



Nebraska Public Power District

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

Subject: 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)
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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Attachment

Nebraska Public Power District's Seventh 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 June 2017 status report (Reference 9) including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

Milestone Accomplishments

Phase 2 design engineering work is considered complete.

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.

Phase 1 and 2 HCVS Milestone Table		
Milestone	Target Completion Date	Activity Status
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 with this submittal
Update 8	June 2018	Not Started

Phase 1 Specific Milestones	
Milestone	Activity Status
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

Phase 2 Specific Milestones			
Milestone	Target Completion Date	Activity Status	Comments/Date Changes
Hold preliminary/conceptual design meeting	December 2015	Complete	
Design Engineering On-site/Complete	October 2017	Complete	
Operations Procedure Changes Developed	May 2018	In Progress	
Site Specific Maintenance Procedure Developed	May 2018	In Progress	
Training Complete	June 2018	In Progress	
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.

Combined Phase 1 and 2 OIP Open Items	
Phase 1 Open Items	
OIP Open Item #	Status/Comment
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.
Phase 2 Open Items	
None.	

Phase 1 Interim Staff Evaluation Open Items	
ISE Open Item #	Status
1	Complete. Response provided in Reference 6.
2	Complete. Response provided in Reference 6.
3	Complete. Response provided in Reference 6.
4	Complete. Response provided in Reference 6.
5	Complete. Response provided in Reference 8.
6	Complete. Response provided in Reference 8.
7	Complete. Response provided in Reference 6.
8	Complete. Response provided in Reference 6.
9	Complete. Response provided in Reference 6.
10	Complete. Response provided in Reference 6.
11	Complete. Response provided in Reference 6.

Phase 2 Interim Staff Evaluation Open Items		
ISE Open Item #	Action / ISE Section Reference	Status
1	Licensee to demonstrate that containment failure as a result of overpressure can be prevented without a drywell vent during severe accident conditions. Section 3.3.3	Complete. Response provided in Reference 8.
2	Licensee to demonstrate that there is adequate communication between the MCR and the operator at the FLEX pump during severe accident conditions. Section 3.3.3.4	Complete. Response provided in Reference 8.
3	Licensee to demonstrate the SAWM flow instrumentation qualification for the expected environmental conditions. Section 3.3.3.4	Pending. Initial response to this ISE open item was provided in Reference 9. During an audit discussion with the NRC on July 13, 2017, additional information was requested regarding flow instrumentation accuracy. This information will be provided in the June 2018 status update.

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