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U S Nuclear Regulatory Commission  
ATTN: Document Control Desk  
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Prairie Island Nuclear Generating Plant Units 1 and 2  
Dockets 50-282 and 50-306  
License Nos. DPR-42 and DPR-60

30-Day Response to Human Performance Substantive Cross-Cutting Issue (SCCI)

- References:
1. Letter from Nuclear Regulatory Commission (NRC) to Mr. Mark A. Schimmel, "Mid-Cycle Performance Review and Inspection Plan – Prairie Island Nuclear Generating Plant, Unit 1 and 2," dated September 1, 2009 (Accession Number ML092440367)
  2. Letter from NRC to Mr. Mark A. Schimmel, "Annual Assessment Letter – Prairie Island Nuclear Generating Plant, Units 1 and 2 (05000282/2010001; 05000306/2010001)," dated March 3, 2010 (Accession Number ML100610286)

In reference 1, the NRC noted a SCCI in the area of human performance (HU) identified during the 2009 mid-cycle assessment which remained an identified concern through the 2009 end-of-cycle assessment. Reference 2 requests that Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy, provide a written response to the human performance SCCI because the issue has been open for two consecutive assessment cycles. In response to reference 2, NSPM submits the 30-day response to the human performance SCCI as Enclosure 1.

Human performance is a journey that is never complete. While PINGP is not yet satisfied that the site's performance meets expectations of excellence, PINGP is committed to continue providing the attention and resources needed to further reduce the number of occurrences and significance of human performance related events. PINGP is also committed to maintain strong oversight of the improvement actions and to monitor HU effectiveness metrics through the Performance Assessment Review Board (PARB) and through individual manager and supervisor accountability.

Summary of Commitments

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

A handwritten signature in black ink, appearing to read "Mark A. Schimmel". The signature is fluid and cursive, with the first name "Mark" and last name "Schimmel" clearly legible.

Mark A. Schimmel  
Site Vice President, Prairie Island Nuclear Generating Plant  
Northern States Power Company - Minnesota

Enclosures (1)

cc: Regional Administrator, Region III, USNRC  
Project Manager, Prairie Island, USNRC  
Resident Inspector, Prairie Island, USNRC

## ENCLOSURE 1

### **30-DAY RESPONSE TO HUMAN PERFORMANCE SUBSTANTIVE CROSS-CUTTING ISSUE (SCCI)**

By letter dated March 3, 2010, the NRC issued the annual assessment letter for the Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2. The letter requests that Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy, provide a written response to the SCCI in the area of human performance (HU) because the issue has been open for two consecutive assessment cycles. The requested information is provided below.

#### **DISCUSSION OF ACTIONS UNDERTAKEN**

Prairie Island identified a decline in HU in late 2008. While actions were taken, including re-rollout of the HU tools, the initial response did not result in sufficient improvement to meet NSPM's expectations.

As a result, the station formed a cross-functional team in March 2009 to develop a comprehensive Performance Recovery Plan to further improve station performance. A Common Cause Evaluation (CCE) was completed, which examined NRC findings, Nuclear Oversight (NOS) findings, an independent HU assessment, the site 2008 Mid-Cycle Evaluation, the 2008 Management and Safety Review Committee (MSRC) assessments and Corrective Action Program (CAP) documents from 2006-2008. The CCE identified the following primary drivers:

1. Conservative Decision-Making (Risk Management)
2. Procedure Use and Adherence
3. Work Package Quality
4. Human Performance Fundamentals

A seven step change management model was used to identify gaps between the industry standards and the existing actions and results from the previous assessments and the CCE. The seven steps, performed in the following order, are listed below:

1. Developing the right picture
2. Defining the standard, based on industry excellence and regulatory standards
3. Creating alignment among site organizations.
4. Communicating the standards through training, etc.
5. Monitoring and actively coaching as the standard is implemented
6. Providing feedback and actively coaching as the standards are used
7. Checking and adjusting as needed.

Identified gaps in existing processes, behaviors and structure were evaluated to create additional actions which were combined with previously identified actions and were integrated into a site-wide Performance Recovery Plan.

Actions taken to improve Conservative Decision-Making (Risk Management), Procedure Use and Adherence, Work Package Quality and Human Performance Fundamentals included the following:

- The “Operational Decision-Making” tool was revised to include two types: Type 1 to address operational emergent type challenges faced by operators and Type 2 to address the larger, more significant decisions involving multiple departments. These tools were established in a fleet procedure applicable to both PINGP and the Monticello Nuclear Generating Plant.
- The “Principles for a Strong Nuclear Safety Culture” were reintroduced to the station and posters of these principles were placed in the main conference rooms. Managers have been provided pocket-sized books of the principles and their attributes. The safety culture principles are emphasized every day, from the time employees walk into the explosive monitors and hear the recorded messages, through safety moments at meetings, to weekly Leadership Alignment meetings, as well as in daily interactions.
- The station has introduced “Risk Principles and Behaviors” as a tool to coach workers on using low risk options and managing risk. The focus of these two principles is to change the station’s culture from “we have always done it this way” to “what can we do to minimize risk?” and “are we aligned to industry best practices?”
- A major focus has been placed on use of the “STOP When Unsure” HU tool. Workers who do STOP and involve their supervisor in decision making are formally recognized to encourage the desired behavior. A monthly Employee Recognition Luncheon is held where the senior leadership team, including the Site Vice President and the Chief Nuclear Officer, recognize employees for their behaviors among other positive achievements. Additionally, we recognize employees weekly for situations where risk was recognized, avoided and documented in the corrective action process through the site’s “Good Catch” program.
- A fleet procedure for Integrated Risk Management (IRM) has been implemented and newly created work order tasks are now screened for risk (including nuclear, radiological, industrial, and environmental safety). Additional actions are required to mitigate risk for all tasks that are screened as medium or high risk to ensure the tasks are done safely and correctly. These actions include more supervision, management oversight, pre-job challenge boards, and detailed job-specific pre-job briefs.
- Expectations were created and communicated to all site workers for “Procedure Use and Adherence.” Critical steps (i.e. those that are irreversible and consequential) are discussed in pre-job briefs and the specific HU tool(s) for the critical steps are identified and agreed to by the workers to prevent errors. Supervisors have been provided self-inking stamps to help mark the critical steps in procedures.

- Procedure levels of usage were reviewed and several procedures have been adjusted, where appropriate. In some cases, Reference Use procedures were used for operating plant equipment when Continuous Use may have been more appropriate.
- An additional HU tool for workers was added in 2009 to align the station with industry best practices. This tool is “Flagging”, and it involves distinctly marking the correct component with a flagging device to help ensure the worker returns to the correct component. “Pre-Job Briefing” was also made a formal HU tool last year.
- A Human Performance Exposition (EXPO) was held for all site employees, including contractors, prior to Unit 1 Cycle 26 Refueling Outage (1R26). The EXPO contained many booths reinforcing the use of the HU tools, staffed by plant employees, to teach the use of the tools and discuss how specifically to apply them in the field. Dynamic Learning Activities (DLAs) were developed to reinforce correct behaviors and a case study of a large refinery accident where multiple HU barriers were broken was reviewed. The EXPO concluded with a senior manager discussion of the significant takeaways from the day’s activities.
- Site All-Hands meetings were conducted in February and March 2010 where the station’s performance was compared to industry performance. A major focus of the meeting was on human performance improvement, with a 2010 strong employee emphasis on the following:
  - Accountability, Coaching and Behaviors
  - Use of Human Performance Tools
  - Risk Management Principles and Behaviors
  - Procedure Use and Adherence
- Monthly department meetings were started in March 2010 to improve communication of site performance and department improvement focus areas. A common message will be promulgated at each department meeting that emphasizes the site’s number one improvement objective of human performance.
- The Human Performance Improvement Team (HUIT), an employee group which is working to proactively affect human performance, recently promulgated posters of supervisors and individual contributors using human performance tools. This is another step taken to shift the responsibility for use of error reduction tools down to the worker level.
- Greater emphasis has been placed on individual responsibility and accountability in using error reduction practices. As evidenced by an increased number of disciplinary cases, personnel who choose not to use and/or enforce the use of error reduction practices face consequences.
- Continuing Leadership training focused on a review of the coaching tools. Managers then were required to conduct a number of “Coach the Coach” observations.
- Metrics to measure effectiveness include site and department clock reset rate, percent of work order tasks screened for risk, number of significant and noteworthy events per month, number of critical observations per month, and number of risk situations prevented per month.

## **ACTIONS PLANNED TO ADDRESS THE CONCERN**

Additional actions planned and underway to improve performance include the following:

- Accountability, coaching, and reinforcement of the correct behaviors are cornerstones of our Performance Recovery Plan. Response to some recent events included significant measures intended to convey the importance of procedure adherence and the consequences for failure to use the human performance tools.
- An additional Human Performance DLA will be used to communicate management expectations for the use of error reduction practices and the need to improve Prairie Island Human Performance prior to the upcoming Unit 2 Cycle 26 Refueling Outage (2R26). All vendors will be required to attend one of the scheduled four-hour sessions. The DLA will be updated to emphasize lessons learned from the previous HU EXPO. Emphasis will be placed on individual accountability and responsibility, STOP when unsure, and risk avoidance.
- The station continues to improve work package quality through use of a Quality Review Team process, improving work order walk down quality, and use of the Institute of Nuclear Power Operations (INPO) AP-928 and Electric Power Research Institute (EPRI) standards for work management. Management expectations for 100% feedback from workers on completed preventive maintenance (PM) tasks were established. An outside firm has been retained to assist maintenance, planning and engineering supervisors improve their effectiveness over a 41 week period in 2010, by providing specific feedback and coach the coach input.
- Event Review Boards are now being used more frequently for significant plant events. These require the participation of all employees involved in the event, including multiple levels of supervision; not just those personally responsible for causing the event. Event Review Boards were especially helpful in a recent reactivity event attributed to operators who did not perform proper place-keeping and peer checks, and a lifting and rigging event attributed to lapses in formality of communications and rigging roles and responsibilities. Event Review Boards serve to not only capture the facts and lessons learned from events, but also help our workers internalize the consequences and establish higher accountability for the outcomes. They are applied at the Plant Manager's discretion and are considered for all department and site clock reset events.
- As part of Continuing Leadership training, the "Performance Analysis Worksheet" tool will be covered during 2010. This is a tool used to analyze behavior to determine issue resolution and to determine how training, resources, feedback, and consequences contribute to the issue resolution.
- Positive recognition for individuals who identify risk significant activities and/or take actions to avoid and prevent risk is being increased site wide. In addition to the previous Good Catch program, management is now providing recognition and rewards for individuals noted to be using the "STOP When Unsure" tool, as well as those who complete an "I Care" card, which identifies situations where co-workers are coaching each other to take steps to prevent human errors that can cause events or accidents.

## **CURRENT ASSESSMENT OF PERFORMANCE**

Overall site performance is showing signs of improvement, as demonstrated by performance indicator data:

	2008	2009
Site Event Clock Resets	15	10
Lost/Restricted Injuries	6	2
OSHA Recordable Injuries	15	9

Of significance is that the time between clock resets significantly improved at the end of 2009 as compared to the beginning of 2009.

Additionally, the Inadequate Switching and Tagging indicator improved in 2009. The station is now consistently assessing work order tasks for risk, and requiring specific oversight and mitigation measures to be taken for all medium and high risk tasks.

In 2008, due to an error in operating an unlabeled valve, a new management expectation was issued that no safety related valves or plant equipment would be operated without a label. Because of the number of original plant components which had never been labeled, this resulted in a significant effort to label plant equipment. A large number of temporary and permanent tags were attached as components which were identified in course of plant operation.

During refueling outage 1R26, the station hung new labels on 265 previously unlabeled manifold valves in containment, for a total of 2205 manifold valves now newly labeled. The only remaining safety related unlabeled valves are in Unit 2 containment and these valves will be labeled during refueling outage 2R26. Over 1100 new tags were applied during the 1R26 outage, and 300 temporary procedure changes and 2400 permanent procedure changes due to these changes were performed in the last half of 2009.

These results demonstrate a new attitude by employees to "STOP When Unsure" and correct the procedure before proceeding with the work. Management further encouraged the behavior by recognizing workers by name who demonstrated the correct behaviors. As a result, the 1R26 Refueling Outage was completed without a significant, consequential human performance event. These same actions will continue for 2R26.

Although some indicators show improvement, PINGP management is not yet satisfied with the station's performance. Other indicators of human performance, including reactivity events and components out of position, remain flat since 2008 and have not seen similar improvements. Additionally, there have been three site clock resets to date in 2010, based on late identification of missing radioactive sources, loss of key accountability and a reactivity event.

Station management has taken immediate steps to address each of these recent events, is performing causal evaluations on each of these occurrences, and will take the appropriate corrective actions to prevent recurrence of similar problems. These will be added to the current actions in our Performance Recovery Plan. The highest priority for the station is preventing further significant events by maintaining a strong focus on day-to-day human performance. This will be embraced by the entire site leadership team in 2010, both for online and outage performance.

If you have any questions regarding the Performance Recovery Plan, please contact Scott Northard, Performance Recovery Manager at 651-267-7395.