From: Amy Cubbage
To: White, Frostie (GE Infra Energy Non-GE)
Date: 03/20/2007 9:05:19 AM
Subject: Supplemental RAI request RAI 21.6-88 - SUNSI information

Resending to add CC's
Frostie - when you reply on the prop content please reply to Martha

>>>>
Frostie - See attached supplemental RAI request for RAI 21.6-88. We have marked this file (password protected) as containing proprietary information. Non-proprietary version is alaso attached. Please respond to Martha by 3/23 to confirm the proprietary content, so she can add the non-prop version to ADAMS promptly. Also, please contact Martha if you have any questions on this request or would like to schedule a telecon.

Thanks,
Amy

CC: Barillas, Martha; Klein, Veronica

Mail Envelope Properties (45FFDC0A.468 : 18 : 35676)

Subject: Supplemental RAI request RAI 21.6-88 - SUNSI information
Creation Date 03/20/2007 9:05:14 AM
From: Amy Cubbage

Created By: AEC@nrc.gov

Recipients
ge.com
frostie.white (Frostie (GE Infra Energy Non-GE) White)

nrc.gov
OWGWPO01.HQGWDO01
MCB CC (Martha Barillas)

nrc.gov
OWGWPO04.HQGWDO01
VMK1 CC (Veronica Klein)

Post Office	Route
	ge.com
OWGWPO01.HQGWDO01	nrc.gov
OWGWPO04.HQGWDO01	nrc.gov

Files	Size	Date & Time
MESSAGE	1011	03/20/2007 9:05:14 AM
Comments on 21.6-88 S01 NONPROP.pdf	8859	03/19/2007 11:35:10 AM
Comments on 21.6-88 S01 PROPRIETARY.pdf	15492	03/19/2007 11:39:50 AM

Options
Expiration Date: None

Priority:	Standard
ReplyRequested:	No
Return Notification:	None
Concealed Subject:	No
Security:	Standard

NRC staff comments on GE's partial response to RAI letter #66
(MFN-06-467 Supplement 1)

1. Comments on Supplement 1 to RAI 21.6-88 response

Supplement 1 to MFN-06-467 states that the pressure drop iteration accounts for the bypass flow fraction using [[
]]. Please explain how the elements of the [[
]] are determined.

Explain any differences in the determination of the bypass flow rate using [[
]] as in the ESBWR calculation and the method used in the outer loop iteration described in NEDO-20953-A to converge the in-channel and bypass flow rates. If the approaches are consistent (as would be indicated by the statements in Section 1.5.5 of NEDC-33239P (LTR)) clarify the description of the [[ ]] in the revised LTR and provide, as a supplemental response, the parameters calculated by [[ ]] that are used as [[ ]]. Alternatively provide as a supplemental response a detailed description of the means by which [[
]] in terms of the information already provided in Supplement 1 to MFN-06-467.

If the elements of the [[ ]] are calculated in a manner that is not consistent with Section 1.5.5 for the specific application to the ESBWR, update the NEDC-33239P LTR to also include a description of the method by which this calculation is performed.

If the elements are derived from the iterative [[ ]] calculations, provide the number of elements and the ranges of applicable power and flow rates as an RAI response.

If another means is or was used to determine the elements, provide the [[
]] and a description of the origin of the elements as an RAI response.

In the mathematical expression for the axial power shape parameter (the fraction of bundle power below the core midplane) explain why [[
]] in the update to the LTR.

Describe the basis for the [[ ]] given that the [[ ]] is based on calculated [[ ]] for [[
]] as an RAI response.

Are there any flow regime transitions for the high power ESBWR bundles (i.e. above [[
]]) specifically that may result in channel flow errors as a result of the extrapolation between [[ ]]? If so, are they of sufficient magnitude to perturb the nodal power distribution beyond the established uncertainties? Provide the answer as an RAI response.

Verify in an RAI response that the bypass voiding is calculated according to the method in PANAC11AE8. Alternatively, if the response to RAI 4.4-39 request for supplemental information contains a [[
]] verify that the bypass region is predominantly liquid (i.e. <5% void above the LPRM D detector).