



Exelon Generation

Order No. EA-13-109

RS-16-232

December 14, 2016

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

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Subject: Fifth Six-Month Status Report For Phases 1 and 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)

References:

1. NRC Order Number EA-13-109, "Issuance of Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," dated June 6, 2013
2. NRC Interim Staff Guidance JLD-ISG-2013-02, "Compliance with Order EA-13-109, Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions", Revision 0, dated November 14, 2013
3. NRC Interim Staff Guidance JLD-ISG-2015-01, "Compliance with Phase 2 Order EA-13-109, Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions", Revision 0, dated April 2015
4. NEI 13-02, "Industry Guidance for Compliance With Order EA-13-109, BWR Mark I & II Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions", Revision 1, dated April 2015
5. Exelon Generation Company, LLC's Answer 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 26, 2013
6. Exelon Generation Company, LLC 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 (RS-14-058)
7. Exelon Generation Company, LLC First Six-Month Status Report 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 December 17, 2014 (RS-14-302)
8. Exelon Generation Company, LLC Second Six-Month Status Report 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, 2015 (RS-15-148)

9. Exelon Generation Company, LLC Phase 1 (Updated) 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 15, 2015 (RS-15-299)
10. Exelon Generation Company, LLC Fourth Six-Month Status Report For Phases 1 and 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 June 30, 2016 (RS-16-106)
11. NRC letter to Exelon Generation Company, LLC, Dresden Nuclear Power Station, Units 2 and 3 – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Phase 1 of Order EA-13-109 (Severe Accident Capable Hardened Vents) (TAC Nos. MF4462 and MF4463), dated February 11, 2015
12. NRC letter to Exelon Generation Company, LLC, Dresden Nuclear Power Station, Units 2 and 3 – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Phase 2 of Order EA-13-109 (Severe Accident Capable Hardened Vents) (TAC Nos. MF4462 and MF4463), dated September 30, 2016

On June 6, 2013, the Nuclear Regulatory Commission ("NRC" or "Commission") issued an Order (Reference 1) to Exelon Generation Company, LLC (EGC). Reference 1 was immediately effective and directs EGC to require their BWRs with Mark I and Mark II containments to take certain actions to ensure that these facilities have a hardened containment vent system (HCVS) 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 (SA) conditions resulting from an Extended Loss of AC Power (ELAP). Specific requirements are outlined in Attachment 2 of Reference 1.

Reference 1 required submission of an Overall Integrated Plan (OIP) by June 30, 2014 for Phase 1 of the Order, and an OIP by December 31, 2015 for Phase 2 of the Order. The interim staff guidance (References 2 and 3) provide direction regarding the content of the OIP for Phase 1 and Phase 2. Reference 3 endorses industry guidance document NEI 13-02, Revision 1 (Reference 4) with clarifications and exceptions identified in References 2 and 3. Reference 5 provided the EGC initial response regarding reliable hardened containment vents capable of operation under severe accident conditions. Reference 6 provided the Dresden Nuclear Power Station, Units 2 and 3, Phase 1 OIP pursuant to Section IV, Condition D.1 of Reference 1. References 7 and 8 provided the first and second six-month status reports pursuant to Section IV, Condition D.3 of Reference 1 for Dresden Nuclear Power Station. Reference 9 provided the Dresden Nuclear Power Station, Units 2 and 3, Phase 1 updated and Phase 2 OIP pursuant to Section IV, Conditions D.2 and D.3 of Reference 1. Reference 10 provided the fourth six-month status report pursuant to Section IV, Condition D.3 of Reference 1 for Dresden Nuclear Power Station.

The purpose of this letter is to provide the fifth six-month update report for Phases 1 and 2, pursuant to Section IV, Condition D.3 of Reference 1, that delineates progress made in implementing the requirements of Reference 1 for Dresden Nuclear Power Station, Units 2 and 3. The enclosed report 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

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basis, if any. The enclosed report also addresses the NRC Interim Staff Evaluation open items contained in References 11 and 12.

This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact David P. Helker at 610-765-5525.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 14th day of December 2016.

Respectfully submitted,


Glen T. Kaegi
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Enclosure:

Dresden Nuclear Power Station, Units 2 and 3 Fifth Six-Month Status Report for Phases 1 and 2 Implementation of Order EA-13-109, Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions

cc: Director, Office of Nuclear Reactor Regulation
NRC Regional Administrator - Region III
NRC Senior Resident Inspector - Dresden Nuclear Power Station
NRC Project Manager, NRR - Dresden Nuclear Power Station
Mr. Raj Auluck, NRR/JLD/TSD/JCBB, NRC
Mr. Brian E. Lee, NRR/JLD/JCBB, NRC
Mr. John P. Boska, NRR/JLD/JOMB, NRC
Illinois Emergency Management Agency - Division of Nuclear Safety

Enclosure

Dresden Nuclear Power Station, Units 2 and 3

**Fifth Six-Month Status Report for Phases 1 and 2 Implementation of Order EA-13-109,
Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable
of Operation Under Severe Accident Conditions**

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COMBINED PHASES 1 AND 2 SIX MONTH UPDATE

Enclosure

Dresden Nuclear Power Station, Units 2 and 3

Fifth Six-Month Status Report for Phases 1 and 2 Implementation of Order EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions"

1 Introduction

Dresden developed an Overall Integrated Plan (Reference 1 in Section 8), 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 NRC Order EA-13-109 (Reference 2). Starting with the six month status report dated December 16, 2015 (Reference 6), updates of milestone accomplishments will be based on the combined Phases 1 and 2 Overall Integrated Plan.

Dresden developed an updated and combined Phases 1 and 2 Overall Integrated Plan (Reference 6), documenting:

1. 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.
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 enclosure provides an update of milestone accomplishments since submittal of the combined Phases 1 and 2 Overall Integrated Plan including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

2 Milestone Accomplishments

The following milestone(s) have been completed since the development of the combined Phases 1 and 2 Overall Integrated Plan (Reference 6), and are current as of December 1, 2016.

- Unit 3 achieved compliance with Phase 1 HCVS Order requirements.
- Unit 2 detailed Phase 1 design is complete.
- Conceptual design for Phase 2 completed..

Enclosure

Dresden Nuclear Power Station, Units 2 and 3

**Fifth Six-Month Status Report for Phases 1 and 2 Implementation of Order EA-13-109,
Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable
of Operation Under Severe Accident Conditions**

(16 pages)

COMBINED PHASES 1 AND 2 SIX MONTH UPDATE

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Dresden Nuclear Power Station, Units 2 and 3

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3 Milestone Schedule Status

The following provides an update to Part 5 of the combined Phases 1 and 2 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.

Milestone	Target Completion Date	Activity Status	Comments
Phases 1 and 2 HCVS Milestone Table			
Submit Overall Integrated Plan	June 2014	Complete	
Submit 6 Month Updates:			
Update 1	Dec. 2014	Complete	
Update 2	June 2015	Complete	
Update 3 [Simultaneous with Phase 2 OIP]	Dec. 2015	Complete	
Update 4	June 2016	Complete	
Update 5	Dec. 2016	Complete with this submittal	
Update 6	June 2017	Not Started	
Update 7	Dec. 2017	Not Started	
Update 8	June 2018	Not Started	
Update 9	Dec. 2018	Not Started	
Phase 1 Specific Milestones			
Phase 1 U3 (Lead Unit) Modifications:			
Begin Conceptual Design	Sep. 2012	Complete	
Complete Conceptual Design	Mar. 2013	Complete	
Begin Detailed Design	Nov. 2014	Complete	

Milestone	Target Completion Date	Activity Status	Comments
Phases 1 and 2 HCVS Milestone Table			
Complete Detailed Design and Issue Modification Package	Jan. 2016	Complete	
Begin Online Portion of the Installation	Nov. 2015	Complete	
Complete Online Installation	Oct. 2016	Complete	
Begin Outage Portion of the Installation	Oct. 2016	Complete	
Complete Outage Installation and put system into service	Nov. 2016	Complete	
Phase 1 Procedure Changes Active			
Operations Procedure Changes Developed	Oct. 2016	Complete	
Site Specific Maintenance Procedure Developed	Oct. 2016	Complete	
Procedure Changes Active	Nov. 2016	Complete	
Phase 1 Training:			
Training Complete	Oct. 2016	Complete	
Phase 1 Completion			
U3 Phase 1 HCVS Implementation	Nov. 2016	Complete	
Phase 1 U2 (Lag Unit) Modifications:			
Begin Conceptual Design	Sep. 2012	Complete	
Complete Conceptual Design	Mar. 2013	Complete	
Begin Detailed Design	Nov. 2014	Complete	
Complete Detailed Design and Issue Modification Package	Sep. 2016	Complete	
Begin Online Portion of the Installation	Mar. 2016	Complete	
Complete Online Installation	Oct. 2017	Started	
Begin Outage Portion of the Installation	Oct. 2017	Not Started	

Milestone	Target Completion Date	Activity Status	Comments
Phases 1 and 2 HCVS Milestone Table			
Complete Outage Installation and put system into service	Nov. 2017	Not Started	
Phase 1 Procedure Changes Active			
Operations Procedure Changes Developed	Oct. 2017	Not Started	
Site Specific Maintenance Procedure Developed	Oct. 2017	Not Started	
Procedure Changes Active	Oct. 2017	Not Started	
Phase 1 Training:			
Training Complete	Oct. 2017	Not Started	
Phase 1 Completion			
U2 Phase 1 HCVS Implementation	Nov. 2017	Not Started	
Phase 2 Specific Milestones			
Phase 2 U2 (Lead Unit) Modifications:			
Begin Conceptual Design	March 2016	Complete	
Complete Conceptual Design	Aug. 2016	Complete	Conceptual design report SL-013485 Rev 0 in accordance with EA-13-109 is available on ePortal for NRC review.
Begin Detailed Design	Nov. 2016	Complete	

Milestone	Target Completion Date	Activity Status	Comments
Phases 1 and 2 HCVS Milestone Table			
Complete Detailed Design and Issue Modification Package	Mar. 2017	Started	
Begin Online Portion of the Installation	May 2017	Not Started	
Complete Online Installation	Oct. 2017	Not Started	
Begin Outage Portion of the Installation	Oct. 2017	Not Started	
Complete Outage Installation and put system into service	Nov. 2017	Not Started	
Phase 2 Procedure Changes Active			
Operations Procedure Changes Developed	Oct. 2017	Not Started	
Site Specific Maintenance Procedure Developed	Oct. 2017	Not Started	
Procedure Changes Active	Oct. 2017	Not Started	
Phase 2 Training:			
Training Complete	Oct. 2017	Not Started	
Phase 2 Completion			
U2 Phase 2 HCVS Implementation	Nov. 2017	Not Started	
Submit Unit 2 Phase 1 and Phase 2 full compliance Report [60 days after Unit achieves compliance]	Jan. 2018	Not Started	
Phase 2 U3 (Lag Unit) Modifications:			
Begin Conceptual Design	Mar. 2016	Complete	
Complete Conceptual Design	Aug. 2016	Complete	Conceptual design report SL-013485 Rev 0 in accordance with EA-13-109 is available on

Milestone	Target Completion Date	Activity Status	Comments
Phases 1 and 2 HCVS Milestone Table			
			ePortal for NRC review.
Begin Detailed Design	Apr. 2017	Not Started	
Complete Detailed Design and Issue Modification Package	Aug. 2017	Not Started	
Begin Online Portion of the Installation	Oct. 2017	Not Started	
Complete Online Installation	Oct. 2018	Not Started	
Begin Outage Portion of the Installation	Oct. 2018	Not Started	
Complete Outage Installation and put system into service	Nov. 2018	Not Started	
Phase 2 Procedure Changes Active			
Operations Procedure Changes Developed	Oct. 2018	Not Started	
Site Specific Maintenance Procedure Developed	Oct. 2018	Not Started	
Procedure Changes Active	Oct. 2018	Not Started	
Phase 2 Training:			
Training Complete	Oct. 2018	Not Started	
Phase 2 Completion			
U3 Phase 2 HCVS Implementation	Nov. 2018	Not Started	
Submit Unit 3 Phase 1 and Phase 2 Full Compliance Report [60 days after full site compliance]	Jan. 2019	Not Started	

4 Changes to Compliance Method

The dose impact of HCVS on FLEX strategies is being evaluated. Any changes to the compliance method will be reported in the June 2017 update.

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

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

6 Open Items from Combined Phase 1 and 2 Overall Integrated Plan and Interim Staff Evaluations

The following tables provide a summary of the open items documented in the combined Phases 1 and 2 Overall Integrated Plan or the Interim Staff Evaluation (ISE) and the status of each item.

Combined Phases 1 and 2 OIP Open Items		Status
Item #	Phase 1 Open Items	
OI-1	Confirm that at least 6 hours battery coping time is available.	Closed to ISE Open Item number 1.
OI-2	Determine actions to enable wetwell (WW) venting following a flooding around the torus.	Closed to ISE Open Item number 2.
OI-3	Determine how Motive Power and/or HCVS Battery Power will be disabled during normal operation.	Closed to ISE Open Item number 3.
OI-4	Confirm that the Remote Operating Station (ROS) will be in an accessible area following a Severe Accident (SA).	Closed to ISE Open Item number 12.
OI-5	Confirm diameter on new common HCVS Piping.	Closed to ISE Open Item number 5.
OI-6	Confirm suppression pool heat capacity.	Closed to ISE Open Item number 6.
OI-7	Determine the approach for combustible gases.	Closed to ISE Open Item number 7.
OI-8	Provide procedures for HCVS Operation.	Closed to ISE Open Item number 18.
OI-9	Perform radiological evaluation for Phase 1 vent line impact on ERO response actions.	<p>Complete with this submittal.</p> <p>Calculation DRE16-0010 and the evaluation performed in 10 CFR 50.54(q) Evaluation No. 16-161 (Doc. No. ECR 15-00449) performed the radiological evaluations for Phase 1 vent line impact on ERO response actions.</p> <p>DRE16-0010 and 50.54(q) Evaluation No. 16-161 are available for NRC review on the ePortal.</p>

Combined Phases 1 and 2 OIP Open Items		Status
Item #	Phase 2 Open Items	
OI-1	Determine SAWA flow control.	Not Started.
OI-2	Resolve location of the FLEX DG to mitigate radiological consequences during severe accident conditions.	Complete with this submittal. The FLEX DG location has been changed from U2 Trackway roof to Turbine Deck at EL 561' to mitigate radiological impacts under flooding event.
OI-3	Validate time-line for Reactor Building hose connections does not exceed 1 hour.	Not Started.

Item #	Phase 1 Interim Staff Evaluation Open Items	Status
ISE-1	Make available for NRC staff audit documentation confirming that at least 6 hours battery coping time is available.	Complete with June 2016 submittal.
ISE-2	Make available for NRC staff audit documentation that confirms the ability to operate HCVS following flooding around the suppression pool.	Completed with this submittal. EC 391644 has been completed to provide flood barriers for the Reactor Building under a flood event prediction. The barriers will be installed to keep the flood waters from entering the suppression pool and challenging the functionality of the suppression pool vent. Additionally, an Engineering Evaluation (EC 407086) has been completed to ensure that any flood water inleakage does not rise to a level where it can enter the suppression

		<p>pool via the vacuum breakers.</p> <p>The 50.59 Evaluation for EC 391644 and EC 407086 have been uploaded to ePortal for NRC review.</p>
ISE-3	<p>Make available for NRC staff audit documentation of a method to disable HCVS during normal operation to provide assurances against inadvertent operation that also minimizes actions to enable HCVS operation following an ELAP.</p>	<p>Complete with June 2016 submittal.</p>
ISE-4	<p>Make available for NRC staff audit the seismic and tornado missile final design criteria for the HCVS stack.</p>	<p>Complete with June 2016 submittal.</p>
ISE-5	<p>Make available for NRC staff audit documentation of the licensee design effort to confirm the diameter on the new common HCVS piping.</p>	<p>Complete with June 2016 submittal.</p>
ISE-6	<p>Make available for NRC staff audit analyses demonstrating that HCVS has the capacity to vent the steam/energy equivalent of one percent of licensed/rated thermal power (unless a lower value is justified), and that the suppression pool and the HCVS together are able to absorb and reject decay heat, such that following a reactor shutdown from full power containment pressure is restored and then maintained below the primary containment design pressure and the primary containment pressure limit.</p>	<p>Complete with June 2016 submittal.</p>
ISE-7	<p>Provide a description of the final design of the HCVS to address</p>	<p>Complete with this submittal.</p>

	hydrogen detonation and deflagration.	<p>Dresden has designed and installed an argon purge system per EC 400578 to address hydrogen detonation and deflagration requirements of NEI 13-02 Rev. 1 for Unit 3 and will install for Unit 2. The design meets HCVS-WP-03 requirements.</p> <p>HCVS-WP-03 and the DCS Section of EC 400578 are available for NRC review on the ePortal.</p>
ISE-8	Make available for NRC staff audit documentation of a determination of seismic adequacy for the ROS location.	<p>Complete with this submittal.</p> <p>Calculation DRE16-0028 performed an evaluation for adequacy of the ROS location including seismic interaction of the structure above the ROS location. EC 403549 performed an evaluation for seismic interaction of nearby SSCs in the ROS location.</p> <p>These documents are available for NRC review on the ePortal.</p>
ISE-9	Make available for NRC staff audit documentation that demonstrates adequate communication between the remote HCVS operation locations and HCVS decision makers during ELAP and severe accident conditions.	Complete with June 2016 submittal.
ISE-10	Provide a description of the strategies for hydrogen control that minimizes the potential for hydrogen gas migration and ingress into the reactor building or other buildings.	Complete with June 2016 submittal.
ISE-11	Provide descriptions of design details that minimize unintended cross flow of vented fluids within a unit and between units on the site.	Complete with June 2016 submittal.

ISE-12	Make available for NRC staff audit an evaluation of temperature and radiological conditions to ensure that operating personnel can safely access and operate controls and support equipment.	<p>Complete with this submittal.</p> <p>DRE16-0010 has been completed that documents dose assessment results for designated areas outside of primary containment that acceptably support the sustained operation of the wetwell containment system. The DCS section 4.1.14 for EC 400578 documents the environmental conditions.</p> <p>These documents are available for NRC review on the ePortal.</p>
ISE-13	Make available for NRC staff audit the final sizing evaluation for HCVS batteries/battery charger including incorporation into FLEX DG loading calculation.	<p>Complete with this submittal.</p> <p>Calculation DRE15-0056 sizes the 125 VDC battery/battery charger required to power the Unit 2 and Unit 3 Hardened Containment Vent System (HCVS) components for 24 hours.</p> <p>The DCS section 4.1.35 for EC 400578 discusses re-powering of the HCVS battery charger using a FLEX portable DG.</p> <p>The calculation is available for NRC review on the ePortal.</p>
ISE-14	Make available for NRC staff audit documentation of the HCVS nitrogen pneumatic system design including sizing and location.	<p>Complete with this submittal.</p> <p>The nitrogen pneumatic design is described in EC 400578 DCS section 4.1.33. For Unit 3, two nitrogen bottles are provided to operate 3-1601-60 and 3-1601-93 valves. The primary operating location for the nitrogen system is the MCR via solenoid operated valves. Additionally, the nitrogen system can be activated from</p>

		<p>the ROS by opening valves manually.</p> <p>EC 400578 DCS is available for NRC review on the ePortal.</p>
ISE-15	<p>Make available for NRC staff audit descriptions of all instrumentation and controls (existing and planned) necessary to implement this order including</p>	<p>Complete with this submittal.</p> <p>Existing plant instruments that meet the requirements of RG 1.97 or equivalent are considered qualified for the sustained operating period without further evaluation. The following plant instruments required for HCVS that meet the requirements of RG 1.97:</p> <p>2(3)-1641-5A (div I) and 2(3)-1641-5B (div II) Wetwell Level Instruments. 2(3)-1641-6A (div I) and 2(3)-1641-6B (div II) Drywell Pressure Instruments.</p> <p>New HCVS Instrumentation is discussed in detail within the DCS sections of EC 400578 and EC 401069. The HCVS instruments are either qualified by seismic shake table testing and/or analysis as discussed in the DCS of the ECs. These sections of the ECs are available for NRC review on the ePortal.</p>
ISE-16	<p>Make available for NRC staff audit the descriptions of local conditions (temperature, radiation and humidity) anticipated during ELAP and severe accident for the components (valves, instrumentation, sensors, transmitters, indicators, electronics, control devices, etc.) required for HCVS venting including confirmation that the components are capable of performing their functions during ELAP and</p>	<p>Complete with this submittal.</p> <p>The DCS of ECs 400578 and 401069 are available for NRC review on the ePortal. DCS section 4.1.14 provides detail on environmental conditions. The local environmental conditions do not impact the capability of the components to perform their intended functions.</p>

	severe accident conditions.	
ISE-17	Make available for NRC staff audit documentation of an evaluation verifying the existing containment isolation valves, relied upon for the HCVS, will open under the maximum expected differential pressure during BDBEE and severe accident wetwell venting.	Complete with this submittal. DCS Sections 4.1.5 and 4.1.33 of EC 400578 and EC 401069 discuss the operations of the existing containment isolation valves relied upon for the HCVS. Appendix B of the DCS of EC 401069 describes the Primary Containment Pressure Limit (PCPL), which is conservatively expected to be the differential pressure during BDBEE and severe accident wetwell venting, being less than the maximum valve differential pressure limit. The PCPL is also less than the design pressure of the line containing the existing containment isolation valve.
ISE-18	Make available for NRC staff audit procedures for HCVS operation.	Complete with this submittal. The procedure for HCVS operation is FSG-15, "Hardened Containment Vent Operation." The procedure is available for NRC review on the ePortal.

Item #	Phase 2 Interim Staff Evaluation Open Items	Status
1	Make available for NRC an evaluation for the locations of the SAWA equipment and controls, as well as ingress and egress paths for the expected Severe Accident conditions (temperature, humidity, radiation) for the Sustained Operating period.	Started.

2	Make available for NRC staff an evaluation showing that instrumentation and equipment being used for SAWA and supporting equipment is capable to perform for the sustained operating period under the expected temperature and radiological conditions.	Started.
3	Make available for NRC staff supporting documentation demonstrating that containment failure as a result of overpressure can be prevented without a drywell vent during severe accident conditions.	Started.
4	Make available for the NRC staff a description of how the plant is bounded by the reference plant analysis that shows the SAWM strategy is successful in making it unlikely that a DW vent is needed.	Started.
5	Make available for NRC staff documentation that demonstrates adequate communication between the MCR and the operator at the FLEX pump during severe accident conditions.	Started.
6	Make available for the NRC staff the SAWM flow instrumentation qualification for the expected environmental conditions.	Started.

7. Interim Staff Evaluation Impacts

There are no potential impacts to the Interim Staff Evaluation(s) identified at this time.

8 References

The following references support the updates to the combined Phases 1 and 2 Overall Integrated Plan described in this enclosure.

1. Dresden's 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, To Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," Revision 1, dated April 2015.
4. NRC Interim Staff Guidance JLD-ISG-2013-02, "Compliance with Order EA-13-109, Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," Revision 0, dated November 2013 (Accession No. ML13304B836).
5. NRC Endorsement of industry "Hardened Containment Venting System (HCVS) Phase 1 Overall Integrated Plan Template (EA-13-109) Rev 0" (Accession No. ML14128A219).
6. Dresden's Combined Phase 1 and 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 16, 2015.
7. NRC Interim Staff Guidance JLD-ISG-2015-01, "Compliance with Phase 2 of Order EA-13-109, Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," Revision 0, dated April 2015 (Accession No. ML15104A118).
8. NRC Order Number EA-12-050, Order Modifying Licenses with Regard to Reliable Hardened Containment Vents, dated March 12, 2012.
9. Regulatory Correspondence RS-16-106, Dresden's Fourth Six-Month Status Report for Phases 1 and 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 June 30, 2016.