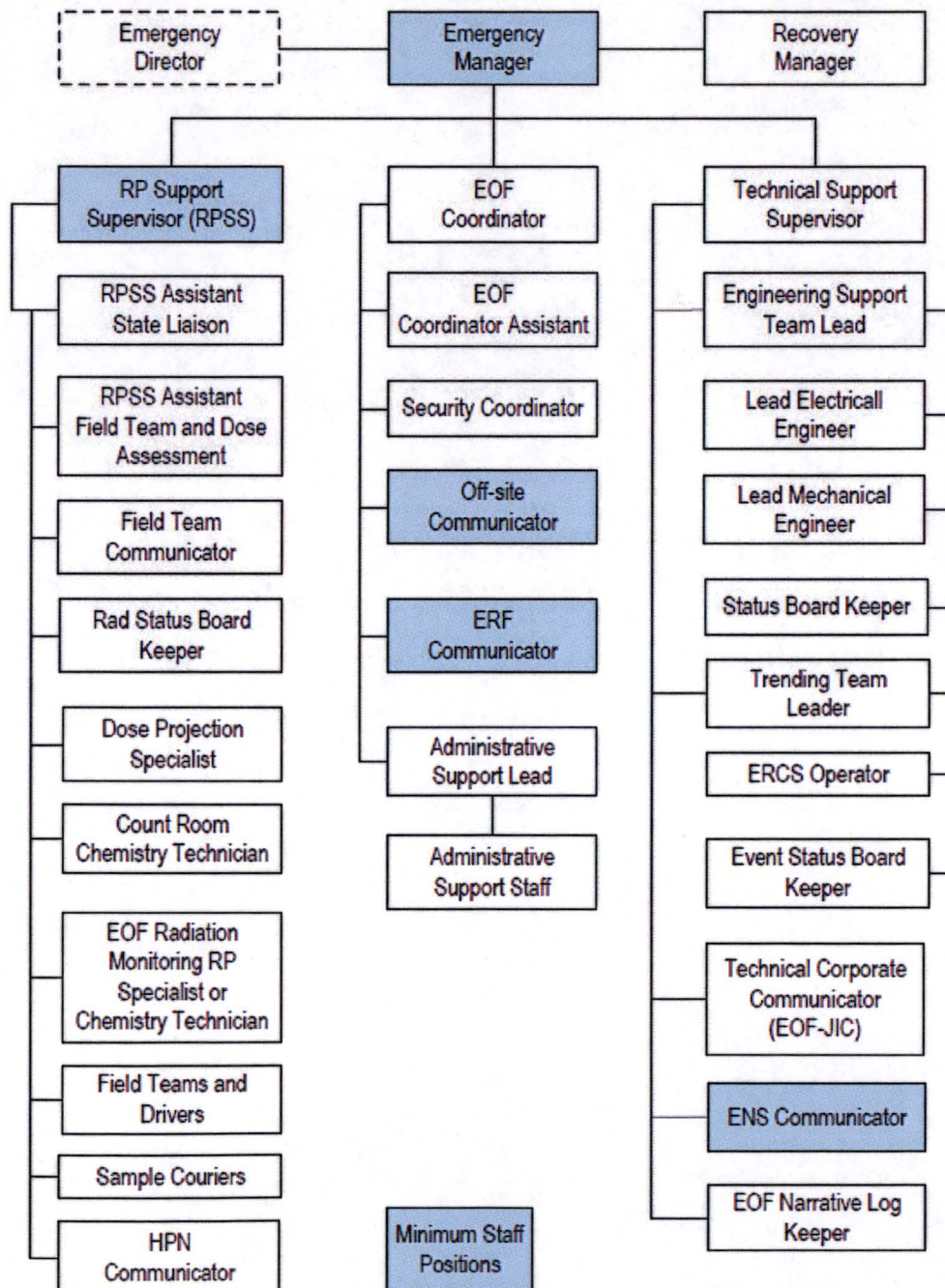
- A. Off-site dose projections and coordination and direction of the utility off-site radiological monitoring teams.
- B. Authorization of emergency classification changes. The Emergency Director retains the primary responsibility for re-classifications and makes recommendations to the Emergency Manager 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.

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Figure 2 Prairie Island EOF Organization



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Positions listed are 90 minute responders

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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 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.

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The ERO Auto Dial System and ERO Pager Network are two notification system(s) used to activate the onsite emergency organization. One system is the backup of the other system. Both will be activated for ERO notification. Telephone numbers of all key emergency organization personnel are published in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

If the event involves a credible security threat, EOF staff may be directed to staff the Backup EOF. In this case, the onsite ERO may be directed to the Red Wing Service Center until it is safe to staff the onsite OSC and TSC. The Red Wing Service Center is to be used as the Alternative Facility during a security threat or event. The RWSC has communication links with the Control Room, EOF, and Security.

6.1.2 Notification Scheme

When an abnormal condition is identified by the Operating Staff/Shift Supervisor, the Shift Supervisor will contact the Shift Manager and the Shift Emergency Communicator. An assessment of the safety significance will be performed, and a determination of the emergency classification will be made using the plant's emergency plan implementing procedures.

Upon declaring an emergency condition, the Shift Manager will activate portions of the Emergency Plan as appropriate to respond to the declared emergency. During a Notification of Unusual Event, the Emergency Director position usually will not be **staffed**~~activated~~ and the Shift Manager **SHALL** designate the Shift Emergency Communicator or other qualified communicator to make the necessary notifications of offsite state and local authorities. The Emergency Director position will be **staffed**~~activated~~ during an Alert, a Site Area Emergency or General Emergency. The Shift Manager will assume the role as Emergency Director until relieved by the individual designated to relieve him.

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6.3 Summary of Site Response Actions

Summarized below are the actions required by the site staff for each of the four emergency classifications. For each class of emergency, appropriate state, local, and tribal authorities will be notified. Depending on the emergency level classification, they will activate the segment(s) of their emergency organizations, according to their individual plans and based on the information received in the notification.

NOTIFICATION OF UNUSUAL EVENT

1. Promptly inform offsite authorities of unusual event status and the reason for the Unusual Event as soon as discovered.
2. Augment on-shift resources as needed.
3. Assess and respond to Unusual Event.
4. Terminate by contacting offsite authorities

or

5. Escalate to a more severe class.

ALERT

1. Promptly inform offsite authorities of Alert status and reason for Alert as soon as discovered.
2. Augment resources by activating onsite Technical Support Center (TSC) and onsite Operational Support Center (OSC). The Emergency Operations Facility (EOF) and key offsite emergency organization personnel will be activated.
3. Assess and respond to the Alert condition.
4. Dispatch onsite ~~and/or~~ offsite survey teams and associated communications. ~~as needed.~~
5. Provide periodic plant status updates to offsite authorities.
6. Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases.

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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 ~~two~~^{three} emergency Radiation Survey Teams. ~~The~~^{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~~ Additional 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 ~~are completed by other augmented personnel~~. 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 ~~first teams~~ will be activated and respond within ~~sixty~~^{thirty} (30) minutes ~~and the second team within ninety (90) minutes~~. 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.~~

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F. The capability to record and display the following:

1. Plant System Parameters
 - a Reactor Coolant System
 - b Secondary System
 - c ECCS System
 - d Containment
2. In-Plant Radiological Parameters
 - a Reactor Coolant System
 - b Containment
 - c Effluent Treatment
 - d Release Paths
 - e Area Monitors
3. Offsite Radiological Parameters
 - a Meteorology
 - b Offsite Radiation Levels

The Technical Support Center **SHALL** be activated [within 60 minutes](#) when an Alert, Site Area or General Emergency is declared.

The Technical Support Center Coordinator **SHALL** be responsible for coordinating activities in the TSC. This individual **SHALL** be responsible for establishing the monitoring of direct radiation and airborne activity in the Technical Support Center. Communications **SHALL** be established between the TSC, OSC, Control Room and EOF.

If activation of the Technical Support Center occurs during normal work hours, instructions to report to the TSC will be received over the plant public address system.

If activation of the Technical Support Center occurs during the off duty hours, the Shift Manager **SHALL** designate the Shift Emergency Communicator to contact the Emergency Response Organization (ERO) by phone and/or ERO Pager Network and request them to report to the Technical Support Center.

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7.1.2 Operational Support Center (OSC)

The Operational Support Center will provide a center to assemble the necessary Operators, Radiation Protection Specialists, Instrument and Control, Electrical, Nuclear Plant Service Attendants, and Maintenance personnel to support the operations of the plant under emergency conditions without causing undue congestion in the Control Room.

The Operational Support Center is located immediately adjacent to the Control Room.

The Operational Support Center will be activated [within 60 minutes](#) when an Alert, Site Area or General Emergency is declared.

The Operational Support Center Coordinator **SHALL** be responsible for the activation and coordination of activities in the OSC. The OSC Coordinator may designate a communicator to establish lines of communications between the Operational Support Center, the Control Room and the Technical Support Center.

If activation of the OSC occurs during a normal working day, instructions to report to the OSC will be received over the plant public address system. Any Operations shift personnel on site that are not assigned to normal shift duty **SHALL** report to the OSC immediately. The following personnel will also report to the OSC if on site (additional personnel will be contacted as necessary):

- A. Maintenance Supervisors (Mechanical and Electrical)
- B. Designated Lead Station Electricians and Maintenance personnel
- C. Instrument and Control Supervisors
- D. Radiation Survey Team Members
- E. Nuclear Plant Service Attendants

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7.1.3 Emergency Operations Facility (EOF)

The Emergency Operations Facility (EOF) is a required emergency response facility located near the plant site to provide continuous coordination and evaluation of activities during an emergency having, or potentially having, environmental consequences. A plan view of the EOF Command Center is shown in Figure 7. The EOF will be activated **within 90 minutes** ~~when~~**during** an Alert, Site Area or General Emergency **is declared**.

The functions of the EOF will be:

- A. Management of the overall NSPM's offsite emergency response in support of plant activities;
- B. Evaluate the magnitude and effects of actual or potential radioactive releases from the plant;
- C. Recommend appropriate offsite protective measures, in conjunction with the TSC personnel;
- D. Coordinate the offsite radiological monitoring during emergencies and recovery operations;
- E. Coordinate emergency response activities with those of local, State, Tribal, and Federal emergency response organizations;
- F. Provide current information on conditions potentially affecting the public to the NRC and to offsite emergency response agencies;
- G. Act as the post-accident recovery management center for both onsite and offsite activities, if necessary.

The EOF will be ~~activated and~~ staffed by personnel from the Engineering and Projects Management groups and Prairie Island Training Center staff. Activation and various responsibilities within the EOF are described fully in Section F8 of the EOF Emergency Plan Implementing Procedures.

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7.3.2 Facilities and Equipment for Offsite Monitoring

A. Meteorological

Several locations, exterior to the plant site, can be used to obtain offsite meteorological conditions. Locations and outputs are summarized in Table 10.

B. Assessment Equipment

1. The EOF Count Room contains a GEM detector system and Geiger-Mueller counter to analyze offsite samples.
2. The emergency lockers in the Assembly Points have the equipment necessary to collect and analyze air samples (particulate and iodine) and portable instruments for measuring radiation levels.
3. The hospital emergency kit at Mayo Clinic Health System has instruments for measuring radiation levels and contamination levels of radiation casualties arriving at the medical center for medical treatment.
4. All Monticello Nuclear Plant counting room and portable radiation detection equipment is available for analysis of samples from Prairie Island NGP. ~~Some equipment will be brought with the Monticello Radiation Protection Group members arriving onsite to augment the Prairie Island Radiation Protection Group in performing offsite surveys and sampling.~~
5. There are TLD badges and airborne particulate and iodine sampling stations installed in areas surrounding the plant. The badges and air sampling stations are installed as part of the Radiation Environmental Monitoring Program. During an emergency, these badges and/or air sampling filters or cartridges may be used for dose assessment purposes.
6. All onsite portable equipment and count room equipment at Prairie Island NGP may be used for required offsite radiation surveys or analysis of offsite samples (liquid or airborne).


ENCLOSURE 1, ATTACHMENT 2

**NORTHERN STATES POWER - MINNESOTA
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2**


**REVISION TO STAFF AUGMENTATION TIMES IN THE
PINGP EMERGENCY PLAN**

CLEAN COPY PAGES OF EMERGENCY PLAN

25 pages follow

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- 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 Figures 1 and 2 is available and the facility is ready to assume its assigned Emergency Plan functions and relieve the on-shift staff of those functions. Although the facility may be ready, the on-shift staff 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.

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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. 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.

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4.1.2 Alert


At the Alert action level, events are in process or have occurred which involve actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. It is the lowest level when some necessity for emergency planning and response offsite is necessary. Any radioactive release will be limited to a small fraction of the EPA Protective Action Guideline exposure levels.

The purpose of the Alert action level is to: (1) assure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required; and (2) provide offsite authorities current status information, i.e., early and prompt notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized.

4.1.3 Site Area Emergency

The Site Area Emergency action level describes events that are in process or have occurred which involve actual or likely major failure of plant functions needed for protection of the public or HOSTILE ACTION that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. It reflects conditions where significant offsite releases are likely to occur or are occurring but where a core melt situation is not expected although severe fuel damage may have occurred. Any radioactive releases are not expected to exceed the EPA Protective Action Guideline exposure levels except near the site boundary.

The purpose of the Site Area Emergency action level is to: (1) assure that response centers are manned; (2) assure that monitoring teams are dispatched; (3) assure that personnel required for evacuation of near-site areas are at duty stations if the situation becomes more serious; (4) provide current information for and consultation with offsite authorities; and (5) provide updates for the public through offsite authorities.

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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. Table 1 shows the personnel available on-shift and the capability for additional personnel within 60 minutes and 90 minutes of event declaration. Table 1 follows the guidance developed in accordance with 10 CFR 50 Appendix E. This staffing analysis is documented in F3-1.1, Emergency Plan On-Shift Staffing.

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.

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. If necessary, the Shift Supervisor of the unaffected unit may function as an alternate Emergency Director backing up the Shift Manager.

Twenty-four (24) hour coverage for the Emergency Director position is provided by the Duty Shift Manager who assumes the responsibility of the TSC Emergency Director at the onset of any emergency condition.

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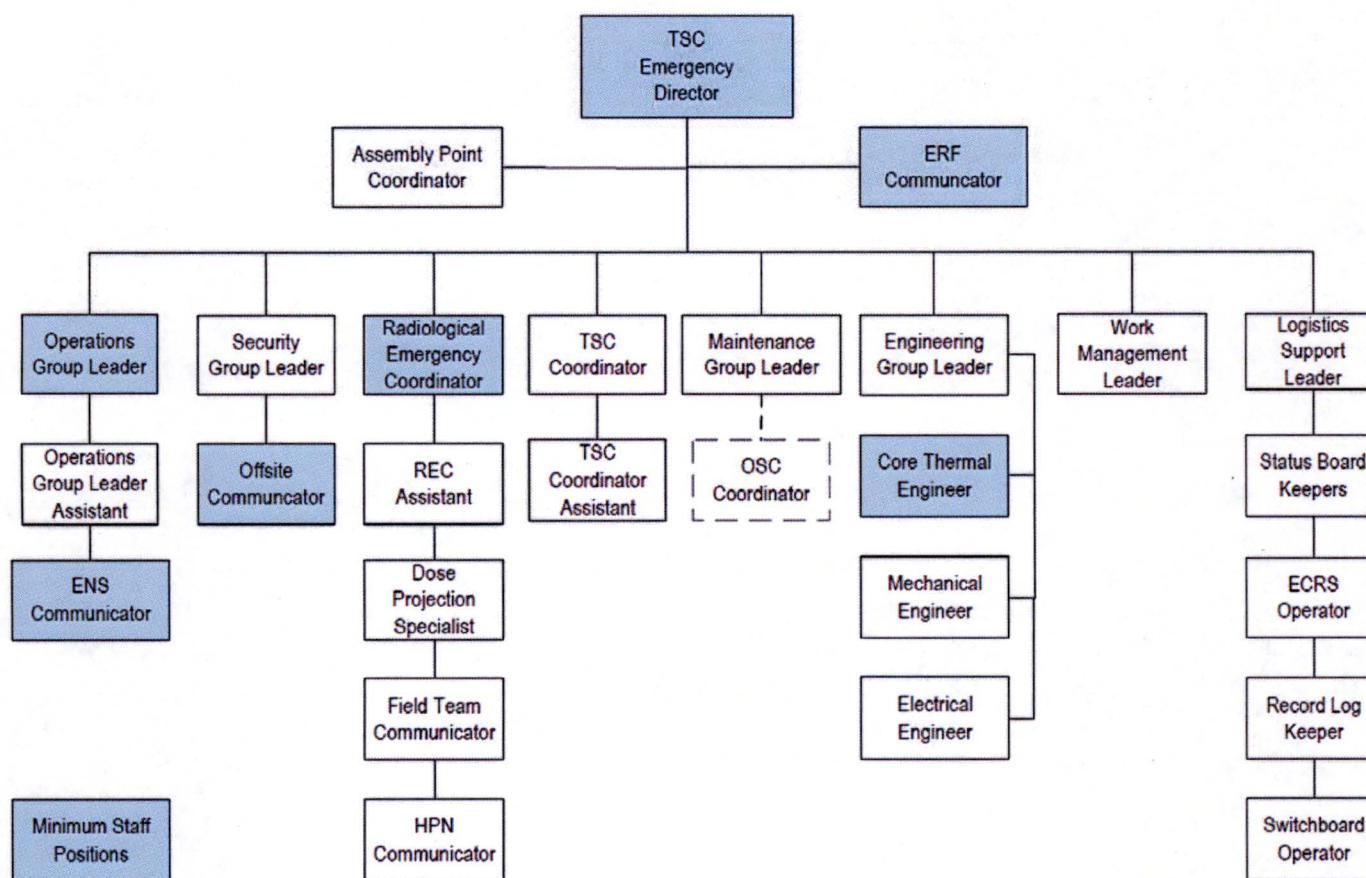
When the Technical Support Center (TSC) and Emergency Operations Facility (EOF) Organizations are activated, the Emergency Director (ED) and TSC staff will relieve the Emergency Director on shift of command and control functions as soon as practical and assume the responsibility for the management of NSPM's overall response to the emergency. The Emergency Director on shift can then direct the plant's priorities for event responses. Upon activation of the EOF, responsibility for offsite functions of notification and protective action recommendations transfer from the TSC to the EOF Emergency Manager (EM). The transition of command and control functions is depicted below.

| CONTROL ROOM | TSC | EOF |
|------------------------------------|-------------------------------|------------------------------|
| <u>On Shift/Emergency Director</u> | <u>TSC Emergency Director</u> | <u>EOF Emergency Manager</u> |
| Classification | Classification | |
| Notifications | Notifications | Notifications |
| PARs | PARs | PARs |
| Emergency Exposure Controls | Emergency Exposure Controls | |

Transition of Command and Control Functions

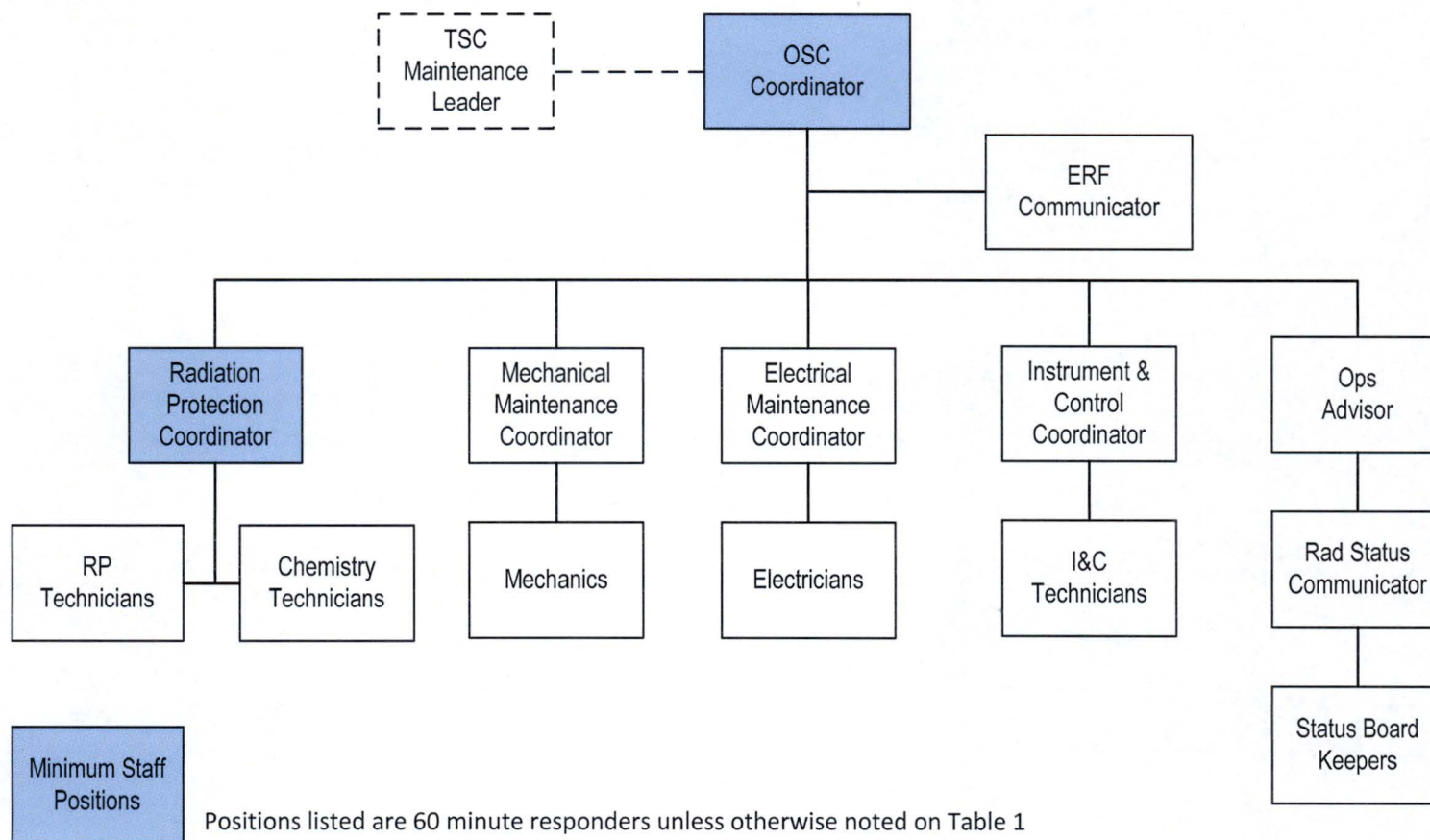
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Figure 1 Prairie Island Plant Emergency Organization



Positions listed are 60 minute responders

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Figure 1 Prairie Island Plant Emergency Organization


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Table 1 Guidance for Augmentation of Plant Emergency Organization

| Major Functional Area | Major Tasks | Position Title or Expertise | On-Shift | Capability for Additions | |
|--|--|--|----------|--------------------------|--------|
| | | | | 60 min | 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 | - | - |
| | | Offsite Communicator | - | 1 | 1 |
| | | ENS Communicator | - | 1 | 1 |
| Radiological Accident Assessment and Support of Operational Accident Assessment | Emergency Operations Facility (EOF) Director | Emergency Manager | - | - | 1 |
| | | Emergency Director | - | 1 | - |
| | Offsite Dose Assessment | Radiological Emergency Coordinator | - | 1 | - |
| | | RP Support Supervisor | - | - | 1 |
| | Offsite Surveys | Radiation Protection Specialist/ Support | - | 2 | 2 |
| | Onsite Surveys (out-of-plant) In-plant Surveys | Radiation Protection Specialist | 1 | 1 | 1 |


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Table 1 Guidance for Augmentation of Plant Emergency Organization

| Major Functional Area | Major Tasks | Position Title or Expertise | On-Shift | Capability for Additions | |
|-------------------------------|---|---------------------------------|------------------|--------------------------|--------|
| | | | | 60 min | 90 min |
| Plant System Engineering, | Chemistry/Radiochemistry | Chemistry Technician | 1 | 1 | - |
| | Technical Support | Shift Technical Advisor | 1 | - | - |
| | | Core/Thermal | - | 1 | - |
| | | Electrical | - | 1 | - |
| | | Mechanical | - | 1 | - |
| Repair and Corrective Actions | Repairs and Corrective Actions | Mechanical Maintenance | 1 ⁽¹⁾ | 1 | - |
| | | Electrical Maintenance | 1 ⁽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 | Instrument Control | - | - | 1 |
| | | Radiation Protection Specialist | 1 | 1 | 1 |
| | | | | | |
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Table 1 Guidance for Augmentation of Plant Emergency Organization

| Major Functional Area | Major Tasks | Position Title or Expertise | On-Shift | Capability for Additions | |
|--|---|-----------------------------|----------------------|--------------------------|--------|
| | | | | 60 min | 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 | 14 | 9 |

⁽¹⁾ May be provided by shift personnel assigned other functions.

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.

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- 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).
- 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.

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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 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

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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. 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.

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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 Emergency Director until relieved by the TSC 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 is activated, 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.

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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 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.

H. Chemistry Technician

One Chemistry Technician is onsite at all times. The Chemistry Technician is responsible for chemistry, radiochemistry, dose assessments, and offsite dose projections. The Chemistry Technician is also cross-trained to support the Radiation Protection Specialist functions described in Section G above.

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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 will be activated within 90 minutes of when an Alert, Site Area Emergency or General Emergency is declared.

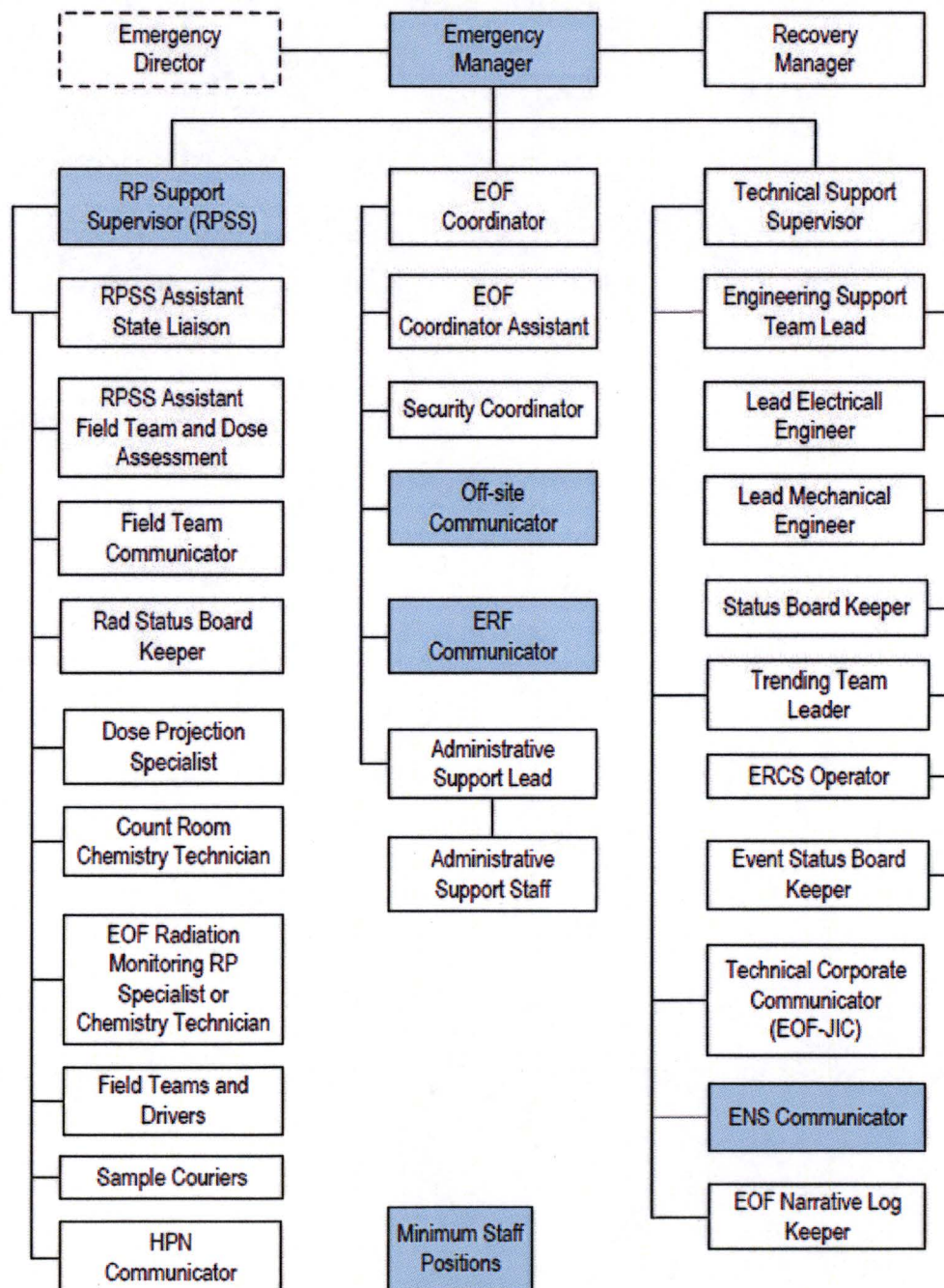
5.4.1 EOF Direction and Control

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.

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Figure 2 Prairie Island EOF Organization



Positions listed are 90 minute responders

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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.

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.

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The ERO Auto Dial System and ERO Pager Network are two notification system(s) used to activate the onsite emergency organization. One system is the backup of the other system. Both will be activated for ERO notification. Telephone numbers of all key emergency organization personnel are published in the MT & PI Nuclear Emergency Preparedness Telephone Directory.

If the event involves a credible security threat, EOF staff may be directed to staff the Backup EOF. In this case, the onsite ERO may be directed to the Red Wing Service Center until it is safe to staff the onsite OSC and TSC. The Red Wing Service Center is to be used as the Alternative Facility during a security threat or event. The RWSC has communication links with the Control Room, EOF, and Security.

6.1.2 Notification Scheme

When an abnormal condition is identified by the Operating Staff/Shift Supervisor, the Shift Supervisor will contact the Shift Manager and the Shift Emergency Communicator. An assessment of the safety significance will be performed, and a determination of the emergency classification will be made using the plant's emergency plan implementing procedures.

Upon declaring an emergency condition, the Shift Manager will activate portions of the Emergency Plan as appropriate to respond to the declared emergency. During a Notification of Unusual Event, the Emergency Director position usually will not be staffed and the Shift Manager **SHALL** designate the Shift Emergency Communicator or other qualified communicator to make the necessary notifications of offsite state and local authorities. The Emergency Director position will be staffed during an Alert, a Site Area Emergency or General Emergency. The Shift Manager will assume the role as Emergency Director until relieved by the individual designated to relieve him.

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6.3 Summary of Site Response Actions

Summarized below are the actions required by the site staff for each of the four emergency classifications. For each class of emergency, appropriate state, local, and tribal authorities will be notified. Depending on the emergency level classification, they will activate the segment(s) of their emergency organizations, according to their individual plans and based on the information received in the notification.

NOTIFICATION OF UNUSUAL EVENT

1. Promptly inform offsite authorities of unusual event status and the reason for the Unusual Event as soon as discovered.
2. Augment on-shift resources as needed.
3. Assess and respond to Unusual Event.
4. Terminate by contacting offsite authorities


or

5. Escalate to a more severe class.

ALERT

1. Promptly inform offsite authorities of Alert status and reason for Alert as soon as discovered.
2. Augment resources by activating onsite Technical Support Center (TSC) and onsite Operational Support Center (OSC). The Emergency Operations Facility (EOF) and key offsite emergency organization personnel will be activated.
3. Assess and respond to the Alert condition.
4. Dispatch onsite and offsite survey teams and associated communications.
5. Provide periodic plant status updates to offsite authorities.
6. Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases.
7. Terminate by contacting offsite authorities.

or


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6.4.2 Radiological Surveys

The Radiation Protection Group **SHALL** be responsible for all radiological surveys and personnel monitoring both onsite and offsite. The Emergency Director has the responsibility for directing all radiation safety during the emergency.

The Radiation Protection Specialists may be divided into two emergency Radiation Survey Teams. The 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. Additional 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 are completed by other augmented personnel. 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 first team will be activated and respond within sixty (60) minutes and the second team within ninety (90) minutes. Designated Emergency Lockers contain emergency survey kits, which include portable instruments, battery operated air samplers, liquid sampling equipment, and communication equipment.

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F. The capability to record and display the following:


1. Plant System Parameters
 - a Reactor Coolant System
 - b Secondary System
 - c ECCS System
 - d Containment
2. In-Plant Radiological Parameters
 - a Reactor Coolant System
 - b Containment
 - c Effluent Treatment
 - d Release Paths
 - e Area Monitors
3. Offsite Radiological Parameters
 - a Meteorology
 - b Offsite Radiation Levels

The Technical Support Center **SHALL** be activated within 60 minutes when an Alert, Site Area or General Emergency is declared.

The Technical Support Center Coordinator **SHALL** be responsible for coordinating activities in the TSC. This individual **SHALL** be responsible for establishing the monitoring of direct radiation and airborne activity in the Technical Support Center. Communications **SHALL** be established between the TSC, OSC, Control Room and EOF.

If activation of the Technical Support Center occurs during normal work hours, instructions to report to the TSC will be received over the plant public address system.

If activation of the Technical Support Center occurs during the off duty hours, the Shift Manager **SHALL** designate the Shift Emergency Communicator to contact the Emergency Response Organization (ERO) by phone and/or ERO Pager Network and request them to report to the Technical Support Center.

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7.1.2 Operational Support Center (OSC)

The Operational Support Center will provide a center to assemble the necessary Operators, Radiation Protection Specialists, Instrument and Control, Electrical, Nuclear Plant Service Attendants, and Maintenance personnel to support the operations of the plant under emergency conditions without causing undue congestion in the Control Room.


The Operational Support Center is located immediately adjacent to the Control Room.

The Operational Support Center will be activated within 60 minutes when an Alert, Site Area or General Emergency is declared.

The Operational Support Center Coordinator **SHALL** be responsible for the activation and coordination of activities in the OSC. The OSC Coordinator may designate a communicator to establish lines of communications between the Operational Support Center, the Control Room and the Technical Support Center.

If activation of the OSC occurs during a normal working day, instructions to report to the OSC will be received over the plant public address system. Any Operations shift personnel on site that are not assigned to normal shift duty **SHALL** report to the OSC immediately. The following personnel will also report to the OSC if on site (additional personnel will be contacted as necessary):

- A. Maintenance Supervisors (Mechanical and Electrical)
- B. Designated Lead Station Electricians and Maintenance personnel
- C. Instrument and Control Supervisors
- D. Radiation Survey Team Members
- E. Nuclear Plant Service Attendants

| | | |
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7.1.3 Emergency Operations Facility (EOF)

The Emergency Operations Facility (EOF) is a required emergency response facility located near the plant site to provide continuous coordination and evaluation of activities during an emergency having, or potentially having, environmental consequences. A plan view of the EOF Command Center is shown in Figure 7. The EOF will be activated within 90 minutes when an Alert, Site Area or General Emergency is declared.

The functions of the EOF will be:

- A. Management of the overall NSPM's offsite emergency response in support of plant activities;
- B. Evaluate the magnitude and effects of actual or potential radioactive releases from the plant;
- C. Recommend appropriate offsite protective measures, in conjunction with the TSC personnel;
- D. Coordinate the offsite radiological monitoring during emergencies and recovery operations;
- E. Coordinate emergency response activities with those of local, State, Tribal, and Federal emergency response organizations;
- F. Provide current information on conditions potentially affecting the public to the NRC and to offsite emergency response agencies;
- G. Act as the post-accident recovery management center for both onsite and offsite activities, if necessary.

The EOF will be staffed by personnel from the Engineering and Projects Management groups and Prairie Island Training Center staff. Activation and various responsibilities within the EOF are described fully in Section F8 of the EOF Emergency Plan Implementing Procedures.

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7.3.2 Facilities and Equipment for Offsite Monitoring

A. Meteorological

Several locations, exterior to the plant site, can be used to obtain offsite meteorological conditions. Locations and outputs are summarized in Table 10.

B. Assessment Equipment

1. The EOF Count Room contains a GEM detector system and Geiger-Mueller counter to analyze offsite samples.
2. The emergency lockers in the Assembly Points have the equipment necessary to collect and analyze air samples (particulate and iodine) and portable instruments for measuring radiation levels.
3. The hospital emergency kit at Mayo Clinic Health System has instruments for measuring radiation levels and contamination levels of radiation casualties arriving at the medical center for medical treatment.
4. All Monticello Nuclear Plant counting room and portable radiation detection equipment is available for analysis of samples from Prairie Island NGP.
5. There are TLD badges and airborne particulate and iodine sampling stations installed in areas surrounding the plant. The badges and air sampling stations are installed as part of the Radiation Environmental Monitoring Program. During an emergency, these badges and/or air sampling filters or cartridges may be used for dose assessment purposes.
6. All onsite portable equipment and count room equipment at Prairie Island NGP may be used for required offsite radiation surveys or analysis of offsite samples (liquid or airborne).

ENCLOSURE 1, ATTACHMENT 3

**NORTHERN STATES POWER - MINNESOTA
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2**

**REVISION TO STAFF AUGMENTATION TIMES IN THE
PINGP EMERGENCY PLAN**

LETTER OF CONCURRENCE FROM STATE AND LOCAL AUTHORITIES

2 pages follow

Letter of Consultation and Concurrence from Off-site Response Organizations
Acknowledgement of Opportunity to Review and Support of PINGP and/or MNGP
Proposed E-Plan Change to Augmented ERO Staffing Goal From 30/60 minutes to
60/90 Minutes



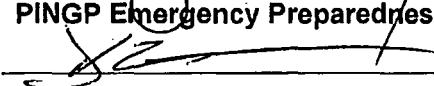

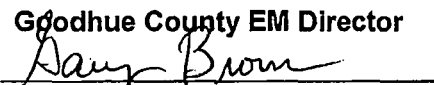


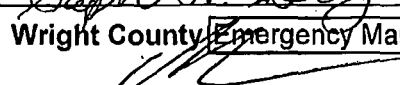
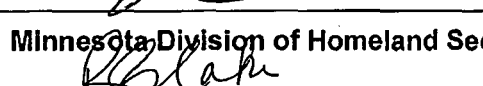
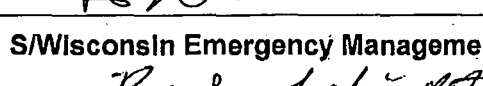

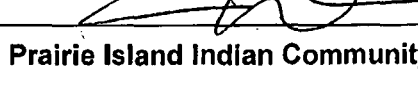
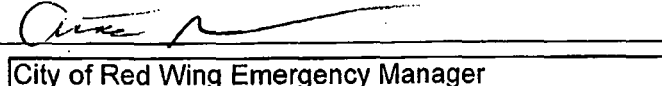
During a quarterly meeting on February 2, 2017 with offsite response organizations (ORO) from PINGP and during a quarterly meeting on February 3, 2017 with ORO from MNGP, Emergency Preparedness (EP) representatives from Xcel Energy's PINGP/MNGP respectively and Corporate staff provided a briefing to the Dakota, Goodhue, Pierce, Sherburne and Wright County Emergency Management organizations, the Prairie Island Indian Community, and the state of Minnesota and Wisconsin (ORO stakeholders). Note that if an organization was not in attendance, a one-on one meeting was conducted to update the stakeholder with information contained in the license amendment request (LAR). PINGP/MNGP/Corporate EP reviewed with the ORO stakeholders the proposed license amendment requests (LAR) seeking NRC approval for extension of the goal for staffing its augmented Emergency Response Organization (ERO) from the current goal of 30/60 minutes to one of 60/90 minutes.

During the reference meeting, PINGP/MNGP/Corporate EP Staff provided assurances that the proposed change will not adversely affect existing capabilities for prompt notification to the stakeholders of an Emergency Classification Level, for radiological monitoring and assessment support, and for ongoing communication and coordination of emergency information.

In addition to maintaining notification capabilities to notify the stakeholders of a declare emergency within 15 minutes, Xcel Energy will continue to deploy a liaison to the Emergency Operations Centers (EOC) after declaration of an Alert of higher emergency classification level. The staffing levels at the EOCs will not change.

The ERO will continue to support the states for offsite radiological monitoring and assessment. Coordination arrangements between PINGP/MNGP and the ORO stakeholders will continue to allow for timely dissemination of emergency information to the public.

With the assurances noted on page 1, the ORO stakeholders representing the named organization, have received information on the Emergency Response Organization (ERO) augmentation License Amendment Request (LAR) to the Nuclear Regulatory Commission (NRC) and support going from a 30 minute Technical Support Center (TSC)/60 minute Emergency Operations Facility (EOF) to a 60 minute TSC/90 minute EOF activation.

| ORGANIZATION | DATE |
|---|--------------|
|  MNGP Emergency Preparedness Coordinator | 2/2/17 |
|  PINGP Emergency Preparedness Coordinator | 2/2/2017 |
|  Dakota County EP Coordinator | 02/02/2017 |
|  Goodhue County EM Director | 2/2/2017 |
|  Pierce County EM Director | 2/2/2017 |
|  Sherburne County Emergency Services Director | 02/03/2017 |
|  Wright County Emergency Management Director | 2/3/2017 |
|  Minnesota Division of Homeland Security & EM | 2/3/2017 |
|  S/Wisconsin Emergency Management | 2/2/17 |
|  S/Wisconsin Department of Health Services | Feb. 1, 2017 |
|  Prairie Island Indian Community EM Coordinator | 2/2/17 |
|  City of Red Wing Emergency Manager | 2/2/17 |
|  City of Monticello Emergency Manager | 2/3/17 |

**ENCLOSURE 2
NORTHERN STATES POWER - MINNESOTA
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2**

**REVISION TO STAFF AUGMENTATION TIMES FOR THE
EMERGENCY RESPONSE ORGANIZATION**

**COMPARISON BETWEEN NUREG-0654 REVISION 1 - TABLE B-1,
THE 1982 NRC APPROVED EMERGENCY PLAN (REVISION 2),
THE CURRENT EMERGENCY PLAN (REVISION 52),
AND THE PROPOSED CHANGES TO THE EMERGENCY PLAN**

3 pages follow

PINGP Site On-Shift Table Comparison

| Major Functional Area | Major Tasks | Position Title / Expertise | Table B-1 On-shift | PINGP Rev 2 On-Shift | PINGP Rev 52 On-Shift | PINGP Proposed On-shift |
|---|--|---|--------------------|----------------------|-----------------------|-------------------------|
| Plant Operation and Assessment of Operation Aspects | | Shift Supervisor (SRO) | 1 | 1 | 1 | 1 |
| | | Shift Foreman (SRO) | 1 | 1 | 2 | 2 |
| | | Control Room Operators | 1 | 3 | 4 | 4 |
| | | Auxiliary Operators | 1 | 4 | 6 | 6 |
| Emergency Direction and Control (Emergency Coordinator) *** | | STA. Shift Supervisor or facility manager | 1** | 1** | 1** | 1** |
| Notification / Communication **** | Notify State/local and federal personnel, maintain communication | | 1**** | 1 | 1 | 1 |
| Radiological Accident Assessment and Support of Operational Accident Assessment | In-Plant surveys | HP Technicians | 1 | 1** | 1 | 1 |
| | Chemistry / Radiochemistry | Chem/HP Technicians | 1 | 1 | 1 | 1 |
| Plant System Engineering | Technical support | Shift Technical Advisor | 1 | 1 | 1 | 1 |
| Repair and Corrective Actions | Repair and Corrective Actions | Mechanical Maintenance | 1** | 1** | 1** | 1** |
| | | Electrical Maintenance | 1** | 1** | 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 | HP Technicians | 2** | 2** | 1 | 1 |
| Firefighting | | Fire Brigade per Tech Specs | | | | |
| Rescue Operations and First-Aid | | | 2** | 2** | 2** | 2** |
| Site Access Control and Personnel Accountability | Security, firefighting communications, personnel accountability | Security personnel per security plan | | | | |
| Total On-Shift | | | 10 | 12 | 18 | 18 |

** May be provided by shift personnel assigned other functions

*** Overall direction of facility response to be assumed by EOF director when all centers fully manned

**** May be performed by engineering aide to shift supervisor

PINGP Site 30-Minute Augmented ERO Table Comparison

| Major Functional Area | Major Tasks | Position Title / Expertise | Table B-1 Augment (30 min) | PINGP Rev 2 (30 min) | PINGP Rev 52 (30 min) | PINGP Proposed (60 min) |
|---|--|----------------------------|----------------------------------|----------------------------|-----------------------------|-------------------------------|
| Notification / Communication | Notify State/local and federal personnel, maintain communication | | 1 | 1 | 1 | 2 |
| Radiological Accident Assessment and Support of Operational Accident Assessment | Emergency Response & Recovery Director | Senior Manager | | | | 1 |
| | Offsite Dose Assessment | Sr. HP Expertise | 1 | 1 | 1 | 1 |
| | Offsite Surveys | HP Technicians/Support | 2 | 2 | 2 | 2 |
| | On-Site Surveys | HP Technicians | 1 | 1 | | 1 |
| | In-Plant surveys | HP Technicians | 1 | 1 | 1 | |
| | Chemistry / Radiochemistry | Chem/HP Technicians | | | | 1 |
| Plant System Engineering | Technical Support | Core/Thermal Hydraulics | 1 | 1 | 1 | 1 |
| | | Electrical | | | | 1 |
| | | Mechanical | | | | 1 |
| Repair and Corrective Actions | Repair and Corrective Actions | Mechanical Maintenance | | | | 1 |
| | | Rad Waste Operator | | | | |
| | | Electrical Maintenance | 1 | 1 | 1 | 1 |
| | | I&C Technician | 1 | 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 | HP Technicians | 2 | 2 | 1 | 1 |
| Total Augmented ERO | | | 11 | 11 | 9 | 14 |

PINGP Site 60-Minute Augmented ERO Table Comparison

| Major Functional Area | Major Tasks | Position Title / Expertise | Table B-1 Augment (60 min) | PINGP Rev 2 (60 min) | PINGP Rev 52 (60 min) | PINGP Proposed (90 min) |
|---|--|-----------------------------------|-----------------------------------|-----------------------------|------------------------------|--------------------------------|
| Notification / Communication | Notify State/local and federal personnel, maintain communication | | 2 | 2 | 2 | 2 |
| Radiological Accident Assessment and Support of Operational Accident Assessment | Emergency Response & Recovery Director | Senior Manager | 1 | 1 | 1 | 1 |
| | Offsite Dose Assessment | Sr. HP Expertise | | | | 1 |
| | Offsite Surveys | HP Technicians/Support | 2 | 2 | 2 | 2 |
| | On-Site Surveys | HP Technicians | 1 | 1 | 1 | 1 |
| | In-Plant surveys | HP Technicians | 1 | 1 | 1 | |
| | Chemistry / Radiochemistry | Chem/HP Technicians | 1 | 1 | 1 | |
| Plant System Engineering | Technical Support | Core/Thermal Hydraulics | | | | |
| | | Electrical | 1 | 1 | 1 | |
| | | Mechanical | 1 | 1 | 1 | |
| Repair and Corrective Actions | Repair and Corrective Actions | Mechanical Maintenance | 1 | 1 | 1 | |
| | | Rad Waste Operator | 1 | 1 | 1 | |
| | | Electrical Maintenance | 1 | 1 | 1 | |
| | | I&C Technician | | | | 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 | HP Technicians | 2 | 2 | 2 | 1 |
| Total Augmented ERO | | | 15 | 15 | 15 | 9 |