NRR-PMDAPEm Resource

From: Mozafari, Brenda
Sent: Friday, September 02, 2011 6:27 PM
To: Caves, John
Subject: RAI regarding TAC No. ME5409 (Harris-M5 cladding)

Importance: High

John,

By letter dated January 13, 2011, Carolina Power and Light Company (CP&L) submitted a request for an amendment to the Technical Specifications (TS) for Shearon Harris Nuclear Power Plant Unit 1 (HNP). The license amendment request (LAR) proposed a change to the HNP Technical Specifications (TS) 5.3.1 and adds the AREVA NP report BAW-10240(P)(A), "Incorporation of M5 Properties in Framatome ANP Approved Methods," to the referenced analytical methods in administrative TS 6.9.1.6.2 to allow the use of M5 alloy for fuel rod cladding. The proposed amendment would modify the HNP TS to permit the use of the AREVA fuel cladding alloy designated as M5.

We have reviewed the license amendment request, and determined that additional information is needed in order to complete our evaluation.

The NRC requests that the licensee respond to this request for additional information (RAI) within 30 days of the date of this email. If the licensee concludes that more than 30 days are required to respond to the RAI, the licensee should request additional time, including a basis for why the extension is needed.

Contact me at the number below or by e-mail if you have any questions on this issue or if you require additional time to submit your response.

Brenda L. Mozafari
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PROPOSED LICENSE AMENDMENT REQUEST FOR REVISION TO TS 5.3.1
AND CORE OPERATING LIMITS REPORT REFERENCES FOR M5 CLADDING
NRC DOCKET NO. 50-400
(TAC NO. ME5409)

1. Safety evaluation for Topical Report BAW-10240(P)(A) lists following four conditions which Framatome (FANP) has accepted:

   (a) The corrosion limit, as predicted by the best-estimate model will remain below 100 microns for all locations of the fuel.

   (b) All of the conditions listed in the SEs for all FANP methodologies used for M5 fuel analysis will continue to be met, except that the use of M5 cladding in addition to Zircaloy-4 cladding is now approved.

(c) All FANP methodologies will be used only within the range for which M5 data was acceptable and for which the verifications discussed in BAW-I0240(P) or Reference 2 was performed.

(d) The burnup limit for this approval is 62 GWd/MTU

Explain in detail, how each of the above condition has been implemented at HNP Unit 1.

2. The safety evaluation for EMF-2310, Revision 0 topical report (Section 5.0) has restated one of the restrictions (Number 1) from the safety evaluation for ANF-89-151(P)(A) (Section 2.2, TER Conclusions) as stated below:

   The stated application of the S-RELAP5 code is for the events listed above in Table 1. There are other computer codes and methodologies employed for evaluation of the events not listed in the table. For each licensing basis event analyzed, the applicant must, as always, justify the methodology used whether by reference to S-RELAP5 or whatever methodology has been used.

   Explain how this restriction is implemented for the upcoming cycle reload analyses when the transition to M5 cladding occurs.

3. RODEX2 fuel deformation and conductivity models were incorporated in S-RELAP5 for transient and accident analyses. Provide details of the methodology in the fuel model to evaluate fuel thermal conductivity as a function of burnup and temperature, considering all of the effects that take in the fuel during the irradiation in the reactor core.

Provide a list of Shearon Harris Unit 1 FSAR Chapter 15 Non-LOCA events that will be either analyzed or dispositioned for the upcoming fuel cycle when the licensee is planning to use M5 cladding. Also summarize the methodologies and codes used for the analyses.

Hearing Identifier: NRR_PMDA
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Mail Envelope Properties (Brenda.Mozafari@nrc.gov20110902182600)

Subject: RAI regarding TAC No. ME5409 (Harris-M5 cladding)
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From: Mozafari, Brenda

Created By: Brenda.Mozafari@nrc.gov

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"Caves, John" <john.caves@pgnmail.com>
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MESSAGE	3890	9/2/2011 6:26:00 PM

Options
Priority: High
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