

Request for Additional Information No. 37, Revision 0

8/07/2008

U. S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 02.03.01 - Regional Climatology

SRP Section: 02.03.04 - Short Term Atmospheric Dispersion Estimates for Accident Releases

SRP Section: 02.03.05 - Long-Term Atmospheric Dispersion Estimates for Routine Releases

Application Section: FSAR Ch. 2

RSAC Branch

QUESTIONS

02.03.01-10

The response to RAI 02.03.01-7 noted that inherent to the definition of zero percent exceedance temperature, is to exclude peaks of less than two hours in duration. In spite of the two-hour criterion, the staff still believes that the proposed zero percent maximum non-coincident wet bulb temperature of 81°F is under-conservative. As shown in attachment 1, compared to maximum observed wet bulb temperatures from ASHRAE, the U.S. EPR proposed site parameter is exceeded throughout the majority of the U.S., 67 percent of the time, especially in the Southeast U.S., where the proposed site parameter is exceeded 96 percent of the time. The NRC staff is not inclined to approve a plant design that cannot be sited at a reasonable number of potential COL sites without requiring COL applicants to request a departure from the design as part of their COL application. Please revise the zero percent maximum non-coincident wet bulb temperature or provide additional justification how this value is representative of a reasonable number of sites.

02.03.01-11

The response to RAI 02.03.01-8 is inadequate since it only discusses the zero percent exceedance maximum wet bulb temperature of 81° F. Please provide a technical basis for the site parameter values listed in FSAR Table 2.1-3 and FSAR Table 2.1-4. Also, please justify that these site parameter values are representative of a number of potential COL sites.

02.03.04-5

The staff intends for the control room accident χ/Q values to be presented in the site parameter table, FSAR Table 2.1-1. Standard Review Plan 2.3.4 specifically states that a DC applicant should include EAB, LPZ, and control room atmospheric dispersion factors for the appropriate time periods in the list of site parameters. Note, Standard Review Plant 2.0 states that the examples of site characteristics and site-related design parameters provided are not necessarily a complete list. Please revise FSAR Table 2.1-1 accordingly.

02.03.04-6

Per Regulatory Guide 1.206 and Standard Review Plan 2.3.4, please provide a site plan showing plant north and indicating locations of all potential accident release pathways and control room intake and unfiltered in-leakage pathways.

02.03.05-5

- a. The response to RAI 02.03.05-1 stated that the annual average χ/Q value of $4.973E-6 \text{ sec/m}^3$ was determined using meteorological data from the Calvert Cliffs Nuclear Power Plant site; whereas the response to RAI 02.03.05-3 stated that the χ/Q values were based on information in the EPRI ALWR URD and available early site permits. Please clarify this apparent contradiction. If the χ/Q values in FSAR Section 2.3.5 were based on previous early site permit (ESP) applications, please explain how ground-level release χ/Q values from the ESP applications were used to determine the mixed-mode release χ/Q values for the U.S. EPR.
- b. Please explain how the proposed χ/Q values presented in FSAR Section 2.3.5 could be considered representative of a reasonable number of potential sites.