



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

December 15, 2011

Mr. Mark A. Schimmel
Site Vice President
Prairie Island Nuclear Generating Plant
Northern States Power Company, Minnesota
1717 Wakonade Drive East
Welch, MN 55089

**SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT
EVALUATIONS OF CHANGES, TESTS, OR EXPERIMENTS AND
PERMANENT PLANT MODIFICATIONS BASELINE INSPECTION
REPORT 05000282/2011012(DRS); 05000306/2011012(DRS)**

Dear Mr. Schimmel:

On November 18, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications Inspection at your Prairie Island Nuclear Generating Plant. The enclosed inspection report documents the inspection results which were discussed on November 18, 2011, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, two NRC-identified findings of very low safety significance were identified. The findings involved violations of NRC requirements. However, because of their very low safety significance and because the issues were entered into your corrective action program, the NRC is treating these issues as Non-Cited Violations (NCVs) in accordance with Section 2.3.2 of the NRC Enforcement Policy.

If you contest the subject or severity of any NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission – Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Prairie Island Nuclear Generating Plant. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the

M. Schimmel

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Regional Administrator, Region III, and the NRC Resident Inspector at the Prairie Island Nuclear Generating Plant.

In accordance with Title 10, Code of Federal Regulations (CFR), Part 50, Section 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA by A. Dahbur for/

Robert C. Daley, Chief
Engineering Branch 3
Division of Reactor Safety

Docket Nos.: 50-282; 50-306
License Nos.: DPR-42; DPR-60

Enclosure: Inspection Report 05000282/2011012(DRS); 05000306/2011012(DRS)
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos.: 50-282; 50-306

License Nos.: DPR-42; DPR-60

Report No: 05000282/2011012(DRS); 05000306/2011012(DRS)

Licensee: Northern States Power Company, Minnesota

Facility: Prairie Island Nuclear Generating Plant

Location: Welch, MN

Dates: October 31, 2011, through November 18, 2011

Inspectors: George M. Hausman, Senior Reactor Inspector (Lead)
Jasmine A Gilliam, Reactor Inspector
Dariusz Szwarc, Reactor Inspector

Approved by: Robert C. Daley, Chief
Engineering Branch 3
Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000282/2011012(DRS); 05000306/2011012(DRS); 10/31/2011 – 11/18/2011; Prairie Island Nuclear Generating Plant; Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications.

This report covers a two-week announced baseline inspection on evaluations of changes, tests, or experiments and permanent plant modifications. The inspection was conducted by Region III based engineering inspectors. Two findings were identified by the inspectors. The findings were considered Non-Cited Violations (NCVs) of NRC regulations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Cross-cutting aspects were determined using IMC 0310, "Components Within the Cross-Cutting Areas." Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a finding of very low safety significance and an associated NCV of Title 10, Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to check the adequacy of design for flammable gas bottles installed in areas located within the auxiliary building and their impact on safety-related cables and equipment. Specifically, the licensee failed to evaluate how a failure of the flammable gas bottles and a resulting fire or explosion at the installed locations could impact nearby safety-related structures, systems, or components. The licensee entered this issue into their corrective action program to review the placement of the flammable gas bottles.

The inspectors determined that the finding was more than minor because the finding was associated with the Initiating Events cornerstone's attribute of Protection against External Factors (Fire) and affected the cornerstone's objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding was of very low safety significance due to the low fire initiating frequency and the availability of remaining mitigating systems. This finding did not have a cross-cutting aspect because the finding was not representative of current performance. (Section 1R17.2b)

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to promptly correct a condition adverse to quality. Specifically, the licensee failed to submit a license amendment request (LAR) to correct the non-conservative Technical Specification (TS) surveillance requirements in Section 3.8.1 for the emergency diesel generators (EDGs) allowable steady state frequency. The issue was originally identified and entered into the licensee's corrective

action program on September 8, 2006. During this inspection, the licensee entered the finding into their corrective action program to evaluate how to resolve the issue.

The inspectors determined that the finding was more than minor because the finding was associated with the Mitigating Systems cornerstone's attribute of Equipment Performance and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee could not be assured that the design requirements for the EDGs' system loads would operate within the appropriate design specifications if the EDGs were allowed to operate within the non-conservative TS allowable steady state frequency of ≥ 58.8 Hertz (Hz) and ≤ 61.2 Hz. As a result, the licensee established an administrative limit to limit operation of the EDGs to a frequency between 59.5 Hz and 60.5 Hz. The finding was of very low safety significance because it did not result in a loss of operability. The finding had a cross-cutting aspect in the area of human performance, decision-making because the licensee repeatedly delayed submitting the license amendment until a resolution was developed by an industry working group. [H.1 (a)] (Section 4OA2.1b)

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity

1R17 Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications (71111.17)

.1 Evaluation of Changes, Tests, or Experiments

a. Inspection Scope

From October 31, 2011, through November 18, 2011, the inspectors reviewed seven safety evaluations performed pursuant to Title 10, Code of Federal Regulations (CFR), Part 50, Section 59 to determine if the evaluations were adequate and that prior NRC approval was obtained as appropriate. The inspectors also reviewed 12 screenings where licensee personnel had determined that a 10 CFR 50.59 evaluation was not necessary. The inspectors reviewed these documents to determine if:

- the changes, tests, or experiments performed were evaluated in accordance with 10 CFR 50.59 and that sufficient documentation existed to confirm that a license amendment was not required;
- the safety issue requiring the change, tests or experiment was resolved;
- the licensee conclusions for evaluations of changes, tests, or experiments were correct and consistent with 10 CFR 50.59; and
- the design and licensing basis documentation was updated to reflect the change.

The inspectors used, in part, Nuclear Energy Institute (NEI) 96-07, "Guidelines for 10 CFR 50.59 Implementation," Revision 1, to determine acceptability of the completed evaluations, and screenings. The NEI document was endorsed by the NRC in Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments," dated November 2000. The inspectors also consulted Part 9900 of the NRC Inspection Manual, "10 CFR Guidance for 10 CFR 50.59, Changes, Tests, and Experiments."

This inspection constituted seven samples of evaluations and 12 samples of changes as defined in IP 71111.17-04.

b. Findings

No findings of significance were identified.

.2 Permanent Plant Modifications

a. Inspection Scope

From October 31, 2011, through November 18, 2011, the inspectors reviewed seven permanent plant modifications that had been installed in the plant during the last three years. This review included in-plant walkdowns for portions of the modified 11 turbine driven auxiliary feedwater (AFW) pump, the D1/D2 emergency diesel generators (EDGs) and the diesel driven cooling water pump (DDCLP) fuel oil storage tank (FOST) pump motor starter equipment. The modifications were selected based upon risk-significance, safety significance, and complexity. The inspectors reviewed the modifications selected to determine if:

- the supporting design and licensing basis documentation was updated;
- the changes were in accordance with the specified design requirements;
- the procedures and training plans affected by the modification have been adequately updated;
- the test documentation as required by the applicable test programs has been updated; and
- post-modification testing adequately verified system operability and/or functionality.

The inspectors also used applicable industry standards to evaluate acceptability of the modifications. The list of modifications and other documents reviewed by the inspectors is included as an Attachment to this report.

This inspection constituted seven permanent plant modification samples as defined in IP 71111.17-04.

b. Findings

Flammable Gas Bottles Located in the Auxiliary Building

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to check the adequacy of design for flammable gas bottles installed in areas located within the auxiliary building and their impact on safety-related cables and equipment. Specifically, the licensee failed to evaluate how a failure of the flammable gas bottles and a resulting fire or explosion at the installed locations could impact nearby safety-related structures, systems, or components.

Description: The inspectors identified two instances of flammable gas bottles installed on the 715 foot elevation of the auxiliary building near safety-related cables and equipment. A bottle of acetylene was located in the chemistry hot sample lab. That acetylene was used to provide acetylene gas to the internal burner of an atomic absorption analyzer located in the lab. A bottle of 80 percent hydrogen was also located behind a stairwell outside the chemistry hot sample lab. The hydrogen was used in

support of a gas analyzer system and was installed prior to March 13, 1980, as documented in a licensee's letter to the Office of Nuclear Reactor Regulation (NRR).

During the inspectors' walkdowns, the inspectors noticed that the flammable gas bottles were within close proximity of safety-related cables and equipment (e.g., Technical Specification (TS) specified equipment) at each location. The inspectors raised concerns about the locations of the flammable gas bottles with respect to the safety-related cables and equipment located nearby.

The flammable gas bottles present a fire and an explosion hazard. According to Table 2-7.1 of the Society of Fire Protection Engineers (SFPE) Handbook of Fire Protection Engineering (Fourth Edition) acetylene and hydrogen have a lower flammability limit of 2.5 and 4 percent, and an upper flammability limit of 100 and 75 percent, respectively. This means that an acetylene mixture of between 2.5 and 100 percent and a hydrogen mixture of between 4 and 75 percent will burn. The hydrogen bottle had a mixture of 80 percent hydrogen. If the hydrogen were to escape from the bottle, it would dilute with the surrounding atmosphere and fall into the flammable range of between 4 and 75 percent.

The hydrogen and acetylene bottles each had a regulator attached to the discharge. However, if a piece of equipment or some other object were to hit the regulator it could fail, cause a spark, and ignite the flammable gas. A fire from one or more of the flammable gas bottles could damage safety-related cables and an explosion could additionally damage other nearby safety-related equipment.

The licensee could not locate a safety or design evaluation that adequately analyzed the hazards associated with the hydrogen or the acetylene gas bottles. As a result, the inspectors concluded that the licensee failed to check the adequacy of the design for the flammable gas bottles installed and their impact on safety-related cables and equipment. Specifically, the licensee failed to evaluate how a failure of the flammable gas bottles and a resulting fire or explosion at the installed locations could impact nearby safety-related structures, systems, or components.

The licensee entered this issue into their corrective action program (CAP) as CAP 01313606, "Combustible Gas Cylinders May Not be Evaluated Adequately," dated November 17, 2011, to review the placement of the flammable gas bottles. Subsequently, the licensee also issued CAP 01314188, "Compressed Gas Cylinder Storage without 50.59 Process," on November 21, 2011, to document the failure to evaluate the placement of the flammable gas bottles.

Analysis: The inspectors determined that the failure to evaluate the impact of the flammable gas bottles' installed locations near safety-related cables and equipment was contrary to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and was a performance deficiency. The inspectors determined that the finding was more than minor because the finding was associated with the Initiating Events cornerstone's attribute of Protection against External Factors (Fire) and affected the cornerstone's objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown, as well as power operations. Specifically, the installed locations of the flammable gas bottles could have resulted in damage to safety-related cables and equipment if the gas bottles were to ignite or explode.

In accordance with Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 0609.04, "Phase I - Initial Screening and Characterization of Findings," Table 3b, the inspectors determined the finding degraded the fire protection defense-in-depth strategies. Therefore, screening under IMC 0609, Appendix F, "Fire Protection Significance Determination Process," was required. The inspectors determined that the finding impacted the Fire Prevention and Administrative Controls category.

Based on review of IMC 0609, Appendix F, Attachment 2, "Degradation Rating Guidance Specific to Various Fire Protection Program Elements," the inspectors determined the degradation rating to be high because of the flammable gases being more flammable than low flashpoint combustibles and there being a significant fire hazard associated with release of the gases. The Duration Factor was 1.0 based on the duration of the degradation being greater than 30 days per Table 1.4.1, "Duration Factors." An overall fire frequency of 1.3E-3 per year was assigned for the flammable gas bottles based on information from IMC 0609, Appendix F, Attachment 4, "Fire Ignition Source Mapping Information: Fire Frequency, Counting Instructions, Applicable Fire Severity Characteristics, and Applicable Manual Fire Suppression Curves."

The Region III Senior Reactor Analyst used the Prairie Island Standard Plant Analysis Risk (SPAR) Model, Version 8.15, and Systems Analysis Programs for Hands-on Integrated Reliability Evaluations (SAPHIRE), Version 8.0.7.17, to calculate a conditional core damage probability (CCDP) less than 1E-6 conservatively assuming a fire due to failure of the flammable gas bottles that resulted in a plant trip and damage to a safe shutdown division. Based on the above CCDP and frequency values, the risk associated with this finding is very low (Green).

The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.

Contrary to the above, from March 13, 1980, through November 18, 2011, the licensee failed to check the adequacy of design for flammable gas bottles installed within the auxiliary building and their impact on safety-related cables and equipment. Specifically, the licensee failed to evaluate how a failure of the flammable gas bottles and a resulting fire or explosion at the installed locations could impact nearby safety-related structures, systems, or components.

Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as CAP 01313606 and CAP 01314188, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000282/2011012-01(DRS); 05000306/2011012-01(DRS), Flammable Gas Bottles Installed in the Auxiliary Building).

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution

.1 Routine Review of Condition Reports

a. Inspection Scope

From October 31, 2011, through November 18, 2011, the inspectors reviewed fifteen corrective action process documents that identified or were related to 10 CFR 50.59 evaluations and permanent plant modifications. The inspectors reviewed these documents to evaluate the effectiveness of corrective actions related to evaluations of changes, tests, or experiments and permanent plant modifications. In addition, corrective action documents written on issues identified during the inspection were reviewed to verify adequate problem identification and incorporation of the problems into the corrective action system. The specific corrective action documents that were sampled and reviewed by the inspectors are listed in the attachment to this report.

b. Findings

Failure to Correct a Condition Adverse to Quality

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to promptly correct a condition adverse to quality. Specifically, the licensee failed to submit a license amendment request (LAR) to correct the non-conservative Technical Specification (TS) surveillance requirements in Section 3.8.1 for the emergency diesel generators' (EDGs') allowable steady state frequency. The issue was identified and entered into the licensee's corrective action program on September 8, 2006.

Description: The licensee's TS surveillance requirements in Section 3.8.1 stated, "Verify each DG [Diesel Generator] starts from standby conditions and achieves steady state voltage ≥ 3740 V [Volts] and ≤ 4580 V, and frequency ≥ 58.8 Hz [Hertz] and ≤ 61.2 Hz." The inspectors found that the licensee's EDG loading calculations ENG-EE-018, "Diesel Generator Sequence Loading for an SI Event Concurrent with Loss of Offsite Power (LOOP) for D1, D2, D5, D6," ENG-EE-021, "Diesel Generator Steady State Loading for an SI Event Concurrent with Loss of Offsite Power (LOOP) for D1, D2, D5, D6," and ENG-EE-045, "Diesel Generator Steady State Loading for a LOOP Coincident with an SBO [Station Blackout]," assumed/established an administrative limit for the EDGs' steady state frequency with a range of 59.5 Hz to 60.5 Hz. The administrative limit was established because if the EDGs were allowed to operate within the non-conservative TS allowable steady state frequency range of ≥ 58.8 Hz and ≤ 61.2 Hz, the design requirements for the EDGs' system loads could not be assured.

On September 8, 2006, the licensee identified the non-conservative TS and entered the issue into their corrective action program as CAP 01049042, "Evaluation of Impacts from EDG Frequency Variation." The licensee performed an operability recommendation as part of that CAP and implemented the EDG frequency compensatory measure to limit operation of the EDGs to between 59.5 Hz and 60.5 Hz. In that CAP, the licensee also

determined that an amendment would have to be submitted to the NRC in order to correct the non-conservative TS.

After identifying this issue in 2006, the licensee observed that resolution of the non-conservative TS values for the EDGs' steady state frequency and voltage were being pursued by other utilities due to receiving NCVs from the NRC. As a result, the licensee subsequently initiated discussions with the Pressurized Water Reactor Owners Group (PWROG) and decided to postpone submitting an LAR for the EDGs' steady state frequency range until a resolution was developed by the industry. The licensee stated that they considered the non-conservative TS value for the EDGs' steady state frequency range an industry-wide issue for which the PWROG would pursue a generic resolution for the PWR plants. However, after discussions with NRR, the inspectors concluded that the non-conservative TS value for the EDGs' steady state frequency was to be treated on a plant specific basis, since no approved generic resolution presently exists.

The inspectors' review of CAP 01090396, "Inadequate EDG Surveillance Test Procedures," Revision 0, dated May 1, 2007, which was issued to address the non-conservative TS steady state voltage and initiate action to submit an LAR to revise the EDGs' steady state voltage range, identified the due date to complete this action as June 5, 2013. The licensee stated that the PWROG met with the NRC several times to discuss a proposed resolution for the non-conservative TS value for the EDGs' steady state voltage. During this inspection, the licensee stated they were in the final stages of submitting an LAR to correct the non-conservative TS value for the EDGs' steady state voltage.

The licensee stated that they did not initiate an LAR to correct the non-conservative TS value for the EDGs' steady state frequency because the resolution currently proposed by the PWROG did not specify a TS steady state frequency range. The inspectors concluded that the licensee was well aware that a condition adverse to quality, such as the non-conservative TS value for the EDGs' steady state frequency, must be promptly corrected. Therefore, given the time period following discovery (i.e., September 8, 2006, until November 18, 2011) the licensee should have submitted an LAR to address the non-conservative TS value for the EDGs' steady state frequency.

The NRC provided guidance for improper or inadequate TS in Administrative Letter 98-10. Imposing administrative controls in response to improper or inadequate TS was an acceptable short-term corrective action. However, the NRC expected that, following the imposition of administrative controls, an amendment to the TS would be submitted in a timely fashion. Therefore, the licensee should not have relied on the administrative controls limiting EDG operation to between 59.5 Hz and 60.5 Hz for a period of five years to address the non-conservative TS surveillance requirements in Section 3.8.1.

The licensee entered this issue into their corrective action program as CAP 01313783, "EDG Loading Calculations Do Not Consider EDG Operation at 61.2 Hz," dated November 18, 2011, to document the inadequate calculations and CAP 01314190, "Lack of Timely Response to Non-Conservative Technical Specification," dated November 21, 2011, in order to evaluate how to resolve the issue.

Analysis: The inspectors determined that failure to correct the non-conservative TS surveillance requirements in Section 3.8.1 in a timely fashion was contrary to 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," and was a performance deficiency. Specifically, the licensee failed to submit a license amendment to correct the non-conservative TS value for the EDGs' allowable steady state frequency since entering the issue into their corrective action program on September 8, 2006.

The finding was more than minor because the finding was associated with the Mitigating Systems cornerstone's attribute of Equipment Performance and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee could not be assured that the design requirements for the EDGs' system loads would operate within the appropriate design specifications if the EDGs were allowed to operate within the non-conservative TS allowable steady state frequency of ≥ 58.8 Hz and ≤ 61.2 Hz. As a result, the licensee established an administrative limit to limit operation of the EDGs to a frequency between 59.5 Hz and 60.5 Hz.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process" Attachment 0609.04, "Phase I - Initial Screening and Characterization of findings," Table 4a, "Characterization Worksheet for IE, MS, and BI Cornerstones." The inspectors determined that the cornerstone best reflecting the dominant risk was the Mitigating Systems cornerstone. The inspectors confirmed that the finding did not result in a loss of operability or functionality per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment," because of the administrative procedures already in place (i.e., limiting operation of the EDGs between 59.5 Hz and 60.5 Hz). Therefore, this finding was of very low safety significance (Green).

This finding has a cross-cutting aspect in the area of human performance, decision making because the licensee did not formally define the authority and roles for decisions affecting nuclear safety and as a result did not take the necessary steps to resolve a non-conservative TS in a time manner. Specifically, the licensee made a decision to delay resolving the non-conservative TS until the PWROG came up with a solution.
[H.1 (a)]

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Contrary to the above, from September 8, 2006, until November 18, 2011, the licensee failed to promptly correct a condition adverse to quality. Specifically, the licensee failed to submit an LAR to correct the non-conservative TS surveillance requirements in Section 3.8.1 for the EDGs' allowable steady state frequency.

Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as CAP 01313783 and CAP 01314190, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000282/2011012-02(DRS); 05000306/2011012-02(DRS), Failure to Correct a Condition Adverse to Quality).

4OA6 Meetings

.1 Exit Meeting Summary

On November 18, 2011, the inspectors presented the inspection results to Mr. Mark A. Schimmel and other members of the licensee staff. The licensee personnel acknowledged the inspection results presented and did not identify any proprietary content. The inspectors confirmed that all proprietary material reviewed during the inspection was returned to the licensee staff.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Anderson, Regulatory Affairs Manager
P. Anderson, Fleet Director of Licensing/Regulatory Affairs
M. Birkel, Compliance Engineer
J. Boesch, Plant Engineering Supervisor
J. Connors, Fleet Design Engineering Supervisor
S. DiPasquale, Licensing Engineer
S. Ford, Mechanical Design/Civil Supervisor
B. Horner, Reactor System Engineer
P. Huffman, Site Engineering Director
J. Lash, Nuclear Oversight Manager
S. McCall, Engineering Design Manager
S. Northhard, Plant Manager
L. Pflingsten, Administrative Support
M. Schimmel, Site Vice President
D. Vincent, Senior Project Manager
K. Vincent, Regulatory Programs Supervisor
B. Wegner, Mechanical Design/Civil Engineer
H. Wike, Electrical/I&C Design Supervisor

Nuclear Regulatory Commission

K. Stodter, Senior Resident Inspector
P. Zurawski, Resident Inspector

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000282/2011012-01(DRS); 05000306/2011012-01(DRS)	NCV	Flammable Gas Bottles Installed and/or Stored in the Auxiliary Building (Section 1R17.2b)
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05000282/2011012-02(DRS); 05000306/2011012-02(DRS)	NCV	Failure to Correct a Condition Adverse to Quality (Section 4OA2.1b)
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Closed

05000282/2011012-01(DRS); 05000306/2011012-01(DRS)	NCV	Flammable Gas Bottles Installed and/or Stored in the Auxiliary Building (Section 1R17.2b)
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05000282/2011012-02(DRS); 05000306/2011012-02(DRS)	NCV	Failure to Correct a Condition Adverse to Quality (Section 4OA2.1b)
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Discussed

None.

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

10 CFR 50.59 EVALUATIONS

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
1025	D104.1, Zebra Mussel Treatment	April 13, 2010
1062	Revise Excessive Heat Removal Due to FW Sys Malfunction Analysis in USAR	April 28, 2009
1077	Removal of NRC Commitments 0001028 and 0001029 for Non-Intrusive RCS Level Indication During Reduced Inventory Ops	April 19, 2010
1079	Strategic H ₂ O Chemistry Plan for PINGP Pri Sys Chemistry	May 25, 2010
1084	Response Time for R-11 Particulate Rad Monitor to Leaks of 1.0 gpm and 0.2 gpm	January 11, 2011
1085	Man Actions Required to Maintain Batt Rm Temp	January 21, 2011
1088	AFW Increased Flow to SG Due to Recirc Line Flowmeter Install	May 20, 2011

10 CFR 50.59 SCREENINGS

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
2931	EC9451 Electrical/Setpoint Calculation	December 17, 2008
3208	D5/D6 FOS Requirements and D1/D2 and DDCLP FOS Capacity	0
3335	S&W to Complete New EQ Vital Area Bounding Rad Environmental Calc and Analysis for CS Pump Rm	November 24, 2009
3346	Update AFW Surveillance Procedures to Incorporate Bearing Temperature Limits for Motor Bearing Limits	December 22, 2009
3372	Revise Max Batt Rm Temperature Value	December 23, 2009
3442	Update Batt Charger Calc's ENG-EE-001, 002, 003, and 004	May 17, 2010
3627	Closure of RHR to Letdown MOVs During LOC Inventory	November 15, 2010
3659	EC7776 - Revise DG Loading Analysis ENG-EE-021	December 3, 2010
3685	CST Min Level to Restart AFPs Changed to 10,000 gal	February 10, 2011
3688	USAR Change Previously Made by Input Item 94-203	February 5, 2011
3692	Install Orifice Flowmeter on 11TDAFW Pump Recirc Flow Path Downstream of Existing Breakdown Orifice	June 3, 2011
3768	11TDAFW Pump Min Recirc Flowmeter Uncertainty	May 27, 2011

CALCULATIONS

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
12400604-UR(B)-006	Bounding Rad Environment for Elect EQ and Post LOCA Vital Area Access Applicable for Current Operation with OFA Fuel/Future Operation with HB Fuel and the MUR Uprate (Proprietary)	0
12400604-UR(B)	EQ Rad Levels 24 Hours Post-Accident in CS Pump Rm	0

CALCULATIONS

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
-007	and 15 day Post-Accident on EL 755' of Aux Bldg (Proprietary)	
CA-2008-07030	FOST Sulfur Additive (D5/D6)	1
ENG-EE-001	11 Batt Charger Sizing Calculation	2A
ENG-EE-003	21 Batt Charger Sizing Calculation	2A
ENG-EE-018	DG Sequence Loading for SI Event Concurrent with LOOP for D1, D2, D5, D6	5
ENG-EE-021	DG Steady State Loading for SI Event Concurrent with LOOP for D1, D2, D5, D6	5
ENG-EE-045	DG Steady State Loading for LOOP Coincident with SBO	5
ENG-ME-020	D1/D2 and DDCLP FOS Capacity, Rev 2	January 14, 2008
ENG-ME-066	D5/D6 FOS Requirements, Rev 4	May 28, 2009
ENG-ME-293	Safety-related Tank Usable Volume, Rev 4B	November 19, 2010
ENG-ME-576	AFW Pump Acceptance Criteria	2
ENG-ME-757	Turbine Building Rm Heat-Up Output Analysis	0
M-379-FO-001	Determine DG FOS Requirements [D5/D6], Rev 2 (Fluor Daniel Calc)	July 22, 1992
SPC-AF-006	AFW Pump Min Recirc Flowmeter Uncertainty	May 25, 2011
SPC-EP-065	Unit 1 RWST Level Control Rm Indication Loop 1L-920	0
SPC-EP-099	Unit 1 EOP Parameters	0

CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED DURING INSPECTION

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
01311298	Calibration Gas Bottles 121 H ₂ RCMBNR Past Exp.	November 2, 2011
01311299	Left 8.5 percent H ₂ Cal Gas Bottle 121 H ₂ RCMBNR Regulator OOS	November 2, 2011
01311417	Fuel Oil Specification and Consumption Issues	November 3, 2011
01311451	XH-74-16 Contains No ID Number on the Drawing	November 3, 2011
01311464	Typos Identified in 50.59 Screening No. 3534 Rev 0	November 3, 2011
01312130	ENG-ME-094 Missing Some Combustibles	November 8, 2011
01312724	SR Power / Control Cables Supporting NSR Loads	November 11, 2011
01313604	Question Regarding USAR Tables Related to EDG Rating	November 17, 2011
01313606	Combustible Gas Cylinders May Not Be Eval Adequately	November 17, 2011
01313658	Typo Found in SP1001C	November 17, 2011
01313744	Boron Concentration Issues in RWST Instrumentation	November 17, 2011
01313783	EDG Loading Calcs Do Not Consider Operation at 61.2 Hz	November 18, 2011
01314188	Compressed Gas Cylinder Storage Without 50.59 Process	November 21, 2011
01314190	Lack of Timely Response to Non-Conservative Tech Spec	November 21, 2011

CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
01049042	Evaluation of Impacts from EDG Frequency Variation	September 8, 2006

CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
01055847	Evaluate NRC IN 2006-22, New Ultralow Sulfur Fuel	October 16, 2006
01090396	Inadequate EDG Surveillance Test Procedures, Revision 0	May 1, 2007
01090847	Min Fuel Oil Inventory for Unit 1 with EDG at Max Frequency	May 3, 2007
01123200	Revise USAR Due to Revs to ENG-EE-021, -045, -018	January 09, 2008
01132098	11 TDAFW Pump was Stopped Due to Turbine Outboard Bearing High Temperature of 220 Degrees	March 23, 2008
01162476	Impact of New S&W Radiological Analysis on the EQ Program	January 15, 2008
01204023	Update SP1100 Rev 76 Add Motor Driven Bearing Temp Limits	October 25, 2009
01204033	Update SP1101 Rev 50 Add Motor Driven Bearing Temp Limits	October 25, 2009
01209434	Min/Max Batt Rm Temperature Not Correct on Site Docs	December 04, 2009
01214555	Batt Charger Calc Inputs Outdated and Non-Conservative	January 20, 2011
01263345	OPR 1233935-01, Diesel Fuel Oil, Needs Improvement	December 17, 2010
01265904	Batt Rm Heat-up Did Not Consider Historical Information	January 11, 2011
01310238	Unit 1 Fuel Oil Calculation Error Found in Plant Records	October 27, 2011
01310428	Trend in Lack of Understanding of Comp Measures/50.59	October 28, 2011

DRAWINGS

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
XH-74-11	Unit 1 General Plan for 26' x 75' High Flat Roof Tanks [RWST] for Northern States Power Co at Prairie Island, Minnesota	2
XH-74-29	Unit 2 General Plan for 26' x 75' High Flat Roof Tanks [RWST] for Northern States Power Co at Prairie Island, Minnesota	1

MODIFICATIONS

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
12252	Addition of Di-Tert Butyl Di Sulfide to Diesel Fuel Oil Tanks	2
15786	Update Batt Charger Calculations ENG-EE-001, 002, 003 and 004 per AR 01214555	May 11,2010
15988	Relocate DDCLP FOST Pump Motor Starter Equipment	January 6, 2011
17465	Flowmeter on 11 TDAFW Pump	0

OPERABILITY RECOMMENDATIONS(OPRs)

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
1263345-01	Diesel Fuel Oil Needs Improvement	4

PROCEDURES

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
C20.16 AOP1	Powering Batt Rm/TSC Cooling from D3 Following LOOP	5
C37.15	Batt Rm Cooling Sys	14
C47010-0103	Alarm Response Procedure	43

PROCEDURES

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
C47010-107	Alarm Response Procedure	45
H30	Fuel Oil Program	8
TCR030F	Engineered Safeguards Equipment Support Systems	30

REFERENCES

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
NSP Letter	January 1, 1980, Lessons Learned Implementation Additional Information	March 13, 1980

WORK ORDERS(WOs)

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
407566	Relocate 121 DSL CLG WTR Pump Oil Starter per EC15988	October 11, 2010
407567	Relocate 122 DDCLP FOST XFER Pump Motor Starter per EC15988	October 16, 2010

WORK REQUESTS(WRs)

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
00073629	Calibration Gas Bottles 121 H ₂ RCMBNR Past Exp.	November 2, 2011
00073630	Left 8.5 percent H ₂ Cal Gas Bottle 121 H ₂ RCMBNR Regulator OOS	November 2, 2011

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AFP	Auxiliary Feedwater Pump
AFW	Auxiliary Feedwater System
AR	Action Request
ATTN	Attention
CAP	Corrective Action Program
CCDP	Conditional Core Damage Probability
CFR	Code of Federal Regulations
CLG	Cooling
CS	Containment Spray
CST	Condensate Storage Tank
DDCLP	Diesel Driven Cooling Water Pump
DG	Diesel Generator
DPR	Demonstration Power Reactor
DRP	Division of Reactor Project
DRS	Division of Reactor Safety
DSL	Diesel
EC	Engineering Change
EDG	Emergency Diesel Generator
EOP	Emergency Operating Procedure
EQ	Equipment or Environmental Qualification
FOS	Fuel Oil Storage
FOST	Fuel Oil Storage Tank
FW	Feedwater
gpm	Gallons per Minute
I&C	Instrumentation and Control
IMC	Inspection Manual Chapter
IN	Information Notice
IP	Inspection Procedure
IR	Inspection Report
LAR	License Amendment Request
LOC	Loss of Coolant
LOCA	Loss of Coolant Accident
LOOP	Loss of Offsite Power
MOV	Motor Operated Valve
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NSP	Northern States Power
NSR	Non-Safety-Related
NRC	U.S. Nuclear Regulatory Commission
NUREG	NRC Technical Report Designation
OA	Other Activities
OOS	Out-of-Service
OPR	Operability Recommendation

LIST OF ACRONYMS USED

PARS	Public Available Records System
PINGP	Prairie Island Nuclear Generating Plant
Pri	Primary
PWROG	Pressurized Water Reactor Owners Group
RCMBNR	Recombiner
RCS	Reactor Coolant System
RHR	Residual Heat Removal
Rm	Room
S&W	Stone and Webster
SBO	Station Blackout
SDP	Significance Determination Process
SFPE	Society of Fire Protection Engineers
SG	Steam Generator
SI	Safety Injection
SP	Surveillance Procedure
SR	Source Range
Sys	System
TD	Turbine Driven
TDAFW	Turbine Driven AFW
TS	Technical Specification
TSC	Technical Support Center
USAR	Updated Safety Analysis Report
WTR	Water
WO	Work Order
WR	Work Request
XFER	Transfer

M. Schimmel

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Sincerely,

/RA by A. Dahbur for/

Robert C. Daley, Chief
Engineering Branch 3
Division of Reactor Safety

Docket Nos.: 50-282; 50-306
License Nos.: DPR-42; DPR-60

Enclosure: Inspection Report 05000282/2011012(DRS); 05000306/2011012(DRS)
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