



Northern States Power Company

Prairie Island Nuclear Generating Plant

1717 Wakonade Dr. East
Welch, Minnesota 55089

April 18, 1996

10 CFR Part 2

U S Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

Reply to Notice of Violation (Inspection Report 96002)

Your letter of March 19, 1996, which transmitted Inspection Report No. 96002, required a response to a Notice of Violation. Our response to the violation is contained in the attachment to this letter.

We too were concerned that these events all involved a failure to properly self-check. We believe that the self-checking guideline (discussed in the response) and its associated training will strengthen operators use of this tool. Additionally, we believe the logkeeping and fuel handling process self-assessments (also discussed in the response) will uncover valuable corrective actions which will prevent future errors in these areas.

In this letter we have made new Nuclear Regulatory Commission commitments indicated as the statements in italics.

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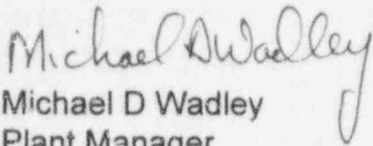
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NORTHERN STATES POWER COMPANY

Please contact Jack Leveille (612-388-1121, Ext. 4662) if you have any questions related to this letter.


Michael D Wadley
Plant Manager
Prairie Island Nuclear Generating Plant

c: Regional Administrator - Region III, NRC
Senior Resident Inspector, NRC
NRR Project Manager, NRC
J E Silberg

Attachment: RESPONSE TO NOTICE OF VIOLATION

RESPONSE TO NOTICE OF VIOLATION

Technical Specification 6.5, Plant Operating Procedures, states, in part, that "detailed procedures, including the applicable check-off lists and instructions, covering areas listed below shall be prepared and followed." Included in the areas listed are Section 6.5.A.1, "Integrated and system procedures for normal startup, operation and shutdown of the reactor and all systems and components involving nuclear safety of the facility," Section 6.5.A.2, "Fuel handling operations," and Section 6.5.C.3, "Preventive or corrective maintenance of plant equipment and systems that could have an effect on nuclear safety."

Contrary to the above:

1. Work Order 9506728 Section 7.1, a procedure for line up of components involving nuclear safety, required tagging of the 1RX disconnect switches in the open position.

On January 9, 1996, an operator failed to tag the 1RX disconnect switches in the open position as required by Work Order 9506728.

2. Administrative Procedure 5AWI 3.10.0, "Control and Operation of Plant Equipment," Step 6.8.2, requires that "All switching and/or valving SHALL be performed in accordance with procedures or approved by the shift supervisor and entered in the appropriate log."

On January 9, 1996, an operator failed to log the opening of two disconnect switches from transformer 1RY, as required by Administrative Procedure 5AWI 3.10.0.

3. Fuel handling procedures D5.2, "Reactor Refueling Operations," and C17, "Fuel Handling System" require that all movements of fuel assemblies and rod cluster control assemblies necessary to complete refueling, are to be accomplished according to the "Fuel Transfer Log."
 - a. On January 28, 1996, an operator placed a rod cluster control assembly in the wrong location in the change fixture by failing to properly follow the "Fuel Transfer Log" while performing fuel handling operations.
 - b. On January 31, 1996, an operator removed the wrong fuel assembly from the reactor by failing to properly follow the "Fuel Transfer Log" while performing fuel handling operations.

This is a Severity level IV Violation (Supplement I).

Example 1

1. **Work Order 9506728 Section 7.1, a procedure for line up of components involving nuclear safety, required tagging of the 1RX disconnect switches in the open position.**

On January 9, 1996, an operator failed to tag the 1RX disconnect switches in the open position as required by Work Order 9506728.

Response to Example 1

This event was described in Unit 1 LER 96-002 submitted February 8, 1996.

Example 1: Reason for the Violation

After locating what was thought to be the 1RX disconnects (actually misreading the label on the 1RY disconnect door) the operator did not adequately apply self-checking to ensure that the correct component had been located. The operator left and returned with the necessary switching gear but did not apply self-checking to ensure the intended action was going to be performed on the correct component. Temporary scaffolding erected under 1RY and 1RX disconnects contributed to the misreading. The scaffolding prevented the operator from getting directly under the disconnect door to read the labels, thus the operator viewed the disconnect doors from the side. Depending on from where the label was viewed, part of the letter Y or X was blocked from view. Also, the top portion of the two letters are similar in appearance.

Example 1: Corrective Steps Taken and Results Achieved

Power was restored to Bus 15 by the operators manually opening Breaker 15-3, Bus 15 Source From 1RY transformer, and allowing Breaker 15-7, Bus 15 Source From Bus CT11, to be automatically closed by the action on the load sequencer. Various 480V loads were restarted manually as required.

The operator was counseled on self-checking.

Improved labels were installed in multiple locations on the outside of all in-plant 4 KV disconnect doors on Unit 1.

The appropriate sections of administrative work instruction 5AWI 3.10.0, Control and Operation of Plant Equipment, were changed to explicitly require 2 person crews to connect/close or disconnect/open any switchgear greater than 480V. Plant personnel were informed of management's expectations regarding this practice.

Additional administrative controls for maintaining safeguard power supplies during reduced inventory operations have been developed. These controls were used at the subsequent reduced inventory condition later in the outage.

Self-checking and pre-job briefing refresher training was conducted with all operations personnel. This was accomplished using the plant video "Right From The Start".

The plant's non-conformance process was used to disposition any concerns associated with Train A 480V equipment that was in service at the time.

Example 1: Corrective Steps to be Taken to Avoid Further Violations

Similar labels on Unit 2 4 KV disconnect doors will also be improved by September 30, 1996.

A self-checking guide has been developed for all of NSP Generation which more clearly defines expectations for self-checking. *These guidelines will be presented to all Prairie Island Operations personnel and all Prairie Island supervisors by September 30, 1996.*

Example 1: Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Example 2

2. **Administrative Procedure 5AWI 3.10.0, "Control and Operation of Plant Equipment," Step 6.8.2, requires that "All switching and/or valving SHALL be performed in accordance with procedures or approved by the shift supervisor and entered in the appropriate log."**

On January 9, 1996, an operator failed to log the opening of two disconnect switches from transformer 1RY, as required by Administrative Procedure 5AWI 3.10.0.

Response to Example 2

Example 2: Reason for Violation

The Unit 1 Lead Nuclear Plant Equipment & Reactor Operator failed to log that the A and B phases of the 1RY disconnect were opened following the inadvertent opening of the C phase. The Unit 1 Shift Supervisor failed to notice that this log entry was not made when he reviewed the log at the end of the shift. The Electrical Log for Unit 1 & 2 did have a log entry at 2308 which stated, "Security Analysis System Setpoints - 345 KV (98%) and no analyzed setpoint for 161 KV due to 1R OOS." To those on shift at the time this entry may have caused them to assume that adequate detail had been logged.

Example 2: Corrective Steps Taken and Results Achieved

The 1RY disconnect was inspected under work order # 9600238. A log entry in the Electrical Log Unit 1 & 2 was made at 1202 on January 13, 1996 stating that the 1R transformer was restored per this work order.

Example 2: Corrective Steps to be Taken to Avoid Further Violations

A self-assessment of the Operations logkeeping process will be completed by September 30, 1996 to ensure that appropriate information is transmitted and that Operations personnel understand and comply with the requirements.

Example 2: Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Example 3a

3. Fuel handling procedures D5.2, "Reactor Refueling Operations," and C17, "Fuel Handling System" require that all movements of fuel assemblies and rod cluster control assemblies necessary to complete refueling, are to be accomplished according to the "Fuel Transfer Log."
- a. On January 28, 1996, an operator placed a rod cluster control assembly in the wrong location in the change fixture by failing to properly follow the "Fuel Transfer Log" while performing fuel handling operations.

Response to Example 3a

Example 3a: Reason for Violation

The operator did not remember that the revolving stop had to be rotated to the horizontal position to allow the carriage assembly to be moved past the stop to the end stop for lining up the East Change Fixture (ECF) with the guide tube. When the gripper hoist reached the full down travel, the operator forgot about checking for slack cable before releasing the RCCA. When the RCC change fixture carriage assembly came up against the revolving stop, the operator assumed that was all the further the carriage had to go in order for the ECF to line up with the guide tube. When moving the carriage assembly, the operator had difficulty seeing the change fixture compartments from the operating location because of the ripples on the water. The operator did not look at the carriage assembly from a different location to ensure it was lined up correctly before starting to lower the RCCA. The operator felt confident on the operation of the RCC Change fixture based on successful operation of the change fixture during past outages. Some of the details involved with the change fixture operation were missed by the operator assigned to this task due to the infrequent performance of fuel handling.

Example 3a: Corrective Steps Taken and Results Achieved

The RCCA was retrieved and moved to the center change fixture position which serves as interim storage for RCCAs during the fuel shuffle.

Refueling was suspended and a briefing conducted. The conclusions from the briefing were communicated to all operations personnel.

RCCA change fixture operations were walked through with a Nuclear Engineer and the first person operating the RCCA change fixture.

Subsequent fuel handling turnovers consisted of a step through of equipment operations by the off-going operator.

The senior reactor operator (SRO) in charge of fuel handling was required to give permission for each of the following actions: Insert a rod into an assembly in the East or West change fixture; Grip and extract a rod from an assembly in the East or West change fixture.

The SRO in charge of fuel handling was required to verify positioning of the change fixture prior to giving permission to insert or extract a rod from an assembly in the change fixture.

A new RCCA was placed into a fresh assembly in the spent fuel pool to take the place of the dropped RCCA. At the end of the fuel shuffle, a dummy fuel assembly was transferred from the spent fuel pool to containment and the dropped RCCA was placed in the dummy assembly. The dummy assembly and RCCA were then returned to the spent fuel pool.

Example 3a: Corrective Steps to be Taken to Avoid Further Violations

A self-assessment of the fuel handling process will be completed to include responsibilities, communications, procedures, and training. The corrective actions identified in this assessment of fuel handling will be incorporated prior to the next scheduled refueling.

Example 3a: Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Example 3b

3. Fuel handling procedures D5.2, "Reactor Refueling Operations," and C17, "Fuel Handling System" require that all movements of fuel assemblies and rod cluster control assemblies necessary to complete refueling, are to be accomplished according to the "Fuel Transfer Log."
- b. On January 31, 1996, an operator removed the wrong fuel assembly from the reactor by failing to properly follow the "Fuel Transfer Log" while performing fuel handling operations.

Response to Example 3b

Example 3b: Reason for Violation

When reading step 46544 of the fuel transfer log core location G01 was misread as G04. This incorrect core location was then communicated to the manipulator crane operator who then positioned the crane at core location G04. Once at this location the manipulator crane position was verified by the SRO as being at the core location previously communicated (G04) to the operator. The manipulator crane position indicated by the indexing system was not compared to the core location stated in the step. When notifying the control room that step 46544 was completed the correct core location (G01) was communicated to the control room operator. From this information the control room operator updated the fuel transfer log and board.

Example 3b: Corrective Steps Taken and Results Achieved

Assembly U-32, in the spent fuel pool, was returned to its original location and assembly S-45 was removed as originally intended. These series of updated moves brought the shuffle back to its original sequence and did so with no adverse effect on core reactivity.

Following the fuel transfer error on January 31, 1996, Operations Management met with the Nuclear Vice President, Plant Manager, Nuclear Engineering, Error Reduction Task Force, Training, and Generation Quality Services personnel. During this meeting the fuel transfer error along with the RCCA change event and the 1RY Disconnect event were analyzed. It was concluded that all three events were caused by an initial inattention to detail which was not caught by either self-checking or a second check. Prior to resuming fuel handling operations the following actions were completed:

1. Do not handle fuel until INPO simulator evaluations are completed.

2. Define the roles of each fuel handling position including the requirements for familiarization, self-checking, and second checking.
3. Define communications requirements.
4. Make some Human Factor Improvements to the Fuel Transfer Log.
5. Define management's expectations for the supervisor's responsibilities in the areas of inattention to detail, self-checking, and second checking.
6. Educate fuel handling supervisors and operators on items 1 through 5.

Example 3b: Corrective Steps to be Taken to Avoid Further Violations

A self-assessment of the fuel handling process will be completed to include responsibilities, communications, procedures, and training. The corrective actions identified in this assessment of fuel handling will be incorporated prior to the next scheduled refueling.

Example 3b: Date When Full Compliance Will Be Achieved

Full compliance has been achieved.