

**From:** "Gregory, Julie J" <jjgrego@sandia.gov>  
**To:** "Jason Schaperow" <JHS1@nrc.gov>  
**Date:** Tue, Jun 29, 1999 5:30 PM  
**Subject:** RE: User Assistance

Jason,

This somewhat counter-intuitive effect that you are seeing in your results is a result of relocation. In other words, 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.

To show that this effect can be eliminated (that is to demonstrate that higher doses and fatalities track with higher activity release), the relocation criteria can be set to maximum values, i.e., in the early module the following input can be substituted:

SRDOSHOT001 1.E10

SRDOSNRM001 1.E10

and in the chronc module, the following input can be substituted:

CHDSCRLT001 1.0E5

As you suspected, the largest impact results from the longterm dose relocation criterion.

By the way, I did check in the code, and your interpretation was correct about the implementation of the TMPACT time. The dose projection is re-evaluated for a new TMPACT time period following each decontamination level, and then dose accumulation starts depending on the result of the dose projection/dose criterion comparison.

I hope that this information is helpful - it is an interesting problem that you posed. I believe we have resolved it without discovering a problem with MACCS (much to my relief).

Julie

-----Original Message-----

**From:** Jason Schaperow [mailto:JHS1@nrc.gov]  
**Sent:** Monday, June 28, 1999 12:13 PM  
**To:** jjgrego@sandia.gov  
**Cc:** Cgt@nrcsmtp.nrc.gov  
**Subject:** User Assistance

I used the following input files which are attached to this e-mail message:

atmos: atmos7b.inp  
early: early299.inp  
chronc: chrnc1\_n.inp  
site: sursit.inp  
met: metsur.inp

c/99

I got the following results for 0-100 miles:

47,700 Sv and 2,460 cancer fatalities (atmos7b.inp)

45,600 Sv and 2,220 cancer fatalities (atmos7b.inp with Cs-134 inventory set to 0 Bq)

I got the following results for 0-500 miles:

571,000 Sv and 25,800 cancer fatalities (atmos7b.inp)

685,000 Sv and 30,600 cancer fatalities (atmos7b.inp with Cs-134 inventory set to 0 Bq)

I would certainly appreciate any assistance you can give me to figure out why the code is getting 20% higher doses and cancer fatalities for 0-500 miles. Thank you.

Sincerely,  
Jason Schaperow

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