

RESPONSE TO AUDIT ISSUES

APR1400 Topical Reports

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. PROJ0782

Review Section	TR Realistic Evaluation Methodology for LBLOCA of the APR1400
Application Section	Topical Report: APR1400-F-A-TR-12004 Realistic Evaluation Methodology for Large-Break LOCA of the APR1400
Issue Date	08/13/2015

Audit Issues No. 80

The guidance in RG 1.157, Section 3.16.2 establishes acceptable controls for the data comparisons necessary to justify best estimate models. RG 1.157 states that "...best estimate code calculations should be compared with applicable experimental data (e.g., separate effects tests...". Appendix C presents the results of comparisons against FLECHT- SEASET tests. These selected tests utilize a cosine power distribution. [

]^{TS} Provide the results or a reference for the calculations performed for the FLECHT-SEASET tests that utilize skewed power distributions or provide the bases justifying the applicability of the selected tests.

Response

The objective of data comparisons in RG 1.157, Section 3.16.2 is to ensure that the code predicts realistic behavior of SET well. In addition, this section states that the uncertainty analysis is required to ensure that a major bias does not exist in the code and rarely affects code calculation result.

FLECHT-SEASET is a reflood experiment to observe thermal-hydraulic phenomena in the bundle test section during the reflood phase. The experiments were performed with assuming cosine power shape [1]. In Appendix C, FLECHT-SEASET is adopted to ensure that code predicts thermal-hydraulic phenomena, such as cladding temperature, vapor temperature, and differential pressure, accurately during the reflood phase. In addition, the axial variation of FLECHT-SEASET test data is well predicted by the code as described in Appendix C both qualitatively and quantitatively. [

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- [1] M.J. Loftus. et al., "PWR FLECHT SEASET Unblocked Bundle, Forced and Gravity Reflood Task Data Report," EPRI NP-1459, NUREG/CR-1532, WCAP-9699, 1981



Figure 1. Axial Power Shape Comparison

Impact on DCD

There is no impact to the DCD.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Report

There is no impact on any Technical, Topical, or Environmental Report.