

**From:** Jason Schaperow  
**To:** internet:jgrego@sandia.gov  
**Date:** Mon, Oct 18, 1999 1:16 PM  
**Subject:** MACCS User Assistance

Julie,

I have attached a request for MACCS User Assistance. Please call me when you are available. Thank you.

Jason

**CC:** Charles Tinkler, John Randall

B/11

Julie,

I am working on a detailed report describing the results of my assessment of offsite consequences for a severe spent fuel pool accident. I would like to request some user assistance in better understanding an unexpected trend in the results as shown in the following table.

Decay Time in Spent Fuel Pool	Distance (miles)	Prompt Fatalities	Societal Dose (person-Sv)	Cancer Fatalities
30 days	0-100	1.75	47,700	2,460
	0-500	1.75	571,000	25,800
90 days	0-100	1.49	46,300	2,390
	0-500	1.49	586,000	26,400
1 year	0-100	1.01	45,400	2,320
	0-500	1.01	595,000	26,800

Table x. Mean consequences for the Base Case.

As expected, for the population within 100 miles, the societal dose and cancer fatalities decrease with increasing decay time (i.e., decay time prior to the accident). However, for the population within 500 miles, it is not clear to me why the societal dose and cancer fatalities increase with increasing decay time. Although the increases I have seen in my calculations are not high (typically about 5%), I need to better understand why there is any increase at all.

I had earlier requested you examine why doses went up by 20% when I ran the spent fuel pool consequence calculation without Cs-134. In a June 29, 1999, e-mail message to me, you explained that "... the added dose from the Cs-134 results in longer times for some population to return to their property and less dose over the exposure time (which probably has an additional decontamination level), and when the Cs-134 is zeroed out, the population are allowed to return to their property earlier and subsequently receive a higher dose over the exposure time period." The answer to my current request for user assistance appears to be related to my earlier request regarding Cs-134. I would like to better understand how the relocation criteria are applied and how the doses are calculated when people are relocated.

Jason