

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT 2

COMPLIANCE WITH NRC ORDER EA-12-049, "ORDER MODIFYING LICENSES WITH REGARD TO REQUIREMENTS FOR MITIGATION STRATEGIES FOR BEYOND-DESIGN-BASIS EXTERNAL EVENTS"

1.0 INTRODUCTION

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 directed 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), Units 1 and 2. Specific requirements were outlined in Attachment 2 of Reference 1.

In response to NRC Order EA-12-049, NSPM developed and submitted an Overall Integrated Plan (OIP) (Reference 3) describing the diverse and flexible mitigation strategies (FLEX) for responding to beyond-design-basis external events at PINGP. As required by the NRC Order, NSPM has submitted five OIP status updates at six-month intervals (References 6, 7, 8, 9, and 11).

In Reference 4, NSPM requested relaxation of the schedule requirements for full implementation of Order EA-12-049 for PINGP Unit 2. The relaxation request was specific to the FLEX Storage Building construction, equipment storage, and equipment deployment time validation and was based on construction delays. By Reference 5, the NRC granted a 60 day schedule relaxation. However, NSPM completed construction of the FLEX building prior to startup from 2R29, and therefore, full compliance with Order EA-12-049 was achieved without implementation of the 60-day relaxation.

In accordance with Reference 1, licensees are required to complete full implementation with the Order no later than two refueling cycles after submittal of the OIP, or December 31, 2016, whichever comes first. The second refueling outage after the Reference 3 submittal for PINGP Unit 2 occurred in the Fall of 2015. Additionally, the Order requires that licensees report when full compliance has been achieved. The NRC staff has requested that the compliance report be submitted within 60 days of commencing unit startup from the implementation outage. The information provided in this Enclosure documents Unit 2 compliance with NRC Order EA-12-049.

2.0 OPEN ITEM RESOLUTION

Open and pending items from the NRC Interim Staff Evaluation (ISE) (Reference 12) and NRC Audit Report (Reference 13) have been addressed by NSPM. The issues identified as open or pending in the NRC Audit Report are listed below:

ISE Confirmatory Items (CI):

- CI 3.1.1.2.A, Deployment of FLEX Equipment, Open
- CI 3.2.1.2.A, Reactor Coolant Pump Seals, Pending
- CI 3.2.4.9.A, Fuel Consumption, Open

Audit Report Safety Evaluation (SE) Items:

- SE.16, Spent Fuel Pool (SFP) Spray, Open
- SE.18, Develop integrated flooding strategy, Open
- SE.19, Accumulator borated water injection calculation, Open
- SE.20, N+1 Capability for FLEX 480 VAC portable generators, Open

Responses to the above items are provided in the NSPM Fukushima Response online reference portal with the exception of SE.20 that was described as a compliance change in the fifth six-month status report (Reference 11). The above items are summarized in Enclosure 2 to this letter. These items are complete pending NRC closure. NSPM had no ISE Open Items and no Licensee Identified Open Items.

3.0 Milestone Schedule – Items Complete

Unit 2 Milestone	Completion Date
Submit 60 Day Status Report (Reference 2)	October 2012
Submit Overall Integrated Plan (Reference 3)	February 2013
Submit First Six-Month Status Update (Reference 6)	August 2013
Commence Engineering Modification Design – Phase 2 & 3	September 2013
Submit Second Six-Month Status Update (Reference 7)	February 2014
National SAFER Response Center Operational	August 2015
Procure Equipment	November 2015
Submit Third Six-Month Status Update (Reference 8)	August 2014
Commence Installation for Online Modifications – Phase 2 and 3	June 2015

Unit 2 Milestone	Completion Date
Implement Storage	November 2015
Issue Maintenance Procedures	November 2015
Implement Training	November 2015
Submit Fourth Six-Month Status Update (Reference 9)	February 2015
Submit Phase 2 Staffing Assessment (Reference 10)	May 2015
Implement Communication Recommendations	June 2015
Issue Procedures updated for FLEX strategies	November 2015
Submit Fifth Six-Month Status Update (Reference 11)	August 2015
Unit 2 Implementation Outage	December 2015
Validation Walk-throughs	October 2015
Submit Completion Report – Unit 2	Complete with this submittal

4.0 Order EA-12-049 Compliance Elements Summary

Strategies – Complete

The PINGP Unit 2 strategies are in compliance with Order EA-12-049. Strategy related Open Items, Confirmatory Items, or Audit Questions/Audit Report Open Items have been addressed by NSPM as discussed in Section 2.0 above.

Modifications - Complete

The modifications required to support the FLEX strategies for PINGP Unit 2 have been fully implemented in accordance with the station design control process.

Equipment – Procured and Maintenance & Testing - Complete

The equipment required to implement the FLEX strategies for PINGP Unit 2 has been procured in accordance with NEI 12-06 (Reference 14), Section 11.1 and 11.2, received at PINGP, initially tested/performance verified as identified in NEI 12-06, Section 11.5, and is available for use.

Maintenance and testing will be conducted through the use of the PINGP Preventative Maintenance Program such that equipment reliability is achieved and maintained.

Protected Storage - Complete

The storage facility required to implement the FLEX strategies for PINGP has been completed and provides protection from the applicable site hazards, with the exception of the design basis flood. The PINGP FLEX strategy during a design basis flood relies on the expected warning time and pre-deployment of SAFER equipment to the site prior to the site grade flooding. The equipment required to implement the non-flood FLEX strategies for PINGP is stored in its protected configuration.

Procedures - Complete

FLEX Support Guidelines (FSGs) for PINGP Unit 2 have been developed and integrated with existing procedures. The FSGs and affected existing procedures have been validated and are available for use in accordance with the site procedure control program.

Training - Complete

Training for PINGP has been implemented in accordance with an accepted training process as recommended in NEI 12-06, Section 11.6.

Staffing - Complete

The staffing study for PINGP has been completed in accordance with 10CFR50.54(f), "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," Recommendation 9.3, dated March 12, 2012 (Reference 15), as documented in the letter to the NRC dated May 28, 2015 (Reference 10). The staffing study concluded that no additional staff is required to mitigate the ELAP event.

National SAFER Response Center - Complete

NSPM has established a contract with Pooled Equipment Inventory Company (PEICo) and has joined the Strategic Alliance for FLEX Emergency Response (SAFER) Team Equipment Committee for off-site facility coordination. It has been confirmed that PEICo is ready to support PINGP with Phase 3 equipment stored in the National SAFER Response Centers in accordance with the site specific SAFER Response Plan.

Validation - Complete

NSPM has completed validation in accordance with industry developed guidance to assure required tasks, manual actions, and decisions for FLEX strategies are feasible and may be executed within the constraints identified in the OIP for Order EA-12-049.

FLEX Program Document - Established

The NSPM FLEX Program Document for PINGP has been developed in accordance with the requirements of NEI 12-06.

5.0 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. ML12054A735).
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-15-086) to NRC, "Request for Relaxation from 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 September 29, 2015 (ADAMS Accession No. ML15272A505).
5. NRC Letter to NSPM, "Prairie Island Nuclear Generating Plant, Unit 2 - Relaxation of the Schedule Requirements For Order EA-12-049, 'Issuance Of Order To Modify Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events' (TAC No. MF0835)," dated October 25, 2015 (ADAMS Accession No. ML15273A291).
6. 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).

7. 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).
8. 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).
9. 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).
10. NSPM Letter (L-PI-15-044) to NRC, "Prairie Island Nuclear Generating Plant Phase 2 Staffing Assessment in Response to March 12, 2012, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, Enclosure 5, Recommendation 9.3, Emergency Preparedness- Staffing, Requested Information Items 1, 2, and 6," dated May 28, 2015 (ADAMS Accession No. ML15154A564).
11. 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).
12. NRC Letter to NSPM, "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).

13. 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).
14. NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, dated August 2012 (ADAMS Accession No. ML12242A378).
15. 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).