Southern Nuclear

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

Edwin I. Hatch Nuclear Plant – Units 1 and 2
Fifth Six-Month Status Report of the Implementation of the
Commission Order with Regard to Requirements for
Reliable Hardened Containment Vents (EA-13-109)

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. SNC Letter, *Edwin I. Hatch Nuclear Plant – Units 1 and 2 Phase 1 Overall Integrated Plan in Response to June 6, 2013 Commission Order Modifying Licenses with Regard to Requirements for Reliable Hardened Containment Vents (EA-13-109)*, dated June 27, 2014.
3. SNC Letter, Edwin I. Hatch Nuclear Plant – Units 1 and 2 Third Six-Month Status Report of the Implementation of Commission Order with Regard to Requirements for Reliable Hardened Containment Vents (EA-13-109), dated December 23, 2015.

Ladies and Gentlemen:

On June 6, 2013, the Nuclear Regulatory Commission (NRC) issued an Order (Reference 1) to Southern Nuclear Operating Company (SNC). Reference 1 was immediately effective and directs the Edwin I. Hatch Nuclear Plant - Units 1 and 2 (HNP) to install 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. Specific requirements are outlined in Attachment 2 of Reference 1.

In addition, Reference 1 also required submission of a Phase 1 overall integrated plan pursuant to Section IV, Condition D, and status reports at six-month intervals thereafter. SNC submitted the Phase 1 overall integrated plan (OIP) by letter dated June 27, 2014 (Reference 2). The third six-month update for Phase 1 of the Order included the required HCVS Phase 2 OIP submittal, and was submitted on December 23, 2015 (Reference 3). The consolidated HCVS Phase 1 and 2 OIP document (Reference 3) provided a list of the Phase 1 OIP open items, and addressed the NRC Interim Staff Evaluation open items for Phase 1. This letter is being submitted to satisfy the requirements for providing the six-month updates for Phase 1 and 2 of the Order in accordance with Section IV, Condition D.3, of Reference 1.

This letter contains no new NRC commitments. If you have any questions, please contact John Giddens at 205.992.7924.

Mr. C. R. Pierce states he is the Regulatory Affairs Director for Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and, to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

C. R. Pierce

C. R. Pierce
Regulatory Affairs Director

CRP/JMG/GLS

Sworn to and subscribed before me this 14 *day of* December, *2016.*

Laura L. Crapps
Notary Public

My commission expires: 10-8-2017

Enclosure: Fifth Six-Month Status Report Regarding Requirements for Reliable Hardened Containment Vents (EA-13-109)

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. D. R. Vineyard, Vice President – Hatch
Mr. M. D. Meier, Vice President – Regulatory Affairs
Mr. D. R. Madison, Vice President – Fleet Operations
Mr. B. J. Adams, Vice President – Engineering
Mr. G. L. Johnson, Regulatory Affairs Manager – Hatch
RType: CHA02.004

U. S. Nuclear Regulatory Commission
Ms. C. Haney, Regional Administrator
Mr. M. D. Orenak, NRR Project Manager – Hatch
Mr. D. H. Hardage, Senior Resident Inspector – Hatch

State of Georgia
Mr. R.E. Dunn, Director – Environmental Protection Division

Edwin I. Hatch Nuclear Plant – Units 1 and 2
Fifth Six-Month Status Report of the Implementation of the Commission Order with Regard to Requirements for Reliable Hardened Containment Vents (EA-13-109)

Enclosure

Fifth Six-Month Status Report Regarding Requirement for Reliable Hardened Containment Vents (EA-13-109)

Edwin I. Hatch Nuclear Plant – Units 1 and 2
Fifth Six Month Status Report for the Implementation of Order EA-13-109

1 Introduction

Southern Nuclear Operating Company developed an Overall Integrated Plan (References 1 and 8) for the Edwin I. Hatch Nuclear Plant – Units 1 and 2 (HNP) documenting the installation of a Hardened Containment Vent System (HCVS). Updates of milestone accomplishments are based on the combined Phase 1 and 2 Overall Integrated Plan dated December 23, 2015.

HNP developed an updated and combined Phase 1 and 2 Overall Integrated Plan (Reference 8), 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 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.

HNP has elected to upgrade the existing HCVS to comply with the requirements of EA-13-109 for Phase 1 and 2 under Revision 1 of NEI 13-02. Revision 1 of NEI 13-02 addresses methodology to implement Phase 2 requirements of order EA-13-109 and additional clarifications and guidance for implementation of Phase 1.

This enclosure provides an update of milestone accomplishments since submittal of the combined Phase 1 and 2 Overall Integrated Plan (Reference 8), 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 Phase 1 and 2 Overall Integrated Plan (Reference 8), and are current as of October 31, 2016.

- Unit 2 Design Engineering On-site/Complete

3 Milestone Schedule Status

The following provides an update to Attachment 2 of the combined Phase 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.

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

Phase 1 and 2 HCVS Milestone Table

Milestone	Target Completion Date	Activity Status	Comments
Submit Overall Integrated Plan	**Jun. 2014**	Complete	
Submit 6 Month Updates:			
Update 1	**Dec. 2014**	Complete	
Update 2	**Jun. 2015**	Complete	
Update 3	**Dec. 2015**	Complete	Simultaneous with Phase 2 OIP
Update 4	**Jun. 2016**	Complete	
Update 5	**Dec. 2016**	Complete with this submittal	
Update 6	**Jun. 2017**	Not Started	
Update 7	**Dec. 2017**	Not Started	
Phase 1 Specific Milestones			
Phase 1 Modifications:			
Hold preliminary/conceptual design meeting	**Jun. 2014**	Complete	
Unit 1 Design Engineering On-site/Complete	**Feb. 2017**	Started	Current Projection Nov. 2016
Unit 1 Implementation Outage	**Mar. 2018**	Not Started	
Unit 1 Walk Through Demonstration/Functional Test	**Mar. 2018**	Not Started	
Unit 2 Design Engineering On-site/Complete	**May 2016**	Complete	
Unit 2 Walk Through Demonstration/Functional Test	**Feb. 2017**	Not Started	
Unit 2 Implementation Outage	**Feb. 2017**	Not Started	
Phase 1 Procedure Changes			
Operations Procedure Changes Developed	**Dec. 2017**	In Progress	Current Projection Jan. 2017
Site Specific Maintenance Procedure Developed	**Jan. 2017**	Not Started	
Procedure Changes Active	**Feb. 2017**	Not Started	

Milestone	Target Completion Date	Activity Status	Comments
Phase 1 Training:			
Training Complete	**Dec. 2016**	Not Started	Current Projection Mar. 2018
Phase 1 Completion			
Unit 2 HCVS Implementation	**Mar. 2017**	Started	Current Projection Feb. 2017
Unit 1 HCVS Implementation	**Mar. 2018**	Started	Current Projection Feb. 2018
Full Site HCVS Implementation	**Mar. 2018**	Started	Current Projection Feb. 2018
Phase 2 Specific Milestones			
Phase 2 Modifications:			
Hold preliminary/conceptual design meeting	**Apr. 2016**	Started	No modifications expected. Engineering evaluations and associated non-modification changes scope definition by Mar 2017
Unit 1 Design Engineering On-site/Complete	**Feb. 2017**	In Progress	No modifications expected. Engineering evaluations and associated non-modification changes by Oct 2017
Unit 1 Walk Through Demonstration/Functional Test	**Mar. 2018**	Not Started	Current Projection Feb. 2018
Unit 1 Implementation Outage	**Mar. 2018**	Not Started	Current Projection Feb. 2018
Unit 2 Design Engineering On-site/Complete	**Feb. 2018**	Not Started	No modifications expected. Engineering evaluations and associated non-modification changes by Oct 2018

Milestone	Target Completion Date	Activity Status	Comments
Unit 2 Walk Through Demonstration/Functional Test	**Mar. 2019**	Not Started	Current Projection Feb. 2019
Unit 2 Implementation Outage	**Mar. 2019**	Not Started	Current Projection Feb. 2019
Phase 2 Procedure Changes			
Operations Procedure Changes Developed	**Sep. 2017**	Not Started	Current Projection Feb. 2018
Site Specific Maintenance Procedure Developed	**Dec. 2017**	Not Started	
Procedure Changes Active	**Mar. 2018**	Not Started	Current Projection Mar. 2019
Phase 2 Training:			
Training Complete	**Dec. 2017**	Not Started	
Phase 2 Completion			
Unit 1 HCVS Implementation	Mar. 2018	Not Started	Current Projection Feb. 2018
Submit Unit 1 Phase 1 and 2 Completion Report	**May 2018**	Not Started	Current Projection Apr. 2018
Unit 2 HCVS Implementation	Mar. 2019	Not Started	Current Projection Feb. 2019
Full Site HCVS Implementation	Mar. 2019	Not Started	Current Projection Feb. 2019
Submit Unit 2 and site Completion Report [60 days after full site compliance]	**May 2019**	Not Started	Current Projection Apr. 2019

4 Changes to Compliance Method

There are no changes to the compliance method as documented in the Phase 1 and 2 Overall Integrated Plan (Reference 8). But, HNP will utilize additional portable equipment for use at the main stack. Attachment 1 on page 49 of the Phase 1 and 2 OIP (Reference 8) includes a list of HCVS/SAW A/SADV Portable Equipment. Refer to the following table which lists the additional equipment mentioned above:

Attachment 1: HCVS/SAWA/SADV Portable Equipment				
List portable equipment	*BDBEE Venting*	*Severe Accident Venting*	*Performance Criteria*	*Maintenance IPM requirements*
Stack integrated DG trailer with 85kW generator, connection cabinets, and Argon bottles		X	TBD	Per the EPRI PM Database for Standby DG

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

Edwin I. Hatch Nuclear Plant – Units 1 and 2, expect 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 Evaluation

The following tables provide a summary of the open items documented in the combined Phase 1 and 2 Overall Integrated Plan, the Phase 1 Interim Staff Evaluation (ISE) and the Phase 2 Staff Evaluation and an updated response to each item.

Hatch 1 & 2 HCVS Phase 1 and 2 OIP Open Items		Response
1	Determine location of Dedicated HCVS Battery transfer switch -	Included on page 13 of 66 in the Phase 1 & 2 OIP (ML15357A212) Switches are located on ground elevation of Control Building
2	Determine location of back-up nitrogen bottles	Included on page 13 of 66 in the Phase 1 & 2 OIP (ML15357A212) "Nitrogen Bottles will be located in the Control Building"
3	Evaluate location of Portable DG for accessibility under Severe Accident HCVS use	All FLEX portal equipment and the DG relied upon for the stack mixing chamber is greater than 20 feet below the release point (main stack 300+ feet) as referenced in NEI 13-02, HCVS-FAQ-04. Additionally, the FLEX pumps (phase 2 action) and FLEX generators are a substantial distance (>500 ft) from the vent stack release point and generally shielded by vital buildings. Included on page 13 of 66 in the Phase 1 & 2 OIP (ML15357A212) "Portable DG will be staged and operated adjacent to the Reactor Building substantially away from the HCVS piping or the main stack release point"

4	Confirm suppression pool heat capacity	"i. Suppression pool cooling The suppression pool is capable of accepting operation of the RCIC system and SRVs without any suppression pool cooling during the SBO coping duration. Although not required, suppression pool cooling capability can be initiated within 1 h when the AAC source becomes available by meeting the diesel loading margins." (Reference Section 8.4 of U2 FSAR) "The current containment and RPV thermal hydraulic analysis for SBO took credit for analysis performed for 10CFR50, Appendix R (fire protection). As part of the extended power uprate, the SBO scenario was reanalyzed assuming that suppression pool cooling was initiated in one hour when the alternate AC is assumed available. The peak pool temperature is 167 F. Even if SPC is not initiated until four hours, the resulting peak pool temperature of 194 F is acceptable for containment and ECCS pump operation." (reference NEDC-32749P, "Extended Power Uprate Safety Analysis Report for Edwin I. Hatch Units 1 and 2", July 1997 and GE MDE-03-0186 "Safe Shutdown Appendix R Analysis for Edwin I. Hatch Nuclear Power Station Units 1 and 2")
5	Determine location of HCVS Remote Operating Station	Included on page 16 of 66 in the Phase 1 & 2 OIP (ML15357A212) "ROS will be located at the 147'elevation of the Control Building, one floor below the elevation of the MCR" and 1 floor above ground level
6	State which approach or combination of approaches Plant Hatch decides to take to address the control of flammable gases, clearly demarcating the segments of vent system to which an approach applies	Included on page 17 of 66 in the Phase 1 & 2 OIP (ML15357A212) "Plant Hatch plans to use option I of the endorsed white paper HCVS-WP-03 and power up the mixing chamber fan in the base of the metrological stack." In addition, procedurally closing the main stack interconnecting valves and purging the main stack mixing chamber is utilized as defense in depth. HNP will utilize a portable DG deployed to the stack to repower the stack mixing chamber fans and power operators on some of the interconnecting valves

7	Evaluate SGTS Valve Leakage utilizing criteria from NEI HCVS-FAQ-05 - Audit item per ISE	10 valves are being tested per the LLRT procedure 42SV-TET-001-2
8	Identify qualification method used for HCVS instruments - Audit item per ISE	"Demonstration that instrumentation is substantially similar to the design of instrumentation previously qualified." Site design standards such as IEEE 323-1974 or IEEE 324-1975 were either used in the specifications.
9	Evaluate HCVS monitoring location of Portable DG for accessibility, habitability, staffing sufficiency, and communication capability with Vent under Severe Accident HCVS use decision makers - Audit item per ISE	For Accessibility and Habitability refer response on item 3. Staffing sufficiency and communication capability for the Main Stack DG will be addressed in an HCVS addendum to the updated FLEX Phase 2 staffing study and HNP FLEX verification and validation report.
10	Perform severe accident evaluation for FLEX DG use post 24 hour actions – Confirmatory Action	Refer response on item 3
11	Determine the control document for HCVS out of service time criteria - Audit item per ISE	Procedure NMP-OS-019-013 and NMP-OS-019-013-GLO2

	Hatch 1 & 2 HCVS Phase 1 ISE Open Items	**Response**
1	Make available for NRC staff audit the location of the ROS's	- OIP Item # 5 Included on page 16 of 66 in the Phase 1 & 2 OIP (ML15357A212) "ROS will be located at the 147'elevation of the Control Building, one floor below the elevation of the MCR"
2	Make available for NRC staff audit the location of the dedicated HCVS battery transfer switch	- OIP Item # 1 Included on page 13 of 66 in the Phase 1 & 2 OIP (ML15357A212) Switches are located on ground elevation of Control Building
3	Make available for NRC staff audit documentation of the HCVS nitrogen pneumatic system design including sizing and location	- OIP Item # 2 Included on page 13 of 66 in the Phase 1 & 2 OIP (ML15357A212) "Nitrogen Bottles will be located in the Control Building" Calculations for the accumulator tank and nitrogen bottle sizing are included in SMNH-13-013 and SMNH-13-019.
4	Make available for NRC staff audit the deployment location of the portable diesel generators	Two portable DGs will be located on the west side of the Control Building for Unit 1, one portable DG will be located on the south side of the Turbine Building for Unit 2 and one DG will be located at the base of Main Stack.

5	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	Included on page 16 of 66 in the Phase 1 & 2 OIP (ML15357A212) "The HCVS design allows initiating and then operating and monitoring the HCVS from the Main Control Room (MCR) or the Remote Operating Station (ROS). The MCR location is protected from adverse natural phenomena and is the normal control point for HCVS operation and Plant Emergency Response actions. The final location of the ROS is the 147'elevation of the Control Building, one floor below the elevation of the MCR. Additional support equipment is located on the 130' elevation Control Building (battery throw-over switch and nitrogen bottle rack). Reference Assumption HNP-5 from OIP, HCVS-FAQ-08, HCVS-FAQ-04 and General Design Criteria 19.
6	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	- OIP Item # 4 "i. Suppression pool cooling The suppression pool is capable of accepting operation of the RCIC system and SRVs without any suppression pool cooling during the SBO coping duration. Although not required, suppression pool cooling capability can be initiated within 1 h when the AAC source becomes available by meeting the diesel loading margins." (Reference Section 8.4 of U2 FSAR) "The current containment and RPV thermal hydraulic analysis for SBO took credit for analysis performed for 10CFR50, Appendix R (fire protection). As part of the extended power uprate, the SBO scenario was reanalyzed assuming that suppression pool cooling was initiated in one hour when the alternate AC is assumed available. The peak pool temperature is 167 F. Even if SPC is not initiated until four hours, the resulting peak pool temperature of 194 F is acceptable for containment and ECCS pump operation." (reference NEDC-32749P, "Extended Power Uprate Safety Analysis Report for Edwin I. Hatch Units 1 and 2", July 1997 and GE MDE-03-0186 "Safe Shutdown Appendix R Analysis for Edwin I. Hatch Nuclear Power Station Units 1 and 2")
7	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,	The original design for the GL 89-16 vent line was 343F so engineering judgement was used for qualification to 350F based on downstream cooling of vent piping. Specification for new equipment and

	indicators, electronics, control devices, etc) required for HCVS venting including confirmation that the components are capable of performing their functions during ELAP and severe accident conditions	instrumentation included environmental conditions expected from License for post-accident design values. New equipment procured to comply with the Order was purchased through new specifications the ROS, batteries, and battery charger. Those specifications contain all the required operating parameters for the equipment for normal operation, design basis accidents as well as BDBEE requirements. The radiation monitor is an "off the shelf" monitor without its own specification. It was procured with a datasheet specific to Hatch for radiation and temperature requirements. Each item procured with a specification requires test reports be provided that the test specimens performed in compliance with the specification requirements. The radiation monitor also has multiple test reports which document compliance with required operating conditions/parameters. Other commodities such as conduit, wiring, piping, etc. were procured consistent with the design requirements of the systems and locations they were being installed. For example, items installed in the control building – non-harsh environment with temperature considerations consistent with current SBO temperatures and radiation. These other items like pipe, cable, valves, transmitters were procured AQ as necessary to meet the BDBEE requirements for the location where they are installed. The majority of equipment installed is located outside the reactor building, and therefore does not require additional qualification beyond normal operating/accident conditions of the plant.
8	Make available for NRC staff audit the final sizing evaluation for HCVS batteries/battery charger including incorporation into FLEX DG loading calculation	See Calculation SENH-13-005, Modification Calculation SENH-16-003, and FLEX DG Sizing Calculation A-47402.
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	- OIP Item # 9 Notifications can be made with either the gaitronics system or via runners to the MCR or ROS to allow operation of the HCVS once the portable DGs are operating.
10	Provide a description of the final design of the HCVS to address hydrogen detonation and deflagration	- OIP Item # 6 Included on page 17 of 66 in the Phase 1 & 2 OIP (ML15357A212)

		"Plant Hatch plans to use option I of the endorsed white paper HCVS-WP-03 and power up the mixing chamber fan in the base of the metrological stack." In addition, HNP plans to close HCVS boundary valves and main stack interconnecting valves and purge the main stack mixing chamber. HNP will utilize a portable DG deployed to the stack to repower the stack mixing chamber fans and power operators on some of the interconnecting valves.
11	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	Refer to response to ISE item # 10 and leakage testing of boundary valves found in the calculations in DOEJ M003 and SMNH-13-023.
12	Make available descriptions of design details that minimize unintended cross flow of vented fluids within a unit and between units	- OIP Item 7 The HCVS interface to other systems is described in section 2, pages 10 and 17 of 66 in the Phase 1 &2 OIP. The boundary valves will be tested in accordance with the guidance of NEI 13-02, FAQ-HCVS-05 to ensure unintended system cross flow is minimized. Refer to the response to ISE item # 10 and leakage testing of 10 boundary valves per the LLRT program procedure 42SV-TET-001-2. See calculations in DOEJ M003 and SMNH-13-023.
13	Make available for NRC staff audit descriptions of all instrumentation and controls (existing and planned) necessary to implement this order including qualification methods	Refer to DCP 598056 ILOM for I&C components (I&C and electrical sections) "Demonstration that instrumentation is substantially similar to the design of instrumentation previously qualified." Site design standards such as IEEE 323-1974 or IEEE 324-1975 were either used in the specifications.
14	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	Existing PCIVs that perform a Design Basis function were utilized. Per NEI13-02 no further evaluation required. The expected differential is within the scope of containment design for compliance with GL 89-16 since containment pressure is managed below the design pressure. Additionally, Hatch is utilizing existing PCIVs which were designed and procured to meet the containment design pressures.
15	Make available for NRC staff audit the control document for HCVS out of service time criteria	- OIP Item # 11 Procedure NMP-OS-019-013 and NMP-OS-019-013-GLO2

<table>
<tr><th colspan="2">Hatch 1 & 2 HCVS Phase 2
ISE Open Items</th><th>Response</th></tr>
<tr><td>1</td><td>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</td><td>The wetwell vent has been designed and installed to meet NEI 13-02 Rev 1 guidance which will ensure that it is adequately sized to prevent containment overpressure under severe accident conditions.

The SAWM strategy will ensure that the wetwell vent remains functional for the period of sustained operation. HNP will follow the guidance (flow rate and timing) for SAWA/SAWM described in BWROG-TP-15-008 and BWROG-TP-15-011. These documents have been posted to the ePortal for NRC staff review. The wetwell vent will be opened prior to exceeding the PCPL value of 62 PSIG. Therefore, containment over pressurization is prevented without the need for a drywell vent.</td></tr>
<tr><td>2</td><td>Licensee shall demonstrate how the plant is bounded by the reference plant analysis that shows the SAWM strategy is successful in making it unlikely that a drywell vent is needed Section 3.3.3.1</td><td>Using Figure 2.1.C from the combined Phase 1 and 2 OIP, compare the reference plant parameters to the plant specific parameters.

<table><tr><th>Reference Plant</th><th>HNP</th></tr><tr><td>Torus freeboard volume is 525,00[1]gallons</td><td>Torus freeboard volume is >805,161[2] gallons</td></tr><tr><td>SAWA flow is 500 GPM at 8 hours followed by 100 GPM from 12 hours to 168 hours</td><td>SAWA flow is 500 GPM at 8 hours followed by 100 GPM from 12 hours to 168 hours</td></tr><tr><td colspan="2">The above parameters for HNP demonstrate that the reference plant values are bounding. Therefore, the SAWM strategy implemented at HNP makes it unlikely that a DW vent is needed to prevent containment overpressure related failure.</td></tr></table></td></tr>
<tr><td>3</td><td>Licensee to demonstrate that there is adequate communication between the MCR and the Intake Structure operator at the FLEX manual valve during severe accident conditions. Section 3.3.3.4</td><td>HNP utilizes gaitronics paging system or runners to communicate between the MCR and the Intake Structure operator at the FLEX pump. This communication method is the same as accepted in Order EA-12-049. Gaitronics has been modified with a 12-hour UPS battery backup and will be repowered with FLEX portable DGs.</td></tr>
</table>

[1] Peach Bottom available freeboard volume in gallons is estimated from nominal water level of 14.7 feet to 21 feet. 21 feet is the upper range of the wide range torus level instrument and the assumed loss of wetwell vent function. The Peach Bottom torus is 31 feet in diameter.

[2] From HNP Phase 1&2 OIP page 53 of 66 using lower range of loss of wet well vent.

7 Interim Staff Evaluation Impacts

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

8 Additional Information

The interfacing valves in the main stack mixing chamber are connected to long runs of piping that will be evacuated of any combustible gases before combustible gas levels are approached, but for defense in depth and per the testing criteria in HCVS-FAQ-04, the interfacing valves are being leak tested as described in ISE open item 12 above. One set of isolation valves associated with an after filter for HNP Unit 1 did not meet the required leakage in a test performed in the fall of 2016. The isolation valves 1N62-F525B/1N62-F526B to the after filter had a leakage less than twice the allowable limit (3,900 versus 2,425 sccm). These valves cannot be repaired until the 2018 refueling outage. In order to address the mitigation of cross flow to Unit 1 while Unit 2 is in compliance the response procedure is being revised to close both valves so both valves with a filter assembly in between will be an additional barrier to cross flow back into Unit 1. This evaluation of the method of mitigating the cross flow is acceptable per NEI 13-02. The valves will be repaired in order to meet the testing requirements of Unit 1 prior to compliance in the 2018 RFO.

9 References

The following references support the updates to the Phase 1 and 2 Overall Integrated Plan (Reference 8) described in this enclosure:

1. SNC Letter, *Edwin I. Hatch Phase I Overall Integrated Plan in Response to June 6, 2013 Commission Order Modifying Licenses with Regard to Requirements for Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109),* dated June 27, 2014 (ML14178B464).
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 (ML13143A321).
3. NRC Endorsement, *Hardened Containment Venting System (HCVS) Phase 1 Overall Integrated Plan Template (EA-13-109) Revision 0*, dated May1, 2014 (ML14128A219).
4. NRC Letter, *Edwin I. Hatch Nuclear Plant Units, 1 and 2 - 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. MF4479 and MF4480),* dated March 25, 2015 (ML14335A137).
5. 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 (ML15113B318).
6. 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 1, dated April 2015 (ML15104A118).

7. NRC Endorsement of "Hardened Containment Venting System (HCVS) Phase 1 and 2 Overall Integrated Plan Template," Revision 1, dated September 22, 2015, and Frequently Asked Questions (FAQs) 10, 11, 12, and 13, dated October 8, 2015 (ML15271A148).
8. SNC Letter with Combined Phase 1 and 2 Overall Integrated Plan, *Edwin I. Hatch Nuclear Plant – Units 1 and 2 Third Six-Month Status Report of the Implementation of the Commission Order with Regard to Requirements for Reliable Hardened Containment Vents (EA-13-109),* dated December 23, 2015 (ML15357A212).