

NRR-PMDAPEm Resource

From: Feintuch, Karl
Sent: Thursday, April 26, 2012 9:04 AM
To: 'Jack Gadzala'; 'Craig D Sly'
Cc: Paige, Jason; Parks, Benjamin
Subject: FW: ME8460 (successor to ME8205) - KEWAUNEE POWER STATION - 10 CFR 50.46, 30-DAY RESPONSE - REQUEST FOR ADDITIONAL INFORMATION - REPLACEMENT DRAFT ITEMS

From: Feintuch, Karl [mailto:Karl.Feintuch@nrc.gov]
To: Craig D Sly (Generation - 6); Jack Gadzala (Generation - 4)
Cc: Paige, Jason; Parks, Benjamin
Subject: ME8460 (successor to ME8205) - KEWAUNEE POWER STATION - 10 CFR 50.46, 30-DAY RESPONSE - REQUEST FOR ADDITIONAL INFORMATION - REPLACEMENT DRAFT ITEMS

By letter dated March 15, 2012 (ADAMS Accession No. ML12079A287), the licensee, Kewaunee Power Station, submitted a Title 10 Code of Federal Regulations (10 CFR) 50.54(f) response to the NRC's information request related to the estimated effect on peak cladding temperature resulting from thermal conductivity degradation in the Westinghouse furnished realistic emergency core cooling evaluation. The licensee also stated that this response served as a 30-day report in accordance with requirements of 10 CFR 50.46.

In the course of the Reactor Systems Branch (SRXB) *10 CFR 50.46* response review, the NRC staff has determined that additional information is necessary to complete its review. In an email message dated Friday, March 23, 2012 3:50 PM, I (Project Manager Karl Feintuch) transmitted Draft Items from SRXB staff. A replacement email message was sent on Monday, April 23, 2012 3:56 PM.

This current email message is a replacement in the entirety for the messages of Friday, March 23, 2012 3:50 PM and of Monday, April 23, 2012 3:56 PM. The changes are in items 1 and 4 (both deleted), 5a, 5b, 6 (all changed text), and an added item 9 below. Italics are used to emphasize changed text and are not part of the RAI.

The NRC staff requests a prompt response to the replacement RAI items (RAII). The NRC staff requests an acknowledgement of these RAIIs and their proposed "request by" date(s), or a clarification call to resolve this information. For a clarification call the NRC staff proposes Monday, April 30, 2012, at 1:00 PM ET. The participating Reviewer would be Benjamin Parks.

The NRC staff's replacement request for additional information follows. Please contact Karl Feintuch (301-415-3079) to discuss the schedule for response or any need for clarification.

KEWAUNEE POWER STATION

10 CFR 50.46, 30-DAY RESPONSE

REQUEST FOR ADDITIONAL INFORMATION (RAI)

REPLACEMENT DRAFT ITEMS

Consistent with the identification of RAI items (RAII) for other projects, each of the 9 RAII below are assigned tracking numbers:

ME8460-RAII-SRXB-Parks-001-2012-05-23
ME8460-RAII-SRXB-Parks-002-2012-05-23
ME8460-RAII-SRXB-Parks-003-2012-05-23

ME8460-RAII-SRXB-Parks-004-2012-05-23
ME8460-RAII-SRXB-Parks-005-2012-05-23
ME8460-RAII-SRXB-Parks-006-2012-05-23
ME8460-RAII-SRXB-Parks-007-2012-05-23
ME8460-RAII-SRXB-Parks-008-2012-05-23
ME8460-RAII-DORL-Paige-009-2012-05-23

The tracking numbers are in the form:

[TAC number]-RAII-[Reviewing Technical Branch]-[Reviewer-sequence #]-[Request-by date expressed as year-month-day]

1. ~~(ME8460-RAII-SRXB-Parks-001-2012-05-23)~~ Please explain how the 10 CFR 50.46(a)(3) error report enclosed in your response to the NRC's Information Request pursuant to 10 CFR 50.54(f) remains adherent to the WCAP 14449 P A methodology, which includes a supplement describing the method for fulfilling 10 CFR 50.46(a)(3) re-analysis requirements.
2. **(ME8460-RAII-SRXB-Parks-002-2012-05-23)** Justify the evaluation of reduced peaking factors at beginning-of-life conditions to obtain analytic margin to offset the TCD effect. Show that peaking factor reductions affect PCT in a manner that is substantially independent of fuel burnup.
3. **(ME8460-RAII-SRXB-Parks-003-2012-05-23)** Fully explain all peaking factor adjustments and provide the rationale for each adjustment.
4. ~~(ME8460-RAII-SRXB-Parks-004-2012-05-23)~~ Compare the results of the TCD and offset sensitivity studies to the fuel rod parameter sensitivity studies discussed in the Code Qualification Document. Please explain any significant discrepancies in the results.
5. **(ME8460-RAII-SRXB-Parks-005-2012-05-23)** Your submittal referenced a March 7, 2012 letter sent by Westinghouse Electric Company to the NRC.
 - a) *The final paragraph on Page 2 of 9 refers to small differences in fuel characteristics that were claimed to be compared. The paragraph also discusses confirmatory evaluations concluding that other operating characteristics were acceptable. Provide the results of this comparison for Kewaunee, including the relevant conclusions and the technical basis supporting those conclusions. For any conclusion that differences in a particular fuel or operating characteristic are offset by other conservatisms, list those conservatisms and provide a quantitative estimate of each conservatism, as well as a brief description of the rigor associated with that estimate."*
 - b) *Please provide the values for the coefficients used in the PAD 4.0+TCD UO2 thermal conductivity equation.*
 - c) Please explain any error corrections, code improvements, and miscellaneous code cleanup between the WCOBRA/TRAC and HOTSPOT code versions used in the TCD evaluations and those used in the plant's AOR.
 - d) What is the thermal conductivity model impact of code version changes in HOTSPOT?
6. **(ME8460-RAII-SRXB-Parks-006-2012-05-23)** *Please provide additional detail concerning the steady-state initialization process. In particular, please explain what fuel characteristics are adjusted within the ASTRUM/CQD models to obtain convergence and agreement between HOTSPOT and PAD4.0TCD.*

7. **(ME8460-RAII-SRXB-Parks-007-2012-05-23)** Please explain how the changed design values will be verified during operation of the plant, i.e. TS limits, Surveillances, etc. Also, explain what compensatory actions will be taken if a value is found to be outside of the limits assumed in the analysis.
8. **(ME8460-RAII-SRXB-Parks-008-2012-05-23)** Page 3 of Attachment 2 to Serial 12-100 states that “Dominion and its vendor, Westinghouse Electric Company, LLC, utilize processes which ensure that LOCA analysis input values conservatively bound the as-operated plant values for those parameters.” Please explain these processes.
9. **(ME8460-RAII-DORL-Paige-009-2012-05-23)** *Based on the NRC’s review of the March 15,, 2012, submittal it appears that the licensee has revised inputs to a method of evaluation as described in the FSAR (as updated) used in establishing the design bases or in the safety analyses.*
 - a) *Address whether the methodology permits the licensee to establish how to select the value of an input parameter to yield adequately conservative results and whether the revised value is more conservative than that required by the selection method.*
 - b) *Further, address whether any of the changes (i.e., to the UO2 thermal conductivity equation) constitute a change in the calculational framework used for evaluating behavior or response of a system, structure or component.*

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Subject: FW: ME8460 (successor to ME8205) - KEWAUNEE POWER STATION - 10 CFR 50.46, 30-DAY RESPONSE - REQUEST FOR ADDITIONAL INFORMATION - REPLACEMENT DRAFT ITEMS

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From: Feintuch, Karl

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