



**Nebraska Public Power District**

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NLS2015100  
August 27, 2015

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

**Subject:** Nebraska Public Power District'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)  
Cooper Nuclear Station, Docket No. 50-298, DPR-46

- References:**
1. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012
  2. NRC Interim Staff Guidance 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 0, dated August 29, 2012
  3. NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, dated August 2012
  4. NPPD Letter, "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
  5. NPPD Letter, "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 28, 2013

Dear Sir or Madam:

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued an Order (Reference 1) to Nebraska Public Power District (NPPD). Reference 1 was immediately effective and directs NPPD to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. Specific requirements are outlined in Attachment 2 of Reference 1.

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NRR

Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an overall integrated plan pursuant to Section IV, Condition C. Reference 2 endorses industry guidance document Nuclear Energy Institute 12-06, Revision 0 (Reference 3) with clarifications and exceptions identified in Reference 2. Reference 4 provided NPPD's initial status report for Cooper Nuclear Station (CNS) regarding mitigation strategies. Reference 5 provided CNS' Overall Integrated Plan for diverse and flexible coping strategies (FLEX).

Reference 1 requires submission of a status report at six-month intervals following submittal of the overall integrated plan. Reference 3 provides direction regarding the content of the status reports. The purpose of this letter is to provide the fifth six-month status report pursuant to Section IV, Condition C.2, of Reference 1, that delineates progress made in implementing the requirements of Reference 1. The attachment provides an update of milestone accomplishments since the last status report, including any changes to the compliance method, schedule, or need for relief and the basis, if any.

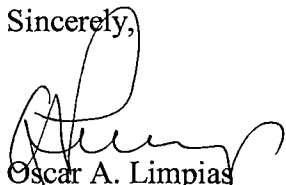
This letter contains no new regulatory commitments.

Should you have any questions regarding this report, please contact Jim Shaw, Licensing Manager, at (402) 825-2788.

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

Executed on: 8/27/15

Sincerely,



Oscar A. Limpas  
Vice President - Nuclear and  
Chief Nuclear Officer

/bk

Attachment: Nebraska Public Power District's Fifth Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

cc: Regional Administrator, w/attachment  
USNRC - Region IV

Cooper Project Manager, w/attachment  
USNRC - NRR Project Directorate IV-1

Director, w/attachment  
USNRC - Office of Nuclear Reactor Regulation

NPG Distribution, w/attachment

Senior Resident Inspector, w/attachment  
USNRC - CNS

CNS Records, w/attachment

## Attachment

### Nebraska Public Power District's Fifth Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

#### Introduction

Nebraska Public Power District (NPPD) developed an overall integrated plan for Cooper Nuclear Station (CNS) (Reference 1), documenting the diverse and flexible coping strategies (FLEX), in response to Reference 2. This attachment provides an update of milestone accomplishments since submittal of the fourth status report to the overall integrated plan (Reference 3), including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

#### Milestone Accomplishments

The following milestone(s) have been completed since the submittal of the fourth status report for the overall integrated plan, and are current as of August 15, 2015:

- A draft Site Response Plan has been submitted to NPPD from the National SAFER Response Center and is undergoing site review.
- A draft training plan has been developed and a team has been assembled to develop the training.
- Online modifications are being input into the site work schedule and a team has been assembled to develop the procedures.

#### Milestone Schedule Status

The following table provides an update to Attachment 2 of the overall integrated plan. It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed.

The revised milestone target completion dates do not impact the Order implementation date.

| Milestone                           | Target Completion Date | Status   | Revised Target Completion Date |
|-------------------------------------|------------------------|----------|--------------------------------|
| 60-day Status Update                | October 2012           | Complete |                                |
| Submit Overall Integrated Plan      | February 2013          | Complete |                                |
| 6-month Status Update               | August 2013            | Complete |                                |
| 6-month Status Update               | February 2014          | Complete |                                |
| Regional Response Center Operations | September 2014         | Complete |                                |

| <b>Milestone</b>  | <b>Target Completion Date</b> | <b>Status</b> | <b>Revised Target Completion Date</b> |
|---|-------------------------------|---------------|---------------------------------------|
| Develop Storage Plan  | May 2014                      | Complete      |                                       |
| Purchase FLEX Equipment                                     | December 2015                 | Started       |                                       |
| Refine Strategies (post-NRC review)                         | June 2015                     | Started       | December 2015                         |
| Issue Maintenance Procedures (for FLEX equipment)           | June 2016                     | Not Started   |                                       |
| 6-month Status Update                                       | August 2014                   | Complete      |                                       |
| Develop Strategies / Contract with Regional Response Center | September 2015                | Started       |                                       |
| Develop Training Plan                                       | June 2015                     | Started       | December 2015                         |
| Implementation Outage 1                                     | Fall 2014                     | Complete      |                                       |
| Develop Online Mods and Implementing Procedures             | September 2015                | Started       |                                       |
| 6-month Status Update                                       | February 2015                 | Complete      |                                       |
| Walk-throughs or Demonstrations                             | April 2015                    | Not Started   | October 2015                          |
| Implement Training  | June 2016                     | Not Started   |                                       |
| 6-month Status Update                                       | August 2015                   | Complete      |                                       |
| Develop Outage Mods and Implementing Procedures             | October 2015                  | Not Started   |                                       |
| Implement Online Mods and Procedures                        | June 2016                     | Started       |                                       |
| 6-month Status Update                                       | February 2016                 | Not Started   |                                       |
| Perform Staffing Assessment                                 | May 2016                      | Not Started   |                                       |
| 6-month Status Update                                       | August 2016                   | Not Started   |                                       |
| Implementation Outage 2                                     | Fall 2016                     | Not Started   |                                       |
| Implement Outage Mods and Procedures                        | Fall 2016                     | Not Started   |                                       |
| Implement Training Updates                                  | Fall 2016                     | Not Started   |                                       |
| Submit Completion Report                                    | Fall 2016                     | Not Started   |                                       |

**Changes to Compliance Method**

There are no changes to the compliance method at this time.

**Need for Relief/Relaxation and Basis for the Relief/Relaxation**

NPPD expects to comply with the Order implementation date and no relief/relaxation is required at this time.

**Open and Confirmatory Items in the Interim Staff Evaluation**

In Reference 4, the Nuclear Regulatory Commission (NRC) issued the Interim Staff Evaluation (ISE) for CNS relating to the overall integrated plan. The following table provides a summary of the confirmatory items documented in the ISE and the status of each item. There were no open items identified in the ISE.

| <b>ISE Confirmatory Items</b> |   |               |
|-------------------------------|---|---------------|
| <b>Item Number</b>            | <b>Description</b>  | <b>Status</b> |
| 3.1.1.2.A                     | Confirm that the required debris removal equipment remains functional and deployable to clear obstructions from pathways between the FLEX storage locations and deployment locations, after the FLEX storage building locations are finalized.  | Open          |
| 3.1.1.4.A                     | Confirm the location(s) of the staging area(s) for equipment from the RRC, and the licensee's plans for transportation from the RRC, staging, and on-site deployment is in accordance with the guidance in NEI 12-06, Sections 5.3.4, 6.3.4, 7.3.4, and 8.3.4, or provide an acceptable alternative to that guidance. | Open          |
| 3.1.3.1.A                     | Confirm that when the FLEX equipment storage building locations are finalized, separation distance and axis of separation is reviewed to confirm that the building locations are consistent with the recommendations in NEI 12-06, Section 7.3.1.   | Open          |
| 3.1.4.2.A                     | Confirm that obtaining makeup water from the Missouri River during an ELAP event adequately addresses NEI 12-06, Section 8.3.2, consideration 3.  | Open          |
| 3.2.1.1.A                     | Benchmarks must be identified and discussed which demonstrate that Modular Accident Analysis Program (MAAP) is an appropriate code for the simulation of an ELAP event at CNS, consistent with the NRC endorsement (ADAMS Accession No. ML13275A318) of the industry position paper on MAAP.                          | Open          |
| 3.2.1.1.B                     | The licensee should demonstrate that the collapsed reactor pressure vessel level remains above Top of Active Fuel and the reactor coolant system cool down rate is within technical specifications limits.  | Open          |

| <b>ISE Confirmatory Items</b> |   |               |
|-------------------------------|---|---------------|
| <b>Item Number</b>            | <b>Description</b>  | <b>Status</b> |
| 3.2.1.1.C                     | The licensee should demonstrate that MAAP is used in accordance with Sections 4.1, 4.2, 4.3, 4.4, and 4.5 of the June 2013 position paper (ADAMS Accession No. ML13190A201).  | Open          |
| 3.2.1.1.D                     | The licensee must identify, in using MAAP, the subset of key modeling parameters cited from Tables 4-1 through 4-6 of the "MAAP Application Guidance, Desktop Reference for Using MAAP Software, Revision 2" (Electric Power Research Institute Report 1020236, available at www.epri.com). This should include response at a plant-specific level regarding specific modeling options and parameter choices for key models that would be expected to substantially affect the ELAP analysis performed for CNS. | Open          |
| 3.2.1.2.A                     | Confirm that the analysis for a long-duration ELAP event shows that the reactor recirculation pump seal leakage value does not exceed the value used in analysis of a 4-hour station blackout event.  | Open          |
| 3.2.1.3.A                     | Confirm that the method for transferring water from the hotwells to the ECSTs, including flow path, valves, pumps, and related equipment, when developed, is reliable.  | Open          |
| 3.2.1.3.B                     | Confirm that the RCIC room heatup evaluation and RCIC room flooding time evaluation are completed with acceptable results.  | Open          |
| 3.2.1.3.C                     | Confirm that the licensee's staffing assessment is completed and it shows that proposed actions from the FLEX strategies can be completed within the specified time constraints.  | Open          |
| 3.2.1.4.A                     | Confirm that the Phase 2 FLEX equipment performance criterion, when developed, supports the licensee's mitigation strategies.   | Open          |
| 3.2.2.1.A                     | Confirm that modifications to the reactor building roof hatch provide the ability to maintain adequate SFP area ventilation.  | Open          |
| 3.2.3.A                       | Confirm that CNS's containment venting strategy is finalized and that the strategy supports both containment pressure protection and proposed RCIC and Phase 2 FLEX pump operation.   | Open          |
| 3.2.3.B                       | With regard to maintaining containment, the implementation of BWROG Emergency Procedure Guideline/Severe Accident Guideline, Revision 3, including any associated plant-specific evaluations, must be completed in accordance with the provisions of NRC letter dated January 9, 2014 (ADAMS Accession No. ML13358A206).  | Open          |

|            |   |      |
|------------|---|------|
| 3.2.4.2.A  | Confirm that fan sizing evaluations support adequate ventilation in the main control room, in the RCIC room, and in other applicable plant areas.   | Open |
| 3.2.4.6.A  | Confirm that analyses addressing heat up in areas that might have personnel habitability considerations conform to the guidance in NEI 12-06, Section 3.2.2, Guideline 11, or provide an acceptable alternative to that guidance. | Open |
| 3.2.4.7.A  | Confirm that the design provisions, as well as operational and protection requirements for the new on-site well/water treatment equipment used for Phase 2 water sources adequately support CNS's proposed ELAP strategies.       | Open |
| 3.2.4.8.A  | Confirm that adequate electrical interaction and isolation considerations are adequately addressed.   | Open |
| 3.2.4.8.B  | Confirm that the sizing of the portable FLEX diesel generators adequately supports CNS's ELAP mitigation strategy.  | Open |
| 3.2.4.8.C  | Provide single-line diagrams showing the proposed connections of Phase 2 and Phase 3 electrical equipment and showing protection information (e.g., breaker, relay, or fuse) and rating for the equipment used when available.    | Open |
| 3.2.4.10.A | Confirm that the minimum dc voltage and dc load profile for the ELAP have been determined, the minimum dc bus voltage and the associated load profile supports CNS's proposed ELAP mitigation strategy.                           | Open |

## References

The following references support the status update to the overall integrated plan described in this attachment:

1. NPPD Letter, "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 28, 2013
2. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012
3. NPPD Letter, "Nebraska Public Power District'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)," dated February 23, 2015
4. NRC Letter, "Cooper Nuclear Station – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC No. MF0972)," dated February 11, 2014