

NRR-PMDAPEm Resource

From: Wang, Alan
Sent: Monday, March 30, 2015 4:24 PM
To: 'SCARBROUGH, RICHARD A (RSCARBR@entergy.com)'; 'Nadeau, James'
Cc: Blechman, Paula
Subject: Grand Gulf Nuclear Station, Unit 1, Request for Additional Information Regarding Fluence License Amendment Request (TAC No. MF5303)

Jeff and Jim, by letter dated November 21, 2014 (Agencywide Document Access and Management System (ADAMS) Accession No. ML14325A752), Entergy Operations, Inc. (Entergy, the licensee), submitted a license amendment request for the Grand Gulf Nuclear Station, Unit No. 1 (GGNS). The proposed amendment would revise its licensing basis to adopt a single fluence methodology. By letter dated February 18, 2015 (ADAMS Accession No. ML 15036A564), the US Nuclear Regulatory Commission (NRC) staff provided the results of the staff's acceptance review of this amendment request and requested supplemental information. Entergy responded to this request by letter dated February 18, 2015 (ADAMS Accession No. ML15049A536). The NRC staff has reviewed the licensee's February 18, 2015, submittal for regarding the fluence methodology and has determined that the following additional information is required to complete its review of the amendment request.

RAI 1

Confirm that fluence corrections are applied appropriately (i.e. considering bias and uncertainty) for all calculated fluence results that exceed 20%. The supplementary information provided in the licensee's response dated February 8, 2015, to the acceptance review RAI 1b indicates that only calculated fluence results with uncertainties greater than 30% are appropriately treated; it is not stated how calculated fluence results with uncertainties between 20% and 30% are treated, if uncertainties in this range exist.

RAI 2

The fluence uncertainties for upper regions of the reactor vessel are highly sensitive to the assumed above core void fraction distribution. What analysis has been performed in support of the assumed void fraction in the region above the core including consideration of the MELLLA+ operating domain?

RAI 3

What is the potential for the high uncertainty outside-of-beltline reactor pressure vessel regions to be limiting with respect to pressure/temperature curve generation over the entire period of extended operation?

RAI 4

In GNRO-2015/00011, Attachment 1, it is stated that "this letter contains no new commitments." However, the response to RAI 1a in the same document states:

Installing dosimetry capsules and/or taking scrapings in specified areas outside of the beltline region would provide dosimetry data for a future benchmark analysis outside of the beltline region. The uncertainty in the fluence calculations at locations above the top of the core is dominated by uncertainty in the water density. Taking scrapings and/or inserting dosimetry in

these locations (during future refueling outages) would not only provide benchmarking data, but it would also provide the data needed to check the output from thermal hydraulics codes that can be used in future improvements of the upper region water density modeling.

The NRC staff request that Entergy provide a regulatory commitment to install dosimetry capsules and/or scrapings, to qualify the 3D fluence method for fluence calculations outside of the beltline region. Provide details regarding the plans and schedule for installing dosimetry capsules and/or scrapings including the proposed locations for dosimetry capsule installation.

Also, provide a regulatory commitment to confirm that future calculated-to-measured (C/M) fluence values at the dosimetry location(s) are reasonably close to one including explicit definition of “reasonably close to one” (e.g. C/M greater than 0.8) and plans to address any substantial disagreements.

This RAI was discussed with Mr. Richard Scarbrough on March 30, 2015, and it was agreed that a response would be provided within 30 days of receipt of this email. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-1445 or via e-mail at Alan.Wang@nrc.gov.

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