Phil Couture
Senior Manager
Fleet Regulatory Assurance - Licensing
601-368-5102

W3F1-2022-0049

10 CFR 50.90
10 CFR 50.69

August 19, 2022

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

Subject: Response to Request for Additional Information Regarding License Amendment Requests to Adopt 10 CFR 50.69 and TSTF-505

Waterford Steam Electric Station, Unit 3
NRC Docket No. 50-382
Renewed Facility Operating License No. NPF-38

By letters dated December 18, 2020 (Reference 1) and February 8, 2021 (Reference 2), as supplemented by letters dated April 8, 2021 (Reference 3), October 1, 2021 (Reference 4), April 25, 2022 (Reference 5), and May 16, 2022 (Reference 6), Entergy Operations, Inc. (Entergy) submitted license amendment requests (LARs) to adopt a risk-informed process for the categorization and treatment of structures, systems, and components and a risk-informed completion time (RICT) program at Waterford Steam Electric Station, Unit 3 (Waterford 3), respectively. The LAR dated December 18, 2020 would modify the Waterford 3 licensing basis, by the addition of a license condition, to allow for the implementation of the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors." The LAR dated February 8, 2021 would modify Technical Specification requirements to permit the use of RICTs consistent with the methodologies presented in Technical Specification Task Force (TSTF) Traveler TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times – Initiative 4b," and Nuclear Energy Institute (NEI) 06-09, Revision 0-A, "Risk-Informed Technical Specifications Initiative 4b: Risk-Managed Technical Specifications (RMTS) Guidelines."

In References 5 and 6, Entergy submitted supplemental information for the 10 CFR 50.69 (Reference 1) and TSTF-505 (Reference 2) LARs, respectively, as requested by the U.S. Nuclear Regulatory Commission (NRC). During subsequent conversations regarding the LAR supplements, the NRC indicated that additional information would be needed to complete its review of the LARs. A draft request for additional information (RAI) was provided to Entergy by electronic mail (email), dated July 15, 2022. A conference call was subsequently held with the NRC on July 21, 2022 to provide clarification of the draft RAI questions. The formal (final) RAI was issued to Entergy by email on July 22, 2022 (Reference 7).

As noted in the Reference 7 email message, the RAI response is expected within 30 days from receipt of the email.

The Enclosure of this letter provides a restatement of the NRC RAI questions followed by Entergy's responses. Attachments 1 and 2 to the Enclosure contain revised Renewed Facility Operating License (FOL) markup pages and clean typed pages, respectively. The FOL License Condition was revised in response to APLA RAI 01 (see Enclosure). The FOL pages provided in this submittal supersede and replace in their entirety the FOL pages previously provided in Enclosures 3 and 4 of the supplement to the 10 CFR 50.69 LAR (Reference 5). In addition, the previously submitted response to APLA RAI 03 is slightly modified to be consistent with a recent change to an Entergy procedure that affects the frequency of Probabilistic Risk Assessment (PRA) model updates. The response to APLA RAI 03 was originally provided in Enclosure 1 of the TSTF-505 RAI response (Reference 6) and the change to the response is discussed in the Enclosure of this letter.

Entergy has reviewed the information supporting the No Significant Hazards Considerations and the Environmental Evaluations that were previously provided to the NRC in the Enclosure of the Reference 1 LAR and Attachment 1 to the Reference 2 LAR. The information in this RAI response does not alter the previous conclusions that the proposed changes present no significant hazards consideration and no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendments.

This letter contains no new regulatory commitments.

In accordance with 10 CFR 50.91(b)(1), "Notice for public comment; State consultation," a copy of this letter is being provided to the designated State Official.

Should you have any questions or require additional information, please contact Leia Milster, Regulatory Assurance Manager, Waterford 3, at 504-739-6250.

I declare under penalty of perjury, that the foregoing is true and correct. Executed on August 19, 2022.

Respectfully,

Phil Couture

PC/cdm

Enclosure: Response to Request for Additional Information

Attachments to Enclosure

1. Renewed Facility Operating License (FOL) – Markup Pages

2. Renewed Facility Operating License (FOL) – Revised Clean Pages

References:

1) Entergy Operations, Inc. (Entergy) letter to U.S. Nuclear Regulatory Commission (NRC), "Application to Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, System [*sic*], and Components (SSCs) for Nuclear Power Reactors,'" (ADAMS Accession No. ML20353A433), dated December 18, 2020

2) Entergy letter to NRC, "Application for Technical Specification Change to Adopt Risk-Informed Extended Completion Times – RITSTF Initiative 4B," (ADAMS Accession No. ML21039A648), dated February 8, 2021

3) Entergy letter to NRC, "Supplement to Application for Technical Specifications Change to Adopt Risk-Informed Extended Completion Times – RITSTF Initiative 4b," (ADAMS Accession No. ML21098A262), dated April 8, 2021

4) Entergy letter to NRC, "Response to U.S. Nuclear Regulatory Commission Request for Additional Information Regarding License Amendment Request to Adopt 10 CFR 50.69," (ADAMS Accession No. ML21274A876), dated October 1, 2021

5) Entergy letter to NRC, "Supplement to Application to Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems, and Components (SSCs) for Nuclear Power Reactors,'" (ADAMS Accession No. ML22115A062), dated April 25, 2022

6) Entergy letter to NRC, "Response to Request for Additional Information to License Amendment Request to Revise Technical Specifications to Adopt TSTF-505, Revision 2, 'Provide Risk Informed Extended Completion Times – RITSTF Initiative 4b,'" (ADAMS Accession No. ML22136A310), dated May 16, 2022

7) NRC electronic mail (email) message to Entergy, "Request for Additional Information: Waterford 3 – License Amendment Requests to Adopt 10 CFR 50.69 and TSTF-505," (ADAMS Accession No. ML22206A017), dated July 22, 2022

cc: NRC Region IV Regional Administrator
NRC Senior Resident Inspector – Waterford Steam Electric Station, Unit 3
NRC Project Manager Waterford Steam Electric Station, Unit 3
Louisiana Department of Environmental Quality

Enclosure

W3F1-2022-0049

Response to Request for Additional Information

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

By letters dated December 18, 2020, and February 8, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML20353A433 and ML21039A648, respectively), as supplemented by letters dated April 25, 2022, April 8, 2021, and May 16, 2022 (ADAMS Accession No. ML22115A062, ML21098A262, and ML22136A310, respectively), Entergy Operations, Inc (Entergy, the licensee) submitted license amendment requests (LARs or applications) for the use of a risk-informed process for the categorization and treatment of structures, systems, and components and the risk-informed completion time (RICT) program at Waterford Steam Electric Station, Unit 3 (Waterford 3), respectively. The LAR dated December 18, 2020 would modify the Waterford 3 licensing basis, by the addition of a license condition, to allow for the implementation of the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors." The LAR dated February 8, 2021, would modify technical specification (TS) requirements to permit the use of RICTs with the implementation of Nuclear Energy Institute (NEI) 06-09, Revision 0-A, "Risk-Informed Technical Specifications Initiative 4b: Risk-Managed Technical Specifications (RMTS) Guidelines."

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the LARs, as supplemented, and determined that additional information is needed to complete its review. The NRC staff's request for additional information (RAI) is listed below.

<u>Division of Risk Assessment (DRA)</u>
<u>Probabilistic Risk Assessment (PRA) Licensing Branch A (APLA) Questions</u>

<u>APLA RAI 01 (Supplement) – Open Internal Events PRA Facts and Observations (F&Os)</u>

In attachment 3 of the April 25, 2022, supplement and enclosure 1 of the May 16, 2022, supplement, the licensee stated that subsequent to the LAR submittals that a focused-scope peer review was conducted on human reliability supporting requirements (SRs) in December 2021 that resulted in four open F&Os. Tables A3-2 and E2-2 of each supplement, respectively, identifies and provides dispositions to these four F&Os.

a) F&O HR 7-1 related to SR HR-G6 not met, regarding reasonableness checks for post-initiator human error probability (HEP) quantifications, identified that plant history and experience do not appear to have been considered in the review of post-initiator human failure events (HFEs) and their final HEPs. The licensee stated in the disposition that this review was performed in its previous cutset review process that included operational personnel. However, the licensee did not describe how the cutset review specifies, as part of its reasonableness check of the human failure probability, review of plant history and experience in accordance with the requirement of the 2009 American Society of Mechanical Engineers/American Nuclear Society (ASME/ANS) PRA Standard SR HR-G6.

    i. Provide details on how the cutset review process included review of both plant history and experience and were assessed to meet SR HR-G6.

    ii. Alternatively, to part (i), propose a mechanism to resolve the F&O using an accepted NRC process ("U.S. Nuclear Regulatory Commission Acceptance on Nuclear Energy Institute Appendix X to Guidance 05-04, 07-12, and 12-13, Close-out of Facts and

Observations (F&Os)," ML17079A427), prior to the implementation of the 10 CFR 50.69 categorization process and the RICT.

b) F&O HR 7-4 related to SR HR-I2 not met, identified a general issue with discrepancies between parts of the human reliability analysis (HRA) notebook and the data analysis notebook. Additionally, the peer review team noted a lack of documentation supporting the licensee's pre-initiator HRA analysis. Documentation also appears to be an issue for the HRA post-initiator analysis noting a lack of basis for the analysis in the HRA calculator. The licensee states in the disposition that this is only a documentation issue and does not impact the application. Associated F&Os HR 1-2 (related to SR HR-C2) and HR 7-3 (related to SR HR-I1) appear to identify similar concerns. The NRC staff notes that with no apparent documentation supporting the licensee's HRA analysis, it is unclear how the HRA meets the applicable SR from the 2009 ASME/ANS PRA Standard.

i. Provide details of how the Waterford 3 HRA analysis is in alignment with approved PRA standards. Specifically:

    a. Explain how the licensee ensured consistency between the data analysis notebook and HRA notebook.

    b. Explain how the review of the pre-initiator HFEs for impact to multiple trains or systems was performed and whether additional mechanisms were discovered.

    c. Explain the licensee's approach to ensure consistency between the HRA calculator and HRA notebook. In the response, address the specific examples identified in the F&O by the peer review team.

ii. Alternatively, to part (i), propose a mechanism to resolve the F&Os, using an accepted NRC process ("U.S. Nuclear Regulatory Commission Acceptance on Nuclear Energy Institute Appendix X to Guidance 05-04, 07-12, and 12-13, Close-out of Facts and Observations (F&Os)"), prior to the implementation of the 10 CFR 50.69 categorization process and the RICT program.

Entergy Response

In response to APLA RAI 01 (Supplement), Entergy proposes to close the F&Os by utilizing an accepted NRC process consistent with the suggested alternatives in part (ii) of items a) and b) as the mechanism for resolving the concerns. As required, the new License Condition (C.22) that was provided in Enclosures 2 and 3 of Entergy Letter W3F1-2022-0009 (ML22115A062), dated April 25, 2022, and proposed to be added to the Waterford 3 Renewed Facility Operating License (FOL), is hereby amended to read as follows (the revised text is indicated with italics):

"22. 10 CFR 50.69, Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Plants

Entergy is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Entergy's submittal letter dated December 18, 2020, and all its subsequent associated supplements as specified in License Amendment No. XXX dated [DATE].

Entergy will complete closure of the four Human Reliability Analysis (HRA) Finding level Facts and Observations (F&Os) identified as Finding Numbers HR 1-2, HR 7-1, HR 7-3, and HR 7-4 in Table A3-2 of Entergy letter to NRC, dated April 25, 2022, and in Table E2-2 of Entergy letter to NRC, dated May 16, 2022, using an accepted NRC process (Nuclear Energy Institute (NEI) Appendix X to NEI 05-04, NEI 07-12, and NEI 12-13) prior to implementation of 10 CFR 50.69 and the risk-informed completion time (RICT) program.

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach)."

Markup and clean pages for the FOL are provided in Attachments 1 and 2 to this Enclosure. Note that the above License Condition, as amended, supersedes the second commitment identified in Enclosure 5 of Entergy letter W3F1-2022-0015 (ML22136A310), dated May 16, 2022. The commitment requires that "Four Finding level Facts and Observations related to documentation issues and listed in Table E2-2 will be resolved prior to program implementation," and the scheduled completion date is specified as "120 days from final approval of LAR." The License Condition, as amended, is provided in lieu of this commitment, and Energy, therefore, rescinds the commitment.

<u>Entergy Revised Response to APLA RAI 03 Item b), Part (i)</u>

In the electronic mail (email) message to Entergy (ML22103A171), dated April 13, 2022, the NRC issued RAIs regarding Entergy's License Amendment Request to adopt TSTF-505. Included in the RAIs was APLA RAI 03 item b), part (i), which requested that Entergy describe the Waterford process and criteria to identify when a Real-Time Risk (RTR) model update is required for the RICT program. The response provided in Enclosure 1 of Entergy letter W3F1-2022-0015 (ML22136A310), dated May 16, 2022, was, in part, that "[t]he Entergy governing procedure for PRA updates is EN-DC-151 'PRA Maintenance and Update'… This procedure provides governance for periodic and interim model updates. Periodic model updates are performed every 4 years…" Subsequent to this response, EN-DC-151 was revised to be consistent with NEI 06-09, Revision 0-A, which requires periodic PRA updates every two cycles for plant-specific RICT applications. Hence, this procedure change dictates the need to revise the RAI response since Waterford 3 is currently on 18-month fuel cycles, and periodic PRA updates would now be required every 3 years. Accordingly, Entergy hereby revises the first paragraph, third sentence, of the response to APLA RAI 03 item b), part (i), by replacing the phrase "every 4 years" with the phrase "every two cycles," in accordance with the current revision of the EN-DC-151 procedure.

Division of Engineering and External Hazards (DEX)
Instrumentation and Controls Branch (EICB) Questions

EICB RAI 01 – Waterford 3 TSTF-505 Audit Item ID 0053 (EICB 1)*

In section 3.1.2.3, "Evaluation of Instrumentation and Control Systems," of the TSTF-505 Revision 2, model application, the NRC clarifies the basis of the NRC staff's safety evaluation is to consider "a number of potential plant conditions allowed by the new TSs" and to consider "what redundant or diverse means were available to assist the licensee in responding to various plant conditions." Traveler TSTF-505, Revision 2, states that at least one redundant or diverse means (e.g., other automatic features or manual action) to accomplish the safety functions (e.g., reactor trip, safety injection, or containment isolation) remain available during the use of the RICT.

In addition, Regulatory Guide 1.174, Revision 2, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," (ML100910006) states the licensee should "assess whether the proposed LB change meets the defense-in-depth principle" by not over-relying on programmatic activities as compensatory measures associated with the change in the LB.

Please demonstrate the consistency with the TSTF-505, Revision 2 model SE by identifying the diverse means for each affected Instrumentation and Controls function under each postulated accident.

If the sole diverse means is identified as "manual actuation," please confirm that these "manual actuations" are modeled in PRA, defined in Waterford 3 operation procedures to which operators are trained, and describe how the completion times associated with these actions are evaluated as adequate.

*The initial response to this question has been placed in the Certrec Portal by the licensee for NRC review. A formal response is now requested to be placed on the docket via the licensee's RAI response.

Entergy Response

As requested, Entergy is formally responding to the EICB RAI 01 question by providing the response that was originally placed in the Certrec Portal for NRC review. The response reads as follows:

> "The attached document [Defense in Depth Table 04-05-2022] lists the diverse means to accomplish safety functions for the instruments to be covered in the RICT program. All have at least one automatic defense in depth feature except for the Containment Pressure High-High actuation function (which would auto initiate Containment Spray [CS]) and Refueling Water Storage Pool (RWSP) level low actuation function (which would initiate Recirculation Actuation Signal (RAS)).

Both of the above have procedures to alert the operator that manual actions are necessary. The emergency operating procedure OP-902-009 Appendix 34 provides instructions for manual initiation of RAS, and OP-902-000, Step 9.3, informs the operator to verify CS is initiated, when conditions are met, in addition to OP-902-002, Section 4, Step 14.

Both of the manual initiations for RAS and CS are in the PRA model. Times to initiate were determined through the Cause Based Decision Tree Method (CBDTM), operator interviews, and procedure assessments."

Note that the "attached document" referred to in the above response provided: "Table 1: RPS [Reactor Protective System] Actuation Instrument Diversity," and "Table 2: ESFAS [Engineered Safety Features Actuation System] Actuation Instrument Diversity." These tables are provided below.

Table 1: RPS Actuation Instrument Diversity

Function	Safety Function	Plant Condition/Accident	Diverse Reactor Trips
Manual Reactor Trip	Reactor Trip	Automatic Actuation Failed from one Reactor Trip Function	1) Two (2) Manual Reactor Trip pushbutton switches in the Main Control Room (MCR) 2) Two (2) Manual Reactor Trip pushbutton switches at the reactor trip switchgear (RTSG) 3) Diverse Automatic Reactor Trips

Table 2: ESFAS Actuation Instrument Diversity

Function	Safety Function	Plant Condition/Accident	Diverse Reactor Trips
Containment Pressure - High	Safety Injection (SIAS)	Loss of Cooling Accident (LOCA)	1) Automatic Protection a. Low Pressurizer Pressure 2) Manual Safety Injection
		Main Steam Line Break (MSLB)	1) Automatic Protection a. Low Pressurizer Pressure 2) Manual Safety Injection
	Containment Isolation (CIAS)	Loss of Cooling Accident (LOCA)	1) Automatic Protection a. Low Pressurizer Pressure 2) Manual Containment Isolation
		Main Steam Line Break (MSLB)	1) Automatic Protection a. Low Pressurizer Pressure

Function	Safety Function	Plant Condition/Accident	Diverse Reactor Trips
			2) Manual Containment Isolation
	Main Steam Line Isolation (MSIS)	Loss of Cooling Accident (LOCA)	1) Automatic Protection a. Low Steam Generator Pressure 2) Manual Main Steam Isolation
		Main Steam Line Break (MSLB)	1) Automatic Protection a. Low Steam Generator Pressure 2) Manual Main Steam Isolation
Pressurizer Pressure - Low	Safety Injection (SIAS)	Loss of Cooling Accident (LOCA)	1) Automatic Protection a. High Containment Pressure 2) Manual Safety Injection
		Main Steam Line Break (MSLB)	1) Automatic Protection a. High Containment Pressure 2) Manual Safety Injection
		Inadvertent Opening of a Pressurizer Safety Valve	1) Automatic Protection a. High Containment Pressure 2) Manual Safety Injection
	Containment Isolation (CIAS)	Loss of Cooling Accident (LOCA)	1) Automatic Protection a. High Containment Pressure 2) Manual Containment Isolation
		Main Steam Line Break (MSLB)	1) Automatic Protection a. High Containment Pressure 2) Manual Containment Isolation
		Inadvertent Opening of a Pressurizer Safety Valve	1) Automatic Protection a. High Containment Pressure 2) Manual Safety Injection
Containment Pressure - High-High (coincident with SIAS)	Containment Spray (CSAS)	Loss of Cooling Accident (LOCA)	1) Manual Containment Spray
		Main Steam Line Break (MSLB)	1) Manual Containment Spray
Steam Generator (SG) Pressure - Low		Loss of Cooling Accident (LOCA)	1) Automatic Protection

Function	Safety Function	Plant Condition/Accident	Diverse Reactor Trips
	Main Steam Line Isolation (MSIS)		a. High Containment Pressure 2) Manual Main Steam Isolation
		Main Steam Line Break (MSLB)	1) Automatic Protection a. High Containment Pressure 2) Manual Main Steam Isolation
Refueling Water Storage Pool (RWSP) - Low	Safety Injection System Sump Recirculation (RAS)	Loss of Cooling Accident (LOCA)	1) Manual Safety Injection System Sump Recirculation
Steam Generator (SG) Level (1/2) - Low AND Steam Generator (SG) Differential Pressure (ΔP) (1/2) - High	Emergency Feedwater (EFAS)	Loss of Normal Feedwater (FWLB)	1) Automatic Protection a. Low SG Level (1/2) AND No SG Pressure - Low Trip (1/2) 2) Manual Emergency Feedwater 3) Control Valve Logic (Not a Trip)
		Main Steam Line Break (MSLB)	1) Automatic Protection a. Low SG Level (1/2) and No SG Pressure - Low Trip (1/2) 2) Manual Emergency Feedwater 3) Control Valve Logic (Not a Trip)
		Plant Blackout (SBO)	1) Automatic Protection a. Low SG Level (1/2) and No SG Pressure - Low Trip (1/2) 2) Manual Emergency Feedwater 3) Control Valve Logic (Not a Trip)
Steam Generator (SG) Level (1/2) - Low AND No SG Pressure - Low Trip (1/2)	Emergency Feedwater (EFAS)	Loss of Normal Feedwater (FWLB)	1) Automatic Protection a. Low SG Level (1/2) AND High ΔP (1/2) 2) Manual Emergency Feedwater

Function	Safety Function	Plant Condition/Accident	Diverse Reactor Trips
			3) Control Valve Logic (Not a Trip)
		Main Steam Line Break (MSLB)	1) Automatic Protection a. Low SG Level (1/2) AND High ΔP (1/2) 2) Manual Emergency Feedwater 3) Control Valve Logic (Not a Trip)
		Plant Blackout (SBO)	1) Automatic Protection a. Low SG Level (1/2) AND High ΔP (1/2) 2) Manual Emergency Feedwater 3) Control Valve Logic (Not a Trip)

Enclosure, Attachment 1

W3F1-2022-0049

Renewed Facility Operating License (FOL) – Markup Pages

FOL Pages

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(a) The information in the FSAR supplement, submitted pursuant to 10 CFR 54.21(d) and as revised during the license renewal application review process, and licensee commitments as listed in Appendix A of the "Safety Evaluation Report Related to the License Renewal of Waterford Steam Electric Station Unit 3," are collectively the "License Renewal FSAR Supplement." This Supplement is henceforth part of the FSAR, which will be updated in accordance with 10 CFR 50.71(e). As such, EOI may make changes to the programs, activities, and commitments described in this Supplement, provided the EOI evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59, "Changes, Tests, and Experiments," and otherwise complies with the requirements in that section.

(b) The License Renewal FSAR Supplement, as defined in license condition 21(a) above, describes certain programs to be implemented and activities to be completed prior to the period of extended operation (PEO).

(1) EOI shall implement those new programs and enhancements to existing programs no later than 6 months before the PEO.

(2) EOI shall complete those activities by the 6 month date prior to the PEO or to the end of the last refueling outage before the PEO, whichever occurs later.

(3) EOI shall notify the NRC in writing within 30 days after having accomplished item (b)(1) above and include the status of those activities that have been or remain to be completed in item (b)(2) above.

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D. The facility requires an exemption from certain requirements of Appendices E and J to 10 CFR Part 50. These exemptions are described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 10 (Section 6.1.2) and Supplement No. 8 (Section 6.2.6), respectively. These exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. These exemptions are, therefore, hereby granted pursuant to 10 CFR 50.12. With the granting of these exemptions, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.

E. EOI shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plan, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Physical Security, Safeguards Contingency and Training & Qualification Plan," and was submitted on October 4, 2004.

EOI shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The EOI CSP was approved by License Amendment No. 234 and supplemented by a change approved by Amendment Nos. 239, 241, and 247.

F. Except as otherwise provided in the Technical Specifications or the Environmental Protection Plan, EOI shall report any violations of the requirements contained in Section 2.C of this renewed license in the following manner. Initial notification shall be made within 24 hours to the NRC Operations Center via the Emergency Notification System with written follow-up within 30 days in accordance with the procedures described in 10 CFR 50.73(b), (c) and (e).

G. Entergy Louisiana, LLC shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

H. This renewed license is effective as the date of issuance and shall expire at midnight on December 18, 2044.

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FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Ho K. Nieh, Director
Office of Nuclear Reactor Regulation

Enclosures:
1. (DELETED)
2. Attachment 2
3. Appendix A (Technical Specifications) (NUREG-1117)
4. Appendix B (Environmental Protection Plan)
5. Appendix C (Antitrust Conditions)

Date of Issuance: December 27, 2018

FOL INSERT

22. <u>10 CFR 50.69, Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Plants</u>

Entergy is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Entergy's submittal letter, dated December 18, 2020, and all its subsequent associated supplements as specified in License Amendment No. XXX dated [DATE].

Entergy will complete closure of the four Human Reliability Analysis (HRA) Finding level Facts and Observations (F&Os) identified as Finding Numbers HR 1-2, HR 7-1, HR 7-3, and HR 7-4 in Table A3-2 of Entergy letter to NRC, dated April 25, 2022, and in Table E2-2 of Entergy letter to NRC, dated May 16, 2022, using an accepted NRC process (Nuclear Energy Institute (NEI) Appendix X to NEI 05-04, NEI 07-12, and NEI 12-13) prior to implementation of 10 CFR 50.69 and the risk-informed completion time (RICT) program.

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

Enclosure, Attachment 2

W3F1-2022-0049

Renewed Facility Operating License (FOL) – Revised Clean Pages

<u>FOL Pages</u>

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(a) The information in the FSAR supplement, submitted pursuant to 10 CFR 54.21(d) and as revised during the license renewal application review process, and licensee commitments as listed in Appendix A of the "Safety Evaluation Report Related to the License Renewal of Waterford Steam Electric Station Unit 3," are collectively the "License Renewal FSAR Supplement." This Supplement is henceforth part of the FSAR, which will be updated in accordance with 10 CFR 50.71(e). As such, EOI may make changes to the programs, activities, and commitments described in this Supplement, provided the EOI evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59, "Changes, Tests, and Experiments," and otherwise complies with the requirements in that section.

(b) The License Renewal FSAR Supplement, as defined in license condition 21(a) above, describes certain programs to be implemented and activities to be completed prior to the period of extended operation (PEO).

(1) EOI shall implement those new programs and enhancements to existing programs no later than 6 months before the PEO.

(2) EOI shall complete those activities by the 6 month date prior to the PEO or to the end of the last refueling outage before the PEO, whichever occurs later.

(3) EOI shall notify the NRC in writing within 30 days after having accomplished item (b)(1) above and include the status of those activities that have been or remain to be completed in item (b)(2) above.

22. <u>10 CFR 50.69, Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Plants</u>

Entergy is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Entergy's submittal letter dated December 18, 2020, and all its subsequent associated supplements as specified in License Amendment No. XXX dated [DATE].

Entergy will complete closure of the four Human Reliability Analysis (HRA) Finding level Facts and Observations (F&Os) identified as Finding Numbers HR 1-2, HR 7-1, HR 7-3, and HR 7-4 in Table A3-2 of Entergy letter to NRC, dated April 25, 2022, and in Table E2-2 of Entergy letter to NRC, dated May 16, 2022, using an accepted NRC process (Nuclear Energy Institute (NEI) Appendix X to NEI 05-04, NEI 07-12, and NEI 12-13) prior to implementation of 10 CFR 50.69 and the risk-informed completion time (RICT) program.

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

D. The facility requires an exemption from certain requirements of Appendices E and J to 10 CFR Part 50. These exemptions are described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 10 (Section 6.1.2) and Supplement No. 8 (Section 6.2.6), respectively. These exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. These exemptions are, therefore, hereby granted pursuant to 10 CFR 50.12. With the granting of these exemptions, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.

E. EOI shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plan, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Physical Security, Safeguards Contingency and Training & Qualification Plan," and was submitted on October 4, 2004.

EOI shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The EOI CSP was approved by License Amendment No. 234 and supplemented by a change approved by Amendment Nos. 239, 241, and 247.

F. Except as otherwise provided in the Technical Specifications or the Environmental Protection Plan, EOI shall report any violations of the requirements contained in Section 2.C of this renewed license in the following manner. Initial notification shall be made within 24 hours to the NRC Operations Center via the Emergency Notification System with written follow-up within 30 days in accordance with the procedures described in 10 CFR 50.73(b), (c) and (e).

G. Entergy Louisiana, LLC shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

H. This renewed license is effective as the date of issuance and shall expire at midnight on December 18, 2044.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Ho K. Nieh, Director
Office of Nuclear Reactor Regulation

Enclosures:
1. (DELETED)
2. Attachment 2
3. Appendix A (Technical Specifications) (NUREG-1117)
4. Appendix B (Environmental Protection Plan)
5. Appendix C (Antitrust Conditions)

Date of Issuance: December 27, 2018