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W3F1-2017-0023

March 30, 2017

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

SUBJECT: Responses to Request for Additional Information Set 14 Regarding the License Renewal Application for Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

- REFERENCES:**
1. Entergy letter W3F1-2016-0012 "License Renewal Application, Waterford Steam Electric Station, Unit 3" dated March 23, 2016.
 2. NRC letter to Entergy "Requests for Additional Information for the Review of the Waterford Steam Electric Station, Unit 3, License Renewal Application – Set 14" dated March 1, 2017.

Dear Sir or Madam:

By letter dated March 23, 2016, Entergy Operations, Inc. (Entergy) submitted a license renewal application (Reference 1).

In letter dated March 1, 2017 (Reference 2), the NRC staff made a Request for Additional Information (RAI) Set 14, needed to complete its review. Enclosure 1 provides the responses to the Set 14 RAIs.

This letter adds License Renewal Commitment 34 as shown in Enclosure 2. If you require additional information, please contact the Regulatory Assurance Manager, John Jarrell, at 504-739-6685.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 30, 2017.

Sincerely,

A handwritten signature in black ink that reads "MR Chisum".

MRC/AJH

- Enclosures:**
1. Set 14 RAI Response – Waterford 3 License Renewal Application
 2. List of Regulatory Commitment

cc: Kriss Kennedy
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Enclosure 1 to

W3F1-2017-0023

**Set 14 RAI Response
Waterford 3 License Renewal Application**

RAI B.1.34-1b

Background:

By letter dated December 8, 2016, the staff issued RAI B.1.34-1a regarding the absence of a staff-approved withdrawal schedule for Capsule 277° (i.e., the surveillance capsule representing the period of extended operation). In its response dated January 19, 2017, the applicant identified a program exception to GALL Report AMP XI.M31, "Reactor Vessel Surveillance." The program exception, in part, indicates that the applicant will submit the revised capsule withdrawal schedule separate from the license renewal application, but prior to implementation.

In its previous letter dated November 10, 2016 (i.e., response to RAI B.1.34-1), the applicant stated that, for the capsule located at 277°, WCAP-18002-NP suggested a removal time of the reactor vessel refueling outage nearest to 48 EFPY. The applicant also stated that the estimated fluence for the capsule at 48 EFPY is 4.51×10^{19} n/cm² providing a fluence greater than the reactor vessel inner radius fluence calculated for 55 EFPY of 4.32×10^{19} n/cm².

Issue:

In its response, the applicant did not describe the current EFPY of the unit as baseline information. In addition, the staff notes that, since the Reactor Vessel Surveillance Program is an existing program as required by Appendix H to 10 CFR Part 50, the program establishes and maintains staff-approved reactor vessel surveillance capsule withdrawal schedules for the license term. Given the applicant's program exception that a withdrawal schedule for Capsule 277° is not submitted as part of the license renewal application, the staff notes that Waterford Unit 3 should submit the capsule withdrawal schedule for staff's review and approval (in accordance with 10 CFR Part 50, Appendix H) within a specific time period following the receipt of a renewed license (e.g., within 1 year following the receipt of a renewed license).

Request:

1. Provide the current EFPY of the unit.
2. Identify a program enhancement to submit a withdrawal schedule for Capsule 277° for staff's review and approval (in accordance with 10 CFR Part 50, Appendix H) within a specific time period following the receipt of a renewed license (e.g., within 1 year following the receipt of a renewed license). If such a program enhancement is not necessary, provide justification.

Waterford 3 Response

1. As of March 1, 2017, WF3 had accrued approximately 27 EFPY of plant operation.

2. The Reactor Vessel Surveillance Program will be enhanced to specify submittal of a withdrawal schedule for review and approval within one (1) year following the receipt of the renewed license. The surveillance capsule located at 277° will be removed at approximately 48 EFPY with a neutron fluence of between one and two times the peak reactor vessel wall neutron fluence at the end of the period of extended operation.

LRA Section A.1.34, Reactor Vessel Surveillance Program, LRA Section A.4 License Renewal Commitment List, LRA Table B-3, WF3 Program Consistency with NUREG-1801, and LRA Section B.1.34, Reactor Vessel Surveillance, are revised as follows. Additions are underlined; deletions are lined through.

A.1.34 Reactor Vessel Surveillance Program

The Reactor Vessel Surveillance Program will be enhanced as follows.

- Revise the Reactor Vessel Surveillance Program to specify submittal of a withdrawal schedule for Capsule 277° to the NRC for review and approval within 1 year following the receipt of the renewed license.

The enhancement will be implemented within one (1) year following issuance of the renewed operating license.

A.4 License Renewal Commitment List

No.	Program or Activity	Commitment	Implementation Schedule	Source (Letter Number)
34	<u>Reactor Vessel Surveillance</u>	<u>Enhance the Reactor Vessel Surveillance Program as described in LRA Section B.1.34.</u>	<u>Within one (1) year following issuance of the renewed license.</u>	<u>W3F1-2017-0023 for Set 14</u>

**Table B-3
WF3 Program Consistency with NUREG-1801**

Program Name	Plant-Specific	NUREG-1801 Comparison	
		Program has Enhancements	Program has Exceptions to NUREG-1801
Reactor Vessel Surveillance [B.1.34]		<u>X</u>	<u>X</u>

B.1.34 REACTOR VESSEL SURVEILLANCE

NUREG-1801 Consistency

The Reactor Vessel Surveillance Program, with enhancement, will be~~is~~ consistent with the program described in NUREG-1801, Section XI.M31, Reactor Vessel Surveillance, with the following exception.

Exceptions to NUREG-1801

The Reactor Vessel Surveillance Program has the following exception.

Elements Affected	Exception
4. Detection of Aging Effects	NUREG-1801 recommends that a reactor vessel surveillance capsule withdrawal schedule be submitted as part of a license renewal application. WF3 will submit the revised capsule withdrawal schedule separate from the license renewal application, but prior to implementation ¹ within one (1) year following issuance of the renewed license.

1. The Reactor Vessel Surveillance Program includes a commitment to specify submittal of a withdrawal schedule for review and approval within one (1) year following the receipt of a renewed license. The surveillance capsule located at 277° will be removed at approximately 48 EFPY with a neutron fluence of between one and two times the peak reactor vessel wall neutron fluence at the end of the period of extended operation. ~~WF3 commitment management system includes a commitment to submit a reactor vessel surveillance capsule withdrawal schedule for future removal of the capsule located at 277°. The commitment specifies submitting the schedule along with its technical justification for NRC approval. In accordance with 10 CFR 50, Appendix H, Entergy will obtain NRC approval of the revised reactor vessel surveillance capsule withdrawal schedule prior to implementation.~~

Enhancements

NoneThe following enhancement will be implemented within one (1) year following issuance of the renewed operating license.

Element Affected	Enhancement
<u>4. Detection of Aging Effects</u>	<u>Revise Reactor Vessel Surveillance Program procedures to specify submittal of a withdrawal schedule for Capsule 277° to the NRC for review and approval within one (1) year following the receipt of the renewed license.</u>

Enclosure 2 to

W3F1-2017-0023

**List of Regulatory Commitments
Waterford 3 License Renewal Application**

A.4 LICENSE RENEWAL COMMITMENT LIST (ADDITION)

No.	Program or Activity	Commitment	Implementation Schedule	Source (Letter Number)
34	Reactor Vessel Surveillance	Enhance the Reactor Vessel Surveillance Program as described in LRA Section B.1.34.	Within one (1) year following issuance of the renewed license.	W3F1-2017-0023