HLWYM NPEmails

From: Asadul Chowdhury
Sent: Friday, April 27, 2007 4:02 PM
To: George Adams; Oleg Povetko; Fernando Ferrante; Tina Ghosh; David Dancer; Robert Johnson (NMSS); Christopher Ryder; Rosemary Reeves; Albert Wong; Sheena Whaley
Subject: RE: PCSA Phase II

Sheena:

Did you identify anybody to check your calculation ?

If you need any help from CNWRA to check this calculation, Oleg will be available for this purpose.

Please let me know your decision.

Asad

-----Original Message-----
From: Sheena Whaley [mailto:SAW2@nrc.gov]
Sent: Friday, April 27, 2007 9:57 AM
To: Fernando Ferrante; George Adams; Oleg Povetko; Albert Wong; Christopher Ryder; David Dancer; Rosemary Reeves; Robert Johnson; Tina Ghosh
Cc: Asadul Chowdhury
Subject: PCSA Phase II

Even though we don't normally assume a cask in mis-manufactured for criticality safety, I ran some quick calcs to see if totally removing a few boral plates from the cask would make much of a difference. I didn't just reduce the boron because there are already studies done on that (I gave Albert a graph that showed that a significant amount would have to be missing uniformly throughout the cask before there was an issue).

My work will have to be checked but the results show that 4 boral plates could be missing and the cask would still be subcritical. The model is a PWR cask (24 assemblies) with flux traps. This is similar to the TAD, but holds 3 more assemblies.
Fuel - fresh (4.2 wt%) 15x15 westinghouse assembly For simplicity, I replaced the bottom boral plate on 2 center locations with water.
I also repeated this for 2 more locations.

keff
normal case (all boral plates present) - .9441 + .0016 missing 2 boral plates - .9439 + .0018 missing 4 boral plates - .9458 + .0015

Again, this needs to be checked to make sure I did the right cells but it appears that this is not an issue.

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From: Asadul Chowdhury

Created By: achowdhury@cnwra.swri.edu

Recipients:
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Tracking Status: None
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Tracking Status: None
"Sheena Whaley" <Sheena.Whaley@nrc.gov>
Tracking Status: None

Post Office:

Files	**Size**	**Date & Time**
MESSAGE	1672	4/27/2007 4:01:55 PM

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
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