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Waterford 3

W3F1-2014-0050

August 28, 2014

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

SUBJECT: Third Six Month Status Report for Implementation of Order EA-12-049, Commission Order Modifying License With Regard To Requirements for Mitigation Strategies for Beyond-Design-Basis External Events Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

References:

1. NRC Order Number EA-12-049, "Order to Modify Licenses With Regard To Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012 (ADAMS Accession No. ML12054A736)

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 (ADAMS Accession No. ML12229A174)

3. Nuclear Energy Institute (NEI) 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, dated August 2012 (ADAMS Accession No. ML12221A205)

4. Entergy letter to NRC, "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 26, 2012 (W3F1-2012-0093) (ADAMS Accession No. ML12300A447)

5. Waterford Steam Electric Station, Unit 3 letter to NRC, "Overall Integrated Plan in Response to March 12, 2012, Commission Order to Modify Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated February 28, 2013 (ADAMS Accession No. ML13063A266)

6 Waterford Steam Electric Station, Unit 3 letter to NRC, "First Six Month Status Report for Implementation of Order EA-12-049, Commission Order Modifying License With Regard To Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" dated August 28, 2013 (ADAMS Accession No. ML13241A281)

7 Waterford Steam Electric Station, Unit 3 letter to NRC, "Second Six Month Status Report for Implementation of Order EA-12-049, Commission Order Modifying License With Regard To Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" dated February 28, 2014 (ADAMS Accession No. ML14059A085)

Dear Sir or Madam:

On March 12, 2012, the NRC issued Order Number EA-12-049 (Reference 1) to Entergy Operations, Inc. (Entergy). The order was immediately effective and required Waterford Steam Electric Station, Unit 3 (Waterford 3) to develop mitigating strategy provisions for beyond-design-basis external events.

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 (OIP). Reference 2 endorses industry guidance document NEI 12-02, Revision 1 (Reference 3). Reference 4 provided the initial status report regarding mitigating strategies and Reference 5 provided the OIP.

NRC Order EA-12-049 requires submission of a status report at six-month intervals following submittal of the Overall Integrated Plan with regard to the requirements for mitigation strategies for beyond-design-basis external events for Waterford 3. References 6 and 7 provided the first and second six-month status reports for Waterford 3 respectively. The purpose of this letter is to provide, as an attachment, the third six month status report for the implementation of Order EA-12-049.

There are no new commitments identified in this submittal. Should you have any questions concerning the content of this letter, please contact John Jarrell, Regulatory Assurance Manager, at (504) 739-6685.

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

Sincerely,

MRC/LEM

Attachment: Waterford Steam Electric Station, Unit 3, Third Six Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to the Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

cc: Attn: Director, Office of Nuclear Reactor Regulation
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Attachment

W3F1-2014-00050

Waterford Steam Electric Station, Unit 3,
Third Six Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to the Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

**Waterford Steam Electric Station, Unit 3,
Third Six Month Status Report for the Implementation of Order EA-12-049,
Order Modifying Licenses with Regard to the Requirements for
Mitigation Strategies for Beyond-Design-Basis External Events**

1 Introduction

Waterford Steam Electric Station, Unit 3 (Waterford 3), developed an Overall Integrated Plan (Reference 1 in Section 8) documenting the diverse and flexible strategies (FLEX) in response to NRC Order EA-12-049 (Reference 2). This attachment provides a planned update of milestone accomplishments since submittal of the last status report (Reference 5), 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 Overall Integrated Plan (OIP), and are current as of July 31, 2014.

- First Six-Month Status Report — August 2013
- Second Six-Month Status Report — February 2014
- N-1 Walkdowns - May 2014
- Third Six-Month Status Report — Complete with submission of this document in August 2014

3 Milestone Schedule Status

The following provides an update to the milestone schedule to support the OIP. This section 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
Submit Overall Integrated Plan	Feb 2013	Complete	N/A
Submit Six Month Updates:			
Update 1	Aug 2013	Complete	N/A
Update 2	Feb 2014	Complete	N/A
Update 3	Aug 2014	Complete	N/A
Update 4	Feb 2015	Not Started	No Change
Update 5	Aug 2015	Not Started	No Change
Perform Staffing Analysis	Nov 2015	Not Started	No Change

Milestone	Target Completion Date **	Activity Status	Revised Target Completion Date
Modifications:			
Engineering and Implementation			
N-1 Walkdowns	May 2014	Complete	N/A
Design Engineering	Oct 2014	Started	Dec 2014
Implementation Outage	Nov 2015	Not Started	No Change
On-site FLEX Equipment			
Purchase	Dec 2014	Started	No Change
Procure	Sept 2015	Started	No Change
Off-site FLEX Equipment			
Develop Strategies with RRC	April 2015	Started	No Change
Install Off-Site Delivery Station (if Necessary)	Nov 2015	Not Started	No Change
Procedures			
Create Waterford FSGs	Nov 2015	Not Started	No Change
Create Maintenance Procedures	Nov 2015	Not Started	No Change
Training			
Develop Training Plan	May 2015	Not Started	No Change
Implement Training	Nov 2015	Not Started	No Change
Submit Completion Report	Feb 2016*	Not Started	No Change

* This date corresponds to the last six month status report and provides time to compile the report following the completion of the fall 2015 Implementation Outage.

** Target Completion Date is the last submitted date from either the overall integrated plan or previous six-month status reports

4 Changes to Compliance Method

During the design phase of the Waterford 3 (WF3) FLEX project, changes were identified to the compliance strategies as described in the Overall Integrated Plan (Reference 1). The changes are summarized below. The changes will be incorporated into a future update.

- The SFP makeup strategy is being changed to credit installed component cooling water makeup pumps to supply coolant to the spent fuel pool via hardened piping. The use of component cooling water makeup to provide SFP makeup in lieu of portable pumps for the Phase 2 strategy would be an alternate method to NEI 12-06 for meeting the Order.

- There are two redundant pumps, both will be capable of being powered from either electrical train. The pumps and associated electrical distribution are protected from all applicable extreme external hazards and are contained within the Reactor Auxiliary Building (RAB). Operation of the pumps and alignment of all valves would be external to the SFP area. The pumps are capable of 600 gpm flow, which significantly exceeds the makeup rates required for SFP makeup (< 150 gpm). The source of coolant for the component cooling water makeup pumps will be either the RWSP or the WCT basins via FLEX temporary hoses and system tie-ins. The final SFP makeup strategy will be reported upon in the Fourth Six Month Update when design has been completed.

- The RCS makeup strategy is being reconsidered to credit the installed charging pumps to supply coolant to the reactor coolant system. FLEX tie-ins would remain available for use by Phase 3 equipment and by the FLEX Core Cooling Pump during Modes 5 and 6 with the steam generators not available. The use of the installed charging pumps to supply coolant to the reactor coolant system in lieu of portable pumps for the Phase 2 strategy would be an alternate method to NEI 12-06 for meeting the Order.

  As discussed in the OIP, the charging pumps are capable of providing 44 gpm each, which exceeds the 25 gpm makeup required to maintain natural circulation and shutdown margin within the RCS. There are three charging pumps, of which two of the three can be powered from either electrical train. The charging pumps are protected from all applicable extreme external hazards and are contained within the RAB. The use of the charging pumps for RCS makeup rather than a portable pump reduces the difficulty of deploying RCS makeup early in the event when resources are challenged and site access is limited. The final RCS makeup strategy will be reported upon in the Fourth Six Month Update when design has been completed.

- The strategy of drawing WCT basin water through a non-running ACCWS pump is being changed to instead establish a gravity drain path directly to TDEFW pump suction, bypassing the non-running ACCWS pump and high point piping. The associated water transfer strategy to replenish the WCT basins from the Mississippi River is being reconsidered and will be reported upon in the Fourth Six Month Update when design has been completed.

- As discussed in WF3 Interim Staff Evaluation and Audit Report Section 3.0 (ADAMS Accession No. ML13220A402) and identified as ISE Confirmatory Item 3.1.1.2.B, the NRC concluded that:

  > "…Entergy does not conform to the NEI 12-06 guidance for provision of a means to move the spare or "N+1" set of FLEX equipment that is reasonably protected from the event. However, through the audit process the NRC understands that Entergy recognizes that this could result in the unavailability of the site FLEX capability (N) under certain conditions. Entergy plans to impose additional unavailability controls for the pre-staged set of equipment. With the associated equipment unavailability controls, the NRC staff concludes that corresponding level of equipment availability is consistent with the intent of NEI 12-06, and that this would be acceptable as an alternate approach to the guidance of NEI 12-06. Therefore, based on the current understanding of Entergy's plans for unavailability controls for the "N" and "N+1" sets of equipment, the NRC staff views the proposed approach as conditionally acceptable…

  Entergy is utilizing the following alternate method to NEI 12-06 to meet the Order.

If only N sets of equipment are protected and deployable under the required conditions, and a required protected component of the N portable equipment becomes unavailable, NEI 12-06, Section 11.5.3.f would be applied. NEI 12-06, Section 11.5.3.f states:

> "If portable equipment becomes unavailable such that the site FLEX capability (N) is not maintained, initiate actions within 24 hours to restore the site FLEX capability (N) and implement compensatory measures (e.g., use of alternate suitable equipment or supplemental personnel) within 72 hours."

For example, consider a portable pump (N) stored in a structure designed to protect the equipment from the hypothetical flood, while the spare pump (+1) is stored in a location below the flood level which could not be relocated prior to the arrival of potentially damaging flood levels (NEI 12-06, Section 6.2.3.1). Upon discovery of the unavailability of the hazard-protected pump (N), the licensee would initiate action within 24 hours to restore the site FLEX capability (N) associated with the pump and implement compensatory measures within 72 hours (NEI 12-06, section 11.5.3.f). The initiation action would typically involve initiation of a work authorization. Available options to restore site FLEX capability might include restoring the availability of the pump (N), or moving the (+1) pump to a location protected from the hypothetical flood, or moving the (+1) pump to a location from which it could be further moved prior to the arrival of a potentially damaging flood level. If the (+1) pump was moved to a hazard-protected location, the licensee would exit the actions of Section 11.5.3.f, but would still continue with the actions of 11.5.3.b ("Portable equipment may be unavailable for 90 days provided that the site FLEX capability (N) is available") until the N+1 capability was restored.

Additionally see updated response on the ePortal to Audit Question WF3-004 that reflects this strategy.

- Consistent with the OIP and ISE, Waterford will pre-stage a FLEX Diesel Generator within a new enclosure on the RAB roof. The finalized location of this enclosure is the RAB +41' roof located on the plant east side next to the train 'B' WCTs. The enclosure will meet the plant design basis for high winds and tornado missiles, will be seismically robust, and is above the site maximum flood elevation. Pre-staging the FLEX Diesel Generator within this enclosure is an alternate method to NEI 12-06 for meeting the Order as the generator is not portable. This strategy is prudent for Waterford due to the extreme external flooding potential that could challenge deployment of a portable generator from an exterior robust storage building. A second +1 diesel generator will be stored within the +1 Storage Building, consistent with the previously described alternate method.

- Similar to the FLEX Diesel Generator, and consistent with the OIP and ISE, the FLEX Core Cooling Pump will be pre-staged on the -35' el. of the RAB and is robust for all extreme external hazards. However, the pump has been changed to be non-portable, and installed at its deployment location near the TDEFW pump. The use of a non-portable pump is an alternate method to NEI 12-06 for meeting the Order. Due to the weight of the pump and size of a trailer, mounting of the pump on a trailer and storing on the -35' el. would present significant challenges to the operators to deploy this pump by the time the FLEX Diesel Generator is available to supply power to the pump. The pump

is capable of receiving power from either electrical train via FLEX temporary cables, and will be utilized to provide flow to either the SGs via FLEX tie-in connections on EFW piping or the RCS via FLEX tie-in connections on HPSI piping dependent on the initial mode that the event occurs. A second +1 FLEX Core Cooling Pump will be stored within the N+1 storage building, consistent with the previously described alternate method.

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

Waterford 3 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 table 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). A fourth table includes a listing of Audit Questions and the status of each item.

Overall Integrated Plan Open Item	Status
OI1. The suction path from the TDEFWP to the WCTs would be through a non-running ACCWS pump post-ELAP. It is expected that both the TDEFWP and the currently sized EFW FLEX pump (primary strategy) will have sufficient capability and/or NPSH to do so. However, this will need to be confirmed more fully as the detailed design of the primary strategy for maintaining core cooling and heat removal evolves (with SGs available).	Closed - The suction path has been evaluated and is insufficient for the FLEX strategy. Change to the strategy includes new modifications to allow a gravity drain from WCTs directly to the TDEFW suction, bypassing the non-running ACCWS pump and any high points in the associated piping.
OI2. An analysis will be needed to demonstrate that containment pressure and temperature will stay at acceptable levels throughout the ELAP event and that no containment spray system will be required as part of FLEX.	In Progress - Preliminary results indicate that containment spray will not be required as part of FLEX. This item will be addressed by update to AQ WF3-030 response when information is finalized.
OI3. At this stage of the conceptual design, the chemistry effects of alternate cooling source (ACS) use on	In Progress - This OIP Open Item will be

Overall Integrated Plan Open Item	Status
secondary wetted components are unknown.	updated when information is available
OI4. It is currently unclear how long gravity feed from the SITs can be maintained during Modes 5 and 6 in Phase 1. The ability to gravity feed depends upon SIT fluid height/backpressure, line losses through the gravity flow path, and developed pressure within the RCS. If this time is sufficiently short, Waterford 3 may choose to pre-stage requisite FLEX equipment in Modes 5 and 6.	Closed - The SITs are assumed to be not available in Modes 5 and 6. RCS makeup will be provided by the new FLEX Core Cooling Pump in Modes 5 and 6.
OI5. It is expected that only the component cooling water system and dry cooling towers will need to be made operational to reject the heat load generated post-ELAP in Phase 3. However, this must be investigated more fully to confirm such. Notably, only 60% of the dry cooling tower fan motors are currently missile protected and none of the wet cooling tower (WCT) fan motors are missile protected. If more than 60% of dry cooling tower (DCT) capacity is needed to support Phase 3, DCT and/or WCT fan motors may need to be missile protected. Currently available information follows: The DCT one train heat removal in an accident would be 113.38 Mbtu/hr. Given that 60% of the DCT is missile protected, it's assumed that that 40% of the heat removal capability is lost. 38 hours after shutdown, decay heat is less than 68 Mbtu/hr (ANS 79 decay heat curve) and less than the heat removal capacity of the DCTs. As the event proceeds, the required heat removal will decrease. Until this point in the event, Phase 1 and 2 FLEX strategies will be capable of removing decay heat. Final system operating details for the CCW and DCT (i.e., number of pumps and fans to operate) still need to be determined.	In Progress - This OIP Open Item will be updated when information is available.

Interim Staff Evaluation Open Items		Status
3.1.3.A	Wind Hazard Screening - The licensee's response fails to consider the warning time offered by a hurricane storm for pre-staging FLEX equipment. In addition, as described in NEI 12-06, Section 7.2.2, hurricanes can have a significant impact on local infrastructure, e.g., downed trees and flooding that should be considered in the interface with off- site resources.	The site takes considerable actions depending on the severity of an incoming storm or flood, up to and including conducting a plant shutdown followed by a cooldown to Mode 5. At least one set of FLEX

Interim Staff Evaluation Open Items		Status
		equipment is protected from all hazards ("robust" per NEI 12-06) and is pre-staged by design.
3.2.1.1.B	CENTS - Justify conformance with the limitations of the use of CENTS by providing the CENTS-calculated value of the centered one-hour moving average of the flow quality at the top of the SG tubes, which corresponds to the maximum void fraction of 0.2 in SG tubes as conditions used to define termination of single phase natural circulation, and confirming that the value is less than the limit specified in the white paper dated September 24, 2013 for use in defining the onset of reflux being.	The site-specific CENTS cases have been preliminarily re-evaluated to conform to the limitations of the use of CENTS. The transition to reflux cooling considered is based on the flow quality at the top of the SG U-tubes. The transition is assumed to occur once the flow quality exceeds 0.10 based on a one hour center moving average. This is in conformance with the use of CENTS as approved by the NRC in ML13276A555 (e.g., CENTS analysis is utilized to project when the transition to reflux cooling is projected and strategy based actions are taken prior to this transition to provide makeup). Revised response to AQ WF3-017 has been provided on the ePortal.
3.2.1.2.A	RCP Seal Leakage - Justification of less than 15 gpm per RCP seal leakage in analysis.	As reported in Second Six Month Update, the RCP seal leakage for Waterford is assumed to be no greater than 15 gpm per RCP.
3.2.1.2.B	RCP generic seal question regarding: (1) the analysis used to determine the leakage rate, (2) cold leg	This item addressed by updated AQ WF3-018

Interim Staff Evaluation Open Items		Status
	subcooling, (3) leakage flow path characteristics after seal failure, (4) seal performance at high temperatures, (5) isolation of controlled bleed off lines, and (6) pressure dependent seal leakage rates.	response.
3.2.1.3.A	Decay Heat -Assumption 4 on page 4-13 of WCAP-17601 states that decay heat is per ANS [American Nuclear Society] 5.1-1979 + 2 sigma, or equivalent. Address the applicability of assumption 4 to Waterford. If the ANS 5.1- 1979 + 2 sigma model is used in the Waterford ELAP analysis, address the adequacy of the use of the decay heat model in terms of the plant-specific values of the following key parameters: (1) initial power level, (2) fuel enrichment, (3) fuel burnup, (4) effective full power operating days per fuel cycle, (5) number of fuel cycles, if hybrid fuels are used in the core, and (6) fuel characteristics (addressing whether they are based on the beginning of the cycle, middle of the cycle, or end of the cycle). If a different decay heat model is used, describe the specific model and address the adequacy of the model and the analytical results.	This item addressed by updated AQ WF3-021 response.
3.2.1.8.A	Core Sub-Criticality- Regarding boron mixing, the NRC staff has not yet accepted the PWROG [Pressurized Water Reactor Owners Group] position paper on boron mixing. Therefore, additional technical justification will be needed to resolve this issue, both generically and on a plant-specific basis.	The NRC has accepted the PWROG position paper on boron mixing per ML13276A183. Waterford conforms to the industry boron mixing position.
3.2.4.2.A	Ventilation - Adequacy of ventilation in the control room to protect energized equipment throughout the entire ELAP event, especially if the ELAP is due to high temperature hazard.	This item addressed by updated AQ WF3-032 response.
3.2.4.2.B	Ventilation- Effects of elevated temperatures in the battery room, especially if the ELAP is due to a high temperature hazard.	This item addressed by updated AQ WF3-032 response.
3.2.4.2.C	Ventilation - Hydrogen concentration in the battery rooms during recharging	This item addressed by updated AQ WF3-032 response.
3.2.4.2.D	Ventilation - Loss of ventilation and any potential impacts on the necessary equipment in the TDEFW pump room.	This item addressed by updated AQ WF3-032 response.
3.2.4.4.A	Lighting - Review the licensee's assessment of the habitability/accessibility requirements to ensure	This item is addressed by updated AQ WF3-

Interim Staff Evaluation Open Items		Status
	lighting is appropriately addressed.	034 response.
3.2.4.8.A	Electrical Power Sources/Isolation and Interactions- Provide a summary of the sizing calculations used to determine the adequacy of the FLEX generators used to power plant electrical equipment.	In Progress - Revised response to associated AQ WF3-041 provided on Entergy ePortal on 10/30/13.
3.2.4.10.A	Load Reduction to Conserve DC Power - The licensee's Integrated Plan on Page 7 identifies dc load shed at hour 1 and 4. With regard to the load shedding of the dc bus in order to conserve battery capacity: a. Provide the dc load profile for the mitigation strategies to maintain core cooling, containment, and SFP cooling during all modes of operation. In your response, describe any load shedding that is assumed to occur and the actions necessary to complete each load shed. Also provide a detailed discussion on the loads that will be shed from the dc bus, the equipment location (or location where the required action needs to be taken), and the required operator actions necessary and the time to complete each action. In your response, explain which functions are lost as a result of shedding each load and discuss any impact on defense-in- depth strategies and redundancy. b. Identify any plant components that will change state if vital ac or dc power is lost or de-energized during the load shed. c. Provide the minimum voltage that must be maintained and the basis for the minimum voltage on each battery/dc bus during each Phase under all MODES of operation (consider the impact of reduced loading as a result of load shedding).	In Progress - An updated AQ WF3-041 response addresses part “c.” of this item. The remaining parts of this item will be addressed by update to AQ WF3-041 response when information is available.

Interim Staff Evaluation Confirmatory Items		Status
3.1.1.1.A	Seismic Protection - Licensee to ensure that: 1) seismic interactions to ensure equipment is not damaged by non-seismically robust equipment or structures for portable equipment that will be stored outside; 2) how large FLEX equipment such as pumps and power supplies stored inside seismic structures is appropriately secured to protect them during a seismic event; and, 3) where other portable equipment such as hoses and power cables would be stored	This item is addressed by updated AQ WF3-001 response.

Interim Staff Evaluation Confirmatory Items		Status
	to assure proper protection from a seismic event.	
3.1.1.2.A	Seismic Deployment - Protection of the connection points for Reactor Coolant System (RCS) inventory control during the final phase is yet to be determined (TBD).	This item is addressed by update to AQ WF3-003 response.
3.1.1.2.B	Seismic Protection - Protection of the tow vehicle used to move the spare or "N+1" FLEX generator. (Also tied into to the ability to move equipment in the flooding context discussed in Section 3.1.2.2 and wind protection for the vehicle discussed in Section 3.1.3.2)	This item is addressed by updated AQ WF3-004 response.
3.1.1.3.A	Seismic Procedural Interface - Seismic hazards associated with large internal flooding sources that are not seismically robust and do not require ac power, and the use of ac power to mitigate ground water in critical locations.	In Progress - This item will be addressed by updated AQ WF3-005 response when information is available.
3.1.1.4.A	Seismic Off site resources - The licensee has not yet identified the local staging area and method of transportation to the site.	This item is addressed by updated AQ WF3-006 response.
3.1.2.2.A	Flooding Deployment- Implementation of flooding persistence into their FLEX strategies for pre-event staging of FLEX equipment.	In Progress - This item will be addressed by update to AQ WF3-007 response when information is available.
3.1.2.3.A	Flooding Procedural Interface- Deployment of portable equipment in flooded conditions not incorporated into flood procedures or the need to deploy temporary flood barriers and extraction pumps necessary to support deployment.	In Progress - This item will be addressed by update to AQ WF3-009 response when information is available.
3.1.3.2.A	Wind Deployment - Whether procedures and programs will include taking proactive actions such as testing, connecting, and readying exposed portable equipment to reduce the potential for wind impacts.	This item addressed by updated AQ WF3-012 response.
3.2.1.1.A	CENTS - Verify the use of CENTS in the ELAP analysis for Waterford is limited to the flow conditions before reflux boiling initiates. This includes providing a justification for how the initiation of reflux boiling is defined.	This item is addressed by updated AQ WF3-020 response.

Interim Staff Evaluation Confirmatory Items		Status
3.2.1.4.A	Initial Values for Key Plant Parameters and Assumptions- Review analysis of UHS [Ultimate Heat Sink] (licensee open item OI5)	This item is related to OI5, which is in progress.
3.2.3.A	Containment Functions Strategies - Review the results of the finalized containment analysis associated with open item OI2 of the Integrated Plan, which shows that containment functions will be (potentially) restored and maintained in response to an ELAP event.	This item is addressed by update to AQ WF3-030 response.
3.2.4.4.B	Communications - Confirm that upgrades to the site's communications systems have been completed.	NRC Confirmatory Action
3.2.4.5.A	Protected and Internal Locked Area Access- Verify access plans are incorporated into FLEX strategies.	This item is addressed by updated AQ WF3-035 response.
3.2.4.6.A	Personnel Habitability - Review the licensee's assessment of the habitability/accessibility requirements in all critical areas.	This item is addressed by update to AQ WF3-033.
3.2.4.7.A	Water Sources -Verify the evaluation of the suction path from the TDEFWP to the WCTs [Wet Cooling Towers] through a non-running ACCWS [Auxiliary Component Cooling Water System] pump post-ELAP confirms it is viable.	This item is related to OI1, which has been closed.
3.2.4.7.B	Water Sources - Description of how the licensee would get water from the Mississippi River to the FLEX pumps.	In Progress (See related information in Section 4) - This item will be addressed by update to AQ WF3-036 response when information is available.
3.2.4.8.B	Electrical Power Sources/Isolation and Interactions - Licensee to provide the level of detail of the FLEX instrumentation to ensure that electrical equipment remains protected (from an electrical standpoint- e.g., power fluctuations). Also, confirm electrical isolation to ensure that the portable/FLEX diesel generators are isolated from Class 1 E diesel generators to prevent simultaneously supplying power to same Class 1 E bus.	This item is addressed by updated AQ WF3-038 response.
3.2.4.9.A	Portable Equipment Fuel - Diesel fuel oil supply for the diesel driven pump and how continued operation to ensure core cooling is maintained. Diesel fuel oil supply (e.g., fuel oil storage tank volume, supply pathway, etc.) for the FLEX	This item is addressed by updated AQ WF3-039 response.

Interim Staff Evaluation Confirmatory Items		Status
	generators and how continued operation to ensure core and SFP cooling is maintained indefinitely (i.e., Phase 2 and 3).	
3.2.4.9.B	Portable Equipment Fuel - Discuss how fuel quality will be maintained.	This item is addressed by updated AQ WF3-039 response.

Audit Question Open Items	Status	Completion or Target Date
WF3-001	Updated response available on the ePortal (ISE Confirmatory Item 3.1.1.1.A)	See ePortal
WF3-002	In progress - This AQ response will be updated when information is available	February 2015
WF3-003	Updated response available on the ePortal (ISE Confirmatory Item 3.1.1.2.A)	See ePortal
WF3-004	Updated response available on the ePortal (ISE Confirmatory Item 3.1.1.2.B)	See ePortal
WF3-005	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.1.1.3.A)	February 2015
WF3-006	Updated response available on the ePortal (ISE Confirmatory Item 3.1.1.4.A)	See ePortal
WF3-007	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.1.2.2.A)	February 2015
WF3-008	Updated response available on the ePortal	See ePortal
WF3-009	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.1.2.3.A)	February 2015
WF3-010	Closed*	N/A
WF3-011	Updated response available on the ePortal	See ePortal
WF3-012	Updated response available on the ePortal (ISE Confirmatory Item 3.1.3.2.A)	See ePortal
WF3-013	Updated response available on the ePortal	See ePortal
WF3-014	Updated response available on the ePortal	See ePortal
WF3-015	Closed*	N/A
WF3-017	Updated response available on the ePortal (ISE Open Items 3.2.1.1.B, 3.2.1.2.B & 3.2.1.8.A)	See ePortal
WF3-018	Updated response available on the ePortal (ISE Open	See ePortal

Audit Question Open Items	Status	Completion or Target Date
	Item 3.2.1.2.A & 3.2.1.2.B)	
WF3-019	Updated response available on the ePortal (ISE Open Item 3.2.1.2.B)	See ePortal
WF3-020	Updated response available on the ePortal (ISE Confirmatory Item 3.2.1.1.A)	See ePortal
WF3-021	Updated response available on the ePortal (ISE Open Item 3.2.1.3.A)	See ePortal
WF3-022	Updated response available on the ePortal	See ePortal
WF3-023	In progress - This AQ response will be updated when information is available	February 2015
WF3-024	In progress - This AQ response will be updated when information is available	February 2015
WF3-025	Updated response available on the ePortal (ISE Confirmatory Item 3.2.4.7.A)	See ePortal
WF3-026	Updated response available on the ePortal	See ePortal
WF3-027	Updated response available on the ePortal	See ePortal
WF3-028	In progress - Changes to the FLEX strategy necessitate an updated response to this AQ when information is available.	February 2015
WF3-029	Updated response available on the ePortal	See ePortal
WF3-030	Updated response available on the ePortal (ISE Confirmatory Item 3.2.3.A)	See ePortal
WF3-031	Closed*	N/A
WF3-032	Updated response available on the ePortal (ISE Open Items 3.2.4.2.A, 3.2.4.2.B, 3.2.4.2.C, 3.2.4.2.D)	See ePortal
WF3-033	Updated response available on the ePortal (ISE Confirmatory Item 3.2.4.6.A)	See ePortal
WF3-034	Updated response available on the ePortal (ISE Open Item 3.2.4.4.A)	See ePortal
WF3-035	Updated response available on the ePortal (ISE Confirmatory Item 3.2.4.5.A)	See ePortal
WF3-036	In progress - This AQ response will be updated when information is available (ISE Confirmatory Item 3.2.4.7.B)	February 2015
WF3-038	Updated response available on the ePortal (ISE Confirmatory Item 3.2.4.8.B)	See ePortal
WF3-039	Updated response available on the ePortal (ISE	See ePortal

Audit Question Open Items	Status	Completion or Target Date
	Confirmatory Items 3.2.4.9.A and 3.2.4.9.B)	
WF3-040	In progress - This AQ response will be updated when information is available	February 2015
WF3-041	In progress - Partial updated response available on the ePortal (ISE Open Item 3.2.4.10.A (c.)). The remainder of this AQ response will be updated when information is available (ISE Open Items 3.2.4.8.A & 3.2.4.10.A)	February 2015

*Closed indicates that Entergy's response is complete.

7 Potential Interim Staff Evaluation Impacts

In addition to the changes to compliance methods identified in Section 4 and the items identified in Section 6, the items discussed below have potential impact on the Interim Staff Evaluation.

- During design finalization, Waterford has identified an error in a supporting calculation to the Maintain Core Cooling & Heat Removal strategy as described in the Waterford Overall Integrated Plan (Reference 1). The Waterford Overall Integrated Plan (Reference 1) discusses the scenario on pages 7, 13, 28 and 76. The Interim Staff Evaluation and Audit Report for Waterford (Reference 4) references the affected strategy in Section 3.2.1 on pages 27, 30 through 36, 40 and 41 of 65. The initial plant cooldown target temperature set to preclude nitrogen injection from the SITs included a non-conservative input for initial SIT volume. To preclude nitrogen injection early in the event response (prior to when the SITs can be isolated), the cooldown strategy is being revised. The overall strategy will be a two stage cooldown, where the first stage will be an early cooldown to a cold leg temperature of approximately 456°F. The second stage of the cooldown will occur after restoring power to the charging pumps and SIT isolation valves to preclude nitrogen intrusion into the RCS. The updated cooldown strategy will be reflected in a future OIP update.
- As stated in the Second Six Month Update (Reference 5), an updated sequence of events timing is required for the SFP cooling strategy for Modes 1 through 4. The calculation to determine the updated timing is in progress and the results will be reported in a future OIP update.

8 References

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

1. Waterford Steam Electric Station, Unit 3 letter to NRC, "Overall Integrated Plan in Response to March 12, 2012, Commission Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated February 28, 2013 (ADAMS Accession No. ML13063A266)

2. NRC Order Number EA-12-049, “Order to Modify Licenses With Regard To Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,” dated March 12, 2012 (ADAMS Accession No. ML12054A736).
3. Waterford Steam Electric Station, Unit 3 letter to NRC, “First Six Month Status Report for Implementation of Order EA-12-049, Commission Order Modifying License With Regard To Requirements for Mitigation Strategies for Beyond-Design-Basis External Events” dated August 28, 2013. (ADAMS Accession No. ML13241A281)
4. NRC letter to Entergy Operations, Inc. - Waterford Steam Electric Station, Unit 3 – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12- 049 (Mitigation Strategies) (TAC No. MF0977), dated November 22, 2013 (ADAMS Accession No. ML13220A402)
5. Waterford Steam Electric Station, Unit 3 letter to NRC, “Second Six Month Status Report for Implementation of Order EA-12-049, Commission Order Modifying License With Regard To Requirements for Mitigation Strategies for Beyond-Design-Basis External Events” dated February 28, 2014 (ADAMS Accession No. ML14059A085)