Appendix D: Deferred Review Items and Westinghouse Commitments

Model	SE Section or RAI	Basis for Deferral
[ ]	3.1.2.2	Use of the **[ ]** is not required to simulate CRDA or reactor oscillations. The NRC staff will review the **[ ]** for application to ATWS simulations
[ ]	3.1.2.2 and RAI 5-8	Use of the **[ ]** is not required to simulate CRDA or reactor oscillations. Westinghouse provided descriptive details of the model in response to RAI 5-8. The NRC staff review contained in Appendix A of this SE indicates there is assurance that the model is acceptable. However, its application will likely require treatment of uncertainty. The NRC staff will review the application once this model is utilized.
Post dryout heat transfer models	3.1.2.2 and RAI 3-5	Post dryout heat transfer is not required to simulate CRDA or reactor oscillations. Since transient analyses are intended to demonstrate margin to critical power the use of post dryout heat transfer is limited to ATWS applications. The NRC staff has reviewed information provided in response to RAI 3-5 regarding the **[ ]** qualification of the heat transfer models in POLCA-T up to the condition of dryout, however, its review does not constitute approval of these models generically. The NRC staff will review these models during its review of the ATWS application
Critical heat flux correlation and DIVOM application	3.1.2.2.3, RAI 2-3, RAI 5-4, RAI 5-5, RAI 6-10 and RAI 8-1	Evaluation of the critical power ratio is required for transient analysis and for the calculation of the DIVOM slope. These applications are outside the scope of CRDA and stability (decay ratio) analysis. Westinghouse provided a commitment in RAI 5-4 and RAI 5-5 to provide additional information regarding the critical heat flux correlations and calculation results in the transient application appendix.

Countercurrent flow limitation correlation	3.1.2.2.5 and RAI 8-4	The NRC staff found the CCFL model to be in error. In response to RAI 8-4 Westinghouse provided a commitment to update the CCFL model for application to transients and ATWS. As countercurrent flow does not occur for CRDA or stability analyses, **[** **]** The NRC staff will ensure that the correction is adequately implemented in a subsequent application appendix.
Steam separator model for EPU/MELLLA+ transients	3.1.2.3.4, RAI 6-33, and RAI 8-8	The NRC staff reviewed the applicability of the separator model for application to stability evaluations where it is important in determining the core inlet subcooling (RAIs 6-33 and 8-8). For EPU/MELLLA+ plants, the core outlet quality may be very large. The NRC staff will separately review the applicability of the steam separator model to transient applications for EPU/MELLLA+ plants in the transient application where transient power increases may result in even higher core outlet qualities.
Reactor Internal Pump model	3.1.2.3.6	Use of a transient RIP model is not required for CRDA or stability calculations. However, models are required to simulate the transient response of the RIPs for ABWR transient and ATWS evaluations. The NRC staff will review information regarding the transient model capabilities for RIPs in the transient application review.
Exothermic metal water reaction model	3.1.2.6, 3.1.2.7, RAI 9-1, and RAI 11-12	Use of the exothermic metal water reaction model is only required for applications where significant, gross fuel cladding heat up occurs. This situation is limited to the ATWS application. Therefore, the NRC staff has deferred the review of the exothermic metal water reaction model to the ATWS application appendix.
ABWR rod drop velocity	3.2.3.5.5.1.2	The NRC staff will review the assumed rod drop velocity for the first application of POLCA-T CRDA method to ABWR licensing analysis.
ABWR CRDA dose assessment	3.2.3.5.6.2	The NRC staff will review the ABWR CRDA dose assessment consistent with the guidance of SRP 15.4.9 during its review of the initial application of POLCA-T CRDA methods to the ABWR

[ ] (bypass void sensitivity)	RAI 3-2	The stability methodology is intended to evaluate the reactor decay ratio; therefore, these calculations are not utilized in developing [ ] However, for transient applications and potential application to DIVOM analyses for Option III LTS, the plant response is sensitive to the LPRM response. The NRC staff will review the influence of bypass void formation on simulated LPRM indications during its review of the transient application. For CRDA applications, void formation is effectively suppressed and the LPRM indications are not impacted.
Dynamic internal bypass channel void formation	RAI 2-4, RAI 6-6, and RAI 6-33	POLCA-T has the capability to model several bypass channels, up to the degree of modeling individual internal bypass flow channels and several [ ] The degree to which this modeling capability is utilized depends on the type of analysis performed. Therefore, the NRC staff intends to review the usage of multi-bypass channel models for both the transient application and the ATWS application. The NRC staff conclusions regarding the multi-bypass usage for stability evaluations is addressed in detail in the NRC staff review of response to RAI 6-33.
Reload licensing methodology	RAI 2-2 and RAI 2-13	Reload licensing is the subject of RAI 2-2 and RAI 2-13. At the time of the NRC staff's review, the reload licensing methodology was being updated (CENPD-300-P-A). In lieu of review of the generic reload licensing methodology, the NRC staff SE recommends specific review of implementation of POLCA-T in any fuel transition applications.
Audit Open Item 9 (BISON and RAMONA)	RAI 4-11	Audit Open Item 9 has to deal with potential errors introduced in the BISON and RAMONA analysis codes as a result of code changes in POLCA7. Westinghouse provided a commitment to address this Open Item in a follow-up letter. As the concern was addressed for POLCA-T the NRC staff does not require this information to reach its safety determination regarding POLCA-T. The NRC staff defers the review of the closure of Open Item 9 to its review of the information provided in the follow-up letter.

Void reactivity coefficient biases and uncertainties	RAI 5-7 and RAI 6-2	Void reactivity coefficient uncertainties are the subject of RAI 5-7 and RAI 6-2. The responses to these RAIs provide that the decay ratio uncertainties are established through **[** **]** However, for transient applications the component uncertainties and their sensitivities on the figure of merit must be addressed. The NRC staff intends to review the void reactivity coefficient uncertainties during its review of POLCA-T application to transients.
Lower plenum nodalization	RAI 6-36	Lower plenum nodalization is the subject of RAI 6-36. In the response, Westinghouse clarified that limiting feedwater and core flow conditions are established at initial steady state conditions for stability analyses. Since these limiting conditions are the initial conditions, the model does not require any transient modeling of the evolving temperature distribution in the lower plenum, and hence, bundle inlet. The NRC staff agrees with this assessment. However, based on the sensitivity analyses provided, the NRC staff cannot conclude that the lower plenum nodalization is necessarily appropriate for future applications of the POLCA-T methodology to transients or ATWS evaluations. Therefore, the NRC staff intends to review the adequacy of the lower plenum nodalization to its review of subsequent application methodologies on an analysis-specific basis.
Cladding rupture model uncertainties	RAI 11-13	The cladding rupture model is **[** **]** The NRC staff will defer its review of the treatment of uncertainties in this model to its review of an application-specific Appendix to the POLCA-T TR where this model is required.