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## CHAPTER 3 DESIGN OF STRUCTURES, SYSTEMS, COMPONENTS, AND EQUIPMENT

### 3.5.1.6 Aircraft Hazards

NUREG-0800, *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition*, establishes that the risks as a result of aircraft hazards should be sufficiently low, as evident in the requirement that aircraft accidents that could lead to radiological consequences in excess of the exposure guidelines of 10 CFR 50.34(a)(1) with a probability of occurrence greater than an order of magnitude of  $10^{-7}$  per year should be considered in the design of the plant. However, the expected rate of exposure identified in 10 CFR 50.34(a)(1) dose guidelines as it relates to the requirements identified in 10 CFR 100.20(b) should be about an order of magnitude of  $10^{-6}$  per year. If it can be shown with rigorous analysis, using realistic assumptions and reasonable arguments, that the estimated probability could be lower, then, in accordance with NUREG-0800 Section 2.2.3, it is acceptable.

The aircraft facilities and airways are described in [Subsection 2.2.2.7](#). A screening evaluation was first performed to determine if the probability is considered to be less than an order of magnitude of  $10^{-7}$  per year by inspection in accordance with the proximity criteria set in NUREG-0800. The evaluation revealed that there are two Federal airways (V16 and J46) whose edge is closer than two statute miles to the CRN Site. The CRN Site is approximately 2.6 statute miles from the centerline of airway V16 and 3.6 statute miles from the centerline of airway J46. Therefore, as required by NUREG-0800, a detailed review of aircraft hazards was performed in order to determine whether the accident probability rate is less than an order of magnitude of  $10^{-7}$ .

Details of the aircraft hazards analysis are provided in [Subsection 2.2.2.7](#). As presented in [Subsection 2.2.2.7](#), the expected rate of occurrence of potential exposures resulting in radiological dose in excess of the guidelines identified in 10 CFR 50.34(a)(1), as it relates to the requirements identified in 10 CFR 100.20(b), has been shown to be on the order of magnitude of  $10^{-6}$  per year and the realistic probability has been shown to be lower, based on qualitative arguments. The bounding building evaluation is acceptable for all technologies with determined bounding building dimensions less than that for the surrogate plant (i.e., with a building diagonal, R, less than 589 feet, height less than 160 feet, and footprint area less than 132,717 square feet). The bounding building dimensions associated with the selected reactor technology will be confirmed at the time of the Combined License Application.