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JAFP-16-0111
June 30, 2016

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

Subject: Entergy – James A. FitzPatrick 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)

James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
License No. DPR-059

- Reference:**
1. NRC Order, Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions, EA-13-109, dated June 6, 2013
 2. NRC Interim Staff Guidance, 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, JLD-ISG-2013-02, dated November 2013
 3. NRC Interim Staff Guidance, 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, JLD-ISG-2015-01, dated April 2015
 4. NEI document, Industry Guidance for Compliance with NRC Order EA-13-109: BWR Mark I & II Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions, Revision 1, NEI 13-02, dated April 2015
 5. ENOI letter, James A. FitzPatrick Overall Integrated Plan In Response To June 6, 2013 Commission Order Modifying License With Regard To Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109), JAFP-14-0075, dated June 30, 2014
 6. ENOI letter, James A. FitzPatrick Phase 2 Overall Integrated Plan In Response To June 6, 2013 Commission Order Modifying License With Regard To Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109), JAFP-15-0149, dated December 29, 2015
 7. ENOI letter, Certification of Permanent Cessation of Power Operations, JAFP-16-0045, dated March 16, 2016

Dear Sir or Madam:

On June 6, 2013, the Nuclear Regulatory Commission (“NRC” or “Commission”) issued Order EA-13-109 to James A. FitzPatrick Nuclear Power Plant (JAF) [Reference 1]. EA-13-109 directs JAF to install a reliable hardened venting capability in accordance with the requirements detailed in the Order, including:

A Phase 1 Overall Integrated Plan pursuant to Section IV, Condition D.1. Reference 2 endorses industry guidance document NEI 13-02, Revision 0 with clarifications and exceptions identified in Reference 2. Reference 5 provided the JAF’s Phase 1 Overall Integrated Plan.

A Phase 2 Overall Integrated Plan pursuant to Section IV, Condition D.2. Reference 3 endorses industry guidance document NEI 13-02, Revision 1 [Reference 4]. Reference 6 provided the JAF’s Phase 2 Overall Integrated Plan.

Submission of a status report at six-month intervals following submittal of the overall integrated plan phase 1 [Reference 5] pursuant to Section IV, Condition D.3. NEI 13-02 [Reference 4] provides direction regarding the content of the status reports.

The purpose of this letter is to provide the fourth six-month status report, which delineates progress made in implementing the requirements of EA-13-109. Attachment 1&2 provide an update to milestone status, including any changes to the compliance method, schedule, or possible need for relief and the basis.

JAF expects to comply with the Order implementation date; however, based on Entergy Nuclear Operations, Inc. (ENOI) plan to permanently shut down the JAF Nuclear Power Plant [Reference 7], compliance with the Order will be affected. Future six-month status report submittals will address any requests for exemption from the Order requirements prior to the Order implementation date. No relief or relaxation is requested at this time.

This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact Mr. William C. Drews, Regulatory Assurance Manager, at 315-349-6562.

I declare under penalty of perjury that the foregoing is true and correct; executed on June 30, 2016.

Sincerely,



Brian R. Sullivan
Site Vice President

BRS/WCD/mh

- Attachment 1: James A. FitzPatrick (JAF) Nuclear Power Plant’s Fourth Six-Month Status Report for the Implementation of Order EA-13-109, “Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions”
- 2: Response to Phase 1 Interim Staff Evaluation Open Items

cc: Director, Office of Nuclear Reactor
Regulation
NRC Regional Administrator
NRC Resident Inspector

NRC Project Manager
NYSPSC
NYSERDA

JAFP-16-0111

Attachment 1

**James A. FitzPatrick (JAF) Nuclear Power Plant's Fourth Six-Month
Status Report for the Implementation of Order EA-13-109, "Order to
Modify Licenses with Regard to Reliable Hardened Containment Vents
Capable of Operation Under Severe Accident Conditions"**

(4 Pages)

James A. FitzPatrick (JAF) Nuclear Power Plant’s Fourth Six-Month Status Report for the Implementation of Order EA-13-109, “Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions”

1 Introduction

JAF developed a Phase 1 Overall Integrated Plan (Reference 2) and a Phase 2 Overall Integrated Plan (Reference 3), documenting the installation of a Hardened Containment Vent System (HCVS) that provides a reliable hardened venting capability in response to NRC Order Number EA-13-109 (Reference 1). This attachment provides an update of milestone accomplishments since submittal of the Phase 1 Overall Integrated Plan, Phase 2 Overall Integrated Plan, and the subsequent Six Month Status Reports, 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 Phase 1 Overall Integrated Plan (Reference 2) and Phase 2 Overall Integrated Plan (Reference 3), and are current as of June 30, 2016. (See Section 3)

- Submitted Fourth 6 Month Status Report by letter JAFP-16-0111

3 Milestone Schedule Status

The following provides an update to Part 5 of the Phase 1 Overall Integrated Plan (Reference 2) and Part 5 of the Phase 2 Overall Integrated Plan (Reference 3). It provides the 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
Phase 1			
Hold preliminary / conceptual design meeting	Jan. 2014	Complete	
Submit Overall Integrated Implementation Plan	Jun. 2014	Complete	
Submit 6 Month Status Report	Dec. 2014	Complete	
Submit 6 Month Status Report	Jun. 2015	Complete	
Design Engineering On-site/Complete	Dec. 2015	Complete	
Submit 6 Month Status Report	Dec. 2015	Complete	
Submit 6 Month Status Report	Jun. 2016	Complete	
Operations Procedure Changes Developed	Aug. 2016	On hold	See section 5
Site Specific Maintenance Procedure Developed	Aug. 2016	On hold	See section 5
Implementation Outage	Oct. 2016	On hold	See section 5

James A. FitzPatrick (JAF) Nuclear Power Plant's Fourth Six-Month Status Report for the Implementation of Order EA-13-109, "Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions"

Milestone	Target Completion Date	Activity Status	Comments
Procedure Changes Active	Nov. 2016	On hold	See section 5
Walk Through Demonstration/Functional Test	Nov. 2016	On hold	See section 5
Submit 6 Month Status Report	Dec. 2016	Not started	
Training Complete	Dec. 2016	On hold	See section 5
Submit 6 Month Status Report	Jun. 2017	Not started	
Submit Completion Report	Jun. 2017	Not started	
Phase 2			
Hold preliminary/conceptual design meeting	Oct 2015	Complete	
Submit Overall Integrated Implementation Plan	Dec 2015	Complete	
Submit 6 Month Status Report	Jun 2016	Completed	
Submit 6 Month Status Report	Dec 2016	Not started	
Submit 6 Month Status Report	Jun 2017	Not started	
Design Engineering On-site/Complete	Jun 2017	On hold	See section 5
Submit 6 Month Status Report	Dec 2017	Not started	
Operations Procedure Changes Developed	Jun 2018	On hold	See section 5
Site Specific Maintenance Procedure Developed	Jun 2018	On hold	See section 5
Training Complete	Jun 2018	On hold	See section 5
Submit 6 Month Status Report	Jun 2018	Not started	
Implementation Outage	Sep 2018	On hold	See section 5
Walk Through Demonstration/Functional Test	Sep 2018	On hold	See section 5
Procedure Changes Active	Sep 2018	On hold	See section 5
Submit Completion Report	Nov 2018	Not started	

James A. FitzPatrick (JAF) Nuclear Power Plant’s Fourth Six-Month Status Report for the Implementation of Order EA-13-109, “Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions”

4 Changes to Compliance Method

This six-month update does not change the compliance method contained in the Phase 1 & 2 Overall Integrated Plans (Reference 2 & 3) or previous six-month updates.

Note: On March 16, 2016, Entergy Nuclear Operations, Inc. (ENOI) submitted a plan to the NRC to permanently cease power operations at JAF on January 27, 2017 (Reference 8). ENOI is evaluating its compliance with EA-13-109 (Reference 1) in order to determine the appropriate actions in alignment with the decision to permanently cease power operations.

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

Based on ENOI’s plan to permanently shut down the JAF Nuclear Power Plant (Reference 8), compliance with NRC Order EA-13-109 will be affected. JAF will submit a plan that resolves any issues relative to Order implementation. This plan may include a relief/relaxation request and up to a request to rescind the Order. However, no relief or relaxation is requested at this time.

6 Open Items from Overall Integrated Plan and Interim Staff Evaluation

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

Overall Integrated Plan Phase 1 & 2 Open Item	Status
Phase 1	
None	
Phase 2	
Complete hydraulic analysis of diesel fire pump for SAWA / SAWM flowrates	On hold. See section 5.
Identify and evaluate severe accident conditions for Phase 2 manual actions.	On hold. See section 5.
The FLEX Engineering Change (EC 52736) has not been completed; therefore, any reference to this information is considered unverified.	On hold. See section 5.

Open items from Phase 1 Interim Staff Evaluation (Reference 7) are provided in Attachment 2 to this letter. Note: Progress toward open items has been placed on hold (See section 5).

7 Interim Staff Evaluation Impacts

There are no potential impacts to the Phase 1 Interim Staff Evaluation (Reference 7) identified at this time.

James A. FitzPatrick (JAF) Nuclear Power Plant's Fourth Six-Month Status Report for the Implementation of Order EA-13-109, "Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions"

8 References

The following references support the updates to the Phase 1 & 2 Overall Integrated Plan described in this attachment:

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 (ML13143A321).
2. Letter JAFP-14-0075, James A. FitzPatrick 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 (ML14181B117).
3. Letter JAFP-15-0149, James A. FitzPatrick Phase 2 Overall Integrated Plan In Response To June 6, 2013 Commission Order Modifying License With Regard To Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Order Number EA-13-109), dated December 29, 2015 (ML15365A593)
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 (ML15113B318).
5. 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 (ML13304B836).
6. 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 (ML15104A118)
7. James A. FitzPatrick Nuclear Power Plant – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Phase 1 of Order EA-13-109 (Severe Accident Capable Hardened Vents), dated February 12, 2015, (ML15007A090).
8. Letter JAFP-16-0045, Certification of Permanent Cessation of Power Operations, dated March 16, 2016 (ML16076A391).

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Attachment 2

Response to Phase 1 Interim Staff Evaluation Open Items

(4 Pages)

Response to Phase 1 Interim Staff Evaluation Open Items

OI	Action	Comment	Response
1	<p>Make available for NRC staff audit analyses demonstrating that HCVS has the capacity to vent the steam/energy equivalent of one (1) 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>Section 3.2.2.1 Section 3.2.2.2</p>	<p>COMPLETE JAF is capable of (a) venting the equivalent of (1) percent of licensed/rated thermal power and (b) the Torus is capable of absorbing the decay heat from full power to (1) one percent licensed/rated thermal power to maintain the integrity of primary containment.</p> <p>Auditable analyses to justify the capability of the Torus, as described in this action, have been issued as calculation JAF-CALC-14-00015 (part of the approved design change package EC 52721) and calculation JAF-CALC-15-00026 (part of the approved design change package EC 58158).</p> <p>Update June 2016: Progress on EC 52721 implementation has been suspended.</p>
2	<p>Make available for NRC staff audit the seismic and tornado missile final design criteria for the HCVS stack.</p>	<p>Section 3.2.2.3</p>	<p>COMPLETE The HCVS piping from the Torus to the discharge above the RB Roof is designed to be seismically rugged as supported by calculations JAF-CALC-14-00017, JAF-CALC-15-00008, JAF-CALC-15-00033, and JAF-CALC-14-00016 (part of the approved design change package EC 52721).</p> <p>Protection from tornado missiles relies on HCVS-WP-04 which concludes that piping located a minimum of 30' above grade is unlikely to be damaged in a manner that prevents containment venting. All JAF HCVS piping is located a minimum of 30' above grade.</p> <p>Update June 2016: Progress on EC 52721 implementation has been suspended.</p>

Response to Phase 1 Interim Staff Evaluation Open Items

OI	Action	Comment	Response
3	Make available for NRC staff audit the final sizing evaluation for HCVS batteries/battery charger including incorporation into FLEX DG loading calculation.	Section 3.2.2.4 Section 3.2.3.1 Section 3.2.3.2 Section 3.2.4.1 Section 3.2.4.2 Section 3.2.5.1 Section 3.2.5.2 Section 3.2.6	<p>NOT COMPLETE</p> <p>The HCVS Battery System will support a minimum of 24 hours of operation. This evaluation is included in EC 52721.</p> <p>The power source for the charger will be backed by a FLEX DG.</p> <p>The FLEX DG loading will be issued as part of the FLEX design change package.</p> <p>Update June 2016: Progress on EC 52721 implementation has been suspended. In addition, FLEX design change package has been suspended.</p>
4	Make available for NRC staff audit documentation of the HCVS nitrogen pneumatic system design including sizing and location.	Section 3.2.2.4 Section 3.2.3.1 Section 3.2.3.2 Section 3.2.4.1 Section 3.2.4.2 Section 3.2.5.1 Section 3.2.5.2 Section 3.2.6	<p>COMPLETE</p> <p>The HCVS pneumatic system design sizing will be capable of 12 cycles in the first 24 hours. The sizing of the nitrogen motive force and purge systems are provided in calculations JAF-CALC-15-00013 and JAF-CALC-15-00038, respectively (part of the approved design change package EC 52721).</p> <p>Update June 2016: Progress on EC 52721 implementation has been suspended.</p>
5	Provide a description of the final design of the HCVS to address hydrogen detonation and deflagration.	Section 3.2.2.6	<p>COMPLETE</p> <p>The JAF strategy for preventing hydrogen detonation and deflagration beyond the final isolation point (valve) is a nitrogen purge system. Concurrent with closing the isolation valve, the purge system will be initiated to purge the vented fluid from the HCVS pipeline.</p>
6	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.	Section 3.2.2.6	<p>COMPLETE</p> <p>At JAF the interfaces between the RB and the HCVS pipeline are limited to normally closed, small bore drain and instrument valves minimizing the hydrogen gas migration and ingress into the Reactor Building. In addition, migration to the Standby Gas Treatment System is minimized through the use of existing Class VI MOVs that will be leak tested in accordance with NEI 13-02.</p>

Response to Phase 1 Interim Staff Evaluation Open Items

OI	Action	Comment	Response
7	Make available for NRC staff audit descriptions of all instrumentation and controls (existing and planned) necessary to implement this order including qualification methods.	Section 3.2.2.10	<p>NOT COMPLETE</p> <p>The required instrumentation and controls (existing and new) are identified as part of the JAF OIP, Part 2. The qualification of the equipment has been described within the approved design change package EC 52721; however, additional documentation must be supplied by vendors before this item is completed.</p> <p>Update June 2016: Progress on EC 52721 implementation has been suspended.</p>
8	Make available for NRC staff audit documentation of a seismic qualification evaluation of HCVS components.	Section 3.2.2.9	<p>NOT COMPLETE</p> <p>The qualification of the equipment has been described within the approved design change package EC 52721; however, additional documentation must be supplied by vendors before this item is completed.</p> <p>Update June 2016: Progress on EC 52721 implementation has been suspended.</p>
9	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 severe accident conditions.	<p>Section 3.2.2.3</p> <p>Section 3.2.2.5</p> <p>Section 3.2.2.9</p> <p>Section 3.2.2.10</p>	<p>COMPLETE</p> <p>The approved design change package EC 52721 describes the conditions and capability of the equipment to function within the stated conditions.</p> <p>Update June 2016: Progress on EC 52721 implementation has been suspended.</p>
10	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.	Section 3.2.2.9	<p>COMPLETE</p> <p>Calculations 14620.9011-US(N)-004 confirms that the PCIVs are capable of operation under the maximum expected differential pressure during BDBEE and severe accident wetwell venting.</p>

Response to Phase 1 Interim Staff Evaluation Open Items

OI	Action	Comment	Response
11	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.	Section 3.2.2.5	<p>NOT COMPLETE The capability for communication between the HCVS operation locations and decision makers will be evaluated as part of EP-Comms modifications.</p> <p>Update June 2016: Progress on EP-Comms design change package EC 53903 has been suspended.</p>
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.	Section 3.2.1 Section 3.2.2.3 Section 3.2.2.4 Section 3.2.2.5 Section 3.2.2.10 Section 3.2.4.1 Section 3.2.4.2 Section 3.2.5.2 Section 3.2.6	<p>COMPLETE The approved design change package EC 52721, along with supporting calculations, has identified the anticipated conditions during ELAP and a Severe Accident and confirm the capability for operating personnel to safely access and operate controls and support equipment.</p> <p>Update June 2016: Progress on EC 52721 implementation has been suspended.</p>