Northern States Power Company
Prairie Island Nuclear Generating Plant
1717 Wakonade Dr. East
Welch, Minnesota 55089

March 23, 1995

10 CFR Part 2
Appendix C

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

Response to Notice of Violation
NRC Inspection Report Nos. 282/94018 and 306/94018(DRP)
Failure to Log RHR Pumps Inoperable During Surveillance of Support Equipment

Your letter of February 21, 1995, which transmitted Inspection Report Nos. 282/94018 and 306/94018(DRP), required a response to the Notice of Violation. Our response to the violation is contained in the attachment to this letter.

In addition to the violation, your letter states that this was the third violation issued in the last 12 months that pertains to problems with essential support systems during maintenance and surveillance activities. Since the violation does not directly address problems with essential support system management, the attached response does not address our actions to manage this issue. Therefore, those actions are discussed in this cover letter.

Essential Support Equipment Management

Background

On August 19, 1993, a violation was cited for allowing both trains of ventilation for the D5/D6 Diesel Generator Building to be out of service for over 15 hours. The violation resulted from our failure to provide operators with adequate guidance to implement the definition of operability relative to essential support equipment. As a result of this event, the following actions were taken:

1. A formal heatup analysis of the D5/D6 building was done.

2. Interim guidance was provided outlining requirements for essential support equipment.

3. Guidance provided in Generic Letter 91-18 was placed in procedures.

4. Training was done.

For further details, see NRC Inspection Report 93015 and our response.

On May 6, 1994, a violation was cited for removing essential support equipment for 480V Bus 120 from service without prior authorization. This violation resulted from our failure to adequately communicate the interim requirements regarding treatment of essential support equipment to plant personnel. As a result of this event, the following actions were taken:

1. The interim guidance from the previous event was placed in a standing procedure, C18.1, Engineered Safeguards Essential Support Equipment.

2. Administrative controls governing work control were revised.

3. Training was done.

4. Those staff positions responsible for authorizing work on critical systems were added to the plant Operations Committee.

For further details, see NRC Inspection Report 94003 and our response.

On October 3, 1994, during preventive maintenance on D6 Diesel Generator, we experienced 2 events in which essential support equipment was improperly removed from service. Cause of the first event was verbal miscommunication between a worker and a Shift Supervisor. Cause of the second event was inadequate review of a work package during its preparation. The causes of these events are different from those that caused the previous violations; it is not likely that corrective actions taken in response to the previous violations would have prevented the October 3, 1994, events. As a result of this event, the following actions were taken:

1. Equipment isolation procedures were reviewed.

2. Instructions governing communications were revised.

3. A project was identified to develop a matrix of essential support system equipment.

For further details, see NRC Inspection Report 94015 and our response.

Work in Progress

The work in determining what equipment is essential support for parent components has been an evolutionary process complicated by other issues that have developed. Numerous room heatup analyses have been performed with ever-changing initial assumptions and initial heat loads in the rooms to assure a bounding case is developed. Additional complications have arisen due to high energy line break issues, reconfiguring the plant safeguards electrical loads on the SBO project, and replacing battery chargers, which also required new analyses. The effort to date is considered a design basis reconstitution activity with implementation being performed as the requirements are identified. The complexity and comprehensive nature of the review makes the real time implementation very involved. We recognize that change management is also an issue and is evolving parallel to the essential support equipment issue.

We have the following broad issues to complete for our management of the essential support equipment issue:

1. Complete matrix of essential support equipment

2. Translate essential support equipment matrix into procedures for use by engineering, operations, etc.

3. Conduct training on essential support equipment requirements for all site groups

In our response we have made the following new Nuclear Regulatory Commission commitments:

SP 1161, Control Room Chilled Water Pump Test, will be revised to address the requirements of C18.1, Engineered Safeguards Essential Support Equipment and the standard procedural steps for LCO entry.

Other Preventive Maintenance and Surveillance procdures will be reviewed for equipment addressed by C18.1 and revised as necessary to address the requirements of C18.1 and LCO entry.

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

Roger O Anderson
Director
Licensing and Management Issues

c: Regional Administrator - Region III, NRC
Senior Resident Inspector, NRC
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Attachment: RESPONSE TO NOTICE OF VIOLATION

RESPONSE TO NOTICE OF VIOLATION

Notice of Violation

During an NRC inspection conducted from December 6, 1994, through January 23, 1995, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the violation is listed below:

Technical Specification 6.5.A requires that detailed written procedures be prepared and followed for operation of the reactor and all systems and components involving nuclear safety of the facility.

Operating Procedure C18.1, paragraph 5.1.4, "Engineered Safeguards Equipment Support Systems," requires that the Unit 1 and Unit 2, Train A residual heat removal (RHR) pumps be declared inoperable if Train A of the safeguards chilled water system is removed from service. Also, procedure C18.1, paragraph 5.1.5, requires that the Unit 1 and Unit 2, Train B RHR pumps be declared inoperable if Train B of the safeguards chilled water system is removed from service.

Contrary to the above, LCOs were not entered per Procedure C18.1 as evidenced by the following examples:

1. On December 19, 1994, No. 21 RHR pump was not declared inoperable when Train A Safeguards Chilled Water System was removed from service for approximately 11 minutes.

2. On December 19, 1994, No. 22 RHR pump was not declared inoperable when Train B Safeguards Chilled Water System was removed from service for approximately 4 minutes.

This is a Severity Level V Violation (Supplement 1) (50-282/94018-01; 50-306/94018-01(DRP)).

Response to Violation

Background

Following is a chronological description of the occurrence:

11/18/94

While performing an engineering review of the safeguards screenhouse ventilation system with respect to single failure criterion, scenarios were proposed where the criterion could not be met due to a non-safeguards, non-diesel-backed power source feeding the starting circuitry of the safegurds screenhouse exhaust fans when automatically started due to a start of 121 Motor-Driven Cooling Water (MDCL) Pump. The scenarios only relate to 121 MDCL

Pump and its support ventilation when 121 MDCL Pump is credited for safeguards operation per Technical Specification (TS) 3.3.D.1.a.

As a result, Technical Specification Interpretation (TSI) 3.3-10 and Temporary Memo (TM) 94-105, Cooling Water System, were issued to clarify Technical Specifications with 121 MDCL Pump as a non-safeguards pump. The TSI and the TM state that 11 & 21 Safeguards Screenhouse Exhaust fans cannot be considered operable for operation of 121 Motor Driven Cooling Water (MDCL) Pump as a safeguards pump. 121 MDCL Pump shall not be considered operable as a safeguards pump but may be considered operable as a non-safeguards pump. TSI 3.3-10 was distributed to the normal locations. The Control Room TSI manual was updated and an orange sticker with "See TSI" placed on the first page of the TS 3.3 section.

12/15/94

Weekly planning meeting was held to review work orders and Surveillance Procedures (SPs) for the upcoming week. From this meeting, a weekly schedule is developed that includes each day of the week. This schedule considers Limiting Conditions for Operation (LCO) requirements, personnel requirements and other conflicts that may interfere with planned maintenance and testing. Weekly Planning Meeting Results identifies all maintenance and SPs that require a planned LCO entry and is reviewed by a Shift Manager and Work Request Authorization Coordinator (WRAC).

12/16/94

Weekly Planning Meeting Results were issued for the week of 12/17/94. On this schedule, 22 Diesel Driven Cooling Water (DDCL) Pump is scheduled to be taken Out of Service (OOS) on 12/19/94 for its annual Preventive Maintenance (PM). SP 1161 was scheduled to be performed on 12/22/94 after 22 DDCL Pump is returned to service. Control Room daily SP schedule sheet for 12/20/94 was not changed to reflect the new scheduled completion date of 12/22/94 for SP 1161.

12/19/94

During the night shift 121 MDCL Pump was lined up to Loop B cooling water header per C35 and TM-94-15 in preparation for taking 22 DDCL Pump OOS. 121 MDCL Pump was not to be considered operable as a safeguards pump per TSI 3.3-10.

- About 0715 22 DDCL Pump was taken OOS for its PM per Work Order (WO) 9405939. A 7-day LCO was entered per T.S.3.3.D.2.A. 22 DDCL Pump LCO entry was logged in the Unit 2 LCO log and 22 DDCL Pump was indicated as OOS on the following turnover sheets: Shift Manager (SM), Units 1 & 2 Shift Supervisors (SS), Unit 2 Lead Plant Equipment Operator (LPEO), & Water Treatment (none listed T.S. reference or time and date by which operability must be restored).

- About 1350 the Daily Planning Meeting was held to formulate the daily work plan for 12/20/94. The daily work plan from this meeting includes emergent work, SPs and work scheduled for that day from the Weekly Planning Meeting Results. This schedule is for that evening starting at 1800 and the following day. SP 1161 was not listed on this daily work plan.

- Later during the day shift an LPEO made a copy of the 12/20/94 daily SP schedule sheet and retrieved copies of all the SPs listed on this schedule sheet. The SPs were then placed on the appropriate unit LPEO's desk in preparation for the oncoming shift. SP 1161 was still listed on this daily SP schedule sheet as being due on 12/20/94.

- About 1800 shift turnover took place. The oncoming Unit 1 SS was told that 22 DDCL Pump was OOS and that 121 MDCL Pump had been lined up for safeguards but could not be considered operable as a safeguards pump. After the turnover, the SS looked at the Daily Work Plan for what needed to be done on the night shift.

- The night crew held their shift meeting after assuming the duty. At this meeting, the crew talked about 22 DDCL Pump being OOS and that 121 MDCL Pump had been lined up to Loop B cooling water header. It was also mentioned that 121 MDCL Pump could not be considered operable as a safeguards pump because of the non-safeguards power supply for the ventilation start but was still operable as a non-safeguards pump.

- Around 2200 the Unit 1 LPEO reviewed SP 1161, Control Room Chilled Water Pump Test, before starting the SP. During this review the LPEO questioned whether the SP should be run while 22 DDCL Pump was OOS. This concern was brought to the attention of the Unit 1 SS. The SM, U-1 SS & U-1 LPEO each reviewed whether the SP should be run with 22 DDCL Pump OOS and after referring to T.S.3.3.D.2.a.(Cooling Water), they each decided it was okay to run SP 1161. When referring to the Tech. Spec. on cooling water pumps they were not aware of the TSI that applied to that part of Tech. Specs. SP 1161 was started shortly after reaching the decision that it was okay to perform.

- The section of the SP for 122 Chiller (Train B) was performed first. Steps of the SP required logging into and out of an LCO per T.S.3.3.A.2.b. for the time that Train B chilled water was isolated to the Train B RHR Pump unit coolers (both units). The LCO was entered for approximately 4 minutes. After completing 122 Chiller, the section for testing 121 Chiller was started. This section also required logging into and out of an LCO per T.S.3.3.A.2.b for the time that Train A chilled water was isolated to the Train A RHR Pump unit coolers (both units). This LCO was entered for approximately 11 minutes. The steps in the SP for logging into the LCO per T.S.3.3.A.2.b. made no reference to entering an LCO for RHR Pumps on both units. LCO entries in the Unit 1 LCO Log were only made for 11(Train A) and 12(Train B) RHR pumps at the time the SP was performed. SP 1161 was completed at 2355.

12/20/94

- At approximately 0630, the Scheduling Specialist was in the Control Room reviewing control board annunciator panels for new work orders issued on annunciator problems during the night. The Scheduling Specialist noticed that a new work order had been issued on 121 Chiller (Train A) annunciator. This apparent problem with a Train A component while Train B safeguards equipment was OOS raised a concern. The specialist talked with the duty Reactor Operator (RO) to find out more about what had happened. The specialist found out that during the night the annunciator problem was identified while performing SP 1161. This information was then passed on to the duty SS and SM who then checked the night shift log entries and found that TS LCO 3.3.D.2.a.1 requirements with 22 DDCL Pump OOS were possibly exceeded when SP 1161 was performed.

Reasons for Violation

Lack of understanding of the TSI associated with the operability condition of 121 MDCL Pump led to the decision that it was acceptable to perform SP 1161.

Failure to follow the daily planned activities also led to the decision to perform SP 1161.

SP 1161, Control Room Chilled Water Pump Test, directed the operator to log into an LCO per TS 3.3.A.2.b which is the LCO for an inoperable RHR pump. The operator logged the appropriate Unit 1 RHR pump inoperable and entered the LCO appropriately for Unit 1 but did not take the appropriate actions for the Unit 2 RHR pumps. The procedure did not specifically identify, by number, the pumps to be declared inoperable, thus contributing to the failure to recognize applicability to the Unit 2 RHR pumps. SP 1161 did not specifically address the C18.1 requirements nor refer to C18.1.

There also was an insufficient degree of attention applied. The operations team didn't recognize that the LCO entry required by the SP prior isolating a train of chilled water made the RHR pumps on both units inoperable.

Corrective Steps Taken and Results Achieved

The violation was corrected by the completion of SP 1161, Control Room Chilled Water Pump Test, which returned the system to service.

About 8 hours after the completion of the surveillance test, the violation was discovered by the questioning attitude of the Scheduling Specialist when he became aware that the surveillance test was performed outside of the intended time period.

Corrective Steps To Avoid Further Violations

SP 1161, Control Room Chilled Water Pump Test, will be revised to address the requirements of C18.1, Engineered Safeguards Essential Support Equipment and the standard procedural steps for LCO entry.

Other Preventive Maintenance and Surveillance procdures will be reviewed for equipment addressed by C18.1 and revised as necessary to address the requirements of C18.1 and LCO entry.

Training on the basis for 121 MDCL Pump inoperability for operations personnel was in progress at the time of this event. The crew that made the error, however, was not scheduled for this training until the following week. Training for all operations personnel has been completed.

Work planning / scheduling output has been changed so that operators are working from only one schedule instead of a daily work schedule and a surveillance schedule. Improvements continue as more conversion to CHAMPS software progresses.

We are considering the following corrective actions:

Finding a better method for identifying Technical Specification subsections that have applicable TSIs.

Implementing a method for informing shift personnel of new TSIs, procedures or information pertinent to the operation of the plant before assuming the duty for the first time after the information has been issued.

Implementing possible improvements to the LCO log.

Date When Full Compliance Will Be Achieved

Full compliance was achieved on December 19, 1994 when the SP 1161, Control Room Chilled Water Pump Test, was completed.