



## Nebraska Public Power District

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NLS2018020  
June 26, 2018

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

**Subject:** Nebraska Public Power District's Eighth Six-Month Status Report in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109)  
Cooper Nuclear Station, Docket No. 50-298, DPR-46

- References:**
1. NRC Order Number EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," dated June 6, 2013
  2. NPPD letter to NRC, "Nebraska Public Power District's Phase 1 Overall Integrated Plan in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109)," dated June 30, 2014 (NLS2014057)
  3. NPPD letter to NRC, "Nebraska Public Power District's First Six-Month Status Report in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109)," dated December 19, 2014 (NLS2014101)
  4. NPPD letter to NRC, "Nebraska Public Power District's Phase 1 and Phase 2 Overall Integrated Plan in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109)," dated December 21, 2015 (NLS2015137)
  5. NPPD letter to NRC, "Nebraska Public Power District's Fifth Six-Month Status Report in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109)," dated December 28, 2016

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On June 6, 2013, the Nuclear Regulatory Commission (NRC) issued Order EA-13-109 (Reference 1) to Nebraska Public Power District (NPPD). Reference 1 was immediately effective and directs NPPD to take certain actions to ensure that Cooper Nuclear Station (CNS) has a Hardened Containment Vent System to remove decay heat from the containment, and maintain control of containment pressure within acceptable limits following events that result in loss of active containment heat removal capability while maintaining the capability to operate under severe accident conditions resulting from an Extended Loss of AC Power. Specific requirements are outlined in Attachment 2 of Reference 1.

Reference 1 required submission of a Phase 1 overall integrated plan (OIP) pursuant to Section IV, Condition D, and status reports at six-month intervals thereafter. NPPD submitted an initial OIP for CNS by letter dated June 30, 2014 (Reference 2), Revision 1 to the OIP by letter dated December 19, 2014 (Reference 3), and Revision 2 which provided a combined Phase 1 and Phase 2 OIP (Reference 4). In Reference 5, NPPD reported that CNS had completed implementation of Phase 1 Order requirements.

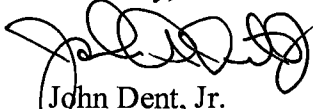
The purpose of this letter is to provide the eighth six-month update pursuant to Section IV, Condition D.3, of Reference 1.

This letter contains no new regulatory commitments. Should you have any questions concerning the content of this letter, 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: 6/26/18

Sincerely,



John Dent, Jr.  
Vice President - Nuclear and  
Chief Nuclear Officer

/bk

Attachment: Nebraska Public Power District's Eighth Six-Month Status Report for the Implementation of Order EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions"

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

Senior Resident Inspector, w/attachment  
USNRC - CNS

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

NPG Distribution, w/o attachment

Cooper Project Manager, w/attachment  
USNRC - NRR Plant Licensing Branch IV

CNS Records, w/attachment

## **Attachment**

### **Nebraska Public Power District's Eighth Six-Month Status Report for the Implementation of Order EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions"**

#### **Introduction**

Nebraska Public Power District (NPPD) developed an Overall Integrated Plan (OIP) for Cooper Nuclear Station (CNS) (Reference 1), documenting the installation of a Hardened Containment Vent System (HCVS) that provides a reliable hardened venting capability for pre-core damage and under severe accident conditions, including those involving a breach of the reactor vessel by molten core debris, in response to Reference 2. Updates of milestone accomplishments are based on the combined Phase 1 and 2 OIP (Reference 4).

NPPD developed Reference 4 in accordance with the guidance contained in Reference 3, documenting:

1. The installation of a HCVS that provides a reliable hardened venting capability for pre-core damage and under severe accident conditions, including those involving a breach of the reactor vessel by molten core debris, in response to Reference 2.
2. An alternative venting strategy that makes it unlikely that a drywell vent is needed to protect the containment from overpressure related failure under severe accident conditions, including those that involve a breach of the reactor vessel by molten core debris, in response to Reference 2.

This attachment provides an update of milestone accomplishments since submittal of the December 2017 status report (Reference 10) including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

#### **Milestone Accomplishments**

None completed since the December 2017 status report.

#### **Milestone Schedule Status**

The following tables provide an update to Attachment 2 of Reference 4. They provide 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.

<b>Phase 1 and 2 HCVS Milestone Table</b>		
<b>Milestone</b>	<b>Target Completion Date</b>	<b>Activity Status</b>
Submit Phase 1 OIP	June 2014	Complete
Submit Six-Month Updates:	--	--
Update 1	December 2014	Complete
Update 2	June 2015	Complete
Update 3 with Phase 2 OIP	December 2015	Complete
Update 4	June 2016	Complete
Update 5	December 2016	Complete
Update 6	June 2017	Complete
Update 7	December 2017	Complete
Update 8	June 2018	Complete with this submittal

<b>Phase 1 Specific Milestones</b>	
<b>Milestone</b>	<b>Activity Status</b>
Hold preliminary/conceptual design meeting	Complete
Design Engineering On-site/Complete	Complete
Operations Procedure Changes Developed	Complete
Site Specific Maintenance Procedure Developed	Complete
Training Complete	Complete
Procedure Changes Active	Complete
Walk Through Demonstration/Functional Test	Complete

<b>Phase 2 Specific Milestones</b>			
<b>Milestone</b>	<b>Target Completion Date</b>	<b>Activity Status</b>	<b>Comments/Date Changes</b>
Hold preliminary/conceptual design meeting	December 2015	Complete	
Design Engineering On-site/Complete	October 2017	Complete	
Operations Procedure Changes Developed	May 2018	In Progress	September 2018
Site Specific Maintenance Procedure Developed	May 2018	In Progress	September 2018
Training Complete	June 2018	In Progress	October 2018
Implementation Outage	October 2018	Not Started	
Walk Through Demonstration/Functional Test	October 2018	Not Started	
Procedure Changes Active	October 2018	Not Started	
Submit Completion Report (60 days after full site compliance)	January 2019	Not Started	

**Changes to Compliance Method**

There are no changes to the compliance method as documented in the combined Phase 1 and 2 OIP.

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

NPPD completed implementation of Phase 1 Order requirements prior to CNS entering Mode 2 (Startup) on November 6, 2016.

NPPD expects to comply with the Phase 2 Order implementation date and no relief/relaxation is required at this time.

**Open Items from Combined Phase 1 and 2 Overall Integrated Plan and Interim Staff Evaluation**

The following tables provide a summary of the open items documented in the combined Phase 1 and 2 OIP, the Interim Staff Evaluations (ISE) for Phase 1 and Phase 2 (References 5 and 7), and the status of each item.

<b>Combined Phase 1 and 2 OIP Open Items</b>	
<b>Phase 1 Open Items</b>	
<b>OIP Open Item #</b>	<b>Status/Comment</b>
1	Closed. Response provided in Reference 6.
2	Closed. Response provided in Reference 6.
3	Closed. Response provided in Reference 6.
4	Closed. Response provided in Reference 6.
5	Closed. Response provided in Reference 6.
6	Closed. Response provided in Reference 6.
7	Closed. Response provided in Reference 6.
8	Closed. Response provided in Reference 6.
9	Closed. Response provided in Reference 6.
10	Closed. Response provided in Reference 6.
11	Closed. Response provided in Reference 6.
12	Closed. Response provided in Reference 8.
<b>Phase 2 Open Items</b>	
None.	

<b>Phase 1 Interim Staff Evaluation Open Items</b>	
<b>ISE Open Item #</b>	<b>Status</b>
1	Response provided in Reference 6 and open item closed by NRC per Reference 11.
2	Response provided in Reference 6 and open item closed by NRC per Reference 11.
3	Response provided in Reference 6 and open item closed by NRC per Reference 11.
4	Response provided in Reference 6 and open item closed by NRC per Reference 11.
5	Response provided in Reference 8 and open item closed by NRC per Reference 11.
6	Response provided in Reference 8 and open item closed by NRC per Reference 11.
7	Response provided in Reference 6 and open item closed by NRC per Reference 11.
8	Response provided in Reference 6 and open item closed by NRC per Reference 11.
9	Response provided in Reference 6 and open item closed by NRC per Reference 11.
10	Response provided in Reference 6 and open item closed by NRC per Reference 11.
11	Response provided in Reference 6 and open item closed by NRC per Reference 11.

<b>Phase 2 Interim Staff Evaluation Open Items</b>		
<b>ISE Open Item #</b>	<b>Status</b>	
1	Response provided in Reference 8 and open item closed by NRC per Reference 11.	
2	Response provided in Reference 8 and open item closed by NRC per Reference 11.	
<b>ISE Open Item #</b>	<b>Action / ISE Section Reference</b>	<b>Status</b>
3	Licensee to demonstrate the SAWM flow instrumentation qualification for the expected environmental conditions. Section 3.3.3.4	<p>Initial response to this ISE open item was provided in Reference 9. As a result of audit discussions with the NRC on July 13, 2017, additional discussion on flow instrumentation accuracy was requested and is provided in the update below. This information was reviewed as part of continuing audit discussions on March 8, 2018, and was closed by the NRC per Reference 11.</p> <p>June 2018 Update - The vendor has provided a Certificate of Conformance and Calibration for the flow meter stating that operating it at a temperature of minus 5 degrees Fahrenheit will not impact accuracy of the instrument.</p>

### **Interim Staff Evaluation Impacts**

There are no potential impacts to the ISE identified at this time.

### **References**

1. NPPD letter to NRC, "Nebraska Public Power District's Phase 1 Overall Integrated Plan in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109)," dated June 30, 2014
2. NRC Order Number EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions" dated June 6, 2013
3. NEI 13-02, "Industry Guidance for Compliance with NRC Order EA-13-109: BWR Mark I and II Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," Revision 1, dated April 2015
4. Nebraska Public Power District's Phase 1 and Phase 2 Overall Integrated Plan in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109), dated December 21, 2015
5. NRC letter to NPPD, "Cooper Nuclear Station - Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Phase 1 of Order EA-13-109 (Severe Accident Capable Hardened Vents) (TAC NO. MF4384)," dated February 11, 2015
6. NPPD letter to NRC, "Nebraska Public Power District's Fourth Six-Month Status Report in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109)," dated June 30, 2016
7. NRC letter to NPPD, "Cooper Nuclear Station - Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Phase 2 of Order EA-13-109 (Severe Accident Capable Hardened Vents) (TAC NO. MF4384)," dated September 29, 2016
8. NPPD letter to NRC, "Nebraska Public Power District's Fifth Six-Month Status Report in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109)," dated December 28, 2016
9. NPPD letter to NRC, "Nebraska Public Power District's Sixth Six-Month Status Report in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109)," dated June 19, 2017

10. NPPD letter to NRC, "Nebraska Public Power District's Seventh Six-Month Status Report in Response to June 6, 2013, Commission Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109)," dated December 21, 2017
  
11. NRC letter to NPPD, "Cooper Nuclear Station - Report for the Audit of Licensee Responses to Interim Staff Evaluations Open Items Related to NRC Order EA-13-109 to Modify Licenses With Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (CAC NO. MF4384; EPID L-2014-JLD-0046)," dated March 29, 2018