

Ru releases - SFP

2/11/00

- At 1 year following final S/D, there will be enough time for an early evacuation.
- Therefore, at 1 year following final S/D, my NACCS calcs should use evacuation 3 hours before the release begins.
- Therefore, I should do my sensitivity calcs for Ru release fractions at 1 year following final S/D using evacuation 3 hours before the release begins (Case 7) as my starting point.

Step 1: Run Case 7

atmos 8d
early 5
chron 1-h
" "
10D
METSUR

Step 2: Run case 12 with Ru release fraction of 1 \Rightarrow

atmos 8d \rightarrow atmos 12d

atmos 12d
early 5
chron 1-h
" "
METSUR
TWELVED

2/11/00

Because of potential impact of using
 100 people/m² with no EAG, switch to
 Surrey population =>

Run Case 13

Along case 7 from 100 people/m² to Surrey population

early 5 → early 6

THIRTED {
 8d
 early 6
 chncl-n
 MTSUE
 SUESIT

Run Case 14, which is case 13 with a En rd Area of 1.

FOURTED {
 12d
 early 6
 chncl-n
 MTSUE
 SUESIT

Prompt Fatality Ratios $\left(\frac{w_1 R_u}{w_0 R_u} \right)$

Surry pop 94 (Base Case, Case 11)
Evac after release

Surry pop 28 (Cases 13, 14)
Evac before release

100 people/mi² 4.7 (Cases 7, 12)
Evac before release

100 people/mi² w/ EAB 6.2 (Cases 15, 16)
Evac before release

⇒ Run Cases 15 and 16 to see whether the lack of an EAB is impacting the prompt fatality ratio.

Look at pop. data in surry site file (SURSIT.ZNP) ⇒

nobody lives within .32 miles

five(5) people live between .32 and .75 miles

$$\begin{aligned} \pi R_2^2 - \pi R_1^2 &= \pi (.75)^2 \text{ mile}^2 - \pi (.32)^2 \text{ mile}^2 \\ &= 1.77 \text{ mile}^2 - .32 \text{ mile}^2 \\ &= 1.45 \text{ mile}^2 \end{aligned}$$

$$\frac{5 \text{ people}}{1.45 \text{ mile}^2} = \frac{3 \text{ people}}{\text{mile}^2}$$

Try cases 15 + 16 with an EAB of .75 miles (1.21 km)

=> Set I BEGIN to 4

=> early 5 -> early 7

Case 15

atmos 8d
early 7
dyncl-n
" "
MEASURE
FIFTED

Case 16

atmos 12d
early 7
dyncl-n
" "
MEASURE
SIXTEED

<u>IBEGIN</u>	<u>SPATIAL DIST (km)</u>	<u>SPATIAL DIST (MILES)</u>
2	.16	.1
3	.52	.32
4	1.21	.75
5	1.61	1
6	2.13	1.32
7	3.22	2
8	4.02	2.5
9	4.83	3
10	5.63	3.5
11	8.05	5

Try cases 17+18 with an EAB of 2 miles ($\text{IBEGIN} = 7$)
 \Rightarrow early 7 \rightarrow early 8

Case 17

atmos 8d
 early 8
 Chncl-n
 " "
 METSUR

SEVENT D

Case 18

atmos 12d
 early 8
 Chncl-n
 " "
 METSUR

EIGHTED

Try Cases 19 + 20 with an EAB of 2 miles ($\begin{matrix} \text{IBEGIN} \\ = 11 \end{matrix}$)

\Rightarrow early 8 \rightarrow early 9

Case 19

atmos 8 d
early 9
chrnc 1-n
" "
METSUR

NINETED

Case 20

atmos 12 d
early 9
chrnc 1-n
" "
METSUR

TWENTYD