

Entergy Nuclear Northeast Entergy Nuclear Operations, Inc.

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Lawrence M. Coyle Site Vice President – JAF

JAFP-14-0105 August 28, 2014

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

Subject: Third Six-Month Status Report in Response to March 12, 2012 Commission

Order Modifying Licenses with Regard to Requirements for Mitigation Strategies

for Beyond Design Basis External Events (Order Number EA-12-049)

James A. FitzPatrick Nuclear Power Plant

Docket No. 50-333 License No. DPR-059

Reference:

- 1. NRC Order Number, EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, dated March 12, 2012
- 2. NRC Interim Staff Guidance, JLD-ISG-2012-01, Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, Revision 0, dated August 29, 2012
- 3. NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, Revision 0, dated August 2012
- 4. Entergy to NRC, JAFP-12-0124, Initial Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated October 29, 2012
- 5. Entergy to NRC, JAFP-13-0025, Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated February 28, 2013

Dear Sir or Madam:

On March 12, 2012, the Nuclear Regulatory Commission ("NRC" or "Commission") issued an order [Reference 1] to James A. FitzPatrick Nuclear Power Plant (JAF). Reference 1 was immediately effective and directed JAF to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. Specific requirements are outlined in Attachment 2 of Reference 1.

Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance [Reference 2] and an overall integrated plan pursuant to Section IV, Condition C.2. Reference 2 endorsed industry guidance document NEI 12-06, Revision 0 [Reference 3] with clarifications and exceptions identified in Reference 2. Reference 4 provided the JAF initial status report regarding mitigation strategies. Reference 5 provided the JAF overall integrated plan.

Reference 1 requires submission of a status report at six-month intervals following submittal of the overall integrated plan. Reference 3 provides direction regarding the content of the status reports. The purpose of this letter is to provide the third six-month status report pursuant to Section IV, Condition C.2, of Reference 1, that delineates progress made in implementing the requirements of Reference 1. The attached 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 basis, if any.

This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact Chris M. Adner, Regulatory Assurance Manager, at 315-349-6766.

I declare under penalty of perjury that the foregoing is true and correct. Executed on 28th day of August, 2014.

Sincerely,

Lawrence M. Coyle
Site Vice President

LMC/CMA/mh

Attachment: James A. FitzPatrick Nuclear Power Plant's (JAF) Third Six-Month Status Report

for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis

External Events

cc: Director, Office of Nuclear Reactor Regulation

NRC Regional Administrator NRC Resident Inspector

Ms. Jessica A. Kratchman, NRR/JLD/PMB, NRC

Mr. Doug Pickett, Senior Project Manager

Ms. Bridget Frymire, NYSPSC

Mr. John B. Rhodes, President NYSERDA

JAFP-14-0105

Attachment

James A. FitzPatrick Nuclear Power Plant's (JAF) Third Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

(12 Pages)

1. Introduction

JAF developed an Overall Integrated Plan (Reference 1 in Section 8), documenting the diverse and flexible strategies (FLEX), in response to Reference 2. This attachment provides an update of milestone accomplishments since submittal of the 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 July 31, 2013, and are current as of July 31, 2014.

- First Six-Month Status Report August 2013 (JAFP-13-0112)
- Second Six-Month Status Report February 2013 (JAFP-14-0023)

3. Milestone Schedule Status

The following provides an update to Attachment 2 of the 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	Revised Target Completion Date
60-day Status Update	October 29, 2012	Complete	
Submit Overall Integrated Plan	February 28, 2013	Complete	
Six-Month Status Report	August 2013	Complete	
Refine Strategies	December 2014	Started	
Perform Staffing Analysis	June 2015	In progress	
Develop Strategies / Contract with RRC	May 2015	Started	
Six-Month Status Report	February 2014	Complete	
Develop Mods	June 2015	Not Started	
Draft Implementing Procedures	June 2016	Not Started	
Regional Response Center Operational	July 2015	Started	
Develop Storage Plan	June 2015	Started	
Purchase FLEX Equipment	Fall 2016	Not Started	
Issue Maintenance Procedures (for FLEX equipment)	Fall 2016	Not Started	
Six-Month Status Report	August 2014	Complete	

James A. FitzPatrick Nuclear Power Plant's (JAF) Third Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

Milestone	Target Completion Date*	Activity Status	Revised Target Completion Date
Develop Training Plan	October 2014	Not Started	November 2015
Refueling Outage 1	Fall 2014	Not Started	
Six-Month Status Report	February 2015	Not Started	
Implement Training	May 2015	Not Started	March 2016
Implement Mods (non- outage)	June 2015	Not Started	
Six-Month Status Report	August 2015	Not Started	
Six-Month Status Report	February 2016	Not Started	
Issue Implementing Procedures	May 2016	Not Started	
Six-Month Status Report	August 2016	Not Started	
Implement Mods (outage)	Fall 2016	Not Started	
Implement Training Updates	Fall 2016	Not Started	
Refueling Outage 2 (full implementation)	Fall 2016	Not Started	
Validation / Demonstration	Fall 2016	Not Started	

^{*}Target Completion Date is the last submitted date from either the overall integrated plan or previous six-month status report.

4. Changes to Compliance Method

There are no changes to the compliance method as documented in the Overall Integrated Plan (Reference 1 and 3).

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

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

6. Open Items from Overall Integrated Plan and Interim Staff Evaluation

The following tables provide a summary and status of any open items documented in the Overall Integrated Plan and any open items or confirmatory items documented in the Interim Staff Evaluation (ISE) (Reference 4). A fourth table includes the status of each FitzPatrick Audit Question for the Mitigation Strategies (FLEX) Order.

	Overall Integrated Plan Open Items	Status
OI-1:	Beyond-design-basis external event impact on requirements in existing licensing documents will be determined based on input from the industry groups and direction from the NRC.	Entergy has determined that update to existing licensing basis documents are not required to reflect BDBEEs.
OI-2:	The structure, content and details of the Regional Response Center playbook will be determined.	Started

	Interim Staff Evaluation Open Items	Status
3.1.1.3.A	Procedural Interface (Seismic Hazard) - Evaluate the impacts from large internal flooding sources. (Audit Question 5)	In Progress. This item will be addressed by update to Audit Question (AQ) JAF-005 response when Information is available.
3.1.3.1.A	Protection of FLEX Equipment (High Wind Hazard) - Evaluate the separation distance and the axis of separation considering the predominant path of tornados in the geographic area to demonstrate that at least N sets of FLEX equipment would remain deployable in the context of a tornado missile hazard. (Audit Question 1)	In Progress. This item will be addressed by update to AQ JAF-001 response when Information is available.
3.1.4.2.B	Deployment of FLEX Equipment (Snow, Ice and Extreme Cold) - Evaluate the potential impact on the UHS due to ice blockage or formation of frazil ice as a result of extreme cold.	In Progress. This item will be addressed on the updated AQ response spreadsheet on the ePortal when Information is available.
3.2.3.A	Containment- Verify that the implementation of Boiling Water Reactor Owners Group (BWROG) Emergency Procedure Guideline (EPG)/Severe Accident Guideline (SAG), Revision 3, including any associated plant-specific evaluations, has been completed in accordance with the provisions of NRC letter dated January 9, 2014 (Reference 23 of ISE - Letter from Jack R. Davis (NRC) to Joseph E. Pollock (NEI) dated January 9, 2014, regarding Boiling	In Progress. This item will be addressed by update to AQ JAF-017 response when Information is available.

Interim Staff Evaluation Open Items	Status
Water Reactor Containment Venting (ADAMS Accession	
No. ML 13358A206))	

	Interim Staff Evaluation Confirmatory Items	Status
3.1.1.2.A	Deployment of FLEX Equipment- Confirm that soil liquefaction will not impede vehicle movement following a seismic event.	In Progress. This item will be addressed by update to AQ JAF-002 response when Information is available.
3.1.1.2.B	Deployment of FLEX Equipment- Confirm final design features of the new storage building including the susceptibility to the loss of ac power to deploy equipment.	In Progress. This item will be addressed by update to AQ JAF-001 response when Information is available.
3.1.1.2.C	Deployment of FLEX Equipment - Confirm the storage locations and means of protection against the seismic hazard of the super duty pickup trucks and the two flatbed trailers used for deployment of FLEX equipment.	In Progress. This item will be addressed by update to AQ JAF-001 response when Information is available.
3.1.1.4.A	Offsite Resources- Confirm location of offsite staging area(s), access routes and methods of delivery of equipment to the site considering the seismic, flood, high wind, snow, ice and extreme cold hazards.	In Progress. This item will be addressed by update to AQ JAF-043 response when Information is available.
3.1.3.2.A	Deployment of FLEX Equipment (High Wind Hazard) - Confirm availability of debris removal equipment to facilitate deployment of FLEX equipment.	In Progress. This item will be addressed on the updated AQ response spreadsheet on the ePortal when Information is available.
3.1.3.2.B	Deployment of FLEX Equipment (High Wind Hazard) -	In Progress.

Confirm protection of the means to move FLEX equipment. This item will be addressed by update to AQ JAF-001 response when Information is available. The progress of the means to move FLEX equipment. This item will be addressed by update to AQ JAF-001 response when Information is available. In Progress. This item will be addressed by update to AQ JAF-001 response when Information is available. This item will be addressed by update to AQ JAF-001 response when Information is available. The progress of the means to move FLEX equipment. In Progress.
Cold) - Confirm availability of snow removal equipment to facilitate deployment of FLEX equipment. This item will be addressed by update to AQ JAF-001 response when Information is available.
3.2.1.1.A Computer Code Used for ELAP Analysis - Benchmarks In Progress.
need to be identified and discussed which demonstrate that Modular Accident Analysis Program (MAAP) is an appropriate code for the simulation of an ELAP event at JAF. This item will be addressed by update to AQ JAF-009 response when Information is available.
3.2.1.1.B Computer Code Used for ELAP Analysis -Confirm that the collapsed level remains above Top of Active Fuel (TAF) and the cool down rate is within technical specifications limits. In Progress. This item will be addressed by update to AQ JAF-012 response when Information is available.
3.2.1.1.C Computer Code Used for ELAP Analysis - Confirm that MAAP was used in accordance with Sections 4.1, 4.2, 4.3, 4.4, and 4.5 of the June 2013 position paper (ADAMS Accession No. ML 13190A201). In Progress. This item will be addressed by update to AQ JAF-010 response when Information is available.
3.2.1.1.D Computer Code Used for ELAP Analysis - Confirm that the In Progress.
licensee, in using MAAP, identified and justified the subset of key modeling parameters cited from Tables 4-1 through 4-6 of the "MAAP Application Guidance, Desktop Reference for Using MAAP Software, Revision 2" (Electric Power Research Institute Report 1 020236). This item will be addressed by update to AQ JAF-011 response when Information is available.

James A. FitzPatrick Nuclear Power Plant's (JAF) Third Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

	Interim Staff Evaluation Confirmatory Items	Status
	specific MAAP analysis case that was used to validate the timing of mitigating strategies in the Integrated Plan has been identified and is available for NRC staff to review. Alternately, a comparable level of information has been included in the supplemental response. In either case, the analysis should include a plot of the collapsed vessel level to confirm that TAF is not reached {the elevation of the TAF should be provided) and a plot of the temperature cool down to confirm that the cool down is within technical specifications limits.	This item will be addressed by update to AQ JAF-009 response when Information is available.
3.2.1.2.A	Recirculation Pump Seal Leakage Models - Confirm the seal leakage model used in the updated MAAP analysis (which will address the MAAP code limitations when used for ELAP analysis). Evaluate the seal leakage rate model used, the details of the seal qualification tests and supporting test data, and leakage rate pressuredependence.	In Progress. This item will be addressed by update to AQ JAF-014 response when Information is available.
3.2.1.3.A	Sequence of Events (SOE) - Confirm the SOE timeline after reanalysis using the MAAP code which will address the limitations when used for the ELAP analysis.	In Progress. This item will be addressed by updated AQ JAF-012 response when Information is available.
3.2.1.4.A	Systems and Components for Consequence Mitigation - Confirm sizing of the FLEX pumps and 600 Vac FLEX diesel generator (DG) and the 4160 Vac generator to be obtained from the RRC.	In Progress. This item will be addressed by update to AQ JAF-022 response when Information is available.
3.2.1.5.A	Monitoring Instrumentation and Controls- Confirm ac powered torus temperature, pressure and level and drywell temperature and pressure instrumentation is modified to remain powered during an ELAP.	In Progress. This item will be addressed by update to AQ JAF-006 response when Information is available.
3.2.1.8.A	Use of Portable Pumps - Confirm that the use of raw water from Lake Ontario for long term core and spent fuel pool cooling strategies is acceptable.	In Progress. This item will be addressed by update to AQ JAF-023

	Interim Staff Evaluation Confirmatory Items	Status
		response when Information is available.
3.2.2.A	Spent Fuel Pool Cooling - Confirm the method of	In Progress.
	ventilation and power requirements, if any, of the spent fuel pool area.	This item will be addressed by update to AQ JAF-028 response when Information is available.
3.2.4.2.A	Ventilation (Equipment Cooling) - Confirm that additional evaluations of the RCIC room temperature demonstrate that an acceptable environment is maintained during the transition phase both for equipment in the room and habitability for operators who may need to enter the room.	In Progress. This item will be addressed by update to AQ JAF-031 response when Information is available.
3.2.4.2.B	Ventilation (Equipment Cooling) - Confirm that evaluations of the battery room temperature demonstrate that an acceptable environment, during both high ambient temperature and during extreme cold ambient temperature, is maintained during Phases 2 and 3.	In Progress. This item will be addressed by update to AQ JAF-069 response when Information is available.
3.2.4.2.C	Ventilation (Equipment Cooling) - Confirm the required ventilation flow or the size of the portable fans to maintain acceptable environmental conditions in the DC equipment room.	In Progress. This item will be addressed by update to AQ JAF-061 response when Information is available.
3.2.4.3.A	Heat Tracing - Confirm completion of walkdowns and evaluation of where heat tracing may be needed for freeze protection of equipment or instruments used in the ELAP mitigation strategies.	In Progress. This item will be addressed by update to AQ JAF-035 response when Information is available.
3.2.4.4.A	Lighting - Confirm need for additional portable lighting, such as dc powered lights.	In Progress. This item will be addressed by update to AQ JAF-036

	Interim Staff Evaluation Confirmatory Items	Status
		response when Information is available.
3.2.4.4.B	Communications - Confirm that upgrades to the site's communication system have been completed.	NRC Confirmatory Action
3.2.4.8.A	Electrical Power Sources - Confirm the technical basis for the selection and size of the FLEX generators to be used in support of the coping strategies.	In Progress. This item will be addressed by update to AQ JAF-050 response when Information is available.
3.2.4.10.A	Load Reduction to Conserve DC Power - Confirm final load shed list and the evaluation of any potential adverse effects of shedding those loads.	In Progress. This item will be addressed by update to AQ JAF-052 response when Information is available.
3.2.4.10.B	Load Reduction to Conserve DC Power - Confirm the final dc load profile with the required loads and the finalized minimum battery voltage.	In Progress. This item will be addressed by update to AQ JAF-066 response when Information is available.
3.2.4.10.C	Load Reduction to Conserve DC Power- Confirm time after the ELAP for connecting the FLEX DG to the battery chargers.	In Progress. This item will be addressed by update to AQ JAF-052 response.
3.4.A	Off-site Resources- Confirm that NEI 12-06, Section 12.2 guidelines 2 through 10 are addressed, or that an appropriate alternative is justified.	In Progress. This item will be addressed by update to AQ JAF-043 response when Information is available.

Audit Questions	Status	Completion or Target Date
JAF-001	In progress - This AQ response will be updated when information is available (ISE Open Item 3.1.3.1.A and ISE Confirmatory Items 3.1.1.2.B, 3.1.1.2.C, 3.1.3.2.B, 3.1.4.2.A)	August 2015
JAF-002	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.1.1.2.A)	August 2015
JAF-003	In progress - This AQ response will be updated when information is available	August 2015
JAF-004	In progress - This AQ response will be updated when information is available	August 2015
JAF-005	In progress - This AQ response will be updated when information is available (ISE Open Item 3.1.1.3.A)	August 2015
JAF-006	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.1.5.A)	August 2015
JAF-008	In progress - This AQ response will be updated when information is available	August 2015
JAF-009	In progress - This AQ response will be updated when information is available (ISE Confirmatory Items 3.2.1.1.A, 3.2.1.1.E)	August 2015
JAF-010	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.1.1.C)	August 2015
JAF-011	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.1.1.D)	August 2015
JAF-012	In progress - This AQ response will be updated when information is available (ISE Confirmatory Items 3.2.1.1.B, 3.2.1.3.A)	August 2015
JAF-013	In progress - This AQ response will be updated when information is available	August 2015
JAF-014	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.1.2.A)	August 2015
JAF-015	Closed*	
JAF-016	Closed*	
JAF-017	In progress - This AQ response will be updated when information is available (ISE Open Item 3.2.3.A)	August 2015
JAF-018	Closed*	
JAF-019	In progress - This AQ response will be updated when	August 2015

Audit Questions	Status	Completion or Target Date
	information is available	
JAF-021	Closed*	
JAF-022	In progress - This AQ response will be updated when information is available (ISE Confirmatory Items 3.2.1.4.A)	August 2015
JAF-023	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.1.8.A)	August 2015
JAF-026	Closed*	
JAF-027	In progress - This AQ response will be updated when information is available	August 2015
JAF-028	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.2.A)	August 2015
JAF-029	Closed*	
JAF-031	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.4.2.A)	August 2015
JAF-032	Closed*	
JAF-033	In progress - This AQ response will be updated when information is available	August 2015
JAF-034	Closed*	
JAF-035	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.4.3.A)	August 2015
JAF-036	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.4.4.A)	August 2015
JAF-037	Closed*	
JAF-038	Closed*	
JAF-040	In progress - This AQ response will be updated when information is available	August 2015
JAF-043	In progress - This AQ response will be updated when information is available (ISE Confirmatory Items 3.1.1.4.A, 3.4.A)	August 2015
JAF-046	Closed*	
JAF-049	Closed*	
JAF-050	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.4.8.A)	August 2015

Audit Questions	Status	Completion or Target Date
JAF-052	In progress - This AQ response will be updated when information is available (ISE Confirmatory Items 3.2.4.10.A, 3.2.4.10.C)	August 2015
JAF-053	Closed*	
JAF-055	Closed*	
JAF-056	In progress - This AQ response will be updated when information is available	August 2015
JAF-057	Closed*	
JAF-058	Closed*	
JAF-059	Closed*	
JAF-060	In progress - This AQ response will be updated when information is available	August 2015
JAF-061	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.4.2.C)	August 2015
JAF-062	In progress - This AQ response will be updated when information is available	August 2015
JAF-063	Closed*	
JAF-064	In progress - This AQ response will be updated when information is available	August 2015
JAF-065	In progress - This AQ response will be updated when information is available	August 2015
JAF-066	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.4.10.B)	August 2015
JAF-068	Closed*	
JAF-069	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.4.2.B)	August 2015
JAF-071	Closed*	
JAF-072	Closed*	
JAF-073	Closed*	

^{*}Closed indicates that Entergy's response is complete.

7. Potential Interim Staff Evaluation Impacts

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

8. References

The following references support the updates to the Overall Integrated Plan described in this attachment.

- Entergy to NRC, JAFP-13-0025, Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated February 28, 2013.
- 2. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012.
- 3. Entergy to NRC, JAFP-13-0112, First Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design Basis External Events (Order Number EA-12-049), dated August 28, 2013.
- 4. NRC letter, James A. FitzPatrick Nuclear Power Plant Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC No. MF1077), dated February 21, 2014
- Entergy to NRC, JAFP-14-0023, Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design Basis External Events (Order Number EA-12-049), dated February 28, 2014