



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Presentation to the ACRS Subcommittee

Safety Review of the Clinch River Nuclear Site, Early Site Permit Application Aircraft Hazards: (SSAR Section 3.5.1.6)

Presented by
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Key Review Areas

3.5.1.6 Aircraft Hazards

- For the site suitability, the plant design should consider that any of the aircraft accidents is not a design basis event (where the aircraft accident 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)
- Federal airways, holding patterns, or approach patterns should be at least 2 statute miles away
- Military installation or any airspace usage (e.g., bombing ranges) should be at least 20 miles from site
- All airports should be at least 5 miles from site



Key Review Areas

3.5.1.6 Aircraft Hazards (Cont'd)

- All airports should have projected operations less than:
 1. $500d^2$ for airports within a distance (d) of 5 to 10 miles
 2. $1000d^2$ for airports outside of 10 miles distance (d)
- Staff reviewed the applicant's information pertaining to site-specific aircraft analysis (aircraft hazards).
- The applicant calculated the aircraft crash probability for the identified two airways (V16 and J46) which are within 3.2 km (2 mi) of the CRN Site.
- The applicant determined the aircraft crash probability of 7.53×10^{-7} per year using non-airport operations referenced in DOE-STD-3014-96, "Accident Analysis for Aircraft Crash into Hazardous Facilities."



Key Review Areas

3.5.1.6 Aircraft Hazards (Cont'd)

- The staff performed independent confirmatory aircraft crash probability calculations using the highest recent 5-year (2011-2015) Federal Aviation Administration (FAA) supplied flight operations data within 8 km and 16.1 km (5 mi and 10 mi) of site.
- The potential aircraft crash probability of 1.5×10^{-8} per year is conservatively estimated by the staff, assuming that all the flights within 16.1 km (10mi) of CRN Site from FAA data follow these two airways.
- Therefore, staff agrees with applicant's conclusion that the aircraft crash probability is about an order of magnitude of 10^{-7} per year or less and meets the provided guidelines.