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Subject:	Hermes CP Audit Questions 82-86 and 92-94 for Preliminary Safety Analysis Report Section 4.5 and Chapter 13
Attachments:	Audit Questions 82 to 86 and 92 to 94_Redacted.pdf

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82 (MHA)	MHA tritium release	PSAR Section 13.2.1.1 seems to refer to TF while the MST refers to T2. Please clarify.
83	MHA tritium release	PSAR Section 13.2.1.1 states "The tritium transport through the graphite pores is assumed to be instantaneous, and all graphite grains are exposed to the same tritium uptake conditions." Is the tritium in the graphite grains diffused out using the diffusivities given on page 47 of 138 of the MHA calc?
84	MHA tritium release	What is the reference or basis for these tritium graphite uptake and release model inputs?
85	MHA tritium release	Is the graphite perfect absorber true of the pebbles and structural graphite?
86	MHA tritium release	Is all the retained tritium of the pebbles released in the **[[ ]]**?

92	PHSS Accident	For the PHSS accident, the oxidation mass loss rate is given by equation 23 in KP-TR-018. The correlation by Zhou is said to be from Reference 23 but I can't find that

		correlation (Zhou) in Reference 23 (MELCOR liftoff model). Is Reference 23 the correct reference?
93	Section 13.1.6	Need an audit call regarding the statement in 13.1.6, "Limiting the amount of MAR in subsystems and components obviates the need for a more detailed safety analysis for this category of events." Does this statement mean for the CP or does it also apply to the OL? The statement sounds like a design commitment as the various MARs are not yet determined. It's the staff opinion this will need to be evaluated at the OL to ensure the MHA continues to bound the releases associated from all non-safety systems due to a single initiating event (e.g., seismic). This would require some type of evaluation (safety-analysis) that the subsystem MAR amounts are set correctly and a summary of this evaluation described in the OL application. Therefore, the wording "obviates the need for a more detailed safety analysis" is difficult to understand.
94	MHA	I need a clarification from Kairos re. the MHA fuel RN release. Per the MHA calc **[[** **]]**, the fully RN inventory of the fuel is retained and hence the fuel source term is independent of pre-transient, in-service failures or manufacturing defects. 1. Does "Inservice Failures" in Figure 3.1 of the MHA calc mean a TRISO failure (i.e., complete failure of all coating layers)?

		2. Does the MHA transient assume a bounding combination of in-service (pre-transient) and manufacturing defects by cohort type? 3. Are the MHA assumed in-service failures (pre-transient) by cohort compared against the steady-state (pre-transient) KP-BISON results to ensure they are conservative?