



Nebraska Public Power District

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NLS2014082
August 26, 2014

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

Subject: Nebraska Public Power District'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)
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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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 third 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. Attachment 1 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.

Attachment 2 provides revised pages in CNS' Overall Integrated Plan for FLEX.

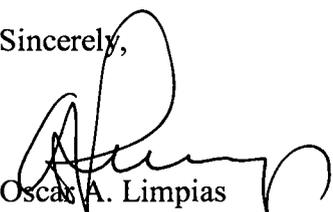
This letter contains no new regulatory commitments.

Should you have any questions regarding this report, please contact David Van Der Kamp, Licensing Manager, at (402) 825-2904.

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

Executed on: 08/26/14

Sincerely,


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

/bk

- Attachments:
1. Nebraska Public Power District's Third 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
 2. Cooper Nuclear Station - Overall Integrated Plan for Diverse and Flexible Coping Strategies (FLEX), Revised Pages

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

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

Senior Resident Inspector, w/attachments
USNRC - CNS

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

NPG Distribution, w/attachments

CNS Records, w/attachments

Attachment 1

Nebraska Public Power District's Third 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 second 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 second status report for the overall integrated plan, and are current as of August 15, 2014:

- Develop Storage Plan

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	TBD	Started	September 2014
Develop Storage Plan	May 2014	Complete	
Purchase FLEX Equipment	June 2014	Started	December 2014

Milestone	Target Completion Date	Status	Revised Target Completion Date
Refine Strategies (post-NRC review)	June 2014	Started	December 2014
Issue Maintenance Procedures (for FLEX equipment)	August 2014	Not Started	December 2014
6-month Status Update	August 2014	Complete	
Develop Strategies / Contract with Regional Response Center	August 2014	Not Started	April 2015
Develop Training Plan	October 2014	Not Started	December 2014
Implementation Outage 1	Fall 2014	Not Started	
Develop Online Mods and Implementing Procedures	December 2014	Started	
6-month Status Update	February 2015	Not Started	
Walk-throughs or Demonstrations	April 2015	Not Started	
Implement Training	May 2015	Not Started	
6-month Status Update	August 2015	Not Started	
Develop Outage Mods and Implementing Procedures	October 2015	Not Started	
Implement Online Mods and Procedures	December 2015	Not 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.

During review of the overall integrated plan, it was discovered that instruments CM-LI-1681B (ECST Level) and PC-LI-110 (Torus Level) had the wrong ranges listed. The affected pages have been corrected. This error has no effect on the overall strategy, compliance method, or implementation of the overall integrated plan.

Attachment 2 to this letter provides the revised pages of the overall integrated plan with the correction discussed above. Revision 2 of CNS' Overall Integrated Plan for FLEX has been posted to the ePortal system.

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.

ISE Confirmatory Items		
Item Number	Description	Status
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	Open

ISE Confirmatory Items		
Item Number	Description	Status
	with the recommendations in NEI 12-06, Section 7.3.1.	
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
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	Open

ISE Confirmatory Items		
Item Number	Description	Status
	completed with acceptable results.	
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	Open

ISE Confirmatory Items		
Item Number	Description	Status
	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.	
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, "Cooper Nuclear Station'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
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

Attachment 2

**Cooper Nuclear Station -
Overall Integrated Plan for Diverse and Flexible Coping Strategies (FLEX)**

Revised Pages

Cover page (new)

Page 14

Page 21

Page 24

CNS Overall Integrated Plan for Diverse and Flexible Coping Strategies (FLEX) - Revision 2

Revision	Date	Description of Change
0	2/28/2013	Initial submittal
1	2/15/2014	Corrected timeline and updated milestones
2	7/30/2014	Corrected instrument ranges for CM-LI-1681B and PC-LI-110

**CNS Overall Integrated Plan for Diverse and Flexible Coping Strategies (FLEX) -
Revision 2**

Key Reactor Parameters	<i>List instrumentation credited for this coping evaluation.</i>	
Parameter	Instrument	Indicator Location
RPV Level Narrow Range	RFC-LI-94A, B and C (0 to 60")	Control Room
RPV Level Narrow Range	NBI-LIS 83A and B (0 to 60") NBI-LIS-101A, B, C and D (0 to 60")	Local rack Local rack
RPV Level Wide Range	NBI-LI-185B (-155" to + 60")	Local ASDR
RPV Level Wide Range	NBI-LIS-57A and B (-150" to +60") NBI-LIS-58A and B (-150" to +60") NBI-LIS-72A, B, C and D (-150" to +60")	Local rack Local rack Local rack
RPV Level Fuel Zone	NBI-LI-191B (-320" to +60")	Local ASDR
RPV Level Fuel Zone	NBI-LITS-73A and B -260" to +40")	Local rack
RPV Pressure	RFC-PI-90A, B and C (0 to 1200 psig)	Control Room
RPV Pressure	NBI-PIS-60A and B (0 to 1500 psig) NBI-PIS-52B and D (0 to 500 psig) NBI-PI-61 (0 to 1500 psig)	Local rack Local rack Local rack
Drywell Pressure	PC-PI-513 (0 to 2 psig), PC-PI-2104AG (0 to 100 psig)	Local rack
Torus Pressure	PC-PI-20 (0 to 2 psig), PC-PI-2104BG (0 to 100 psig)	Local rack
Drywell Temperature	PC-TI-505A, B, C, D and E (50 to 600F)	Control Room
Drywell Temperature	PC-TE-505A,B, C, D and E, with use of M&TE (50 to 600F)	Control Room
Torus Temperature	PC-TE-1A thru H and PC-TE-2A thru H with use of M&TE (0 to 250F)	Local, Cable Spreading Room
Torus Temperature	PC-TI-2A, C, E and G (0 to 250F)	Local ASDR
Torus Level	PC-LI-110 (-6' to +6' H2O)	Local ASDR
ECST Level	CM-LI-1681B (2' to 16' H2O)	Local ASDR
ECST Level	HPCI-PI-117A, convert pressure to level	Local rack
Spent Fuel Pool Level	TBD, NRC Order EA-12-051	
Spent Fuel Pool Level	Visual	Local at SFP
Spent Fuel Pool Temperature	M&TE	Local at SFP
ASDR - Aux Shutdown Room TAF = -158"		
Notes: None.		

**CNS Overall Integrated Plan for Diverse and Flexible Coping Strategies (FLEX) -
Revision 2**

NPPD will evaluate the following potential modifications to address this phase:

- Modification for connection of 4160 VAC RRC DG to the F or G 4160 VAC bus is made by modifying a spare breaker in the warehouse to be able to accept the cable connections from the RRC DG such that in Phase 3 that breaker can be inserted into a spare slot or non-required breaker to connect the DG to the bus. (Primary Strategy)
- Modification to allow re-powering the Reactor Building Aux Condensate Pump.

Key Reactor
Parameters

List instrumentation credited or recovered for this coping evaluation.

Parameter	Instrument	Indicator Location
RPV Level Narrow Range	RFC-LI-94A, B and C (0 to 60")	Control Room
RPV Level Narrow Range	NBI-LIS 83A and B (0 to 60") NBI-LIS-101A, B, C and D (0 to 60")	Local rack Local rack
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Torus Temperature	PC-TE-1A thru H and PC-TE-2A thru H with use of M&TE (0 to 250F)	Local, Cable Spreading Room
Torus Temperature	PC-TI-2A, C, E and G (0 to 250F)	Local ASDR
Torus Level	PC-LI-110 (-6' to +6' H2O)	Local ASDR
ECST Level	CM-LI-1681B (2' to 16' H2O)	Local ASDR
ECST Level	HPCI-PI-117A, convert pressure to level	Local rack
Spent Fuel Pool Level	TBD, NRC Order EA-12-051	
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ASDR - Aux Shutdown Room
TAF = -158"

**CNS Overall Integrated Plan for Diverse and Flexible Coping Strategies (FLEX) -
Revision 2**

Details:																																												
Provide a brief description of Procedures / Strategies / Guidelines.	<i>Confirm that procedure/guidance exists or will be developed to support implementation.</i>																																											
CNS will utilize the industry developed guidance from the Owners Groups, EPRI, and NEI Task team to develop site specific procedures or guidelines to address the criteria in NEI 12-06. These procedures and/or guidelines will support the existing symptom based command and control strategies in the current EOPs.																																												
Identify modifications	<i>List modifications.</i>																																											
Hardened Containment Vent System (i.e., Reliable Hardened Vent) is currently installed but will be enhanced in accordance with NRC Order EA-12-050, Issuance of Order to Modify Licenses with Regard to Reliable Hardened Containment Vents.																																												
Key Containment Parameters	<i>List instrumentation credited for this coping evaluation.</i>																																											
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Parameter</th> <th style="width: 33%;">Instrument</th> <th style="width: 33%;">Indicator Location</th> </tr> </thead> <tbody> <tr> <td>Drywell Pressure</td> <td>PC-PI-513 (0 to 2 psig), PC-PI-2104AG (0 to 100 psig)</td> <td>Local rack</td> </tr> <tr> <td>Torus Pressure</td> <td>PC-PI-20 (0 to 2 psig), PC-PI-2104BG (0 to 100 psig)</td> <td>Local rack</td> </tr> <tr> <td>Drywell Temperature</td> <td>PC-TI-505A, B, C, D and E (50 to 600F)</td> <td>Control Room</td> </tr> <tr> <td>Drywell Temperature</td> <td>PC-TE-505A,B, C, D and E, with use of M&TE (50 to 600F)</td> <td>Control Room</td> </tr> <tr> <td>Torus Temperature</td> <td>PC-TE-1A thru H and PC-TE-2A thru H with use of M&TE (0 to 250F)</td> <td>Local, Cable Spreading Room</td> </tr> <tr> <td>Torus Temperature</td> <td>PC-TI-2A, C, E and G (0 to 250F)</td> <td>Local ASDR</td> </tr> <tr> <td>Torus Level</td> <td>PC-LI-110 (-6' to +6' H2O)</td> <td>Local ASDR</td> </tr> <tr> <td>Hard Pipe Vent Open Indication</td> <td>PC-RIL-SPV32</td> <td>Control Room</td> </tr> <tr> <td>Hard Pipe Vent Closed Indication</td> <td>PC-GIL-SPV32</td> <td>Control Room</td> </tr> <tr> <td>PC 233MV Open Indication</td> <td>PC-RIL-MV233</td> <td>Control Room</td> </tr> <tr> <td>PC 233 MV Closed Indication</td> <td>PC-GIL-MV233</td> <td>Control Room</td> </tr> <tr> <td>PC 237AV Open Indication</td> <td>PC-RIL-SPV237</td> <td>Control Room</td> </tr> <tr> <td>PC 237AV Closed Indication</td> <td>PC-RIL-SPV237</td> <td>Control Room</td> </tr> </tbody> </table>			Parameter	Instrument	Indicator Location	Drywell Pressure	PC-PI-513 (0 to 2 psig), PC-PI-2104AG (0 to 100 psig)	Local rack	Torus Pressure	PC-PI-20 (0 to 2 psig), PC-PI-2104BG (0 to 100 psig)	Local rack	Drywell Temperature	PC-TI-505A, B, C, D and E (50 to 600F)	Control Room	Drywell Temperature	PC-TE-505A,B, C, D and E, with use of M&TE (50 to 600F)	Control Room	Torus Temperature	PC-TE-1A thru H and PC-TE-2A thru H with use of M&TE (0 to 250F)	Local, Cable Spreading Room	Torus Temperature	PC-TI-2A, C, E and G (0 to 250F)	Local ASDR	Torus Level	PC-LI-110 (-6' to +6' H2O)	Local ASDR	Hard Pipe Vent Open Indication	PC-RIL-SPV32	Control Room	Hard Pipe Vent Closed Indication	PC-GIL-SPV32	Control Room	PC 233MV Open Indication	PC-RIL-MV233	Control Room	PC 233 MV Closed Indication	PC-GIL-MV233	Control Room	PC 237AV Open Indication	PC-RIL-SPV237	Control Room	PC 237AV Closed Indication	PC-RIL-SPV237	Control Room
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