KHNPDCDRAIsPEm Resource

From: Ciocco, Jeff
Sent: Monday, June 01, 2015 8:24 AM
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Cc: Lee, Samuel; Ward, William; Erwin, Kenneth; Quinlan, Kevin
Subject: APR1400 Design Certification Application RAI 20-7912 (2.3.4 Short Term Atmospheric Dispersion Estimates for Accident Releases)
Attachments: APR1400 DC RAI 20 RHMB 7912.pdf; image001.jpg

KHNP

The attachment contains the subject request for additional information (RAI). This RAI was sent to you in draft form. Your licensing review schedule assumes technically correct and complete responses within 30 days of receipt of RAIs.

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

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Options
Priority: Standard
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REQUEST FOR ADDITIONAL INFORMATION 20-7912

Issue Date: 06/01/2015
Application Title: APR1400 Design Certification Review – 52-046
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.
Docket No. 52-046
Review Section: 02.03.04 - Short Term Atmospheric Dispersion Estimates for Accident Releases
Application Section: Short Term Atmospheric Dispersion Estimates for Accident Releases

QUESTIONS

02.03.04-1
As stated in SRP Section 2.3.4, 10CFR50 Appendix A, GDC 19 provides the requirements related to the meteorological considerations used to evaluate the personnel exposures inside the control room during radiological and airborne hazardous material accident conditions.

SRP Section 2.3.4 Acceptance Criteria 5 states, in part, that atmospheric dispersion factors used for the assessment of consequences related to atmospheric radioactive releases to the control room for design basis, other accidents, and for onsite and offsite releases of hazardous airborne materials should be provided.

So that the staff may independently conduct a confirmatory analysis to verify the technical acceptability per NRC Regulatory Guide 1.194, please provide the input and output files for all source/receptor pairs in the ARCON96 analysis. These files should be in native (ASCII) format so that the staff may conduct a confirmatory analysis.

02.03.04-2
As stated in SRP Secton 2.3.4, 10CFR52.47(a)(2)(iv) provides the requirements with respect to an assessment of the plant design features intended to mitigate the radiological consequences of accidents, which includes consideration of postulated site meteorology, to evaluate the offsite radiological consequences at the EAB and LPZ.

SRP Section 2.3.4 Acceptance Criteria 2 states, in part, that meteorological data used for the evaluation (as input to the dispersion models) which represent annual cycles of hourly values of wind direction, wind speed, and atmospheric stability for each mode of accidental release should be provided.

APR1400, Tier 2, Table 2.3-13 (1 of 6) lists Prairie Island as the meteorological data used for the design input for the ARCON96 calculations. So that the staff may independently conduct a confirmatory analysis to verify the technical acceptability per NRC Regulatory Guide 1.194, please provide the Prairie Island (1993-1997) meteorological data that was used for the ARCON96 analysis. This data may be submitted in either RG 1.23 format or ARCON format.

02.03.04-3
As stated in SRP Secton 2.3.4, 10CFR52.47(a)(2)(iv) provides the requirements with respect to an assessment of the plant design features intended to mitigate the radiological consequences of accidents, which includes consideration of postulated site meteorology, to evaluate the offsite radiological consequences at the EAB and LPZ.

SRP Section 2.3.4 Acceptance Criteria 1 states, in part, that a description of the atmospheric dispersion models used to calculate χ/Q values for accidental releases of radioactive and hazardous materials to the atmosphere should be provided. The models should be documented in detail and substantiated within the

limits of the model so that the staff can evaluate their appropriateness of use with regards to release characteristics, plant configuration, plume density, meteorological conditions, and site topography.

So that the staff may independently conduct a confirmatory analysis to verify the technical acceptability per NRC Regulatory Guide 1.145, please provide the input and output files used for the analysis of the Accident Release χ/Q Values at the Site Boundary, as provided in Table 2.0-1 (2 of 4). If no input and output files exist, please provide a description of how these χ/Q Values were derived.


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