
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

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

Docket No. 52-046

RAI No.: 108-7973
SRP Section: 15.00.03 - Design Basis Accidents Radiological Consequence Analyses for Advanced Light Water Reactors
Application Section: Chapter 15 including 15A
Date of RAI Issue: 07/23/2015

Question No. 15.00.03-21

10 CFR 52.47(a)(2)(iv) requires that an application for a design certification include a final safety analysis report that provides a description and safety assessment of the facility. The safety assessment analyses are done, in part, to show compliance with the radiological consequence evaluation factors in 52.47(a)(2)(iv)(A) and 52.47(a)(2)(iv)(B) for offsite doses, 10 CFR 50, Appendix A, GDC 19 for control room radiological habitability, and the requirements related to the technical support center in 10 CFR 52.47(b)(8) and (b)(11) and Paragraph IV.E.8 of Appendix E to 10 CFR Part 50. The radiological consequences of design basis accidents are evaluated against these regulatory requirements and the dose acceptance criteria given in SRP 15.0.3.

With regard to the information in DCD 15.6.3 and Table 15.6.3-5, what is the alkali metal partition rate assumed in the steam generator tube rupture (SGTR) dose analysis? How does it compare to the steam generator moisture carryover?

Response

The Regulatory Guide 1.183 guidance states that the retention of particulate radionuclides in the steam generators is limited by the moisture carryover from the steam generators. The partition coefficient (PC) of alkali metal for the radiological consequence analysis in DCD Chapter 15 is conservatively assumed to be 200, which is from Table 2-2 of NUREG-0017, although DCD Table 5.4.2-1, "Steam Generator Design Parameters" gives the maximum weight percent moisture carryover as 0.25% (i.e., PC=400), which is consistent with the experimental data in NUREG-0409, which states that the steam generator specification limits moisture (liquid water carryover) to no more than 0.25%.

The revisions to DCD Table 15.6.3-5 and related descriptions in DCD Section 15.6.3 will be integrated into the response of RAI 108-7973, Question No. 15.00.03-02.

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 Reports

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