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W3F1-2016-0029

April 28, 2016

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

SUBJECT: Responses to Request for Additional Information Regarding the Risk-Informed Surveillance Requirements License Amendment Request (LAR)
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

REFERENCES:

1. Entergy letter W3F1-2015-0006 "Application for Technical Specification Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program", Waterford Steam Electric Station, Unit 3 dated June 17, 2015 [ML15170A121]
2. NRC letter to Entergy dated January 22, 2016 "Request for Additional Information Regarding The Risk-Informed Surveillance Requirements: License Amendment Request" [ML16015A294]
3. Entergy letter W3F1-2016-0010 "Responses to Request for Additional Information Regarding the Risk-Informed Surveillance Requirements License Amendment Request (LAR)", Waterford Steam Electric Station, Unit 3 dated March 3, 2016 [ML16063A532]
4. NRC letter to Entergy dated April 12, 2016 "Request for Additional Information Regarding The Risk-Informed Surveillance Requirements: License Amendment Request" [ML16102A152]

Dear Sir or Madam:

By letter dated June 17, 2015, Entergy Operations, Inc. (Entergy), submitted a license amendment request (LAR) to adopt U.S. NRC-approved Technical Specification Task Force (TSTF) Standard Technical Specifications Change traveler TSTF-425 Initiative 5b (Reference 1).

In letter dated January 22, 2016 (Reference 2), the NRC staff made a Request for Additional Information (RAI) needed to complete its review. Entergy provided the requested information

in Reference 3. In letter dated April 12, 2016 (Reference 4), the NRC staff made an additional Request for Information. Attachment 1 provides the response to that question.

There are no new regulatory commitments contained in this submittal. 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 April 28, 2016.

Sincerely,

MRC/AJH

Attachment: 1. RAI Response

cc:

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ATTACHMENT 1

W3F1-2016-0029

RAI Response

RAI Response

RAI-2.01

In its response to RAI-2 by letter dated March 3, 2016, the licensee stated that Fact and Observation (F&O) IE-C6-01 was addressed during a probabilistic risk assessment (PRA) model update and a disposition was provided in Table U-1 of the supplement to Waterford 3 submittal for adopting National Fire Protection Association (NFPA) Standard 805 (ADAMS Accession No. ML13365A325). The response further stated that the current fault tree logic is more thorough than past models and "[t]he current IE fault trees include items in redundant paths (including valves and breakers)."

The response to RAI-2 and the disposition in Table U-1 of the supplement to Waterford 3 NFPA 805 submittal do not indicate whether modelling of other excluded failure modes cited in F&O IE-C6-01, such as "sensors and transmitters and flow diversion paths," were incorporated in the updated PRA model. The NRC staff notes that flow diversion pathways can potentially have impact on initiating event fault tree results. Explain whether the other failure modes cited in the F&O have been addressed in the initiating event fault trees developed for the internal events PRA (IEPRA) and, if they have not been included, justify that this exclusion will not contribute to underestimation of IEPRA risk and impact Surveillance Test Interval evaluations.

RAI-2.01 Response

Failure modes cited in F&O IE-C6-01 were addressed in IE fault tree development. The potential impact on IEPRA results is insignificant due to the minor contribution of IE fault trees to overall risk, as described below.

The current IE (Internal Events) fault tree logic was updated following the peer review and the F&O IE-C6-01 has been completely resolved. A self-assessment completed with the model update evaluated Standard Element IE-C8 (IE-C6 from the previous Standard) as fully met. Additionally, a vendor prepared gap assessment did not identify any gaps associated with IE fault tree development.

Development of the revised model considered all relevant failure modes for the IE fault trees, including failures of valves, breakers, etc. in redundant paths to transfer open or transfer closed; failure of sensors and transmitters; and flow diversion paths. Many such events and failures have been added to the model; however, others were excluded from the IE fault trees due to limited contribution. The document notes the excluded items in the assumptions sections and provides a basis for exclusion of each.

The PRA Standard (ASME/ANS RA-Sa-2009) allows for and endorses such exclusions as stated in SY-15:

> "In meeting SY-A11 and SY-A14, contributors to system unavailability and unreliability (i.e., components and specific failure modes) may be excluded from the model if one of the following screening criteria is met:
>
> (a) A component may be excluded from the system model if the total failure probability of the Component failure modes resulting in the same effect on system operation is at least two orders of magnitude lower than the highest failure

probability of the other components in the same system train that results in the same effect on system operation.

(b) One or more failure modes for a component may be excluded from the systems model if the contribution of them to the total failure rate or probability is less than 1% of the total failure rate or probability for that component, when their effects on system operation are the same."

Some IE fault tree related failures of valves, breakers, sensors, transmitters, and flow diversion pathways were excluded on the basis of limited contribution as endorsed by the Standard.

With respect to the consideration of the excluded component failures due to low risk impact, the overall risk contribution of IE fault trees to the total plant CDF and LERF is very small (less than 1% of the total). Any exclusions to the IE fault trees based on limited contribution have an insignificant impact on overall risk and Surveillance Test Interval evaluations.