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. 42

The guidance in RG 1.157, Section 4 establishes acceptable controls for the estimation of uncertainties. Section 4.2.2.7.1 of the topical report states that the break mass flow rate is influenced by the pressure drop along the break flow path. Instead of sampling the break mass flow rate, in Section 5.2.1.1 of the topical report the limiting break is determined. Section 5.2.1.1 and Table 5-1 of the topical report do not mention whether the loss coefficients in the break flow paths (on both sides of the break) were varied during sensitivity studies. [

]^{TS} Clarify the uncertainty evaluation.

Response

[

]TS It is also stated that the flow rate is determined by either critical flow or the flow area and the single and two-phase form, acceleration and friction losses in the flow path in the break plane. The importance level of the phenomenon during blowdown is “not applicable”, since the break flow during blowdown would be dependent on the critical flow.
[

]TS

In CAREM, the discharge coefficients are determined by assessment against Marviken test. [

]TS Then, the limiting break condition is found instead of considering the uncertainty of the break location, type and size. Since the worst break condition is used, the uncertainty evaluation of the break condition is basically not required. However, there are concerns related with the flow resistance uncertainty.

[

]TS Also, the plant input making process of CAREM includes the checking of the steady state pressure differences with the designed values. Therefore, the uncertainty of the loop flow resistance is essentially very small.

Impact on DCD

There is no impact on 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.