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Summary of Sensitivity Calculations

A number of sensitivity calculations were performed, as described above. The results of these calculations are summarized in Table 17.

Parameter	Change	Effect on Consequences	
		Short Term	Long Term
population density	change from Surry to 100 persons/mile ²	increased by 10x	small
population density	increase from 100 to 1000 persons/mile ²	increased by 10x	not evaluated
spent fuel storage time prior to accident	change from 30 days to 1 year	reduced by 2x	none
evacuation start time	change from 1.4 hours after plume begins to 3 hours before plume begins	reduced by 20x	none
percent of population evacuating	reduce from 99.5% to 95%	increased by 10x if evacuate before release, otherwise none	none
lanthanide/cerium release fraction	increase from 1×10^{-6} to 6×10^{-6}	none	none
short-lived fission product inventory	add two-thirds of last core	increased by 2x	none
total fission product inventory	reduce by 1.7x	not evaluated	reduced by 1.2x
exclusion area boundary	change from 0 to .32 miles	reduced by 1.1x	not evaluated

Table 17. Summary of sensitivity results for a severe spent fuel pool accident.

Comparison of Spent Fuel Pool and Reactor Accident Offsite Consequences

Steam generator tube rupture accidents are risk significant for PWRs in part because of their high offsite release which is a result of containment bypass. These accidents and their offsite releases have been studied extensively by RES over the last several years using the MELCOR, SCDAP/RELAP5, and VICTORIA severe accident codes. Using the offsite releases from these studies, RES has estimated offsite consequences using the MACCS code. These estimates of offsite consequences are described in References 5 and 6. A comparison of these offsite

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