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August 17, 2016

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U.S. Nuclear Regulatory Commission
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Prairie Island Nuclear Generating Plant Unit 1
Docket Number 50-282
Renewed Facility Operating License No. DPR-42

Prairie Island Nuclear Generating Plant, Unit 1, Seventh Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) (TAC No. MF0834)

References:

1. NRC Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012 (ADAMS Accession No. ML12054A736).

2. NSPM Letter (L-PI-12-092) to NRC, "Initial Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated October 29, 2012 (ADAMS Accession No. ML12305A287).

3. NSPM Letter (L-PI-13-007) to NRC, "Prairie Island Nuclear Generating Plant's Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated February 26, 2013 (ADAMS Accession No. ML13060A379).

4. NSPM Letter (L-PI-13-080) to NRC, "Prairie Island's First Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated August 26, 2013 (ADAMS Accession No. ML13239A094).

5. NSPM Letter (L-PI-14-018) to NRC, "Prairie Island Nuclear Generating Plant's Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated February 26, 2014 (ADAMS Accession No. ML14057A771).

6. NSPM Letter (L-PI-14-104) to NRC, "Prairie Island Nuclear Generating Plant's Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), CORRECTED" dated October 20, 2014 (ADAMS Accession No. ML14295A761).

7. NSPM Letter (L-PI-14-078) to NRC, "Prairie Island Nuclear Generating Plant's Third Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA12049) (TAC Nos. MF0834 and MF0835)," dated August 25, 2014 (ADAMS Accession No. ML14237A512).

8. NSPM Letter (L-PI-15-021) to NRC, "Prairie Island Nuclear Generating Plant's Fourth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) (TAC Nos. MF0834 and MF0835)," dated February 26, 2015 (ADAMS Accession No. ML15057A323).

9. NSPM Letter (L-PI-15-065) to NRC, "Prairie Island Nuclear Generating Plant's Fifth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) (TAC Nos. MF0834 and MF0835)," dated August 25, 2015 (ADAMS Accession No. ML15237A403).

10. NSPM Letter (L-PI-16-001) to NRC, "Notification of Compliance with NRC Order EA-12-049, 'Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,' Prairie Island Nuclear Generating Plant Unit 2 (TAC No. MF0835)," dated January 14, 2016 (ADAMS Accession Nos. ML16014A754, ML16014A755, and ML16014A756).

11. NSPM Letter (L-PI-16-007) to NRC, "Prairie Island Nuclear Generating Plant, Unit 1, Sixth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) (TAC No. MF0834)," dated February 24, 2016 (ADAMS Accession No. ML16057A061).

On March 12, 2012, the NRC staff issued Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," (Reference 1) to all NRC power reactor licensees and holders of construction permits in active or deferred status. Reference 1 was immediately effective and directs Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy, to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities following a beyond-design-basis external event for the Prairie Island Nuclear Generating Plant (PINGP). Specific requirements are outlined in Attachment 2 of Reference 1.

Pursuant to Condition C of Section IV, Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (ISG), an overall integrated plan, and status reports at six-month intervals following the submittal of the overall integrated plan. Reference 2 provided the PINGP initial 60-day status report regarding mitigation strategies. Reference 3 provided the overall integrated plan for PINGP. The first, second, third, fourth, fifth, and sixth six-month status reports were provided in References 4, 5, 7, 8, 9, and 11, respectively. Reference 6 provided a correction to the second six-month status report (Reference 5).

The purpose of this letter is to provide the seventh six-month status report pursuant to Section IV, Condition C.2 of Reference 1, which delineates the progress made in implementing the requirements of the Reference 1 Order. The enclosed report provides an update of milestone accomplishments since the previous six-month status report (Reference 11) was submitted, including changes to the compliance method, schedule, or the need and basis for relief, if any. This update is applicable to PINGP Unit 1 only. The PINGP Unit 2 has completed the Order requirements and has reported compliance to the Commission (Reference 10).

Please contact Lynne Gunderson, Licensing Engineer, at 651-267-7421, if additional information or clarification is required.

Summary of Commitments

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

I declare under penalty of perjury that the foregoing is true and correct.

Executed on August 17, 2016.

Scott Northard

Scott Northard
Acting Site Vice President, Prairie Island Nuclear Generating Plant
Northern States Power Company - Minnesota
Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Prairie Island Nuclear Generating Plant, USNRC
Resident Inspector, Prairie Island Nuclear Generating Plant, USNRC

Prairie Island Nuclear Generating Plant, Unit 1

Seventh Six-Month Status Report for Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

1.0 Introduction

The Nuclear Regulatory Commission (NRC) issued Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," on March 12, 2012 (Reference 1). The Order required licensees to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities following a beyond-design-basis external event. The Order required licensees to submit an overall integrated plan (OIP), including a description of how the requirements in Attachment 2 of the Order would be achieved. Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy, submitted the OIP (Reference 2) for the Prairie Island Nuclear Generating Plant (PINGP) on February 26, 2013. In accordance with Section IV, Condition C.2 of Reference 1, the first, second, third, fourth, fifth, and sixth six-month status reports were provided in References 3, 4, 5, 8, 9, and 11, respectively. Reference 12 provided a correction to the second six-month status report (Reference 4).

This Enclosure provides the seventh six-month status report. This status report includes an update of milestone accomplishments since submittal of the last status report including changes to the compliance method, schedule, or the need and basis for relief, if any. PINGP Unit 2 has completed the requirements of Order EA-12-049 and has reported compliance to the Commission (Reference 10). Therefore, Unit 2 status is no longer included in this report and this update is applicable only to Unit 1.

2.0 Milestone Accomplishments

The original milestone schedule with target dates was provided in Attachment 2 of the Reference 2 Enclosure. No milestones have been completed since the last six-month status (Reference 11). This report reflects status as of July 29, 2016.

3.0 Milestone Schedule Status

The following table provides an update of the milestone schedule for the OIP, which has been updated to show only Unit 1 compliance status. This table reflects status as of July 29, 2016. This table includes a brief milestone status and the revised target date if

that target date has changed. Target dates updated for Unit 1 Compliance are noted in the "Revised Target Date" Column. The target dates are planning dates subject to change as design and implementation details are developed. There were no schedule changes for Unit 1 since the previous status update (Reference 11).

Table – Overall Integrated Plan Milestone Schedule			
Milestone	**Target Completion Date**	**Activity Status**	**Revised Target Date**
Submit 60 Day Status Report	October 2012	Complete	
Submit Overall Integrated Plan	February 2013	Complete	
Submit First Six-Month Status Update	August 2013	Complete	
Commence Engineering Modification Design – Phase 2 & 3 (Unit 1)	September 2013	Complete	
Submit Second Six-Month Status Update	February 2014	Complete	
National SAFER Response Center Operational	August 2015	Complete	
Procure Equipment (Unit 1)	Fall 2016, prior to startup from Unit 1 Implementation Outage	Started	
Submit Third Six-Month Status Update	August 2014	Complete	
Commence Installation for Online Modifications – Phase 2 and 3 (Unit 1)	January 2016	Complete	
Implement Storage	November 2015	Complete	

Table – Overall Integrated Plan Milestone Schedule			
Milestone	**Target Completion Date**	**Activity Status**	**Revised Target Date**
Issue Maintenance Procedures	Fall 2015, prior to startup from Unit 2 Implementation Outage	Complete	
Implement Training (Unit 1)	Fall 2016, prior to startup from Unit 1 Implementation Outage	Started	
Submit Fourth Six-Month Status Update	February 2015	Complete	
Submit Phase 2 Staffing Assessment	Four months prior to 2R29	Complete	
Implement Communication Recommendations	Four months prior to 2R29	Complete	
Issue Procedures updated for FLEX strategies (Unit 1)	Fall 2016, prior to startup from Unit 1 Implementation Outage	Started	
Submit Fifth Six-Month Status Update	August 2015	Complete	
Submit Sixth Six-Month Status	February 2016	Complete	
Unit 1 Implementation Outage	Fall 2016	Not Started	
Validation Walk-throughs	Fall 2016	Started	
Submit Seventh Six-Month Status	August 2016	Complete with this submittal	
Submit Completion Report	December 2016	Not Started	

4.0 Proposed Changes to Compliance Method

There is one change planned to the compliance method since the last six-month status report (Reference 11). This planned change is related to the transition to NEI 12-06, Revision 2, for final compliance of both units. The transition to NEI 12-06, Revision 2, allows the elimination of spent fuel pool (SFP) spray from the FLEX strategies.

- Compliance Change – Removal of SFP Spray from FLEX Strategies

  Background:

  The original OIP (Reference 2) does not discuss SFP spray. Table D-3 of NEI 12-06, Revision 0 (Reference 13), required a minimum of 250 gpm of spray per unit, consistent with 10 CFR 50.54(hh)(2). NSPM's original strategy relied on the B.5.b pumps (10 CFR 50.54(hh)(2)) to meet the Table D-3 requirement.

  During the NRC FLEX audit, the NRC questioned the ability of the B.5.b pumps to deliver 500 gpm under low river level conditions (downstream dam failure due to a seismic event). The NRC audit report (Reference 18) documented the NRC question in SE.16 and requested an updated strategy or basis for an alternative to the SFP spray provisions of NEI 12-06. Reference 10 provided the response to SE.16 and indicated a change to PINGP's FLEX strategies to rely on a submersible pump supplying a SG/SFP make-up pump to supply both SG makeup and SFP spray. This change in FLEX strategies also impacted the response to CI 3.2.2.A, which in part discussed use of the B.5.b equipment for the original SFP strategy. An updated CI 3.2.2.A response was provided that indicated changes in the FLEX SFP strategy.

  NEI 12-06, Revision 2 (Reference 14), was issued in December 2015 and removed the requirement for SFP spray. However, the NRC's endorsement of Revision 2 (Reference 15) retained the requirement for SFP spray unless SFP integrity is demonstrated as part of the seismic hazard reevaluation called for in the March 12, 2012, request for information under 10CFR 50.54(f), Near-Term Task Force (NTTF) Recommendation 2.1 "Seismic" (Reference 16). For the PINGP site, the NRC concluded that the reevaluated seismic hazard is bounded by the plant's existing design-basis safe shutdown earthquake in the 1 to 100 Hz range (Reference 17). No further responses or regulatory actions are required for PINGP in regard for Reference 16. Based on the NRC staff conclusion, a seismic SFP evaluation is not merited for PINGP.

  Compliance change:

  For the PINGP site, SFP spray is no longer required for the FLEX strategies to meet EA-12-049 and is removed from the strategies. This is based on:

  1. the removal of SFP spray requirements in NEI 12-06, Revision 2,

2. the NRC endorsement of NEI-12-06, Revision 2, with the condition of the SFP integrity demonstration for elimination of SFP spray, and
3. the PINGP SFP integrity demonstration by the existing design basis safe shutdown earthquake bounding the seismic hazard reevaluation.

NSPM proposes to remove all discussion and actions associated with SFP spray from the PINGP FLEX strategies. This proposed change is aligned with NEI 12-06, Revision 2, and with the limitations of the recent endorsement of Revision 2 by NRC. Therefore, NSPM will remain in compliance with the Order requirements through application of the NEI endorsed guidance.

This proposed change affects both the Unit 1 and Unit 2 FLEX strategies (Note: Unit 2 was declared compliant with the FLEX Order in late 2015). NSPM has formally responded to SE.16 and CI 3.2.2.A in Reference 10 and will provide updated responses in the final compliance letter. Additionally, Audit Question (AQ) 33 provided SFP strategies and was closed in the SE Tracker during the audit. The removal of the SFP spray does not affect the closure of AQ 33.

5.0 Need and Basis for Relief from the Requirements of the Order

NSPM expects to comply with the Order implementation date and requirements and no relief is required at this time.

6.0 Open Items from Overall Integrated Plan and Interim Staff Evaluation

NSPM did not identify any open items in the PINGP mitigating strategies OIP. The NRC Interim Staff Evaluation (ISE) was issued on February 27, 2014 (Reference 6). The NRC did not identify any open items in the ISE. Closure of the ISE confirmatory items will be completed as part of the NRC's audit process, as described in Reference 7.

7.0 Potential Interim Staff Evaluation Impacts

The ISE (Reference 6) was reviewed and the following sections are potentially impacted by the change in compliance method as described in Section 4.0 above:

- Enclosure 1, Section 3 (page 6), which states use of SFP Spray strategy pursuant to 10 CFR 50.54(hh)(2).
- Enclosure 1, Section 4.2 (page 8), which lists the CI 3.2.2.A tracking the issue.
- Enclosure 2, Section 3.2.2,(page 42), which describes the SFP cooling strategy, states the strategy is consistent with Table D-3 of NEI 12-06, and provides the conclusion to confirm capability in CI 3.2.2.A.

8.0 References

1. NRC Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012 (ADAMS Accession No. ML12054A736).

2. NSPM Letter (L-PI-13-007) to NRC, "Prairie Island Nuclear Generating Plant's Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated February 26, 2013 (ADAMS Accession No. ML13060A379).

3. NSPM Letter (L-PI-13-080) to NRC, "Prairie Island's First Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated August 26, 2013 (ADAMS Accession No. ML13239A094).

4. NSPM Letter (L-PI-14-018) to NRC, "Prairie Island Nuclear Generating Plant's Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated February 26, 2014 (ADAMS Accession No. ML14057A771).

5. NSPM Letter (L-PI-14-078) to NRC, "Prairie Island Nuclear Generating Plant's Third Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) (TAC Nos. MF0834 and MF0835)," dated August 25, 2014 (ADAMS Accession No. ML14237A512).

6. NRC Interim Staff Evaluation "Prairie Island Nuclear Generating Plant Units 1 and 2 - Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies)(TAC Nos. MF0834 and MF0835)," dated February 27, 2014 (ADAMS Accession No. ML14030A540).

7. NRC memorandum, "Supplemental Staff Guidance for Addressing Order EA-12-049 on Mitigation Strategies for Beyond-Design-Basis External Events," dated August 28, 2013 (ADAMS Accession No. ML13238A263).

8. NSPM Letter (L-PI-15-021) to NRC, "Prairie Island Nuclear Generating Plant's Fourth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) (TAC Nos. MF0834 and MF0835)," dated February 26, 2015 (ADAMS Accession No. ML15057A323).

9. NSPM Letter (L-PI-15-065) to NRC, "Prairie Island Nuclear Generating Plant's Fifth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) (TAC Nos. MF0834 and MF0835)," dated August 25, 2015 (ADAMS Accession No. ML15237A403).

10. NSPM Letter (L-PI-16-001) to NRC, "Notification of Compliance with NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," Prairie Island Nuclear Generating Plant Unit 2 (TAC No. MF0835)," dated January 14, 2016 (ADAMS Accession Nos. ML16014A754, ML16014A755, and ML16014A756).

11. NSPM Letter (L-PI-16-007) to NRC, "Prairie Island Nuclear Generating Plant, Unit 1, Sixth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) (TAC No. MF0834)," dated February 24, 2016 (ADAMS Accession No. ML16057A061).

12. NSPM Letter (L-PI-14-104) to NRC, "Prairie Island Nuclear Generating Plant's Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), CORRECTED" dated October 20, 2014 (ADAMS Accession No. ML14295A761).

13. NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, dated August 2012 (ADAMS Accession No. ML12242A378).

14. NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 2, dated December 2015 (ADAMS Accession No. ML16005A625).

15. JLD-ISG-2012-01, Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," Revision 1, dated January 22, 2016 (ADAMS Accession No. ML15357A163).

16. NRC Letter, "Request for Information Pursuant to Title 10 of the *Code Of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review Of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12056A046).

17. NRC Letter to NSPM, "Prairie Island Nuclear Generating Plant, Units 1 and 2 – Staff Assessment Of Information Provided Pursuant to Title 10 of the *Code of Federal Regulations* Part 50, Section 50.54(f), Seismic Hazard Reevaluations For Recommendation 2.1 of the Near-Term Task Force (NTTF) Review of Insights from the Fukushima Dai-ichi Accident and Staff Closure of Activities Associated with NTTF Recommendation 2.1, "Seismic" (TAC Nos. MF3784 and MF3785)," dated December 15, 2015 (ADAMS Accession No. ML15341A162).

18. NRC Letter to NSPM, "Prairie Island Nuclear Generating Plant, Units 1 and 2 - Report for the Audit Regarding Implementation of Mitigating Strategies and Reliable Spent Fuel Pool Instrumentation Related to Orders EA-12-049 and EA-12-051 (TAC Nos. MF0834, MF0835, MF0832, and MF0833)," dated August 20, 2015 (ADAMS Accession No. ML15224B396).