

## **NRR-PMDAPEm Resource**

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**From:** Wall, Scott  
**Sent:** Monday, June 23, 2014 10:30 AM  
**To:** Anderson, Jon S.  
**Cc:** Nordby, Ingrid; Gunderson, Lynne; Vincent, Dale M.; Johnson, Don; Hoffman, Raymond; Norris, Michael; Anderson, Joseph; Carlson, Robert  
**Subject:** Prairie Island, Units 1 and 2 - Final Requests for Additional Information re: License Amendment to Revise Emergency Response Organization Staff Augmentation Response Times (TAC Nos. MF3280 and MF3281)  
**Attachments:** Prairie Island - Request for Additional Information Regarding Emergency Response Times (MF3280 and MF3281).pdf

Mr. Anderson

By letter dated December 20, 2013, Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (NSPM, the licensee), submitted a license amendment request for Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2. The proposed amendment would revise the PINGP Emergency Plan to increase the staff augmentation response times for certain Emergency Response Organization positions from 30 minutes and 60 minutes to 90 minutes.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information provided by NSPM and has determined that additional information is needed to complete the review. On April 21, 2014, the NRC staff forwarded, via an electronic mail, a draft of the requests for additional information (RAIs) to the NSPM staff.

On May 22, 2014, the NRC staff and representatives of NSPM held a conference call to provide the licensee with an opportunity to clarify any portion of the draft RAI and discuss the timeframe for which NSPM may provide the requested information. The attachment to this electronic mail contains the finalized RAIs. During a call held on June 18, 2014, your staff agreed to response to the finalized RAIs no later than October 15, 2014.

Please note that review efforts on this task are being continued and further RAIs may develop.

Finally, please don't hesitate to contact me if you have any additional questions or concerns.

Sincerely,

**Scott P. Wall, PMP®, LSS BB, BSP**

Senior Project Manager

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**From:** Wall, Scott

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REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST FOR EMERGENCY PLAN CHANGE

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNITS 1 AND 2

DOCKET NOS. 50-282 AND 50-306

TAC NOS. MF3280 AND MF3281

By letter dated December 20, 2013, (Agencywide Documents Access and Management System (ADAMS) Accession Number ML13358A405), Northern States Power Company, a Minnesota corporation doing business as Xcel Energy (NSPM, the licensee), requested an amendment to the Site Emergency Plan (SEP) for the Prairie Island Nuclear Generating Plant (PINGP).

NSPM requests review and approval of a revision to the PINGP SEP to increase the staff augmentation response times for all emergency response organization (ERO) positions to go from 30 minutes (or 60 minutes) to 90 minutes, and other related changes to the PINGP SEP.

The following requests for additional information (RAIs) are necessary to facilitate the technical review being conducted by the Division of Preparedness and Response, Operating Reactor Licensing and Outreach Branch staff. These RAIs are based upon information provided in a NSPM letter dated December 20, 2013, as well as from NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0, (ADAMS Accession Number ML111751698) and NRC Interim Staff Guidance document NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants" (ADAMS Accession No. ML13010523). Timely and accurate response to these draft RAIs is requested.

For ease of use, each RAI will reference the applicable document as follows:

- Reference 1: NSPM letter dated December 20, 2013 (ML13358A405)
- Reference 2: NEI 10-05, Revision 0 (ML111751698)
- Reference 3: NSIR/DPR ISG-01 (ML13010523)

**RAI-NSPM-01**

The tables provided seem to be inconsistent with the text provided, particularly for positions where cross-training has apparently been performed. For example, the Radiation Protection Specialists position, seem to rely on plant operators, which may or may not be able to adequately provide this function for events with significant radiological consequences. Please provide clarification as to the exact shift staffing composition and ERO augmentation matrix that indicates shows the following:

- a. The specific on-shift staff member who is responsible for the applicable function(s) and respective time when this on-shift staff member is to be relieved by the ERO;
- b. Possible combinations of on-shift assignments and how all of these combinations serve to maintain the effectiveness of the SEP. Please address the potential effects of the Fire

Brigade being segregated and/or unavailable when evaluating all the possible combinations; and

- c. Other ERO positions in the Technical Support Center (TSC), Operations Support Center (OSC), Emergency Operations Facility (EOF), and the Joint Information Center (JIC)), who are considered minimum staff for the applicable facility and when they are required to perform their function(s).

#### **RAI-NSPM-02**

It is not clear how NEI 10-05 (Reference 2) can be used to justify staff augmentation changes. NEI 10-05 was created by the industry to help licensees fulfill the requirements of 10 CFR Appendix E, IV.A.9, which states, in part, 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." NEI 10-05 does not provide guidance that can be used to justify extensions to ERO timing nor does it assist the staff in making a reasonable assurance finding in accordance with 10 CFR 50.47(a) when evaluating the impact the possible delays in augmentation that may/or may not have with the ability of the on-shift crew to mitigate and/or manage the event. Please provide additional justification that increasing the augmentation time from 30 minutes (or 60 minutes) to 90-minutes for the ERO responders will not negatively impact the ability of the on-shift crew to mitigate an event (i.e., the impact maintaining a 'dual-focus' (plant and emergency preparedness (EP)) will have on public health and safety.

#### **RAI-NSPM-03**

For some positions, maintaining situational awareness of the changing plant conditions may become difficult when managing EP requirements for an extended period of time, particularly in the radiation protection area, oversight, and communications areas. For all positions where an extension of the augmentation time is proposed, provide justification to support the change(s). Please note that NEI 10-05 does not provide guidance relative to this area, it only serves to evaluate/verify that the existing on-shift staff can meet all of its SEP requirements, and can be used to support changes to on-shift staffing, but only as far as providing justification for meeting SEP requirements during the applicable time periods. NEI 10-05 does not evaluate the impact ERO timing extensions have on the on-shift staff and their ability to manage SEP requirements while maintaining situational awareness of the event.

#### **RAI-NSPM-04**

Please provide additional information that would document how license operator requalification training (LORT) and/or EP drills/exercises is sufficient to demonstrate that the Shift Manager can maintain situational awareness of the event, while performing all the EP functions assigned for 90-minutes without assistance or relief. In particular, the General Emergency scenario typically requires a significant amount of time communicating with State and local agencies, as well as the NRC. Please provide documentation that the stated training programs use this scenario, with significant multiple communication demands, for 90-minutes.

#### **RAI-NSPM-05**

In NEI 10-05, a General Emergency event is intended to be a loss of all three fission product barriers resulting in a release greater than 1 Rem total effective dose equivalent (TEDE) offsite.

It is not a progression, but rather a simultaneous loss of all three fission product barriers. Please revise accordingly or provided additional justification.

#### **RAI-NSPM-06**

Section 2.0 of the SEP provides that within approximately 2 to 3 hours, the plant staff will be augmented. Additionally, Section 5.3.2.D states, "Upon activation of the EOF, the offsite survey teams will be comprised of individuals from the [MNGP]."

- a. Are the additional MNGP personnel fulfilling the augmentation positions as listed on Table 1?
- b. Explain how the offsite survey teams can be comprised of MNGP personnel upon activation of the EOF when the EOF will be activated in 90 minutes and the MNGP will not arrive until between 120 minutes and 180 minutes.

#### **RAI-NSPM-07**

Section 5.3.1 of the SEP states, "The Shift Manager shall be relieved of the Emergency Director responsibilities when the designated Emergency Director arrives onsite." The staff could not locate information relative to the required staffing times of this position in either the existing or proposed SEPs. Additionally, augmentation times for the Emergency Director function could not be located on Tables A or B of the Augmentation Staffing Analysis. What is the augmentation time of the Emergency Director, and where is this information documented?

#### **RAI-NSPM-08**

Please provide more detail related to the Shift Emergency Communicator and Assembly Point Coordinator listed on Figure 1 of the SEP, in respect to the following:

- a. Are these on-shift positions or augmented positions?
- b. Who is assigned to fulfill these positions?
- c. Are there special training or qualification requirements for these positions?

#### **RAI-NSPM-09**

As stated in RAI-NSPM-01, it is not clear as to how all the possible permutations of on-shift staffing impact the ability of the on-shift staff to function adequately. For example:

- a. Table 1 of the SEP has the In-Plant Survey task being the responsibility of the Plant Operators and/or Radiation Protection (Rad Pro) Specialist. Since two are proposed to be on-shift, is this two plant operators, two Rad Pro Specialists, or some combination? What impact is their when the plant operators are tasked with other duties, such as Fire Brigade or other operations-related tasks?
- b. Table 1 of the SEP has four responders arriving within 90-minutes to support the Offsite Survey tasks (from the two presently required in 30-minutes and two presently required in 60-minutes). The note attached to this task says that the Monticello Rad Pro Group will arrive within 2-3 hours to augment this position. Please explain if this position will be

staffed within 90-minutes by PINGP staff or within 2-3 hours by Monticello staff. Additionally, how is the NUREG-0654, Table B-1 major task of “offsite surveys” conducted until augmented since the two 30-minute responders have been moved to 90 minutes?

- c. Table 1 of the SEP has three responders arriving within 90-minutes to support the Radiation Protection task (which consists of access control, HP coverage (for repair teams, search and rescue, first aid, and firefighting), personnel monitoring, and dosimetry. For events with significant and varying radiological conditions, having no on-shift staff for these tasks is problematic. Please justify, and discuss why the positions (three within 90-minutes) is adequate for the most severe scenarios, and the impact of having Radiation Protection Specialists and/or Plant Operators staff this position.
- d. NUREG/CR-5569 “Health Physics Positions Data Base,” (HPPOS-238) provides that in the area of emergency preparedness, a non-fully qualified HP technician should not be authorized to lead emergency search and rescue team. Will the Plant Operators be assigned to the OSC within 90-minutes? Please clarify and provide justification for the training and qualification of plant operators to fulfill all the requirements of a qualified Health Physics Technician.

#### **RAI-NSPM-10**

Table 2 of the SEP lists some, but apparently not all, of the PINGP ERO staff with their primary and secondary responsibilities.

- a. Please explain when these positions are expected to be ready to perform their function(s).
- b. Please clarify if first aid capability is maintained on-shift at all times, which on-shift positions fill this role, and the impact this has on the scenarios assessed.
- c. Please explain the apparent inconsistency with the Plant Operations personnel being assigned Fire Brigade duties, this is not reflected on Table 2. Additionally, it lists “maintenance” as having “fire-fighting” as a secondary function. The proposed Table 1 eliminates these positions and is also an apparent inconsistency.

#### **RAI-NSPM-11**

Section 5.3.3 of the SEP discusses the responsibilities of the Plant Shift Organization.

- a. Operations Group: This list includes emergency radiation surveys and short-term damage control and repair tasks. Please explain how this is accomplished for all the applicable scenarios for 90-minutes and still allow for the Operations Group to manage the event (i.e., stop the release for the most radiologically severe scenario escalating straight to General Emergency. What is the training for these tasks?
- b. Security Group: This list includes assisting communication efforts and assisting in first aid. Please explain how this is accomplished for all the applicable scenarios for 90-minutes and still allow for the Security Group to manage the event based on the site’s Security Plan requirements. What is the training for these tasks?

- c. Shift Emergency Communicator: Please clarify who staffs this position. In addition, the SEP states that the c. Shift Emergency Communicator may designate offsite communications to a qualified communicator. Please explain who the “qualified communicators” are and what impact it may have if these positions are designated to be offsite communicators. Does this include the NRC communicator (via the Emergency Notification System)?
- d. Radiation Protection Specialist: This section states that there are three Radiation Protection Specialists onsite at all times, yet also states that qualified Operations personnel on-shift are also trained to perform radiation surveys. Please clarify whether there three Radiation Protection Specialists on-site, and how many per unit? Are plant operators part of these three or is additional support if needed?
- e. Chemistry Technician: This section states that two Chemistry Technicians are onsite at all times. One is for dose assessment and one is for chemistry/radiochemistry functions. It also states that they are trained as Radiation Protection Specialists. What impact is there if the Chemistry Technician is assigned to be a Radiation Protection Specialist, and what is the training provided?

#### **RAI-NSPM-12**

Section 5.3.4 of the SEP discusses the responsibilities of the Plant Emergency Staff Augmentation Groups. Specifically, the Maintenance Group section provides that “Maintenance Supervisors (mechanical, electrical and I&C), and designated Electricians who should report to the Operational Support Center (OSC).” Please explain how is the NUREG-0654, Table B-1 major task of “repair and corrective actions” for all maintenance disciplines performed by these supervisors and only designated electricians.

#### **RAI-NSPM-13**

NEI 10-05 provides the following in Section 2.5: “Table B-1 of NUREG-0654/FEMA-REP-1 lists one Major Task for which a need may not be specified during a staffing analysis - “Repair and Corrective Actions”. Following the guidance contained in NUREG-0654/FEMA-REP-1, Table B-1, repair and corrective action tasks may be performed by dedicated shift personnel or qualified shift personnel assigned other functions/tasks. The assignment for the performance of repair and corrective action tasks must be indicated within the site emergency plan and consistent with Table B-1.” Please provide further justification why the repair and corrective action positions were removed from Table 1 for on-shift and 30-minutes responders.

#### **RAI-NSPM-14**

Section 5.4 of the SEP discusses the EOF Organization and states that the EOF should be staffed and ready to assume its SEP responsibilities within 90-minutes of an Alert, and that transfer of these responsibilities will be from the TSC. .

- a. Please explain how this is accomplished when the proposed SEP change includes that the TSC does not need to be activated for 90-minutes as well.
- b. Please identify whether the proposed change to the ERO augmentation (activation times) of the facilities in the PINGP SEP were evaluated for their impact on the State, local and tribal response organizations ability to effectively implement their FEMA-

approved REP plans, specifically in regards to licensee interface and coordination with State, local and tribal response organizations? If so, please provide evaluation performed and documentation regarding discussions with affected State, local and tribal response organizations used in making this determination.

- c. If potential impacts to OROs exist, have the proposed changes to the PINGP SEP been reviewed and agreed upon by the affected offsite response organizations (OROs) to ensure they can continue to meet the requirements of their current FEMA-approved REP plans? Please provide documentation that the affected OROs have reviewed and concurred on the proposed changes.

#### **RAI-NSPM-15**

Section 6.4.2 of the SEP discusses radiological surveys and states that the Radiation Protection Group is responsible for all radiological surveys and personnel monitoring both onsite and offsite. It also states the non-licensed operators of the Operations Group are trained to conduct post-accident, in-plant surveys for the first hour of the event. Please explain how plant operators can conduct these surveys for 90-minutes, if applicable, and whether these plant operators will be assigned to the Radiation Protection Group, or be an additional responsibility of the Operations Group?

#### **RAI-NSPM-16**

In regards to the On-Shift Staffing Analysis:

- a. The basis for excluding scenarios included the PINGP assessment that the on-shift resolved the scenario of concern, and therefore, no further analysis was warranted. It is the staff's expectation that all scenarios be assessed and evaluated, as the eventual resolution of the event is not the primary concern, and it is subjective as the circumstances of the event cannot be pre-ordained. Please provide an assessment of the scenarios to allow the staff to independently evaluate if the on-shift staff can adequately meet all the timed requirements associated with the SEP, in conjunction with any other assigned tasks/responsibilities. While this does not justify ERO timing extensions, it is needed to ensure all assigned SEP tasks can be completed for all the scenarios.
- b. Please explain why Analysis #5 apparently has initial offsite agencies notifications completed within 25-minutes of event declaration when the requirement is 15-minutes?
- c. Please explain why Analysis #6 does not list an EAL being declared, or revise accordingly.
- d. Analysis #9 depicts a gradual degradation of plant conditions leading to a General Emergency and radiological release over a 35-minute period. Per NEI 10-05, the staff expects this scenario to be based upon an immediate loss of all three fission product barriers resulting in a release greater than 1 Rem TEDE beyond the site boundary. Please re-analyze this event accordingly, and evaluate how the on-shift staff: manages this event for 90-minutes, maintains situational awareness of the plant, provides adequate rad pro coverage, and maintains the significant communication demands (state, local, federal, tribal) an event of this scope would require.

e. Please provide additional justification to support the following on-shift functions/tasks/positions going longer than 60-minutes without augmentation:

- Emergency Director
- Communications
- Health Physics coverage
- TSC Radiation Protection Management
- Dose assessment
- Electrical/IC Engineer
- Mechanical Engineer
- Core/Thermal Hydraulics Engineer
- OSC Supervision
- Electrical maintenance
- Mechanical maintenance
- Onsite field team
- Offsite field team (1)

#### **RAI-NSPM-17**

Section 5.3.1 of Reference 1 (Enclosure 1, Attachment 1) states, "If necessary, the Shift Supervisor of the unaffected unit may function as an alternate Emergency Director backing up the Shift Manager."

- a. Please provide justification supporting the Shift Supervisor's qualifications to "function as an alternate Emergency Director, backing up the Shift Manager."
- b. Please explain how the unaffected unit Shift Supervisor will maintain oversight of the unaffected unit while functioning "as an alternate Emergency Director, backing up the Shift Manager."
- c. Please explain how the unaffected unit Shift Supervisor will maintain oversight of the unaffected unit while maintaining continuous communication with the NRC Operations Center.

#### **RAI-NSPM-18**

Table 5 of Reference 1 (Enclosure 1, Attachment 2) Analysis #9 for a Large Break LOCA with release and resulting in PARs, does not reflect the Shift Technical Advisor (STA) performing the core/thermal technical support function. Please provide documentation demonstrating the STA can perform the operations STA function and the Technical Support functions concurrent with reviewing EALs, performing classifications, and completing event notification forms as identified in Table 2A of Analysis #9.

#### **RAI-NSPM-19**

Table C of Reference 1 (Enclosure 1, Attachment 2) Analysis 2 for a Locked Pump Rotor, states, "Event not classified, further analysis not required." USAR Chapter 14.4.8 is listed as the reference. Please explain why an event that is described as having the "potential for release of significant amounts of radioactive material" in USAR Chapter 14.4.8 does not need analysis.

### **RAI-NSPM-20**

Please explain why Radiation Protection (RP) Specialist #2 reports to OSC for further direction 15 minutes after emergency declaration, when the OSC will not be manned until 90 minutes after emergency declaration.

### **RAI-NSPM-21**

Section 2.2 of Reference 1 (Enclosure 1), identifies “a potential for reduction in driving safety for individuals responding to the emergency” as a reason for the proposed change. This is cited as due to increased population and the impact on commute times and changes in physical security of the PINGP, which has resulted in a “personnel transit time to the PA [being] increased by several minutes.” Additionally, Section 2.3 of Reference 1 (Enclosure 1), identifies a Green Finding associated with 5 responders not meeting their response times following an Alert declaration on January 7, 2012. Please provide evidence for the capability that current Emergency Plan augmentation times can be met at all times.

### **RAI-NSPM-22**

Reference 1 (Enclosure 1, Section 3.3) takes credit for improvements in technology that has enabled the on-shift staff to assess plant conditions quickly and efficiently, and with less distraction. The listed improvements are all electronic.

- a. Please provide documentation that this capability will either not be lost or will not impact the response to a Station Blackout event.
- b. Please provide documentation that this capability will either not be lost or will not impact the response to a Control Room fire leading to evacuation and remote shutdown as referenced in IN 95-48.