72-1004

From: Adelaide Giantelli
To: Allen Hansen; Christopher Bajwa; M. Wayne Hodges
Date: 12/29/03 1:50PM
Subject: Summary of teleconference with TN on 12/23/03

Everyone,

Attached is the summary of the teleconference with TN on 12/23/03.

John - please note, you have some action items.

Thanks

Adelaide

CC: John Monninger; Mary Jane Ross-Lee; Nancy Osgood

72-1004

TO: Mary Jane Ross-Lee, Project Manager
John Monninger, Section Chief, SFLS

FROM: Adelaide Giantelli, Acting Section Chief, TRA

DATE: December 24, 2003

SUBJECT: Teleconference with Transnuclear on December 23, 2003, regarding thermal analyses for the TN Advanced NUHOMS Amendment No. 1 application

PARTICIPANTS:

NRC:
Wayne Hodges, Deputy Director, SFPO
Nancy Osgood, Acting Section Chief, SFLS
Allen Hansen
Chris Bajwa
Adelaide Giantelli

Transnuclear:
U.B. Chopra
Usama Farradj
Jayant Bondre
Greg Banken

Southern California Edison

The application under discussion was the TN Advanced NUHOMS Amendment No. 1. NRC separated the thermal evaluation into three major components: (1) calculation of effective conductivity within the fuel assembly guide tubes; (2) calculation of effective conductivity outside the guide tubes but within the canister; and (3) evaluation of temperatures outside the canister and within the concrete storage module. NRC needs either revised calculations or clarifications from TN on each component of the thermal analysis. The potential path forward to resolve the NRC issues with the thermal evaluation is discussed below.

1. Calculation of effective conductivity within the fuel assembly guide tubes:

   NRC suggested that the calculation of k effective conductivity should be based on the process documented in the TRW report. This calculation could be performed using the ANSYS computer code. TN should provide documentation of their calculation and supporting model. The documentation should include a justification, i.e., comparison of TN model with published data (e.g. TRW, EMAD), that this is a conservative or best estimate.

2. Calculation of effective conductivity outside the guide tubes but within the canister:

   NRC suggested that a CFD analysis could be used to evaluate the effective conductivity. This could be accomplished by two means (a) modeling directly, or (b) developing a model with and without natural convection and comparing the results. The latter is the evaluation used by PNNL in their confirmatory review. TN should provide documentation

of their calculation and supporting model. The effective conductivities within the guide tubes and outside the guide tubes but within the canister could then be used as an input to the ANSYS canister model.

TN discussed the possibility of revising this analysis or adopting another analysis utilizing the SINDA/FLUINT code (similar to what was provided as part of TN's confirmatory analyses in the Amendment 1 application). NRC stated that staff has focused their efforts on thoroughly reviewing the thermal evaluation provided in the amendment application. NRC has not reviewed the TN confirmatory analysis in depth. NRC cautioned that utilizing the SINDA/FLUINT code would likely result in a significant increase in NRC review time.

3. Evaluation of temperatures outside the canister and within the concrete storage module

   NRC cautioned that an analysis similar to that performed for the NUHOMS-24PT1 evaluation would not be considered acceptable for this application because of the higher heat loads being requested. TN has submitted a draft FLUENT analysis for the module. NRC will not expend significant resources reviewing a draft analysis. The initial review of the analysis, being performed by PNNL, is identifying differences. PNNL confirmatory analyses are predicting temperatures that are 100-140 F higher than those calculated by TN. NRC agreed to provide TN with PNNL's confirmatory analyses, in particular, a list of assumptions/input parameters and STAR-CD computer models.

TN proposed another meeting among NRC, PNNL, and TN in January to discuss the thermal evaluation and resolution of NRC issues. NRC will coordinate with TN and PNNL to arrange this meeting. Action Items following phone call:

1. NRC will contact PNNL about providing TN with a list of assumptions/input parameters and computer models. NRC will contact PNNL about a meeting with TN at NRC-HQ in January. Action: Chris Bajwa, Allen Hansen.

2. NRC will contact TN about delivery of PNNL's confimatory evaluation. NRC will contact TN about meeting at NRC-HQ in January. Action: John Monninger (No backup PM listed for TN Advanced NUHOMS, Amendment 1)

3. TN to provide NRC with their plan for resolution of NRC issues. TN to provide, if necessary, an updated schedule on their RAI submittal. (RAI response currently expected ~ January 12, 2004.) Action: TN, U.B. Chopra.