Held, Wesley

From:	Held, Wesley
Sent:	Thursday, July 25, 2013 8:04 AM
To:	'Sisk, Robert B.'
Cc:	Bradford, Anna; Costa, Arlon; Goodwin, Cameron; Frankl, Istvan; Hsii, Yi-Hsiung; Donoghue, Joseph; 'Monahan, Jill S.'
Subject:	REQUEST FOR ADDITIONAL INFORMATION LETTERS NO. 2 AND 3 FOR THE REVIEW OF THE WESTINGHOUSE SMR PHENOMENA IDENTIFICATION AND RANKING TABLE TOPICAL REPORT WCAP-17573-NP, REVISION 1
Attachments:	[PROPRIETARY INFORMATION] WSMR PIRT RAI Letter 2.pdf; [NON-PROPRIETARY] W-SMR PIRT Topical Report RAI Letter 2.docx; [NON-PROPRIETARY] W-SMR PIRT Topical Report RAI Letter 3.docx; [PROPRIETARY INFORMATION] WSMR PIRT RAI Letter 3.pdf

Dear Mr. Sisk:

By letter dated April 25, 2012, Westinghouse Electric Company submitted, for U.S. Nuclear Regulatory Commission (NRC) staff review, Topical Report WCAP-17573-NP, Revision 1, "Westinghouse SMR Small Break Loss-of-Coolant Accident Phenomena Identification and Ranking Table" (ML12125A319). On June 4, 2013, the NRC staff issued Request for Additional Information Letter No. 1 (ML13156A003) and on June 17, 2013, Westinghouse Electric Company submitted responses to those requests (ML13192A459). The NRC staff has identified additional information that is needed to continue portions of the review. The staff's latest requests for additional information are contained in the enclosures to this email.

The attached files contain proprietary information and have been password protected. A separate email will transmit the password. Non-proprietary versions of the letters have also been attached.

Please provide responses by Aug 24, 2013.

If you have any questions, please let me know.

Thanks,

Wesley Held
U.S. Nuclear Regulatory Commission
(301) 415-1583
Wesley.Held@nrc.gov

OFFICE	PM:RES/DSA/RSAB	BC:NRO/DSRA/SRSB	PM:NRO/DARR/SMRLB2	PM:NRO/DARR/SMRLB2
NAME	IFrankl*	JDonoghue*	WHeld**	ACosta*(WHeld for)
DATE	7/23/2013	7/24/13	7/23/2013	7/23/2013

*via email **via electronic RAI system

Request for Additional Information 2

Issue Date: 7/23/2013
Application Title: Westinghouse SMR Pre-Application Activities
Operating Company: Westinghouse Electric Company
Docket No. PROJ 0797
Review Section: TR SBLOCA PIRT
Application Section: WSMR SBLOCA PIRT Topical Report

QUESTIONS

TR SBLOCA PIRT-40

Westinghouse's response to RAI-TR-SBLOCA-PIRT-3 states that the opening pressure of the rupture disk is [ ]^{a,c,e}. The reviewers' understanding is that the rupture disk opens on a pressure differential. It is understood that since the SITs are initially at [ ]^{a,c,e}. However, the SIT pressure can change during a transient. Please clarify whether the value in the response can be considered to be the differential pressure for the opening of the rupture disk throughout the transient. If not, please provide the relevant value and/or clarify.

TR SBLOCA PIRT-41

Please provide clarification to the following items related to your response to RAI TR SBLOCA PIRT-4:
a. Section 10 of the nodalization of the W-SMR vessel in WCOBRA-TRAC-TF2 is described as representing [ ]^{a,c,e} The ADS 1 lines are located at the top of the CMTs. Please explain the necessity and purpose of [ ]^{a,c,e}
b. Does the ADS 1 opening on [ ]^{a,c,e}
c. If the pressurizer heaters were credited to operate during the simulation please provide the capacity for all heaters (backup and proportional) and the corresponding activation setpoints?
d. The description of LOCA event states (on page 24 of 38 of the response) that [ ]^{a,c,e} The "ADS attached to lines off the CMT" is believed to refer to the ADS 1. [ ]^{a,c,e} Please clarify.
e. If the boron in the CMT tanks and the BAST was credited during the LOCA simulation, please provide the corresponding concentrations.

TR SBLOCA PIRT-42

Westinghouse's response to RAI TR SBLOCA PIRT-23 provided a list of the credited automatic RCP trips. Please provide the corresponding setpoints.

TR SBLOCA PIRT-43

Westinghouse's response to RAI TR SBLOCA PIRT-24 states that [ ]^{a,c,e} please provide additional information on design features and countermeasures that prevent catastrophic RCP failure due to excessive vibration that may result in a large break LOCA.

TR SBLOCA PIRT-44

Westinghouse's response to RAI TR SBLOCA PIRT-30 does not provide a table listing the sequence and timing of events during the ATWS simulation. Please provide such a table.

TR SBLOCA PIRT-45

Please supplement the supplied response to RAI TR SBLOCA PIRT-30 by explaining the purpose and activation of the Recirculation Feed Line (RFL) bypass.

TR SBLOCA PIRT-46

Please supplement the supplied response to RAI TR SBLOCA PIRT-34 by briefly explaining how the water temperature control function is monitored and controlled.

TR SBLOCA PIRT-47

Please supplement the supplied response to RAI TR SBLOCA PIRT-35 by identifying the limiting DNBR criteria used in the Westinghouse SAC.

TR SBLOCA PIRT-48

Please supplement the supplied response to RAI TR SBLOCA PIRT-38 by providing the prompt neutron lifetime and the 6 group λ and β values

Request for Additional Information 3

Issue Date: 7/23/2013
Application Title: Westinghouse SMR Pre-Application Activities
Operating Company: Westinghouse Electric Company
Docket No. PROJ 0797
Review Section: TR SBLOCA PIRT
Application Section: WSMR SBLOCA PIRT Topical Report

TR SBLOCA PIRT-49

It is recognized that the neutronics methodology used by Westinghouse for rod withdrawal events in their PWR designs is well established and validated. However, based on the response to RAI TR SBLOCA PIRT-32, please clarify what was done to validate the methodology for the rod withdrawal event in the W-SMR considering the change in reactor geometry (e.g., shorter core) and composition (e.g., different reflectors) and other differences relative to PWR designs.

TR SBLOCA PIRT-50

The response to RAI TR SBLOCA PIRT-30 would appear to indicate that the inadvertent ADS-1 or ADS-2 actuation event is considered a LOCA. Please clarify why these events are considered accident scenarios as opposed to anticipated operational occurrences.

TR SBLOCA PIRT-51

The response to RAI TR SBLOCA PIRT-4 would appear to indicate that the DVI line break analyzed is a double-ended guillotine break. However, the model includes the CMT discharge actuation valve. If this valve is closed at the onset of the accident or during the accident, the break would appear to be single ended for at least a portion of the event. Please clarify the expected operation of this valve during a postulated DVI line break accident.

TR SBLOCA PIRT-52

The response to RAI TR SBLOCA PIRT-30 Part J considers a loss of AC power; however, the response appears to indicate that [ ]^{a,c,e} Please clarify the response.

TR SBLOCA PIRT-53

The revised response to RAI TR SBLOCA PIRT-10 indicates that [ ]^{a,c,e}. Provide additional details as to how [ ]^{a,c,e}.

TR SBLOCA PIRT-54

The response to RAI TR SBLOCA PIRT-25 states that [ ]^{a,c,e}, provide beginning and ending times for the different phases for the representative DVI line break accident described in response to RAI TR SBLOCA PIRT-4. To further assist the staff in reviewing the RAI TR SBLOCA PIRT-4 and RAI TR SBLOCA PIRT-25 responses, provide updated versions of Table 2 and Figure 26 with the start and end times for [ ]^{a,c,e} indicated.