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March 24, 2017

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10 CFR 50.90

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

Monticello Nuclear Generating Plant  
Docket No. 50-263  
Renewed Facility Operating License No. DPR-22

Monticello Nuclear Generating Plant 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 Monticello Nuclear Generating Plant (MNGP) Renewed Facility Operating License. NSPM proposes to revise the MNGP Emergency Plan (E-Plan) to extend 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 E-Plan pages showing the proposed changes. Attachment 2 to Enclosure 1 provides the clean E-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 MNGP.

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 1983 NRC approved E-Plan, the current E-Plan, and the proposed changes to the E-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 March 24, 2017.



Peter A. Gardner  
Site Vice President, Monticello Nuclear Generating Plant  
Northern States Power Company – Minnesota

Enclosures (2)

cc: Administrator, Region III, USNRC  
Project Manager, Monticello Nuclear Generating Plant, USNRC  
Resident Inspector, Monticello Nuclear Generating Plant, USNRC  
State of Minnesota

**ENCLOSURE 1**

**NORTHERN STATES POWER COMPANY  
MONTICELLO NUCLEAR GENERATING PLANT**

**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

## 1.0 SUMMARY DESCRIPTION

Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy proposes revisions to the Monticello Nuclear Generating Plant (MNGP), Emergency Plan (E-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 the Emergency Operations Facility (EOF)
- Removal of references to additional RP support from Prairie Island Nuclear Generating Plant (PINGP) within 3 hours
- Removal of one 30-minute Electrical Maintenance responder from the augmentation list

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 required 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, respectively<sup>1</sup>, 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 response times results in an increase in facility activation times for the MNGP Emergency Response Facilities (ERF's). Therefore, the changes in staff augmentation response times are considered a reduction in E-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.

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<sup>1</sup> 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 MNGP 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 E-Plan pages, respectively.

Proposed Changes to the MNGP E-Plan include:

- a. Section 1.0, “Definitions and Abbreviations,” added definition of ‘Facility Activation’
- b. Section 5.2.1, “Technical Support Center Emergency Organization,” added statement that the TSC will be activated within 60 minutes of an Alert or higher declaration.
- c. Section 5.2.1.1, “Direction and Control,” deleted reference to ‘staffed’ where it is used in combination with ‘activated’, added ‘in the TSC’ to clarify the location of the Emergency Director, added references to classification and emergency exposure authorization as responsibilities that remain in the TSC upon transfer of command and control to the EOF.
- d. Section 5.2.2, “Operation Support Center Emergency Organization,” added statement that OSC will be activated within 60 minutes of an Alert or higher declaration.
- e. Section 5.2.2.3, “Electrical Maintenance,” revised position title from ‘supervisor’ to ‘coordinator’ to align with Figure 13.1.
- f. Section 5.2.2.4, “Instrument & Control,” revised position title from ‘supervisor’ to ‘coordinator’ to align with Figure 13.1.
- g. Section 5.2.3, “EOF Emergency Organization,” added statement that the EOF will be activated within 90 minutes of an Alert or higher declaration.
- h. Section 5.3.1.2, “Emergency Direction and Control,” added ‘in the EOF’ to clarify location of the Emergency Manager and ‘TSC’ to clarify the references to the Emergency Director. Revised references to transfer of offsite responsibilities to align with change in Section 5.2.3 and 5.2.1.1.
- i. Section 5.3.1.3, “Notification and Communications,” changed references from 30 and 60-minute response to 60 and 90 minutes respectively. Removed references to transfer of responsibilities to align with change in Section 5.2.3. Reinforced the Federal notification responsibilities.
- j. Section 5.3.1.4, “Radiological Assessment and Protective Actions,” changed reference from 30 and 60-minute response to 60 and 90 minute response

- respectively. Removed reference to additional augmented support from PINGP.
- k. Section 5.3.1.5, “Engineering and Technical Support,” changed reference from 30-minute response to 60 minutes.
  - l. Section 5.3.1.6, “Repair and Corrective Actions,” changed references from 30 and 60-minute response to 60 and 90 minute response respectively. Changed the I&C responder from 30 minutes to 90 minutes. Removed one 30-minute Electrical Maintenance responder.
  - m. Table 1, “Minimum Shift Staffing and Capability for Additions for Nuclear Power Plant Emergencies,” revised 30 and 60-minute columns to 60 and 90-minutes, changed the 30-minute EOF Coordinator response to a 60-minute ED responder in the TSC, and added 1 RPS Support responder at 90 minutes.
  - n. Table 2, “Monticello Plant ERO Responsibility Matrix,” deleted table and replaced with Figure 13.1 to better describe augmented ERO structure.
  - o. Section 6.1.2.6, “Alert,” revised action for dispatch of on-site and off-site survey teams to remove ‘as necessary’ consistent with the proposed change to staff augmentation times.
  - p. Section 6.3.3, Field Radiation Surveys,” revised the number of survey teams to two (2), aligning with the values in Table 1, removed references to PINGP participation in MNGP field monitoring activities and revised deployment times to one (1) team within 60 minutes and a second team within 90 minutes of event declaration consistent with several of the proposed changes described in Section 1.0 of this Enclosure.
  - q. Section 7.1.3, “Emergency Operations Facility,” removed reference from 30-minute and one hour staffing and activation to align with changes in Section 5.2.3.
  - r. Section 9.5, “Long Term Recovery,” changed ‘activated’ to ‘entry into’ to maintain alignment for use of ‘activated’ throughout the document.
  - s. Section 13.0, “Figures,” specifically Figure 13.1 was changed to separate TSC, OSC and EOF organizational structures and identify minimum staffing positions required for facility activation.
  - t. Section 13.0, “Figures,” Figure 13.4 was deleted as the health physics organization was subsumed by the new charts in Figure 13.1.

## 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 13 positions 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 MNGP E-Plan, Revision 2, approved staffing of 9 positions.

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 MNGP E-Plan consisted of 24 positions which were augmented to support site response to an emergency. Site individuals designated to fill emergency response positions carried pagers or utilized tone-activated radios. The ERO consisted of approximately 70 individuals. Today, the ERO consists of approximately 290 responders. This represents a greater than 300% increase in the number of individuals qualified 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 MNGP 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 after 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 MNGP 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 within 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 Figure 13.1 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’ 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, and 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.

#### Removal of PINGP RP Resources

The MNGP E-Plan currently contains references to additional Radiation Protection (RP) support being provided by Prairie Island Nuclear Generating Plant (PINGP) within approximately three (3) hours. This commitment<sup>2</sup> was implemented to address limited staffing resources available at the site when Revision 2 of the MNGP E-Plan was implemented. Currently, the site has sufficient qualified resources to fulfill this function independently. As a result, the MNGP E-Plan is being revised to remove this commitment.

#### Removal of one 30-Minute Electrical Maintenance Responder

The 30-minute Electrical Maintenance responder is currently described in Table 1 of the MNGP 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.

#### 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 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.

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<sup>2</sup> 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.”

## **2.3 MNGP Emergency Plan Background**

The last MNGP E-Plan reviewed and approved by the NRC in the area of staffing was Revision 2. Revision 2, as well as Revision 0 of the Corporate E-Plan, was approved by NRC Safety Evaluation Report (SER) dated January 20, 1983. As approved by the NRC, the MNGP E-Plan, Revision 2, contained 30-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 MNGP E-Plan, Revision 2, Table 5-1, "Minimum Shift Staffing and Capability for Additions For Nuclear Power Plant Emergencies ". The E-Plan, Revision 2, Table B-1, provided the site commitment to meet the guidance for on-shift staffing and augmentation goals including 30-minute and 60-minute responders established in Table B-1 of NUREG-0654, Revision 1. In Revision 2, activation of the TSC, OSC and EOF occurred at the Alert classification.

The MNGP E-Plan describes four Emergency Response Facilities (ERFs) available to augment the on-shift staff: the Technical Support Center (TSC), the Operational Support Center (OSC), Emergency Operations Facility (EOF), and Back-up Emergency Operations Facility (BUEOF). The Joint Information Center (JIC) is described in the Corporate E-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.

MNGP uses four standard levels of emergency classification as described in NUREG-0654, Revision 1. 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

At the time of the original approval of Revision 2 of the MNGP E-Plan, the site utilized the GEPAC 4020 plant process computer system (PPCS). The operator interface consisted of cathode ray tube (CRT) consoles and printers located in the CR, TSC, and EOF.

In the 1980s, the General Electric (GE) Emergency Response Information System (ERIS) was installed at the site. The GE ERIS computers were installed to meet the requirements of NUREG 0737, Supplement 1; regarding the need to support the Safety Parameter Display System (SPDS) on vendor (GE) supplied CRT consoles as part of upgrading the ERFs.

In 2007, the GE SPDS was replaced by Plant Information (PI) SPDS which allows the displays to be projected on large 40 inch monitors within the CR, TSC, and EOF as well as on standard size monitors. A major result of this change is that real-time SPDS displays are now available to all plant personnel from their normal work locations. The MNGP SPDS meets the requirements of NUREG-0737, Supplement 1.

In 2009, the GE Power Range Neutron Monitoring System (PRNM) was installed at the site. PRNM adds the capability of supporting Oscillation Power Range Monitoring (OPRM) of the reactor core neutron flux. The OPRM software algorithms can produce alarms and trips based on the amplitude, growth rate, and period of reactor core neutron flux oscillations. PRNM also provides a functional replacement of the Local Power Range Monitor (LPRM), Average Power Range Monitor (APRM), and Rod Block Monitor (RBM) functions and upgrades the interfaces to the Rod Worth Minimizer (RWM) and Automated Traversing In-Core Probe (ATIP).

#### Safety Parameter Display System (SPDS)

The current SPDS consists of three primary displays that are designed to support the information needs of the Emergency Procedure Guidelines (EPGs). These

displays, RPV Control Display, Containment Control Display, and Critical Plant Variables Display, are elaborated in special function displays. The special function displays provide:

- 1) two-dimensional plots of the limiting conditions defined in the Emergency Operating Procedures (EOPs), e.g., Drywell Design Pressure Curve;
- 2) trend plots of all control parameters, showing data from the most recent 30 minutes;
- 3) the validation status of SPDS input data, and
- 4) radiation monitoring displays.

Diesel Generator 13 provides a standby power source for the equipment powered from plant 480 VAC Load Centers 107 and 108. This diesel generator is used to ensure the SPDS has power and cooling so that it can remain available after a loss of off-site power. The SPDS system is integrated with the plant Process Computer System (PCS).

#### Process Computer System (PCS)

The PCS provides the process monitoring, calculations and data presentation necessary for effective evaluation of normal and emergency plant operation.

The PCS is an integrated system designed for monitoring, analysis and display of plant process parameters obtained from instrumentation connected to plant equipment and systems. Data is collected via an interface with the Data Acquisition System (DAS). The PCS processes the data (analog, digital and pulse) and provides meaningful displays, logs and plots of historical, current and predicted plant performance. The PCS provides the following functions:

- 1) The Safety Parameter Display System (SPDS) provides displays of critical plant parameters to aid control room operator personnel and system engineers in the determination of safety status of the plant during abnormal and emergency conditions.
- 2) The Transient Recording and Analysis (TRA) System provides recording and analysis functions of real time and historical plant data.
- 3) The Point Log and Alarm (PLA) provides point data processing and an operator interface for controlling point processing, data alarming, display and logging.
- 4) The Gardel Core Monitoring System is provided the necessary data by the PCS. The PCS provides interfaces to interact with the Rod Worth Minimizer (RWM) and the Transversing Incore Probe (TIP) system for the transfer of data.
- 5) The Sequence of Events (SOE) function provides data recording and event recall for system disturbance evaluation.

- 6) The collection and recording of balance of plant (BOP) data provides for BOP performance monitoring.
- 7) The PCS receives data from the CROSSFLOW system, which may be applied to correct for the effects of flow nozzle fouling on the calculated feedwater flow rate. When the CROSSFLOW system is enabled, this data is utilized in the PCS Core Thermal Power calculation.

The PCS is powered from the C40PDS1 and C40PDS2 power distribution systems. These power distribution systems receive their power from panel Y-94 and UPS Y-91 which are supplied from LC-108. In the event of a loss of power to LC-108, 13 diesel generator will supply LC-108 and therefore maintain power to the PCS. If 13 diesel generator is unavailable to supply power, 17 battery will supply power to the UPS for approximately 30 minutes assuming all loads are connected.

In summary, the benefits of the upgraded computer systems include:

- 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
- Periodic logs
- Archival of data

### **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 personnel on-shift through the Unified 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 system, Monticello Off-Site Dose Computation System (MODCOM), used manual entry of meteorological information and plant radioactive airborne effluent release rate information from effluent monitors or dose rate readings converted from release rates. This software was replaced in 1984 with Meteorological Information and Dose Assessment System (MIDAS), an automated system for calculation of

off-site dose rates with data transmitted directly from process monitors and meteorological instruments located at the plant site. This dose assessment software was replaced by Radiological Assessment System for Consequence Analysis (RASCAL) in 2012 and required manual entry of meteorological and effluent data obtained from the Emergency Response Information System (ERIS).

### 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 release rate determination methodology is maintained for use with independent battery powered laptop computers in emergency facilities equipped with 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

Since the 1983 SER approved E-Plan, the site has implemented enhancements to the ERO activation process which includes updated technology capable of rapidly notifying a large number of people. The original activation method used a pager network and in-home tone alert radios to notify ERO members. The current method is a pager network and an automated call-out system which notifies a much larger group of ERO members via home phones and cell phones with a single activation phone call. The system includes a primary activation location as well as a backup facility at a different location to ensure uninterrupted operation. An activation can be performed using any commercial telephone, either on or off site.

### 3.1.4 Procedure Improvements

#### 3.1.4.1 Emergency Operations Procedures (EOPs)

Since the original E-Plan approval, MNGP EOPs have been vastly 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 the plant process computer system

(PPCS). In addition, since the original E-Plan approval, the EOPs have been put into flowcharts, revised for human factoring, and modified for improved layout; ultimately resulting in more consistent implementation. Overall, the improvements made to procedures greatly reduce the operator's reliance on the ERO during the initial phases of any event.

### 3.1.4.2 Emergency Plan Implementing Procedures (EPIPs)

In 2006, Monticello updated the classification methodology to NEI 99-01, Revision 4. MNGP 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 emergency response organization during the initial phases 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 MNGP. 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 control room during normal, abnormal and emergency plant conditions.

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 E-Plan. Scenarios can vary in both length and complexity with some scenarios up to 90 minutes or more. These scenarios provide additional challenges to the crew's ability to prioritize activities to successfully manage very complex situations. The proficiency of the control room team is evaluated in the areas of critical task performance, prioritization of activities, communications, accident mitigation, event classification, teamwork and communications.

A training program procedure is the governing document for this training.

### 3.1.5.2 Shift Technical Advisor (STA) Training

Shift Technical Advisor (STA) training was developed to train the STA as an advisor to the CR 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 Qualifications of Shift Technical Advisors. The INPO guidelines describe the role of the STA and are reflected in Operations Department Instructions. The STA training and qualification program adheres to the requirements of INPO 90-03 and is implemented at MNGP by training program procedures. 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 E-Plan in order to ensure adequate performance of the major E-Plan functions and tasks. Currently, a total of 13 positions are identified for on-shift staffing, which is an increase from the 10 positions identified in the regulatory guidance in NUREG-0654, Revision 1, and an increase from the 9 positions identified in the approved MNGP E-Plan, Revision 2. A comparative chart depicting on-shift and augmented staffing based on NUREG-0654, Revision 1; Revision 2 of the MNGP E-Plan; the current E-Plan and the proposed revisions is included in Enclosure 2.

### 3.1.7 Improvement Summary

The improvements to staffing, equipment, procedures and training that have occurred since initial approval of the MNGP 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 MNGP 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 plan has one (1) additional Control Room Operator (RO) and one (1) Primary Equipment Operator (PEO) 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 availability of Operations personnel to perform specified functions.

In accordance with the current MNGP E-Plan, the on-shift staffing is in excess of the requirements of NUREG-0654 Revision 1 Table B-1, as well as that prescribed in the last MNGP approved E-Plan, Revision 2 from 1983. Additional personnel have been included in the existing on-shift complement for a total on-shift staffing of 13 personnel. This represents an increase of three (3) persons when compared to the regulatory guidance stated in NUREG-0654 Revision 1, Table B-1 and an increase of four (4) persons when compared to the last NRC approved E-Plan in 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 states that the Shift Supervisor or Shift Technical Advisor (STA) assumes the Emergency Director function as a collateral duty. The responsibility for overall direction of facility response may be transferred when ERFs are fully staffed.

- a. In Revision 2 of the MNGP E-Plan, the Shift Supervisor would assume the duties of Emergency Director (ED) and would be responsible for emergency response efforts until relieved by another ED at an Alert or higher classification. There were no response time requirements established with the relief process. The E-Plan identified an EOF Coordinator with a 30-minute response time, who was responsible for coordination of the EOF prior to Emergency Manager (EM) arrival. The EM had a 90-minute response time. The EOF was required to be activated in approximately two (2) hours. In Revision 12, the requirement for transfer of responsibilities to the EOF was changed to approximately one (1) hour and the EM response time was changed to 60 minutes.
- b. The current revision of the MNGP E-Plan maintains the commitment for EOF Coordinator and EM response times as well as activation of the EOF within one (1) hour.
- c. In the proposed E-Plan changes, an ED with a 60-minute response time is added to the staffing in the TSC. The TSC ED will become responsible for the Command/Control function formerly performed by the EOF Coordinator. 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 will remain as a function but will no longer be identified as an augmented position with Figure 13.1. The emergency manager is identified in table 1 as the 90 minute responder. With the change in EOF Coordinator function the activation time is changing from 30 minutes to 90 minutes from event declaration.

The EM position response time 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 MNGP 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 the MNGP E-Plan, Figure 13.1 identifies the following minimum staff positions in the TSC which support activation of the facility within 60 minutes of an Alert declaration:

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

The proposed revision to the MNGP E-Plan, Figure 13.1 identifies the following minimum staff positions in the OSC needed to support activation of the facility within 60 minutes of an Alert or higher declaration:

- OSC Coordinator
- Radiation Protection Coordinator

The proposed revision to the MNGP E-Plan, Figure 13.1 identifies the following minimum staff positions in the EOF which support activation of the facility within 90 minutes of an Alert declaration.

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

This proposed change would not extend the amount of time that the SM/ED maintains responsibility for Emergency Direction and Control as the 60-minute TSC and OSC activation criteria would ensure continued relief for on-shift personnel within the existing timeframe.

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 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 MNGP E-Plan identified the Shift Emergency Communicator (SEC) as being responsible for notification of the ERO. This notification was completed at an Alert or higher 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 SEC at an Alert or higher classification.
- c. The proposed E-Plan changes 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 declaration.

### **State, Local and Federal Notification**

- a. Revision 2 of the MNGP E-Plan, identified notification of state/local personnel as well as the NRC as a function initially completed by the SEC on-shift. The Notification function was augmented by one (1) 30-minute responder and two (2) 60-minute responders.
- b. The current MNGP E-Plan maintains the on-shift and augmented organization for the state/local and federal notification functions as described in Revision 2.
- c. The proposed changes to the E-Plan maintain the current commitments related to the SEC, on-shift control room staffing and transfer of the notification function. 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 clarifies that performance of Federal Notification is completed by a licensed operator or designee on shift and extends the 30-minute responder to 60 minutes, and adds a second 60-minute 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 on-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 changes to the MNGP E-Plan impact 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 identified 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 recent 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 EOF Director, Offsite Dose Assessment, Offsite, On-site and Out-of-Plant surveys and Chemistry/Radiochemistry major tasks.

### **Emergency Operations Facility Director Major Task**

Revision 2 of the MNGP 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 MNGP E-Plan, the Shift Supervisor would assume the duties of ED and would be responsible for emergency response efforts until relieved by another qualified ED at an Alert or higher classification. No response time for the ED was identified. The EM had a 90-minute response time. The EOF was required to be activated in approximately two (2) hours. In Revision 12, the requirement for transfer of responsibilities to the EOF was changed to approximately one (1) hour and the EM response time was changed to 60 minutes.
- b. The current MNGP E-Plan maintains the relief process for the Shift Manager/ED

to another qualified ED in the TSC. The commitment for the 30-minute response time for the EOF Coordinator and 60 minutes for the EM is also maintained.

- 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 MNGP E-Plan establishes a clear time requirement for staffing and activating the TSC within 60 minutes of an Alert or higher event declaration 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 MNGP E-Plan, the on-duty Shift Supervisor, acting as the ED was responsible for event response until relieved by a qualified ED in the TSC at an Alert or higher classification. The MNGP E-Plan included an EOF Coordinator position with a 30-minute response time, which was responsible for coordination of the EOF prior to EM arrival. The EM had a 90-minute response time. The EOF was required to be fully activated in two (2) hours. In Revision 12, the requirement for full activation of the EOF was changed to one (1) hour and the EM response time was changed to 60 minutes.
- b. The current E-Plan maintains the sequence of transfer of command and control functions from the CR to the TSC and, subsequently, to the EOF at an Alert or higher classification.
- c. The proposed changes to the MNGP E-Plan include specific facility activation times of 60 and 90 minutes for the TSC and EOF, respectively. Additionally, the proposed changes revise 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 Figure 13.1). These positions are related to the command and control functions of Classification, Notification,

PARs and Emergency Exposure authorization based on guidance in NSIR/DPR-ISG-01.

Although TSC responders as identified in the proposed E-Plan, Figure 13.1, 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 declaration thus relieving the CR staff of Classification, Notification, PARs and Emergency Exposure Authorization responsibilities. Likewise, the EOF responders identified in Figure 13.1, have a 90-minute response requirement; however, once specific positions are staffed and ready to accept command and control functions, these 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 MNGP E-Plan maintains the requirement for staffing the TSC, OSC and EOF at the Alert or higher event declaration level and revises specific position responsibilities associated with command and control based on the 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 MNGP E-Plan, performance of radiological accident assessment on-shift was the responsibility of the Shift Radiation Protection Specialist (RPS). The MNGP E-Plan identified the Radiological Emergency Coordinator (REC) as the 30-minute responder associated with this function. In Revision 10, responsibility for on-shift dose assessment was changed from the RP specialist to the on-shift Chemistry RPS.
- b. The current MNGP E-Plan maintains the Revision 10 requirement for the completion of on-shift dose assessment by the Chemistry Technician as well as augmentation within 30 minutes by the REC.
- c. In the proposed change, 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 described in section 3.1.2, specifically designed displays have been developed for obtaining the necessary plant, radiological effluent, area radiation monitor, and meteorological information that is used by personnel on-shift through the Unified 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. The URI application is available on ERF dose assessment computers.

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 MNGP E-Plan, offsite surveys were initiated at a Site Area Emergency or higher classification by personnel augmented at 30 and 60 minutes. Survey Teams normally consisted of two individuals, at least one of which was specially trained in radiological field monitoring. The E-Plan also included a commitment for provision of additional survey personnel provided by the PINGP within three (3) hours of notification.
- b. The current MNGP E-Plan maintains the commitment for augmentation of survey teams within 30 minutes and 60 minutes as well as the provision for additional support within three (3) hours by PINGP personnel.
- c. In the proposed MNGP E-Plan, the composition of the survey teams is maintained; however, augmentation would be extended such that the first team would be dispatched at 60 minutes and the second team dispatched at 90 minutes after declaration of an Alert or higher classification rather than 30 and 60 minutes respectively at the Site Area Emergency or higher classification. Additionally, the proposed revision eliminates the commitment for survey team resources coming from the PINGP within three (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, dispatched at 90 minutes, will support continued plume tracking capability as well as sampling activities.

The commitment to provide additional support within three (3) hours by PINGP personnel was implemented to address limited staffing resources available at the site when Revision 2 of the MNGP E-Plan was implemented. Today the site has sufficient resources qualified to fulfill this requirement independently as a result this commitment is no longer needed.

Initiation of environmental sampling at the Alert level will continue to support timely performance of the function even with the extended dispatch times; 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) Major Task**

- a. Revision 2 of the MNGP E-Plan required the dispatch of onsite surveys at the Alert and higher classification. Onsite monitoring was performed by augmented resources which consisted of one (1) HP Technician at 30 minutes and one (1) HP Technician at 60 minutes.
- b. The current MNGP E-Plan maintains the Revision 2 commitment to initiate on-site (out of plant) surveys at an Alert or higher classification by personnel augmented at 30 and 60 minutes.
- c. The proposed change extends the response time of the 30 and 60-minute responders to 60 and 90 minutes respectively. Analysis of onsite monitoring functions shows that the use of in-plant and effluent monitors as well as the addition of a second HP Technician on-shift in E-Plan Revision 38, as noted in the In-Plant Survey Major Task discussion below, effectively supports event classification and onsite protective actions such that performance of this major task at 60 minutes does not adversely impact site response.

#### **In Plant Surveys Major Task**

- a. Revision 2 of the MNGP E-Plan identified an on-shift HP technician as responsible for conduct of in-plant surveys. This position is augmented by an HP technician at 30 minutes and an additional HP technician at 60 minutes. In Revision 38, a 30-minute augmented HP Technician was moved to the on-shift staff in support of in-plant survey activities.
- b. The current MNGP E-Plan maintains the commitment for two (2) on-shift HP technicians responsible for in-plant surveys and monitoring as well as augmentation by an additional HP technician at 60 minutes.
- c. The proposed MNGP E-Plan changes maintain the commitment for two (2) on-

shift HP Technicians responsible for performance of the in-plant survey function as well as the augmented HP Technician at 60 minutes, and add an additional HP Technician augmented at 90 minutes. As previously stated in Section 3.1.1, benefits of the current level of computer upgrades include:

- Alarming/Trending analog signals
- Visual display of input data
- Sequence of events recording
- Review of data on a demand basis
- Periodic logs
- Archival of data
- Robust Backup Power Supplies

On-shift HP technicians can quickly determine radiological conditions utilizing the plant area radiation monitor (ARM) system. ARM data is displayed to plant desktop computers using the SPDS system. This data can be used to brief on-shift operators and response teams on area conditions. It is also used to determine areas that may require follow-up HP surveys.

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 MNGP E-Plan identified the function as being filled by an on-call position notified by pager with augmentation by a 60-minute responder. Revision 3 added the position to the on-shift staffing table and noted that it was filled by a Chemistry Technician.
- b. The current MNGP E-Plan maintains the on-shift Chemistry Technician position added in Revision 3 as well as the additional Chemistry Technician augmented at 60 minutes.
- c. The proposed E-Plan revision maintains the current commitments for the on-shift and augmented staffing for this task.

#### **Offsite Dose Assessment, Offsite survey, Onsite out of plant, In plant Survey and Chemistry/Radiochemistry Major Task Summary**

The proposed revision to the MNGP E-Plan maintains the current E-Plan commitments for the in-plant survey function and adds a 90-minute augmented position in support of this task. 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 offsite and onsite/out-of-plant surveys tasks to 60 minutes from declaration. Enhancements to plant radiological parameter monitoring supports extension of the offsite and onsite/out-of-plant survey 30-minute responders without undue impact to the performance of this 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 MNGP E-Plan included an on-shift technical advisor position that served in advisory capacity to the Shift Supervisor for the Technical Support Major Task. The Core Thermal Hydraulics function was augmented at 30 minutes by one (1) individual. Additional technical support, augmented at 60 minutes, was provided by Electrical and Mechanical Engineering who reported to the ED in the TSC. In Revision 10, the E-Plan incorporated a combined SRO/Shift Technical Advisor (STA) position as an option to the separately staffed STA on-shift. This change was implemented in accordance with NRC Safety Evaluation Report (SER) dated May 1, 1990 (TAC 75559). In Revision 38, an additional SRO was added to the on-shift complement bringing the total number of SRO's on-shift to three (3). One of the three SROs is responsible for performance of the STA function.
- b. The current MNGP E-Plan maintains the three (3) on-shift SROs as described in Revision 38 of the E-Plan, as well as the 30-minute Core Thermal Engineer and 60-minute augmentation by Mechanical and Electrical Engineers. One of the three SROs continues to perform the STA function on-shift.

- 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 an SRO. 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. Subsequent staffing by Electrical and Mechanical Engineering at 60 minutes after the event declaration would be maintained under the proposed MNGP E-Plan in support of the Technical Support major task.

#### **Repair and Corrective Actions Major Task**

- a. In Revision 2 of the MNGP E-Plan, on-shift plant stabilizing functions are completed by operations personnel. Augmented staff to address repair and corrective actions, as well as search and rescue efforts, was implemented through activation within 30 minutes of Electrical Maintenance and I&C Maintenance personnel which reported to the OSC at the Alert or higher classification. Additional augmentation occurred at 60 minutes by a Mechanical and Electrical Maintenance technician and a Radwaste Operator. In Revision 44, the requirement for augmentation of a Radwaste Operator at 60 minutes was removed. The change was reviewed and approved in a NRC SER dated October, 31, 2014. (ML14196A328)
- b. The current MNGP E-Plan maintains the commitment for response of maintenance personnel at 30 and 60 minutes at an Alert or higher classification.
- c. The proposed changes would realign maintenance response by removing the 30-minute Electrical Maintenance responder position. The 60-minute Electrical and Mechanical Maintenance technician responders would remain unchanged. The I&C Maintenance technician response time is proposed to be changed from 30 to 90 minutes from the time of an Alert or higher declaration.

Historically, the repair functions associated with an event have been completed by Plant Equipment Operator (PEO) personnel on-shift who are qualified to respond to plant events and perform actions to stabilize the plant. This practice is aligned with the requirements of 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.

### **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. Elimination of the 30-minute Electrical Maintenance position, extension of the response time from 30 to 60 minutes for the Core Thermal Engineer position, and extension of the I&C Maintenance position response time from 30 to 90 minutes, do 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, 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 MNGP E-Plan provided for augmented responders under the Protective Action functional area through augmented staffing of an HP Technician position within 30 minutes and an HP Technician at 60 minutes.
- b. The current MNGP E-Plan maintains the commitments as stated in Revision 2 of the MNGP E-Plan.
- c. The proposed change to the MNGP E-Plan extends the augmented response time for the HP Technicians from 30 and 60 minutes to 60 and 90 minutes respectively. Justification for these proposed changes are provided in the paragraphs below.

#### **Access Control/Dosimetry**

The performance of access control and dosimetry activities is primarily completed through the use of electronic dosimetry (ED) which is obtained prior to entry into radiologically controlled areas (RCAs). The ED is also used as a “key” to unlock turnstiles to gain access to the RCA. Radiation work permits (RWPs) establish the necessary preset warnings/alarms associated with use of the ED. Specific

emergency RWPs have been developed for use during a declared emergency, which automatically provide the ED 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 ED and RWP process eliminates the need for access control/dosimetry oversight by an HP Technician for the initial event response. 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 Response Actions**

Performance of the HP Coverage for Response action activities will continue to be performed by the on-shift HP Technician. Therefore, 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 HP Technician. Performance of habitability activities are associated with the ERFs after they are staffed by augmented personnel. As augmentation of facility staffing and HP 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 changes maintain the existing on-shift HP technicians for the HP Coverage task. The proposed changes extend the 30-minute and 60-minute response times 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 MNGP which reduced the need for HP Technician actions in each of these areas during the early stages of event response. Additionally, an extension of the response time for the HP Technicians responsible for personnel monitoring coincides with the 60-minute activation time for ERFs as described in the proposed MNGP E-Plan. This approach is consistent with Industry and NRC public meeting discussions which have taken place over the last year.

#### **3.2.7 Firefighting Function**

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

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

shift personnel assigned other functions and augmented by the offsite local fire department.

- b. The current MNGP E-Plan maintains the Firefighting function commitment through the use of on-shift Fire Brigade members in accordance with the Fire Protection Program.
- c. The proposed E-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, Revision 1, Table B-1 notes that this function may be provided by on-shift personnel assigned other functions.

- a. MNGP E-Plan, Revision 2, provided for first aid treatment for injured personnel by qualified on-shift personnel.
- b. The current MNGP E-Plan maintains this commitment through the use of on-shift First Aid Responders.
- c. The proposed changes to the MNGP 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 the MNGP E-Plan Revision 2, site access control and accountability is identified as a function of the Security Supervisor on-shift and is detailed in the Site Security Plan.
- b. The current MNGP 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 MNGP E-Plan Rev. 2 in on-shift staffing in Operations 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 MNGP 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 MNGP E-Plan for NRC approval prior to implementation. The proposed changes continue to meet the provisions of 10 CFR 50.47(b) as the MNGP E-Plan will continue to have onsite and offsite emergency responsibilities and provide adequate staffing to provide facility accident responses.

Further, the current MNGP 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 MNGP E-Plan will continue to meet the requirements of 10 CFR 50.54(q)(2) by maintaining the effectiveness of the E-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 MNGP E-Plan includes a description of the organization, including definition of authorities, responsibilities and duties of individuals. The current MNGP E-Plan is in compliance with 10 CFR 50 Appendix E.IV.A. The 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 MNGP 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 and that personnel and public health and safety are not impacted.

## 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 MNGP 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 minutes 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 E-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 MNGP 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 MNGP 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 License DPR-22, for Monticello Nuclear Generating Plant (MNGP) to revise the Emergency Plan (E-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 MNGP 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 MNGP 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 E-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  
MONTICELLO NUCLEAR GENERATING PLANT**

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

**MARKED-UP COPY PAGES OF EMERGENCY PLAN**

22 pages follow

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- 1.12 Emergency Worker – Any individual who has an essential mission within or outside the plume exposure pathway emergency planning zone to protect the health and safety of the public who could be exposed to ionizing radiation from the plume or from its deposition. Some examples of emergency workers are: radiation monitoring personnel; traffic control personnel; evacuation vehicle drivers; fire and rescue personnel, including ambulance crews; medical facilities personnel; emergency operations center personnel; personnel carrying out backup alerting procedures; and essential services or utility personnel.
- 1.13 Facility Activation – An Emergency Response Facility is activated when the minimum staff per Figure 13.1 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 interests of completing critical tasks prior to turnover.
- ~~1.13~~1.14FTS – Federal Telephone System
- ~~1.14~~1.15Initiating Condition (IC) – One of a predetermined subset of nuclear power plant conditions when either the potential exists for a radiological emergency, or such an emergency has occurred.
- ~~1.15~~1.16Northern States Power Company – Minnesota (NSPM) - is the operator of the Monticello Nuclear Generating Plant.
- ~~1.16~~1.17OSC – Operational Support Center
- ~~1.17~~1.18PASS – Post-Accident Sampling System
- ~~1.18~~1.19Protective Actions – Emergency measures taken before or after a release of radioactive materials in order to prevent or minimize radiological exposures to the population.
- ~~1.19~~1.20Protective Action Guides (PAG) – Projected dose to individuals that warrants protective action prior to and/or following a radioactive release.
- ~~1.20~~1.21REC – Radiological Emergency Coordinator
- ~~1.21~~1.22Recovery Actions – Actions taken after an emergency to restore the plant to normal.
- ~~1.22~~1.23SEC – Shift Emergency Communicator
- ~~1.23~~1.24TSC – Technical Support Center
- ~~1.24~~1.25Total Effective Dose Equivalent (TEDE) is the sum of EDE and CEDE.
- ~~1.25~~1.26Xcel Energy is the owner of the Monticello Nuclear Generating Plant.

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## 5.2 Emergency Organization and Responsibilities

Under emergency conditions the organization of the site staff is altered to simplify communications channels and make more efficient use of personnel resources (refer to Figure 13.1, Monticello Plant Emergency Organization). The Monticello Emergency Response Organization (ERO) consists of various groups which staff the site Emergency Response Facilities including the Technical Support Center, Operational Support Center and Emergency Operations Facility (or backup EOF if necessary). Functional responsibilities of the various groups are described in this section. A detailed description of individual position responsibilities and leadership designations for the various groups is contained in Emergency Plan Implementing Procedure A.2-001 (EMERGENCY ORGANIZATION). A detailed description of personnel assignments is found in Form 5790-001-01 (EMERGENCY RESPONSE ORGANIZATION).

### 5.2.1 Technical Support Center Emergency Organization

The Technical Support Center ERO consists of a Coordination and Direction Group and six subordinate groups. Each group is represented at the command table in the Technical Support Center. **The TSC will be activated within 60 minutes of an Alert or higher declaration.**

When a transition point (Primary Containment flooding is required) in the Emergency Operating Procedures (EOPs) is reached, the duty Shift Manager and Operations Group Leader will make a joint decision to transition from the EOPs to the Severe Accident Management Guidelines (SAMGs). At this point, the Operations Group Leader would inform the TSC that they have relieved the duty Shift Manager as the Decision Maker. The Decision Maker is designated to assess and select the strategies to be implemented. When using the SAMGs, the Operations Group Leader will act as the Decision Maker.

At the same time an Accident Management Team (AMT) is formed to utilize the SAMGs. The AMT is comprised of the following ERO positions; Operations Group Leader, Assistant Operations Group Leader, Engineering Coordinator, Nuclear Engineer, SPDS Operator, Trending Individual. AMT members are the Decision Maker and Evaluators. Evaluators are responsible for assessing control parameters, plant status, system status and EOP/SAMG actions and develop potential strategies that may be utilized to mitigate an event.

#### 5.2.1.1 Direction and Control

The Direction and Control Group consists of the Plant Manager and other senior plant management personnel designated by the Plant Manager. Designated members of this group staff the Emergency Director position in the TSC. Qualified Shift Managers are also included in this group and function as the **interim** Emergency Director during the initial stages of an

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emergency until relieved by a designated TSC Emergency Director.

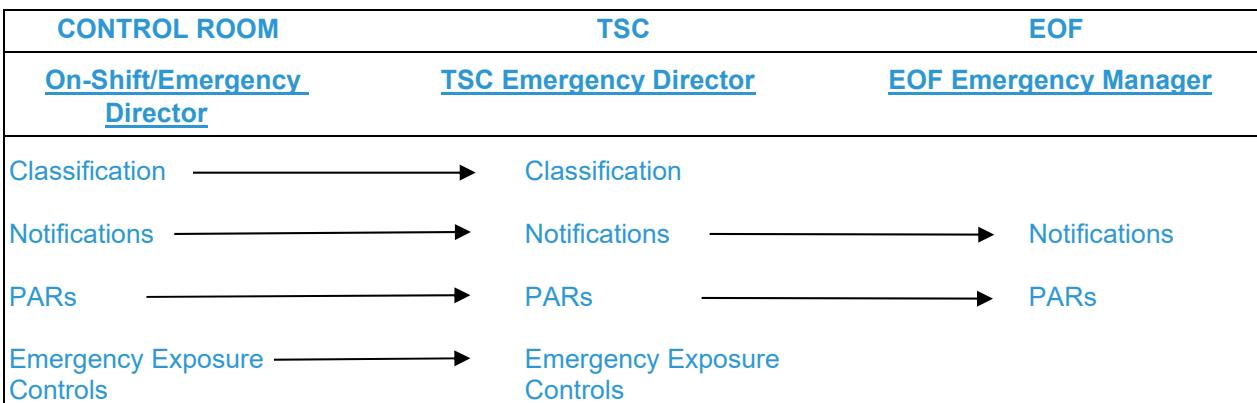
The Emergency Director is responsible for overall emergency direction and control. ~~until relieved of that responsibility by the Emergency Manager at the EOF. Initially, the Shift Manager assumes the role of Emergency Director until relieved by a designated Emergency Director.~~ The Emergency Director has the authority and responsibility to unilaterally initiate emergency response actions including making off-site protective action recommendations to authorities responsible for implementing off-site emergency measures.

Functional responsibilities of the Emergency Director include:

- Recommend off-site protective measures. This responsibility may not be delegated and is relinquished to the Emergency Manager when the EOF is activated. ~~and staffed.~~
- Overall direction and control of the Technical Support Center personnel and activities.
- Ensure 24 hour coverage of key Emergency Response Organization positions in the TSC and OSC and continuity of personnel and material resources.
- Make decisions regarding plant emergency response facility habitability including on-site protective actions (including KI use), personnel monitoring and evacuations.
- Approval of emergency radiation exposures in excess of normal limits.
- Communications with utility and off-site Emergency Response Organizations. EOF assumes responsibility for communications with off-site agencies when activated and staffed.

When the EOF is activated ~~and the Emergency Manager position is staffed~~, the overall direction and control responsibility is transferred from the TSC Emergency Director to the Emergency Manager in the EOF. The TSC Emergency Director ~~retains~~ authority and responsibility for decisions immediately affecting the plant including event classification, direction of plant emergency response and on-site protective measures ~~including emergency exposure authorization~~. Responsibility for offsite functions of notification and protective action recommendations transfer from the TSC to the EOF Emergency Manager. The transition of command and control functions is depicted below.

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### Transition of Command and Control Functions

#### 5.2.1.2 Radiation Protection and Chemistry Groups

The Radiation Protection and Chemistry Groups consists of the Radiological Emergency Coordinator (REC) and members of the Radiation Protection and Chemistry Groups. The REC reports to the Emergency Director and is staffed by Radiation Protection and Chemistry Manager designees. The group is divided into three sections:

- Monitoring Section
- Chemistry Section
- Off-site Dose Projection

The Radiological Emergency Coordinator is the group leader and responsible for coordination of all on-site Radiation Protection and Chemistry emergency response activities.

The Monitoring Section consists of the Monitoring Section Leader, and members of the plant Radiation Protection/Chemistry staff and other NSPM personnel with demonstrated experience in radiation protection. Responsibilities of the Monitoring Section include on-site radiological surveys, in-plant surveys, personnel exposure control, access control, and initial off-site radiological monitoring.

The Chemistry Section consists of the Chemistry Section Leader and members of the plant Chemistry staff. Responsibilities of the Chemistry Section include chemistry sampling and analysis, plant and EOF Count Room operation, PASS sampling and core damage assessment, if necessary. Chemistry personnel also function as off-site Dose Projection Specialists.

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Communicator reports to the Emergency Director (Shift Manager) and is responsible for making or assisting with initial off-site notification. The duty Shift Emergency Communicator may be a qualified SEC from other departments.

#### 5.2.1.8 Emergency Communications Group

The Communications Group consists of the Lead Emergency Communicator and qualified Emergency Communicators from various site groups. Designated personnel are qualified to staff emergency communicator positions in the TSC, OSC, EOF and Control Room. Responsibilities of the Emergency Communicators include emergency notifications to off-site authorities, transmission of Emergency Follow-up Messages and other required information to off-site authorities, intra-utility communications and communications links between site emergency response facilities.

#### 5.2.2 Operational Support Center Emergency Organization

The OSC Emergency Response Organization includes personnel from Maintenance, Operations, Production Planning, Radiation Protection and Chemistry. **The OSC is activated within 60 minutes of an Alert or higher declaration.**

##### 5.2.2.1 Coordination and Direction

The OSC Coordinator is responsible for coordination of all OSC activities including dispatching repair teams, personnel accountability in the OSC and OSC habitability. The OSC Coordinator position is staffed by experienced Maintenance, Production Planning, or Operations personnel and reports to the Maintenance Group Leader.

##### 5.2.2.2 Mechanical Maintenance

The Mechanical Maintenance Group consists of Machinists, Steamfitter – Welders, Riggers and Repairmen from the plant Maintenance Department, as well as designated personnel capable of performing emergency tasks. They are responsible for emergency repair activities under the direction of the OSC Coordinator.

##### 5.2.2.3 Electrical Maintenance

The Electrical Maintenance Group consists of the Electrical Maintenance **Coordinator****Supervisor** and Station Electricians from the plant Maintenance Department, as well as designated personnel capable of performing emergency tasks. They are responsible for emergency repair activities under the direction of the OSC Coordinator.

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#### 5.2.2.4 Instrument & Control

The I&C Group consists of the I&C Maintenance Coordinator Supervisor and I&C Specialists from the plant Maintenance Department, as well as designated personnel capable of performing emergency tasks. They are responsible for emergency repairs under the direction of the OSC Coordinator.

#### 5.2.2.5 Radiation Protection

The Radiation Protection Group consists of the Radiation Protection Coordinator, Radiation Protection Technicians, Chemistry Technicians, and other NSPM personnel with radiation protection/chemistry experience and personnel designated and trained to perform on-site, out of plant and off-site radiological monitoring surveys. Radiation protection responsibilities include: OSC RP support, staffing Main Access Control, in-plant emergency team support, in-plant and out-plant radiological surveys, Emergency Response Center habitability, off-site environmental monitoring, Assembly Point staffing and Fire Brigade support (as necessary).

#### 5.2.2.6 Operations

The Operations Group consists of available non-duty Shift Managers, Control Room Supervisors, Operators and other personnel reporting to the Operations Manager. Their responsibilities include OSC operations support, in-plant emergency teams, augment the duty Control Room staff (as necessary) and Fire Brigade support (as necessary).

#### 5.2.3 EOF Emergency Organization

The EOF Emergency Organization consists of a Direction and Control Group and four subordinate groups. The EOF Emergency Organization is staffed by personnel from the NSPM organization [and is activated within 90 minutes of an Alert or higher declaration](#).

##### 5.2.3.1 Direction and Control

The Direction and Control Group consists of Site Senior Management personnel. Designated members of this group staff the Emergency Manager position in the EOF. The Emergency Manager is responsible for overall direction and control of the utilities emergency response effort. The Emergency Manager relieves the Emergency Director of the following responsibilities:

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

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#### 5.3.1.2 Emergency Direction and Control

The duty Shift Manager initially assumes the duties and responsibilities of the Emergency Director until relieved by a designated TSC Emergency Director. Once relieved, the duty Shift Manager's primary focus returns to overall coordination of emergency response activities of the duty Operations crew. The TSC Emergency Director assumes overall responsibility for the utility emergency response activities until relieved of notification and protective action recommendation functions by the Emergency Manager in the EOF. ~~For non-security related events, the Emergency Manager should take over responsibilities in about 60 minutes from the declaration of an emergency, at the Primary EOF.~~ Once relieved of offsite functions, the TSC Emergency Director's primary focus is on site~~plant~~ operation and overall direction of plant emergency response activities in plant emergency response facilities including the on-site Assembly Point. The Emergency Manager assumes overall authority and responsibility for the utility's emergency response activities from the Emergency Director and retains this authority until the event is terminated or the transition to recovery is complete.

#### 5.3.1.3 Notification and Communications

The Shift Emergency Communicator (SEC) is responsible for the performance of initial emergency notifications to the State, counties, ~~NRC~~ and other off-site and utility support organizations. A licensed operator or designee is responsible for performance of Federal notifications. The duty SEC and licensed operator or designee will be augmented within approximately 360 minutes with two~~one~~ additional Emergency Communicators in the TSC and within 690 minutes with two more Emergency Communicators at the EOF. ~~In about 60 minutes, the EOF should assume responsibility for communications with off-site authorities.~~

#### 5.3.1.4 Radiological Assessment and Protective Actions

The Shift Radiation Protection Technician is responsible for initial radiological assessment including in-plant radiological surveys. The shift Chemistry Technician is responsible for initial chemistry sampling, sample analysis, and off-site dose projection operation if required.

The Shift Radiation Protection Technician will be augmented by three additional Radiation Protection personnel within approximately 360 minutes and three~~four~~ more Radiation Protection personnel within approximately 690 minutes. The

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responsibilities of these additional Radiation Protection personnel include in-plant surveys, access control, and off-site radiological monitoring.

In addition, a qualified Radiological Emergency Coordinator (REC) will augment the shift RP staff within ~~approximately~~ 360 minutes. The REC is responsible for overall coordination of the Radiation Protection and Chemistry Group's emergency response activities. A qualified Radiation Protection Support Supervisor will be augmented within 90 minutes. The RPSS is responsible for dose assessment in the EOF.

The Shift Chemistry Technician will be augmented with one additional Chemist within ~~approximately~~ 60 minutes.

~~The plant Radiation Protection staff will be augmented by Radiation Protection Technicians from the Prairie Island Nuclear Plant within approximately three hours.~~

~~Responsibilities of sister plant Rad Prot Technicians include off-site radiological monitoring and sampling under the direction of the Radiation Protection Support Supervisor and Emergency Manager at the EOF.~~

#### 5.3.1.5 Engineering and Technical Support

Technical support for the shift Operations staff is initially provided by the duty Shift Manager or Shift Technical Advisor (when staffed separately on-shift). The plant Engineering and Operations staff will provide additional technical support personnel, knowledgeable in the areas of nuclear core/thermal hydraulics, electrical, and mechanical engineering.

Augmentation in this area includes the addition of the core/thermal hydraulics position ~~within about 30 minutes~~ and two more members of the TSC Engineering Staff within ~~60 minutes~~approximately one hour. The TSC Engineering Staff is responsible to provide technical support to the Control Room staff under the direction of the Emergency Director.

Specific individuals from the TSC Engineering Staff are also members of an Accident Management Team (AMT). They will evaluate parameters used within the SAMGs.

#### 5.3.1.6 Repair and Corrective Actions

The duty Operations crew is initially responsible for any emergency repair and corrective actions that may be immediately required prior to ERO augmentation. After augmentation, repair and corrective actions are the responsibility of the Maintenance Group under the direction of the Emergency Director. The Maintenance Group consists of

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personnel capable of performing emergency tasks. Personnel from these groups report to the OSC where they are assigned corrective action tasks by the OSC Coordinator.

Augmentation in the maintenance area includes the addition of one mechanical maintenance **and one electrical maintenance** person within **about 60 minutes**, **and** one I&C Group member within **about 390 minutes**. ~~**and two electrical maintenance personnel, one within about 30 minutes and the other within 60 minutes.**~~

#### 5.3.1.7 Firefighting

A shift fire brigade trained and equipped for fire fighting ensures adequate manual fire fighting capability for all areas of the plant containing structures, systems or components important to safety.

Firefighting is the responsibility of the shift Fire Brigade. The shift Fire Brigade may be augmented by non-duty, Fire Brigade qualified, personnel available from the OSC. Additional support for the Fire Brigade is also available from the local Fire Departments upon request.

#### 5.3.1.8 Rescue Operations and First Aid

The shift Fire Brigade is initially responsible for any immediate search and rescue operations or medical emergency response that may be required. After ERO augmentation, additional support for search and rescue and medical emergency response is available from the OSC staff under the direction of the OSC Coordinator.

#### 5.3.1.9 Site Access Control, Accountability and Security

Site access, personnel accountability, coordination of evacuees and on-site traffic control are the responsibilities of the site Security Group. Augmentation of the on-duty, shift Security Force will be as directed by the Emergency Director and Security Group Leader.

#### 5.3.1.10 Administrative and Logistics Support

The Support Group is responsible for administrative support, document control and logistics in the on-site emergency response facilities.

#### 5.3.1.11 Environmental Monitoring Support

The site Radiation Protection/Chemistry Group is responsible to coordinate post-accident environs monitoring with the REMP contractor.

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Table 1  
MINIMUM SHIFT STAFFING AND CAPABILITY FOR ADDITIONS FOR NUCLEAR POWER  
 PLANT EMERGENCIES

<b>Major Functional Area</b>	<b>Major Tasks</b>	<b>Position Title or Expertise</b>	<b>Capability for Additions</b>		
			<b>On Shift</b>	<b>360 min</b>	<b>690 min</b>
Plant Operations and Assessment of Operational Aspects		Shift Manager	1	---	---
		Control Room Supv	1	---	---
		SRO	1	---	---
		Nuclear Lead PE&RO (RO)	1	---	---
		Nuclear PE&RO	2	---	---
		Nuclear Asst. PEO	3	---	---
Emergency Direction and Control		Emergency Director (Shift Manager until relieved)	1*	---	---
Notification/Communication	Notify licensee, Local, State, and Federal personnel & agencies	Shift Emergency Communicator	1	---	---
	Maintain Communications	Emergency Communicators	---	42	2
Radiological Accident Assessment and Support of Operational Accident Assessment	Emergency Operations Facility & TSC Leads	Emergency Manager	---	---	1
	Coordinate EOF prior to arrival of Emergency Manager	EDOF Coord	---	1	---
	Off-Site Dose Assessment	Radiological Emergency Coord RPSS	---	1	---
	Off-Site Surveys	Radiation Protection /Support	---	1	1
	On-Site (out-of-plant)/ In-Plant Surveys		2	-1	1
	Chemistry/Radio-Chemistry	Chemistry	1	1	-4

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Table 1  
MINIMUM SHIFT STAFFING AND CAPABILITY FOR ADDITIONS FOR NUCLEAR POWER  
PLANT EMERGENCIES (CONT'D)

<b>Major Functional Area</b>	<b>Major Tasks</b>	<b>Position Title or Expertise</b>	<b>Capability for Additions</b>		
			<b>On Shift</b>	<b>360 min</b>	<b>690 min</b>
Plant System Engineering, Repair and Corrective actions	Technical Support	Technical Advisors	1*	---	---
		Core/Thermal Hyd.	---	1	---
		Electrical	---	1	1
		Mechanical	---	1	1
	Repair & Corrective Actions	Mech Maint	1*	1	1
		Elec Maint	1*	1	1
		I&C	---	1	1
	Radiation Protection	Radiation Protection	2*	1	1
		a. Access Control			
		b. HP Coverage for response actions			
		c. Personnel monitoring			
		d. Dosimetry			
Fire Fighting		Fire Brigade per 4 AWI-08.01.01		Local Support	
Rescue Operations and First Aid			2*	Local Support	
Site Access Control and Personnel Accountability	Security, Communications, Personnel Accountability	Security Force		All per Security Plan	
<b>Total</b>			---	---	---
			13	914	129

\* May be provided by shift personnel assigned other functions.

## EMERGENCY PLAN

TABLE 2  
MONTICELLO PLANT ERO RESPONSIBILITY MATRIX

P - PRIMARY RESPONSIBILITY

S - SECONDARY RESPONSIBILITY

\* - PRIOR TO EOF ACTIVATION

	EMERGENCY DIRECTOR	SHIFT MANAGER	CONTROL ROOM	SUPERVISOR	OPERATIONS GROUP	SHIFT EMERGENCY COMMUNICATOR	SUPPORT GROUP	RADIOLOGICAL EMERGENCY COORDINATOR	SECURITY GROUP	HEALTH PHYSICS GROUP	EMERGENCY TEAMS	EMERGENCY MANAGER / RECOVERY MANAGER	MAINTENANCE GROUP	ENGINEERING GROUP
COMMAND/ CONTROL	P	P												
NOTIFICATION/ COMMUNICATION	S	S			P		S							
PLANT OPERATIONS	P	S	P	P									S	
TECHNICAL SUPPORT	S	P					S						P	
PROTECTIVE ACTIONS ON-SITE	S	S					P		P					
PERSONNEL ACCOUNTABILITY	S	S						P						
ACCIDENT ASSESSMENT	P*	S	P	S			S		S		P		S	
OFF-SITE DOSE PROJECTION	S						P		P					
CONTAMINATION/ RADIATION CONTROL	S						P		P					
DAMAGE CONTROL	S			P					S			P	S	
PROTECTIVE ACTIONS OFF-SITE RECOMMENDATIONS	P*						P*				P			
SEARCH & RESCUE/ FIRST AID	S	S	P						S	P				
ACCESS CONTROL	S						P	P	P					
RECOVERY OPERATIONS	S			S	S	S			P			S	S	
CHEMISTRY/ RADIOCHEMISTRY	S					P		P						
LOGISTICS SUPPORT	S				P					P				
FIRE FIGHTING	S		P						S	P	S			

This table is deleted  
in its entirety.

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## 6.0 EMERGENCY MEASURES

### 6.1 Summary of Responses

For each of the four emergency classifications discussed in Section 4.0 certain generic emergency response actions are required to be taken by the site Emergency Response Organization. These generic emergency response actions are in addition to those actions specific to the type of emergency. This section summarizes the generic emergency response actions.

#### 6.1.1 Notification of Unusual Event

- 6.1.1.1 Promptly inform State and Local off-site authorities of the nature of the emergency condition.
- 6.1.1.2 Inform the NRC of the Unusual Event.
- 6.1.1.3 Augment on-shift resources as necessary.
- 6.1.1.4 Assess and respond to the off-normal condition.
- 6.1.1.5 Terminate the Unusual Event with notification to the State and Local off-site authorities and the NRC.

OR

- 6.1.1.6 Escalate to a more severe emergency class.

#### 6.1.2 Alert

- 6.1.2.1 Promptly inform the State and Local off-site authorities of the Alert and the nature of the emergency condition.
- 6.1.2.2 Augment on-shift resources by activating the Technical Support Center (TSC), Operational Support Center (OSC), and Emergency Operations Facility (EOF) or Back-up EOF
- 6.1.2.3 Notify the NRC of the Alert.
- 6.1.2.4 Establish the Emergency Response Data System (ERDS) communication link with the NRC.
- 6.1.2.5 Assess and respond to the emergency condition.
- 6.1.2.6 Dispatch on-site and off-site radiological survey teams and associated communications as necessary.
- 6.1.2.7 Provide periodic plant status updates to off-site authorities (Follow-up Messages).
- 6.1.2.8 Provide periodic meteorological assessments to off-site authorities and, if releases are occurring, estimates for actual releases.

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### 6.3.2.2 Detailed Assessment

This mode provides a user-interface to produce more deliberate and comprehensive offsite dose projections than those produced by the Rapid Assessment option. It supports development of refined off-site dose projections based on changing plant status and/or meteorological conditions or field monitoring and sampling results.

### 6.3.2.3 Sum Assessment

This mode permits the user to add archived data from previously completed dose assessments into a single report characterizing multiple concurrent releases. It is an additive process, producing a composite report and is solely for concurrent releases rather than integration of an entire event.

The URI supports expected emergency effluent dose assessment changes such as summing of multiple release/multiple source events and assessment to 50 miles.

The URI program can be run from computer stations located in the Control Room, TSC, EOF, and the Back-up EOF. Independent battery powered laptop computers are available in the TSC, EOF and Back-up EOF.

The Radiological Emergency Coordinator has the capability to estimate the total off-site population dose (manrem) received during a release. The off-site dose assessment computer will supply the projected dose rates or doses (whole body and thyroid) at various distances. Field Team radiation survey results may also be used to determine the off-site dose rates. Population distribution charts comprised of the sectors and distances from the plant are available. The Radiological Emergency Coordinator will determine the applicable doses or dose rates in the sectors and calculate the estimated total population dose by referring to the population totals in the sectors of interest.

### 6.3.3 Field Radiation Surveys

The task of field radiation surveillance will be accomplished by **two** **(2)several** teams under the supervision of Emergency Operations Facility (EOF) personnel. ~~Initially, plant staff personnel will be responsible for on-site as well as off-site monitoring. As the organization is augmented, plant personnel from Prairie Island Nuclear Generating Plant (PINGP) will take over the off-site surveys.~~ The EOF will be the central point for receipt and analysis of all off-site field monitoring data.

Survey teams will normally be composed of 2 individuals each, at least one of whom **SHALL** be trained in radiological field monitoring. Each team **SHALL** be equipped with appropriate monitoring equipment, including dose rate instruments, air sampling equipment and sample collection media and containers. This equipment has the capability to detect and measure

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radioiodine concentrations in the air as low as  $1 \times 10^{-7}$   $\mu\text{Ci}/\text{cc}$  under field conditions. ~~Monticello Nuclear Generating Plant monitoring teams SHALL perform necessary off-site monitoring until the PINGP off-site monitoring teams arrive and assume off-site monitoring responsibility.~~ The estimated deployment time for ~~the initial and second monitoring teams composed of Monticello Nuclear Generating Plant personnel~~ is 60 minutes and 90 minutes respectively from an Alert or higher classification.

## 6.4 Corrective Actions

### 6.4.1 Fire Control

The Fire Brigade, which is composed entirely of plant personnel, is fully equipped, trained and capable of dealing with fire emergencies. At the direction of the Emergency Director and the Brigade Leader, the Fire Brigade will be deployed as necessary.

### 6.4.2 Repair and Damage Control

The repair and damage control functions are assigned to the Maintenance Group. Personnel are assigned according to the skills they possess so that the team is capable of coping with the emergency situation. Repair and damage control team members are selected from available personnel.

## 6.5 Protective Actions

### 6.5.1 Protective Cover, Evacuation, Personnel Accountability

In the course of an emergency situation where there is an actual or potential release of radioactive material to the environs in excess of normal operating levels, an assessment of projected exposure to persons on-site and off-site will be made. The result of this assessment will be a determining factor for implementing protective actions.

#### 6.5.1.1 Plant Site

During the course of an emergency, the REC is responsible for on-site monitoring operations. The on-site monitoring procedures contain criteria for initiating evacuations of various degrees. In all cases of elevated radiation levels or in potentially hazardous situations, non-essential personnel will be evacuated from affected areas of the plant. A plant evacuation is required at the Site Area Emergency level, radiological and environmental conditions permitting. The plant evacuation includes the owner-controlled area outside of the Protected Area.

A personnel accounting process is part of a plant or site evacuation. A system using the plant security computer and individual Security I.D. badges enables the Emergency Director to account for all personnel within the Protected Area in 30 minutes or less. Card readers are located at the TSC, Security

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### 7.1.3 Emergency Operations Facility

In the event of an Alert, Site Area Emergency, or a General Emergency, the Emergency Operations Facility (EOF) will be activated. The EOF serves as a center for evaluation and coordination of off-site activities related to the emergency. Additionally, the facility will be the base of operations for environmental surveillance and communications with supporting operations. The Emergency Manager is in charge of the EOF.

The EOF is located within the site Training Center, 1 mile south by southeast of the plant (approximately 5 minutes driving time). It was designed primarily as a training facility and also in accordance with NUREG 0696. In the event the EOF is needed, it is capable of prompt conversion from a training facility to an Emergency Response Facility.

The EOF will be activated and staffed by Site ERO personnel. ~~On activation, the first personnel will arrive within 30 minutes, with complete activation in approximately one hour.~~ The Emergency Plan Implementing Procedures describe the functions, equipment and personnel responsibilities more fully.

The EOF will also provide office space, trailer space and communications hook-ups for NRC Incident Response Teams, vendors, and technical support contractors. Media personnel may be assembled in the Training Center Multi-Purpose Room or other designated waiting area. The JIC will be the main point of contact for the media to obtain information regarding the emergency.

The EOF has facilities and capabilities for:

- ◆ Management of overall licensee emergency response,
- ◆ Coordination of radiological and environmental assessment,
- ◆ Determination of recommended public protective actions,
- ◆ Notification of offsite agencies,
- ◆ Coordination of event, plant, and response information provided to public information staff for dissemination to the media and public,
- ◆ Staffing and activation of the facility within time frames and at emergency classification levels defined in the emergency plan,
- ◆ Coordination of emergency response activities with Federal, State, and local agencies,
- ◆ Obtaining and displaying key plant data and radiological information, and
- ◆ Analyzing plant technical information and providing technical briefings on event conditions and prognosis to licensee staff and offsite agency responders.

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#### 9.4 Criteria for Resumption of Operation

If the plant is shutdown as the result of an emergency, it will be restarted only when:

- The conditions which caused the emergency are corrected.
- The cause of the emergency is understood.
- Restoration, repair and testing is completed as required.
- No unreviewed safety questions exist.
- All conditions of the license and technical specifications are satisfied.

#### 9.5 Long Term Recovery

If extensive plant damage exists and contamination of plant or site environs has occurred, then a Recovery Phase will be required.

**Activation of Entry** into the Recovery Phase will take place in an incremental manner as the functions change from operational to engineering/construction. The decision to ~~activate~~ enter the Recovery Phase will be made by Site Management. The Recovery Manager will be selected from several qualified designees who are members of the site organization. The Emergency Manager and the Emergency Director will share responsibility at least during the early part of the Recovery Phase.

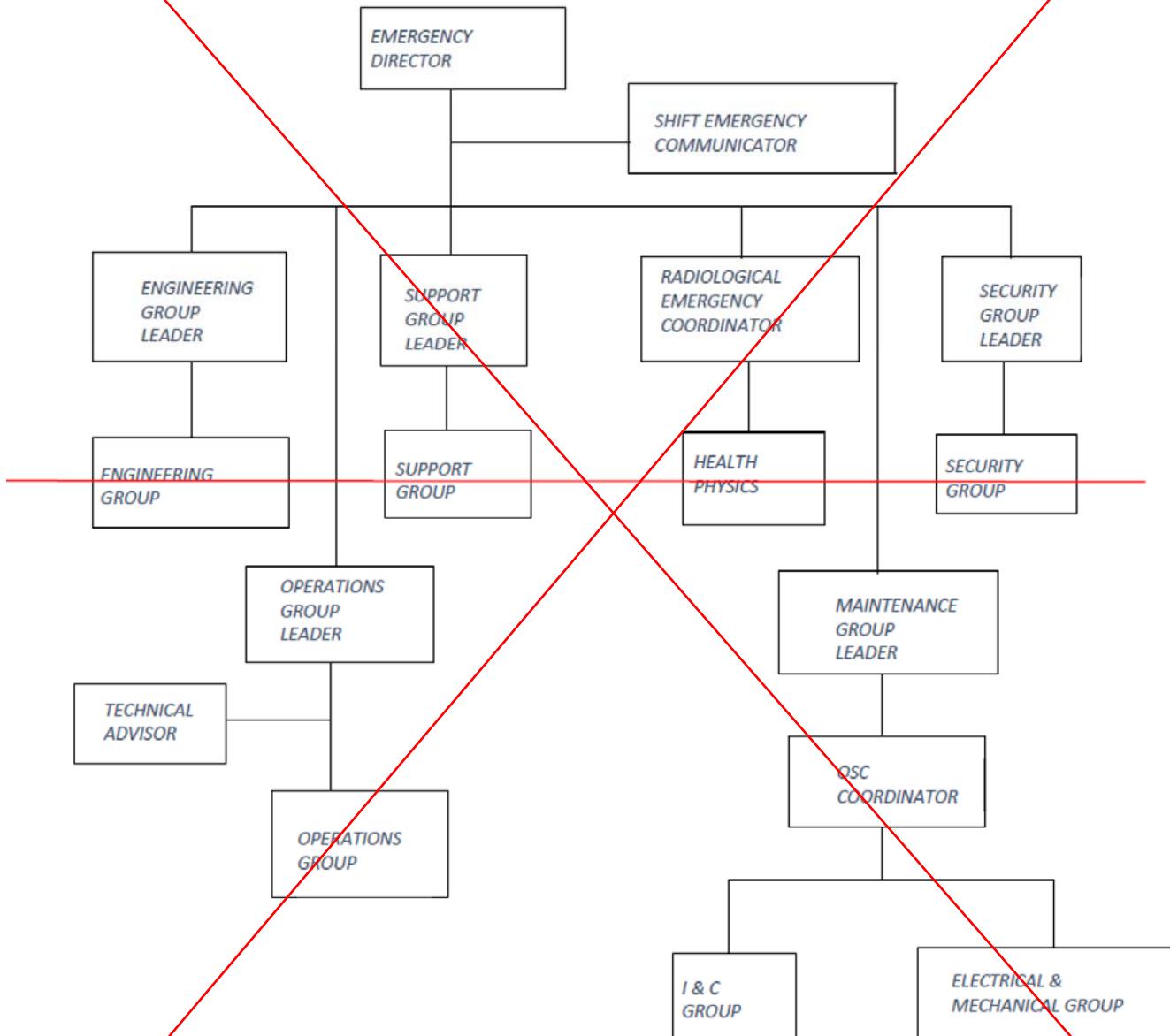
If a transition to the Recovery Phase becomes necessary, the site engineering/construction oriented staff would provide the nucleus of the organization responsible to carry out the Recovery Phase.

The plant staff would be augmented as required by specialists from the site organization and the NSPM/Xcel Energy corporate office. These speciality areas include Engineering Services, Licensing Administration, Maintenance, Quality Assurance, Communications and Security personnel. In addition, appropriate assistance would be secured from the Architect-Engineer and the Technical Support Services vendor organizations. This support could be broadened as required by consultant help from the several organizations familiar with the MNGP and organization. The overall organizations envisioned for a substantial Recovery Phase would be a blend of site staff and appropriate vendor and consultant personnel. On a prior basis it is counter productive to define in detail the extensive organization that might be involved in a sizable Recovery Phase because of the unlimited variation of conditions that could result from plant emergencies. However, the nucleus organization has been identified together with guidelines on how the organization might be expanded to meet the requirements demanded at the time.

When the Emergency Manager and Emergency Director agree that the emergency condition has been terminated, a complete transfer of the responsibilities for off-site support may be made to the Recovery Organization. The EOF will then become the Recovery Center and will function as Command Center for the Recovery Organization activation and implementation in accordance with applicable Emergency Plan Implementing Procedures.

**EMERGENCY PLAN**13.0 FIGURES

Figure 13.1  
MONTICELLO PLANT EMERGENCY ORGANIZATION

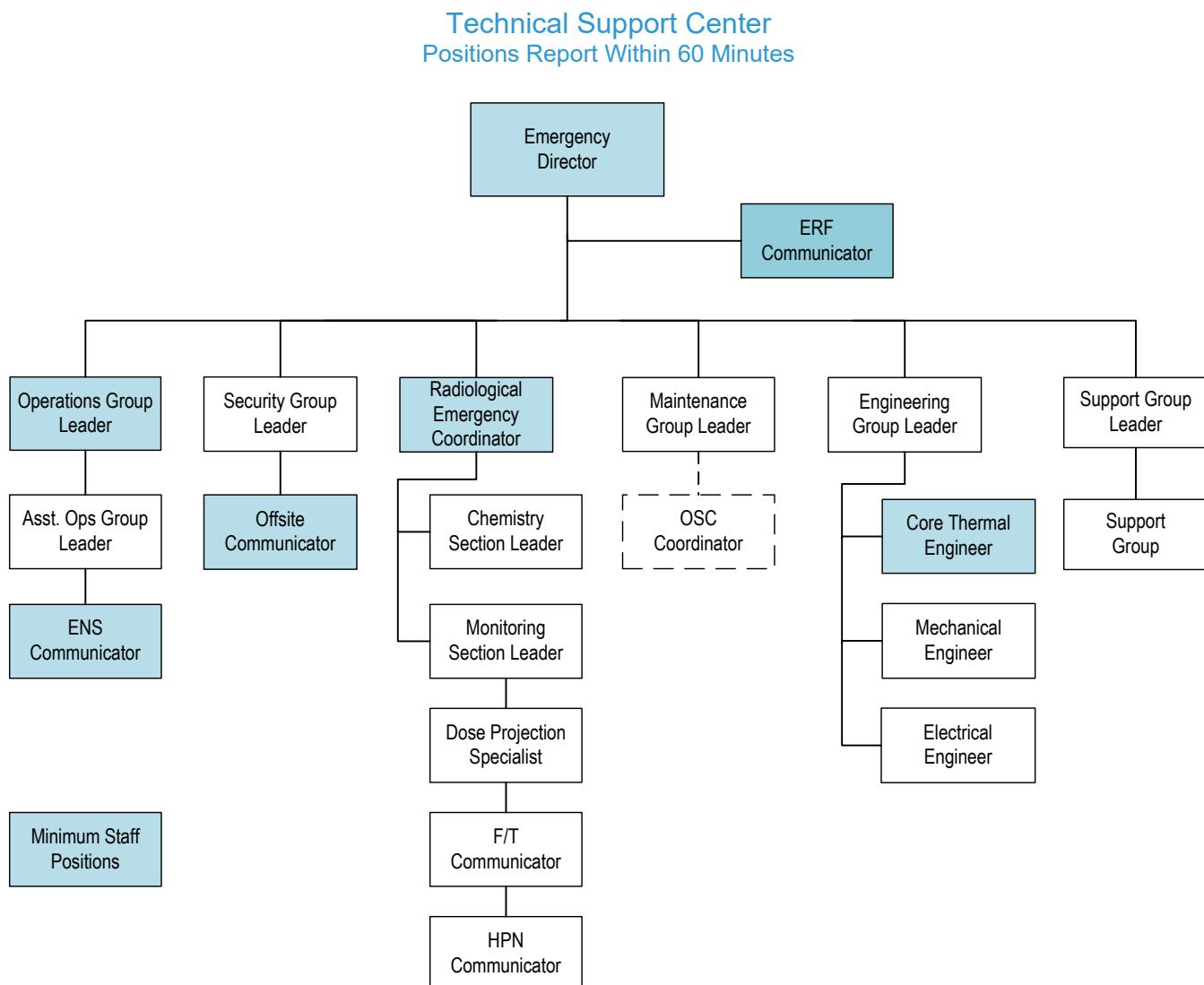


This Figure is superseded entirely. See revised Figure provided on the next 3 pages.

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**Figure 13.1**  
**MONTICELLO PLANT EMERGENCY ORGANIZATION**



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**Figure 13.1**  
**MONTICELLO PLANT EMERGENCY ORGANIZATION**

Operational Support Center  
Positions Report Within 60 Minutes Unless Otherwise Indicated on Table 1

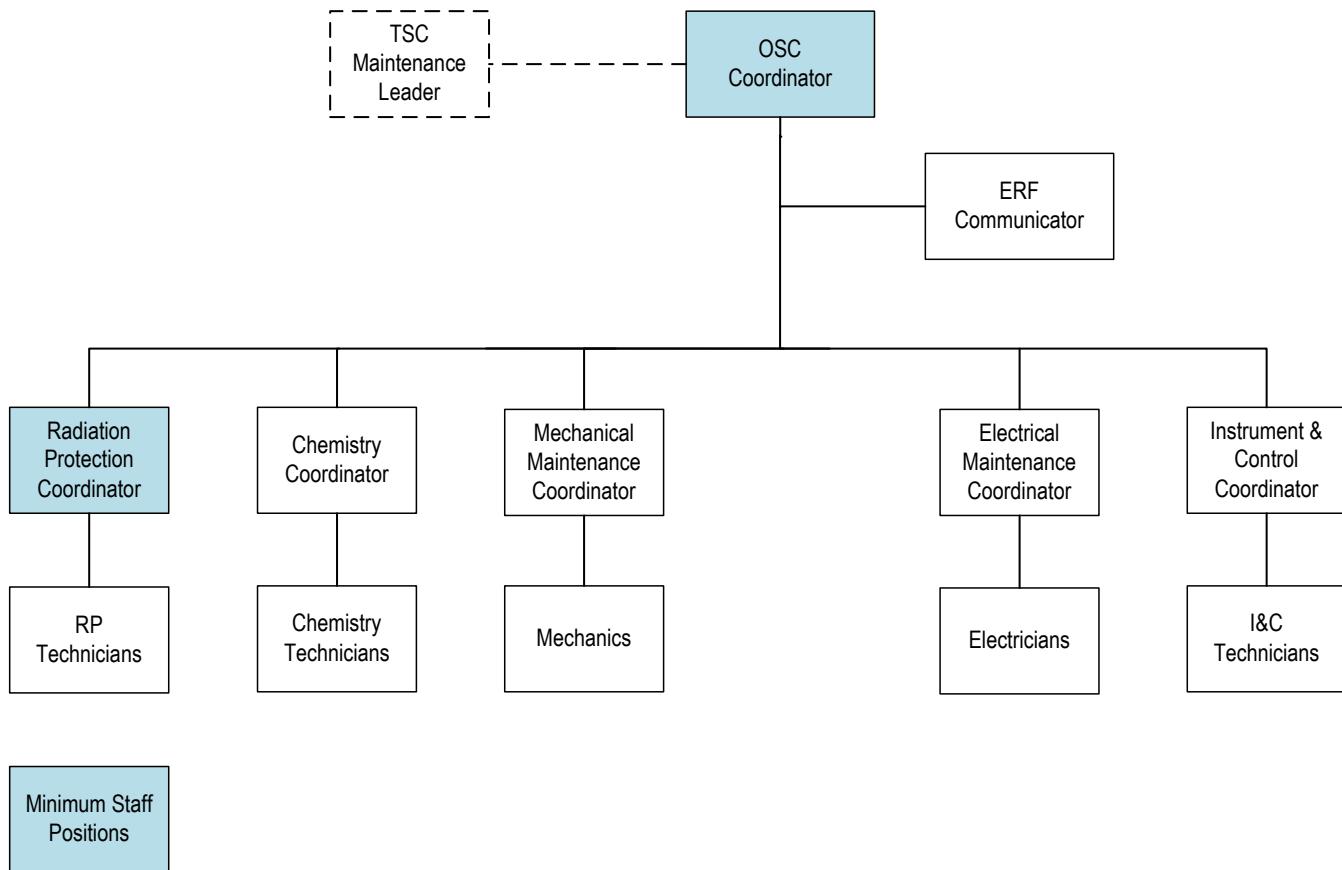
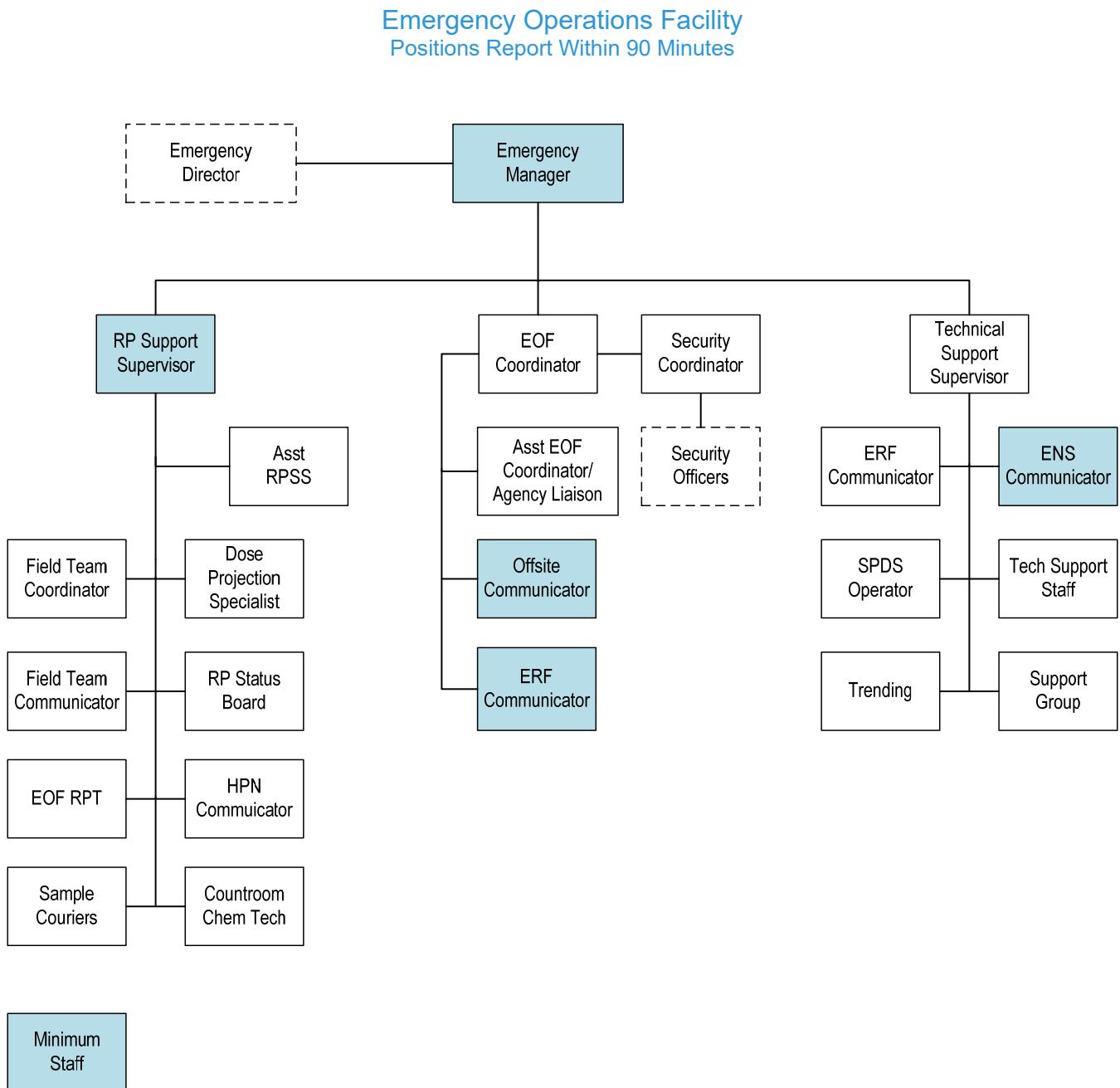


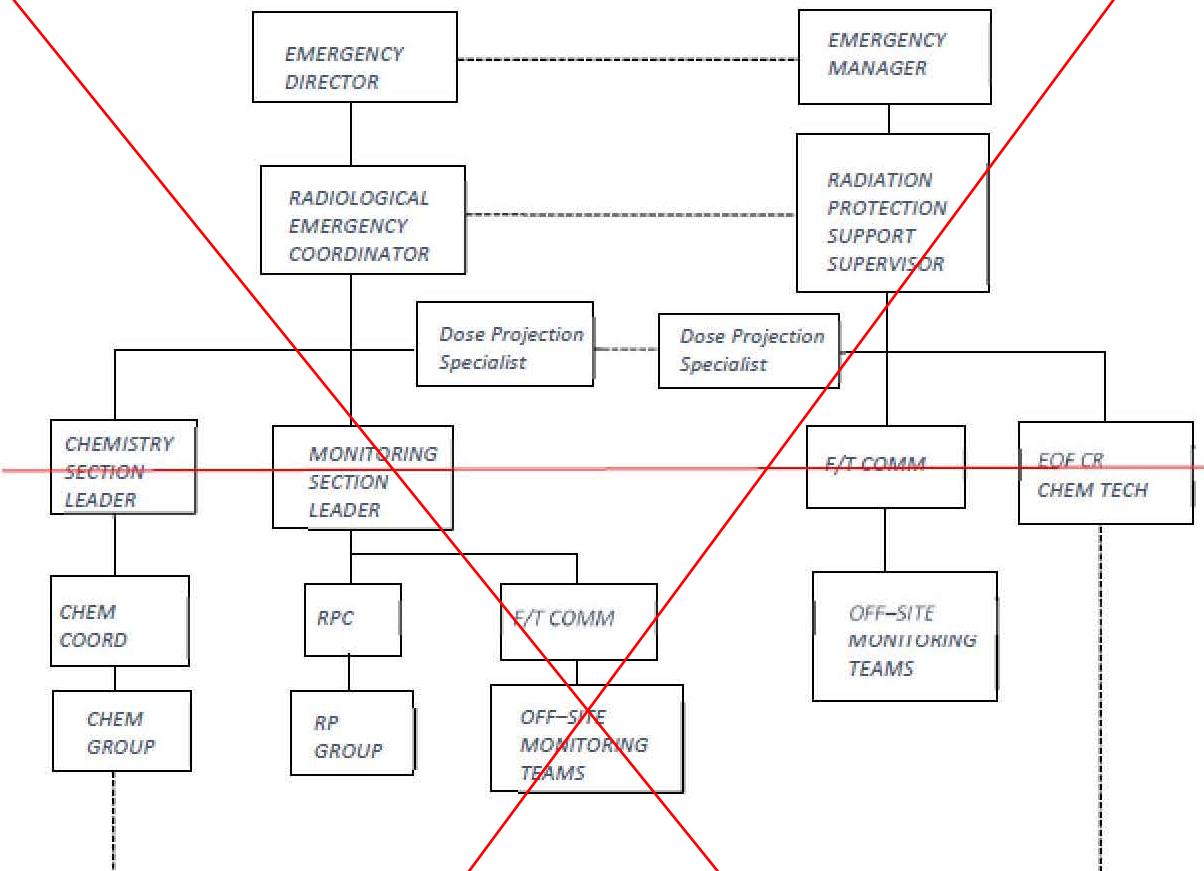
Figure 13.1  
MONTICELLO PLANT EMERGENCY ORGANIZATION



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FIGURE 13.4  
HEALTH PHYSICS GROUP ORGANIZATION



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**ENCLOSURE 1, ATTACHMENT 2**

**NORTHERN STATES POWER - MINNESOTA  
MONTICELLO NUCLEAR GENERATING PLANT**

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

**CLEAN COPY PAGES OF EMERGENCY PLAN**

18 pages follow

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- 1.12 Emergency Worker – Any individual who has an essential mission within or outside the plume exposure pathway emergency planning zone to protect the health and safety of the public who could be exposed to ionizing radiation from the plume or from its deposition. Some examples of emergency workers are: radiation monitoring personnel; traffic control personnel; evacuation vehicle drivers; fire and rescue personnel, including ambulance crews; medical facilities personnel; emergency operations center personnel; personnel carrying out backup alerting procedures; and essential services or utility personnel.
- 1.13 Facility Activation – An Emergency Response Facility is activated when the minimum staff per Figure 13.1 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 interests of completing critical tasks prior to turnover.
- 1.14 FTS – Federal Telephone System
- 1.15 Initiating Condition (IC) – One of a predetermined subset of nuclear power plant conditions when either the potential exists for a radiological emergency, or such an emergency has occurred.
- 1.16 Northern States Power Company – Minnesota (NSPM) - is the operator of the Monticello Nuclear Generating Plant.
- 1.17 OSC – Operational Support Center
- 1.18 PASS – Post-Accident Sampling System
- 1.19 Protective Actions – Emergency measures taken before or after a release of radioactive materials in order to prevent or minimize radiological exposures to the population.
- 1.20 Protective Action Guides (PAG) – Projected dose to individuals that warrants protective action prior to and/or following a radioactive release.
- 1.21 REC – Radiological Emergency Coordinator
- 1.22 Recovery Actions – Actions taken after an emergency to restore the plant to normal.
- 1.23 SEC – Shift Emergency Communicator
- 1.24 TSC – Technical Support Center
- 1.25 Total Effective Dose Equivalent (TEDE) is the sum of EDE and CEDE.
- 1.26 Xcel Energy is the owner of the Monticello Nuclear Generating Plant.

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## 5.2 Emergency Organization and Responsibilities

Under emergency conditions the organization of the site staff is altered to simplify communications channels and make more efficient use of personnel resources (refer to Figure 13.1, Monticello Plant Emergency Organization). The Monticello Emergency Response Organization (ERO) consists of various groups which staff the site Emergency Response Facilities including the Technical Support Center, Operational Support Center and Emergency Operations Facility (or backup EOF if necessary). Functional responsibilities of the various groups are described in this section. A detailed description of individual position responsibilities and leadership designations for the various groups is contained in Emergency Plan Implementing Procedure A.2-001 (EMERGENCY ORGANIZATION). A detailed description of personnel assignments is found in Form 5790-001-01 (EMERGENCY RESPONSE ORGANIZATION).

### 5.2.1 Technical Support Center Emergency Organization

The Technical Support Center ERO consists of a Coordination and Direction Group and six subordinate groups. Each group is represented at the command table in the Technical Support Center. The TSC will be activated within 60 minutes of an Alert or higher declaration.

When a transition point (Primary Containment flooding is required) in the Emergency Operating Procedures (EOPs) is reached, the duty Shift Manager and Operations Group Leader will make a joint decision to transition from the EOPs to the Severe Accident Management Guidelines (SAMGs). At this point, the Operations Group Leader would inform the TSC that they have relieved the duty Shift Manager as the Decision Maker. The Decision Maker is designated to assess and select the strategies to be implemented. When using the SAMGs, the Operations Group Leader will act as the Decision Maker.

At the same time an Accident Management Team (AMT) is formed to utilize the SAMGs. The AMT is comprised of the following ERO positions; Operations Group Leader, Assistant Operations Group Leader, Engineering Coordinator, Nuclear Engineer, SPDS Operator, Trending Individual. AMT members are the Decision Maker and Evaluators. Evaluators are responsible for assessing control parameters, plant status, system status and EOP/SAMG actions and develop potential strategies that may be utilized to mitigate an event.

#### 5.2.1.1 Direction and Control

The Direction and Control Group consists of the Plant Manager and other senior plant management personnel designated by the Plant Manager. Designated members of this group staff the Emergency Director position in the TSC. Qualified Shift Managers are also included in this group and function as the Emergency Director during the initial stages of an emergency until relieved by a designated TSC Emergency Director.

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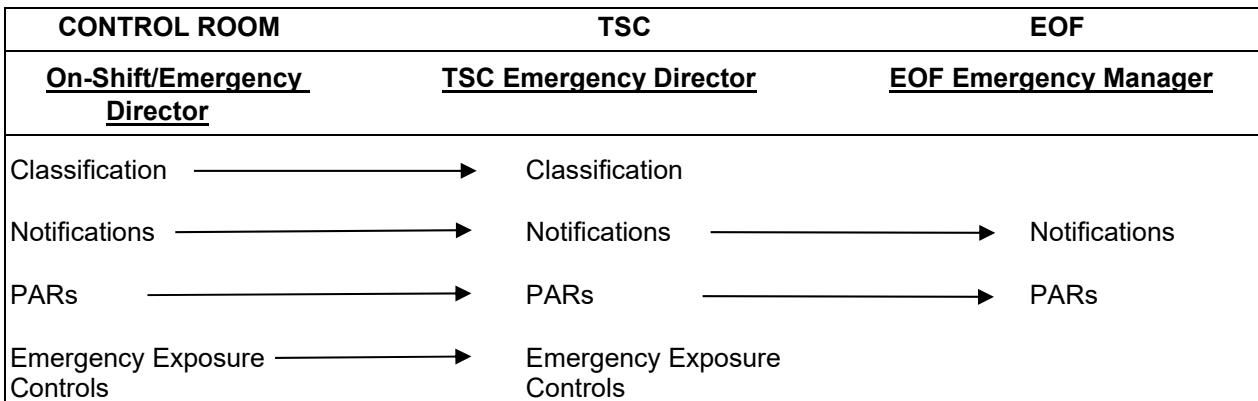
The Emergency Director is responsible for overall emergency direction and control. The Emergency Director has the authority and responsibility to unilaterally initiate emergency response actions including making off-site protective action recommendations to authorities responsible for implementing off-site emergency measures.

Functional responsibilities of the Emergency Director include:

- Recommend off-site protective measures. This responsibility may not be delegated and is relinquished to the Emergency Manager when the EOF is activated.
- Overall direction and control of the Technical Support Center personnel and activities.
- Ensure 24 hour coverage of key Emergency Response Organization positions in the TSC and OSC and continuity of personnel and material resources.
- Make decisions regarding plant emergency response facility habitability including on-site protective actions (including KI use), personnel monitoring and evacuations.
- Approval of emergency radiation exposures in excess of normal limits.
- Communications with utility and off-site Emergency Response Organizations. EOF assumes responsibility for communications with off-site agencies when activated and staffed.

When the EOF is activated the overall direction and control responsibility is transferred from the TSC Emergency Director to the Emergency Manager in the EOF. The TSC Emergency Director retains authority and responsibility for decisions immediately affecting the plant including event classification, direction of plant emergency response and on-site protective measures including emergency exposure authorization.

Responsibility for offsite functions of notification and protective action recommendations transfer from the TSC to the EOF Emergency Manager. The transition of command and control functions is depicted below.

**EMERGENCY PLAN****Transition of Command and Control Functions****5.2.1.2 Radiation Protection and Chemistry Groups**

The Radiation Protection and Chemistry Groups consists of the Radiological Emergency Coordinator (REC) and members of the Radiation Protection and Chemistry Groups. The REC reports to the Emergency Director and is staffed by Radiation Protection and Chemistry Manager designees. The group is divided into three sections:

- Monitoring Section
- Chemistry Section
- Off-site Dose Projection

The Radiological Emergency Coordinator is the group leader and responsible for coordination of all on-site Radiation Protection and Chemistry emergency response activities.

The Monitoring Section consists of the Monitoring Section Leader, and members of the plant Radiation Protection/Chemistry staff and other NSPM personnel with demonstrated experience in radiation protection. Responsibilities of the Monitoring Section include on-site radiological surveys, in-plant surveys, personnel exposure control, access control, and initial off-site radiological monitoring.

The Chemistry Section consists of the Chemistry Section Leader and members of the plant Chemistry staff. Responsibilities of the Chemistry Section include chemistry sampling and analysis, plant and EOF Count Room operation, PASS sampling and core damage assessment, if necessary. Chemistry personnel also function as off-site Dose Projection Specialists.

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Communicator reports to the Emergency Director (Shift Manager) and is responsible for making or assisting with initial off-site notification. The duty Shift Emergency Communicator may be a qualified SEC from other departments.

#### 5.2.1.8 Emergency Communications Group

The Communications Group consists of the Lead Emergency Communicator and qualified Emergency Communicators from various site groups. Designated personnel are qualified to staff emergency communicator positions in the TSC, OSC, EOF and Control Room. Responsibilities of the Emergency Communicators include emergency notifications to off-site authorities, transmission of Emergency Follow-up Messages and other required information to off-site authorities, intra-utility communications and communications links between site emergency response facilities.

#### 5.2.2 Operational Support Center Emergency Organization

The OSC Emergency Response Organization includes personnel from Maintenance, Operations, Production Planning, Radiation Protection and Chemistry. The OSC is activated within 60 minutes of an Alert or higher declaration.

##### 5.2.2.1 Coordination and Direction

The OSC Coordinator is responsible for coordination of all OSC activities including dispatching repair teams, personnel accountability in the OSC and OSC habitability. The OSC Coordinator position is staffed by experienced Maintenance, Production Planning, or Operations personnel and reports to the Maintenance Group Leader.

##### 5.2.2.2 Mechanical Maintenance

The Mechanical Maintenance Group consists of Machinists, Steamfitter – Welders, Riggers and Repairmen from the plant Maintenance Department, as well as designated personnel capable of performing emergency tasks. They are responsible for emergency repair activities under the direction of the OSC Coordinator.

##### 5.2.2.3 Electrical Maintenance

The Electrical Maintenance Group consists of the Electrical Maintenance Coordinator and Station Electricians from the plant Maintenance Department, as well as designated personnel capable of performing emergency tasks. They are responsible for emergency repair activities under the direction of the OSC Coordinator.

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#### 5.2.2.4 Instrument & Control

The I&C Group consists of the I&C Maintenance Coordinator and I&C Specialists from the plant Maintenance Department, as well as designated personnel capable of performing emergency tasks. They are responsible for emergency repairs under the direction of the OSC Coordinator.

#### 5.2.2.5 Radiation Protection

The Radiation Protection Group consists of the Radiation Protection Coordinator, Radiation Protection Technicians, Chemistry Technicians, and other NSPM personnel with radiation protection/chemistry experience and personnel designated and trained to perform on-site, out of plant and off-site radiological monitoring surveys. Radiation protection responsibilities include: OSC RP support, staffing Main Access Control, in-plant emergency team support, in-plant and out-plant radiological surveys, Emergency Response Center habitability, off-site environmental monitoring, Assembly Point staffing and Fire Brigade support (as necessary).

#### 5.2.2.6 Operations

The Operations Group consists of available non-duty Shift Managers, Control Room Supervisors, Operators and other personnel reporting to the Operations Manager. Their responsibilities include OSC operations support, in-plant emergency teams, augment the duty Control Room staff (as necessary) and Fire Brigade support (as necessary).

### 5.2.3 EOF Emergency Organization

The EOF Emergency Organization consists of a Direction and Control Group and four subordinate groups. The EOF Emergency Organization is staffed by personnel from the NSPM organization and is activated within 90 minutes of an Alert or higher declaration.

#### 5.2.3.1 Direction and Control

The Direction and Control Group consists of Site Senior Management personnel. Designated members of this group staff the Emergency Manager position in the EOF. The Emergency Manager is responsible for overall direction and control of the utilities emergency response effort. The Emergency Manager relieves the Emergency Director of the following responsibilities:

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

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#### 5.3.1.2 Emergency Direction and Control

The duty Shift Manager initially assumes the duties and responsibilities of the Emergency Director until relieved by a designated TSC Emergency Director. Once relieved, the duty Shift Manager's primary focus returns to overall coordination of emergency response activities of the duty Operations crew. The TSC Emergency Director assumes overall responsibility for the utility emergency response activities until relieved of notification and protective action recommendation functions by the Emergency Manager in the EOF. Once relieved of offsite functions, the TSC Emergency Director's primary focus is on site operation and overall direction of plant emergency response activities in plant emergency response facilities including the on-site Assembly Point. The Emergency Manager assumes overall authority and responsibility for the utility's emergency response activities from the Emergency Director and retains this authority until the event is terminated or the transition to recovery is complete.

#### 5.3.1.3 Notification and Communications

The Shift Emergency Communicator (SEC) is responsible for the performance of initial emergency notifications to the State, counties, and other off-site and utility support organizations. A licensed operator or designee is responsible for performance of Federal notifications. The duty SEC and licensed operator or designee will be augmented within 60 minutes with two additional Emergency Communicators in the TSC and within 90 minutes with two more Emergency Communicators at the EOF.

#### 5.3.1.4 Radiological Assessment and Protective Actions

The Shift Radiation Protection Technician is responsible for initial radiological assessment including in-plant radiological surveys. The shift Chemistry Technician is responsible for initial chemistry sampling, sample analysis, and off-site dose projection operation if required.

The Shift Radiation Protection Technician will be augmented by three additional Radiation Protection personnel within 60 minutes and three more Radiation Protection personnel within 90 minutes. The responsibilities of these additional Radiation Protection personnel include in-plant surveys, access control, and off-site radiological monitoring.

In addition, a qualified Radiological Emergency Coordinator (REC) will augment the shift RP staff within 60 minutes. The REC is responsible for overall coordination of the Radiation

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Protection and Chemistry Group's emergency response activities. A qualified Radiation Protection Support Supervisor will be augmented within 90 minutes. The RPSS is responsible for dose assessment in the EOF.

The Shift Chemistry Technician will be augmented with one additional Chemist within 60 minutes.

#### 5.3.1.5 Engineering and Technical Support

Technical support for the shift Operations staff is initially provided by the duty Shift Manager or Shift Technical Advisor (when staffed separately on-shift). The plant Engineering and Operations staff will provide additional technical support personnel, knowledgeable in the areas of nuclear core/thermal hydraulics, electrical, and mechanical engineering.

Augmentation in this area includes the addition of the core/thermal hydraulics position and two more members of the TSC Engineering Staff within 60 minutes. The TSC Engineering Staff is responsible to provide technical support to the Control Room staff under the direction of the Emergency Director.

Specific individuals from the TSC Engineering Staff are also members of an Accident Management Team (AMT). They will evaluate parameters used within the SAMGs.

#### 5.3.1.6 Repair and Corrective Actions

The duty Operations crew is initially responsible for any emergency repair and corrective actions that may be immediately required prior to ERO augmentation. After augmentation, repair and corrective actions are the responsibility of the Maintenance Group under the direction of the Emergency Director. The Maintenance Group consists of mechanical and electrical maintenance personnel including instrument and control technicians, as well as designated personnel capable of performing emergency tasks. Personnel from these groups report to the OSC where they are assigned corrective action tasks by the OSC Coordinator.

Augmentation in the maintenance area includes the addition of one mechanical maintenance and one electrical maintenance person within 60 minutes, and one I&C Group member within 90 minutes.

#### 5.3.1.7 Firefighting

A shift fire brigade trained and equipped for fire fighting ensures adequate manual fire fighting capability for all areas of the plant

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Table 1  
MINIMUM SHIFT STAFFING AND CAPABILITY FOR ADDITIONS FOR NUCLEAR POWER  
 PLANT EMERGENCIES

<b>Major Functional Area</b>	<b>Major Tasks</b>	<b>Position Title or Expertise</b>	<b>On Shift</b>	<b>Capability for Additions</b>	
				60 min	90 min
Plant Operations and Assessment of Operational Aspects		Shift Manager	1	---	---
		Control Room Supv	1	---	---
		SRO	1	---	---
		Nuclear Lead PE&RO (RO)	1	---	---
		Nuclear PE&RO	2	---	---
		Nuclear Asst. PEO	3	---	---
Emergency Direction and Control		Emergency Director (Shift Manager until relieved)	1*	---	---
		Shift Emergency Communicator	1	---	---
Notification/Communication	Notify licensee, Local, State, and Federal personnel & agencies	Emergency Communicators	---	2	2
	Maintain Communications	Emergency Communicators	---	2	2
		Emergency Manager ED	---	1	---
Radiological Accident Assessment and Support of Operational Accident Assessment	Emergency Operations Facility & TSC Leads	Emergency Manager ED	---	1	---
	Off-Site Dose Assessment	Radiological Emergency Coord RPSS	---	1	---
		Radiological Emergency Coord RPSS	---	---	1
	Off-Site Surveys	Radiation Protection /Support	---	1	1
		Radiation Protection /Support	---	1	1
	On-Site (out-of-plant)/ In-Plant Surveys		2	1	1
	Chemistry/Radio-Chemistry	Chemistry	1	1	---

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Table 1  
MINIMUM SHIFT STAFFING AND CAPABILITY FOR ADDITIONS FOR NUCLEAR POWER  
PLANT EMERGENCIES (CONT'D)

<b>Major Functional Area</b>	<b>Major Tasks</b>	<b>Position Title or Expertise</b>	<b>On Shift</b>	<b>Capability for Additions</b>	
				<b>60 min</b>	<b>90 min</b>
Plant System Engineering, Repair and Corrective actions	Technical Support	Technical Advisors	1*	---	---
		Core/Thermal Hyd.	---	1	---
		Electrical	---	1	---
		Mechanical	---	1	---
	Repair & Corrective Actions	Mech Maint	1*	1	---
		Elec Maint	1*	1	---
		I&C	---	---	1
Protective Actions (In-Plant)	Radiation Protection	Radiation Protection	2*	1	1
	a. Access Control				
	b. HP Coverage for response actions				
	c. Personnel monitoring				
	d. Dosimetry				
Fire Fighting		Fire Brigade per 4 AWI-08.01.01		Local Support	
Rescue Operations and First Aid			2*	Local Support	
Site Access Control and Personnel Accountability	Security, Communications, Personnel Accountability	Security Force		All per Security Plan	
Total			---	---	---
			13	14	9

\* May be provided by shift personnel assigned other functions.

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	<b>EMERGENCY PLAN</b>
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## 6.0 EMERGENCY MEASURES

### 6.1 Summary of Responses

For each of the four emergency classifications discussed in Section 4.0 certain generic emergency response actions are required to be taken by the site Emergency Response Organization. These generic emergency response actions are in addition to those actions specific to the type of emergency. This section summarizes the generic emergency response actions.

#### 6.1.1 Notification of Unusual Event

- 6.1.1.1 Promptly inform State and Local off-site authorities of the nature of the emergency condition.
- 6.1.1.2 Inform the NRC of the Unusual Event.
- 6.1.1.3 Augment on-shift resources as necessary.
- 6.1.1.4 Assess and respond to the off-normal condition.
- 6.1.1.5 Terminate the Unusual Event with notification to the State and Local off-site authorities and the NRC.

OR

- 6.1.1.6 Escalate to a more severe emergency class.

#### 6.1.2 Alert

- 6.1.2.1 Promptly inform the State and Local off-site authorities of the Alert and the nature of the emergency condition.
- 6.1.2.2 Augment on-shift resources by activating the Technical Support Center (TSC), Operational Support Center (OSC), and Emergency Operations Facility (EOF) or Back-up EOF
- 6.1.2.3 Notify the NRC of the Alert.
- 6.1.2.4 Establish the Emergency Response Data System (ERDS) communication link with the NRC.
- 6.1.2.5 Assess and respond to the emergency condition.
- 6.1.2.6 Dispatch on-site and off-site radiological survey teams and associated communications.
- 6.1.2.7 Provide periodic plant status updates to off-site authorities (Follow-up Messages).
- 6.1.2.8 Provide periodic meteorological assessments to off-site authorities and, if releases are occurring, estimates for actual releases.

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#### 6.3.2.2 Detailed Assessment

This mode provides a user-interface to produce more deliberate and comprehensive offsite dose projections than those produced by the Rapid Assessment option. It supports development of refined off-site dose projections based on changing plant status and/or meteorological conditions or field monitoring and sampling results.

#### 6.3.2.3 Sum Assessment

This mode permits the user to add archived data from previously completed dose assessments into a single report characterizing multiple concurrent releases. It is an additive process, producing a composite report and is solely for concurrent releases rather than integration of an entire event.

The URI supports expected emergency effluent dose assessment changes such as summing of multiple release/multiple source events and assessment to 50 miles.

The URI program can be run from computer stations located in the Control Room, TSC, EOF, and the Back-up EOF. Independent battery powered laptop computers are available in the TSC, EOF and Back-up EOF.

The Radiological Emergency Coordinator has the capability to estimate the total off-site population dose (manrem) received during a release. The off-site dose assessment computer will supply the projected dose rates or doses (whole body and thyroid) at various distances. Field Team radiation survey results may also be used to determine the off-site dose rates. Population distribution charts comprised of the sectors and distances from the plant are available. The Radiological Emergency Coordinator will determine the applicable doses or dose rates in the sectors and calculate the estimated total population dose by referring to the population totals in the sectors of interest.

#### 6.3.3 Field Radiation Surveys

The task of field radiation surveillance will be accomplished by two (2) teams under the supervision of Emergency Operations Facility (EOF) personnel. The EOF will be the central point for receipt and analysis of all off-site field monitoring data.

Survey teams will normally be composed of 2 individuals each, at least one of whom **SHALL** be trained in radiological field monitoring. Each team **SHALL** be equipped with appropriate monitoring equipment, including dose rate instruments, air sampling equipment and sample collection media and containers. This equipment has the capability to detect and measure radioiodine concentrations in the air as low as  $1 \times 10^{-7}$   $\mu\text{Ci}/\text{cc}$  under field conditions. The estimated deployment time for the initial and second

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monitoring team is 60 minutes and 90 minutes respectively from an Alert or higher classification.

#### **6.4 Corrective Actions**

##### **6.4.1 Fire Control**

The Fire Brigade, which is composed entirely of plant personnel, is fully equipped, trained and capable of dealing with fire emergencies. At the direction of the Emergency Director and the Brigade Leader, the Fire Brigade will be deployed as necessary.

##### **6.4.2 Repair and Damage Control**

The repair and damage control functions are assigned to the Maintenance Group. Personnel are assigned according to the skills they possess so that the team is capable of coping with the emergency situation. Repair and damage control team members are selected from available personnel.

#### **6.5 Protective Actions**

##### **6.5.1 Protective Cover, Evacuation, Personnel Accountability**

In the course of an emergency situation where there is an actual or potential release of radioactive material to the environs in excess of normal operating levels, an assessment of projected exposure to persons on-site and off-site will be made. The result of this assessment will be a determining factor for implementing protective actions.

###### **6.5.1.1 Plant Site**

During the course of an emergency, the REC is responsible for on-site monitoring operations. The on-site monitoring procedures contain criteria for initiating evacuations of various degrees. In all cases of elevated radiation levels or in potentially hazardous situations, non-essential personnel will be evacuated from affected areas of the plant. A plant evacuation is required at the Site Area Emergency level, radiological and environmental conditions permitting. The plant evacuation includes the owner-controlled area outside of the Protected Area.

A personnel accounting process is part of a plant or site evacuation. A system using the plant security computer and individual Security I.D. badges enables the Emergency Director to account for all personnel within the Protected Area in 30 minutes or less. Card readers are located at the TSC, Security Access Facility and Access Control to expedite the process. Backup methods are also available in case of a computer malfunction.

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### 7.1.3 Emergency Operations Facility

In the event of an Alert, Site Area Emergency, or a General Emergency, the Emergency Operations Facility (EOF) will be activated. The EOF serves as a center for evaluation and coordination of off-site activities related to the emergency. Additionally, the facility will be the base of operations for environmental surveillance and communications with supporting operations. The Emergency Manager is in charge of the EOF.

The EOF is located within the site Training Center, 1 mile south by southeast of the plant (approximately 5 minutes driving time). It was designed primarily as a training facility and also in accordance with NUREG 0696. In the event the EOF is needed, it is capable of prompt conversion from a training facility to an Emergency Response Facility.

The EOF will be activated and staffed by Site ERO personnel. The Emergency Plan Implementing Procedures describe the functions, equipment and personnel responsibilities more fully.

The EOF will also provide office space, trailer space and communications hook-ups for NRC Incident Response Teams, vendors, and technical support contractors. Media personnel may be assembled in the Training Center Multi-Purpose Room or other designated waiting area. The JIC will be the main point of contact for the media to obtain information regarding the emergency.

The EOF has facilities and capabilities for:

- ◆ Management of overall licensee emergency response,
- ◆ Coordination of radiological and environmental assessment,
- ◆ Determination of recommended public protective actions,
- ◆ Notification of offsite agencies,
- ◆ Coordination of event, plant, and response information provided to public information staff for dissemination to the media and public,
- ◆ Staffing and activation of the facility within time frames and at emergency classification levels defined in the emergency plan,
- ◆ Coordination of emergency response activities with Federal, State, and local agencies,
- ◆ Obtaining and displaying key plant data and radiological information, and
- ◆ Analyzing plant technical information and providing technical briefings on event conditions and prognosis to licensee staff and offsite agency responders.

### 7.1.4 Alternative Facilities

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#### **9.4 Criteria for Resumption of Operation**

If the plant is shutdown as the result of an emergency, it will be restarted only when:

- The conditions which caused the emergency are corrected.
- The cause of the emergency is understood.
- Restoration, repair and testing is completed as required.
- No unreviewed safety questions exist.
- All conditions of the license and technical specifications are satisfied.

#### **9.5 Long Term Recovery**

If extensive plant damage exists and contamination of plant or site environs has occurred, then a Recovery Phase will be required.

Entry into the Recovery Phase will take place in an incremental manner as the functions change from operational to engineering/construction. The decision to enter the Recovery Phase will be made by Site Management. The Recovery Manager will be selected from several qualified designees who are members of the site organization. The Emergency Manager and the Emergency Director will share responsibility at least during the early part of the Recovery Phase.

If a transition to the Recovery Phase becomes necessary, the site engineering/construction oriented staff would provide the nucleus of the organization responsible to carry out the Recovery Phase.

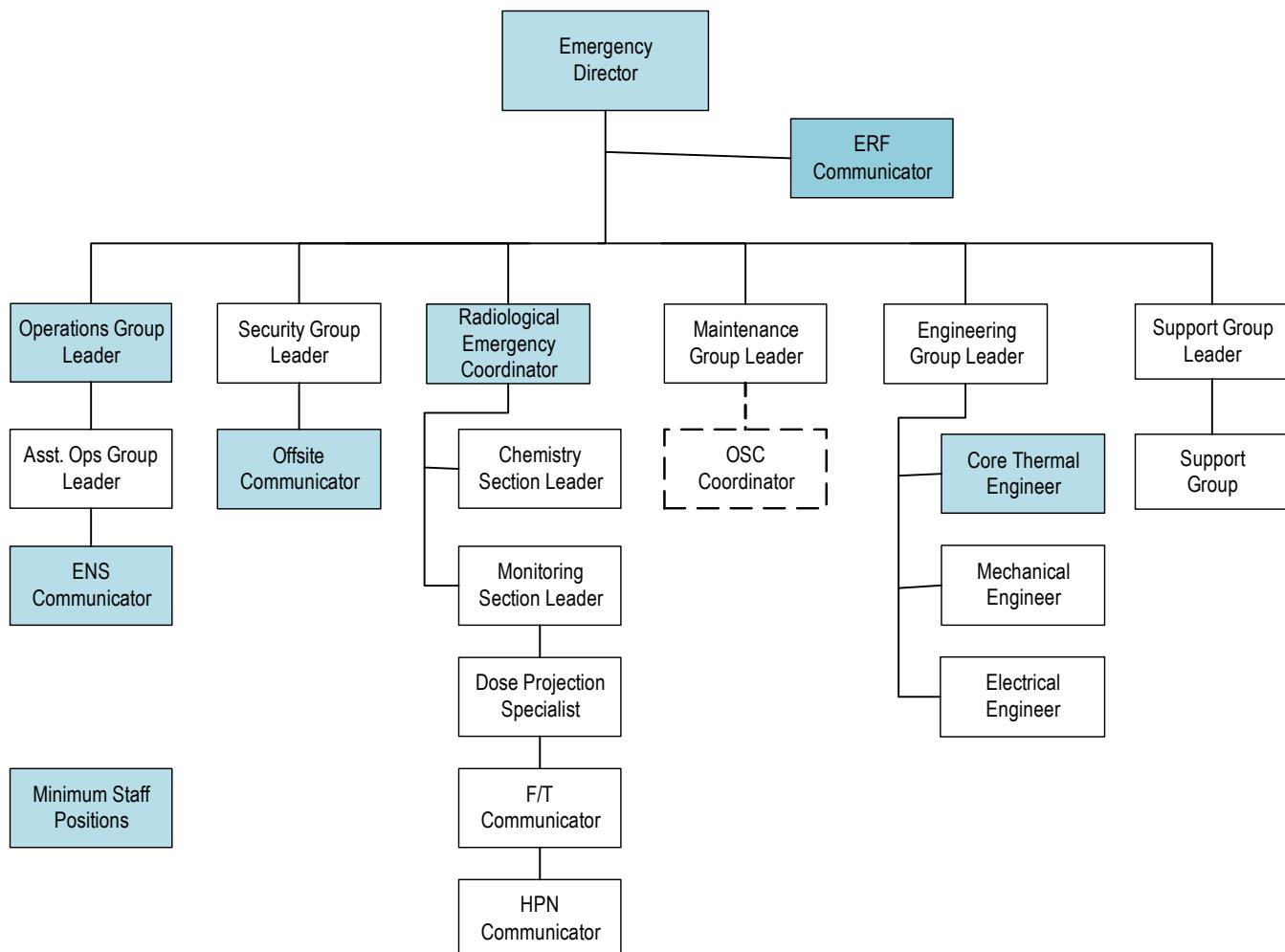
The plant staff would be augmented as required by specialists from the site organization and the NSPM/Xcel Energy corporate office. These speciality areas include Engineering Services, Licensing Administration, Maintenance, Quality Assurance, Communications and Security personnel. In addition, appropriate assistance would be secured from the Architect-Engineer and the Technical Support Services vendor organizations. This support could be broadened as required by consultant help from the several organizations familiar with the MNGP and organization. The overall organizations envisioned for a substantial Recovery Phase would be a blend of site staff and appropriate vendor and consultant personnel. On a prior basis it is counter productive to define in detail the extensive organization that might be involved in a sizable Recovery Phase because of the unlimited variation of conditions that could result from plant emergencies. However, the nucleus organization has been identified together with guidelines on how the organization might be expanded to meet the requirements demanded at the time.

When the Emergency Manager and Emergency Director agree that the emergency condition has been terminated, a complete transfer of the responsibilities for off-site support may be made to the Recovery Organization. The EOF will then become the Recovery Center and will function as Command Center for the Recovery Organization activation and implementation in accordance with applicable Emergency Plan Implementing Procedures.

**EMERGENCY PLAN**13.0 FIGURES

**Figure 13.1**  
**MONTICELLO PLANT EMERGENCY ORGANIZATION**

**Technical Support Center**  
Positions Report Within 60 Minutes



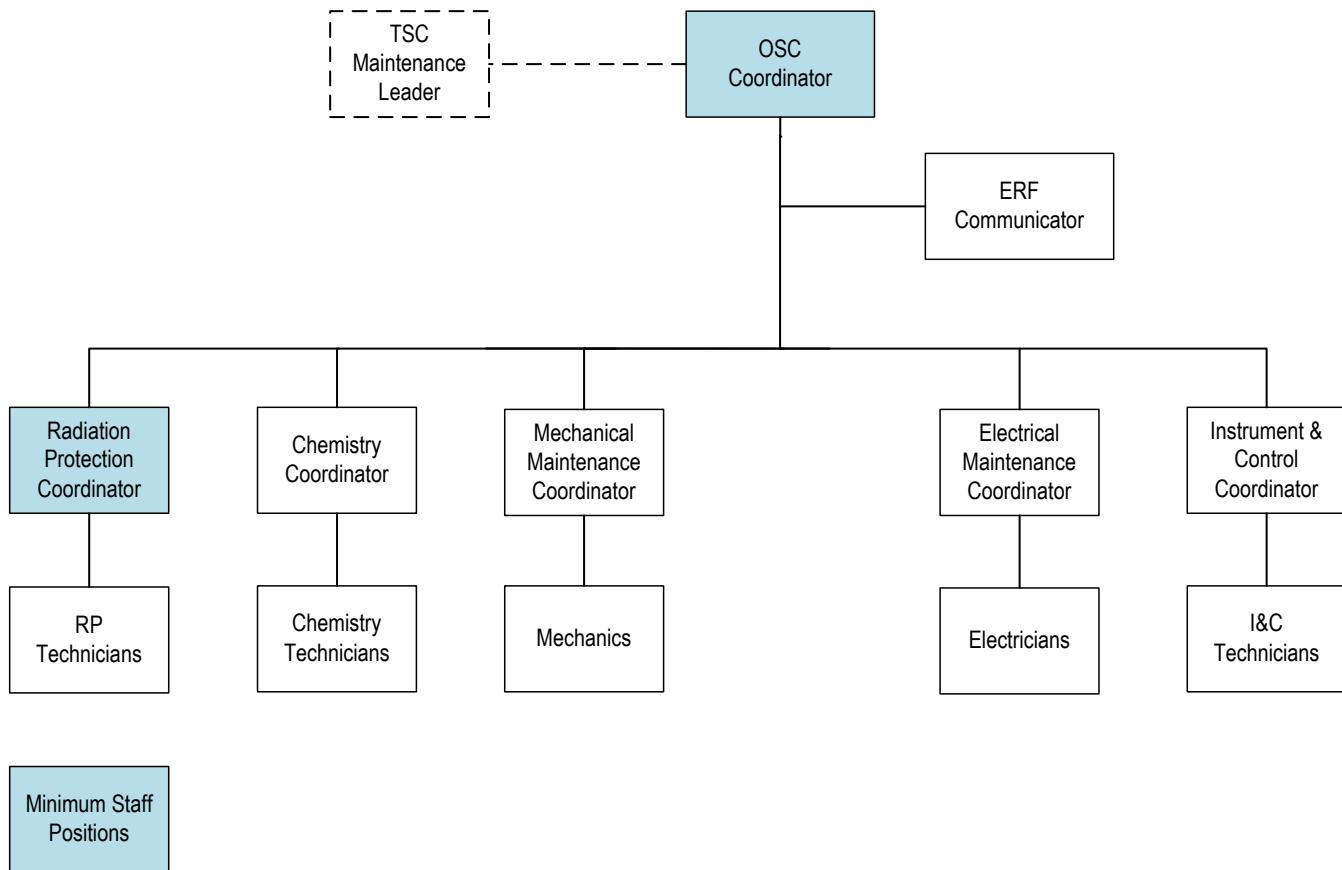
**EMERGENCY PLAN**

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**Figure 13.1**  
**MONTICELLO PLANT EMERGENCY ORGANIZATION**

Operational Support Center

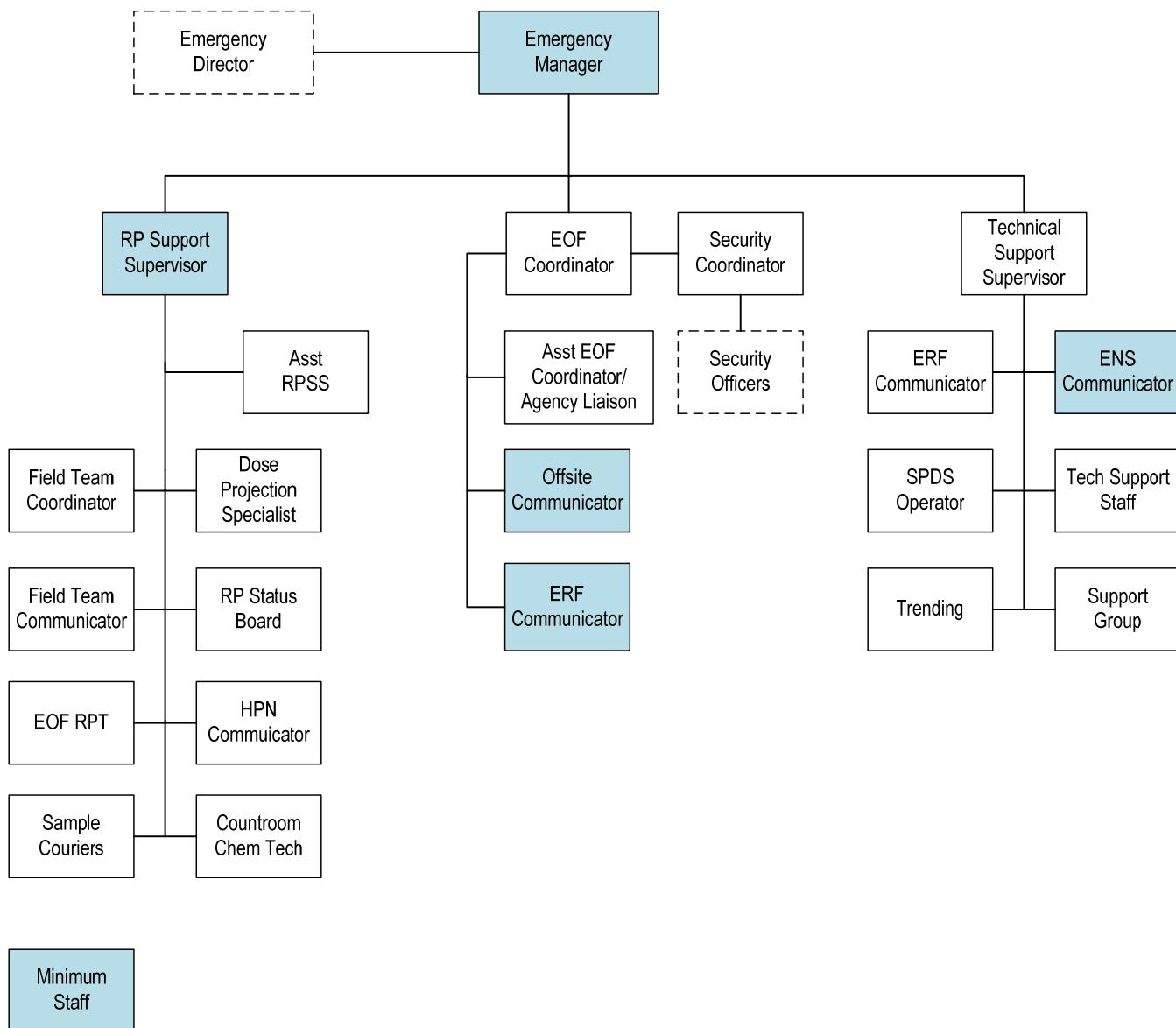
Positions Report Within 60 Minutes Unless Otherwise Indicated on Table 1



**EMERGENCY PLAN**

Figure 13.1  
MONTICELLO PLANT EMERGENCY ORGANIZATION

Emergency Operations Facility  
Positions Report Within 90 Minutes



**ENCLOSURE 1, ATTACHMENT 3**

**NORTHERN STATES POWER - MINNESOTA  
MONTICELLO NUCLEAR GENERATING PLANT**

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

**LETTERS 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

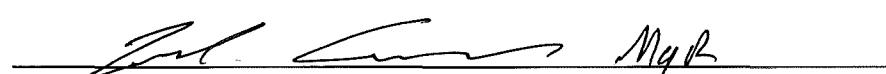
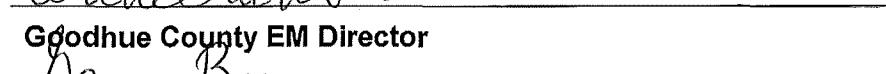
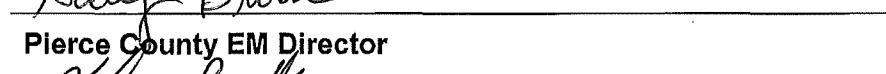
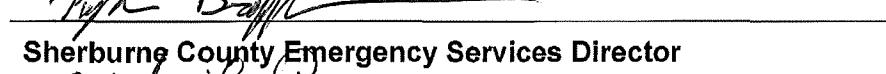
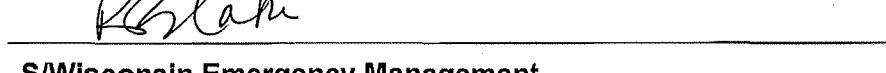
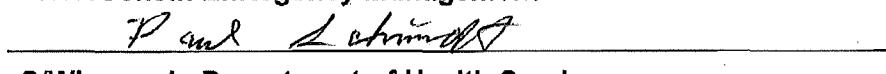
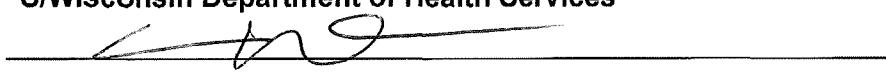
During a quarterly meeting on February 2, 2017 with offsite response organizations (ORO) from PINGP and during a quarterly meeting on February 3, 2017 with ORO from MNGP, Emergency Preparedness (EP) representatives from Xcel Energy's PINGP/MNGP respectively and Corporate staff provided a briefing to 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
 Gary Brown Pierce County EM Director	2/2/2017
 Kip Baillie Sherburne County Emergency Services Director	02/03/2017
 Stephen L. Berg Wright County Emergency Management Director	2/3/2017
 Minnesota Division of Homeland Security & EM	2/2/17
 Paul Lachance S/Wisconsin Emergency Management	Feb 6, 1, 2017
 S/Wisconsin Department of Health Services	2/2/17
 Prairie Island Indian Community EM Coordinator	2/2/17
 City of Red Wing Emergency Manager	2/2/17
 John Rued John Rued City of Monticello Emergency Manager	2/3/17

**ENCLOSURE 2**

**NORTHERN STATES POWER - MINNESOTA  
MONTICELLO NUCLEAR GENERATING PLANT**

**FUNCTIONAL ANALYSIS OF THE  
AUGMENTED EMERGENCY RESPONSE ORGANIZATION POSITIONS**

**COMPARISON BETWEEN NUREG-0654 REVISION 1,  
THE 1983 NRC APPROVED EMERGENCY PLAN REVISION 2,  
THE CURRENT EMERGENCY PLAN,  
AND THE PROPOSED CHANGES TO THE EMERGENCY PLAN**

### MNGP Site On-Shift Table Comparison

Major Functional Area	Major Tasks	Position Title / Expertise	Table B-1 On-shift	MNGP Rev 2 On-Shift	MNGP Rev 47 On-Shift	MNGP Proposed On-shift
Plant Operation and Assessment of Operation Aspects		Shift Supervisor (SRO)	1	1	1	1
		Shift Foreman (SRO)	1	1	1	2
		Control Room Operators	2	2	3	3
		Auxiliary Operators	2	2	3	3
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	2	2
	Chemistry / Radiochemistry	Chem/HP Technicians	1		1	1
Plant System Engineering	Technical support	Shift Technical Advisor	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**	2**	2**
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				
<b>Total On-Shift</b>			<b>10</b>	<b>9</b>	<b>13</b>	<b>13</b>

\*\* 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

**MNGP Site 30 Minute Augmented ERO Table Comparison**

<b>Major Functional Area</b>	<b>Major Tasks</b>	<b>Position Title / Expertise</b>	<b>Table B-1 Augment (30 min)</b>	<b>MNGP Rev 2 (30 min)</b>	<b>MNGP Rev 47 (30 min)</b>	<b>MNGP Proposed (60 Min)</b>
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	1	1
	Offsite Dose Assessment	Sr. HP Expertise	1	1	1	1
	Offsite Surveys	HP Technicians/Support	2	1	1	2
	On-Site Surveys	HP Technicians	1	1	1	1
	In-Plant surveys	HP Technicians	1	1		
	Chemistry / Radiochemistry	Chem/HP Technicians		1		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	1	1	1
<b>Total Augmented ERO</b>			<b>11</b>	<b>11</b>	<b>9</b>	<b>14</b>

### MNGP Site 60 Minute Augmented ERO Table Comparison

Major Functional Area	Major Tasks	Position Title / Expertise	Table B-1 Augment (60 min)	MNGP Rev 2 (60 min)	MNGP Rev 47 (60 min)	MNGP 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
	Offsite Dose Assessment	Sr. HP Expertise				1
	Offsite Surveys	HP Technicians/Support	2	1	1	2
	On-Site Surveys	HP Technicians	1	1	1	1
	In-Plant surveys	HP Technicians	1	1	1	
Plant System Engineering	Technical Support	Chem/HP Technicians	1	1	1	
		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		
		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	1	1	1
<b>Total Augmented ERO</b>			<b>15</b>	<b>12</b>	<b>12</b>	<b>9</b>