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$D_2 = 500 \text{ rem}$

Dose thresholds are: $D_2 = 150 \text{ rem}$

$$RISK = 1 - e^{-\left(\cdot .693 \left(\frac{D_R}{380 \text{ rem}} \right)^5 + \cdot .693 \left(\frac{D_2}{1000 \text{ rem}} \right)^7 \right)}$$

$$RISK = 1 - e^{-\left(H_R + H_2 \right)}$$

$\begin{cases} R = \text{red marrow} \\ L = \text{lungs} \end{cases}$

$N = RISK \cdot \text{fraction susceptible} \cdot \text{exposed population}$

applied to population in a spatial sector on the grid

$$[H_i = 0 \text{ if } DOSE_i < EFFTHR_i]$$

$$RISK = 1 - e^{-\sum H_i}$$

$$H_i = \cdot .693 \left(\frac{DOSE_i}{EFFACR_i} \right)^5$$

Early Fatality Calc:

2/10/00

R = red marrow

L = lungs

$$D_R = (\text{cloudshine} + \text{groundshine} + \text{inhalation})_{Ru-106} \\ + (\text{cloudshine} + \text{groundshine} + \text{inhalation})_{Cs-137}$$

$$D_L = (\text{cloudshine} + \text{groundshine} + \text{inhalation})_{Ru-106} \\ + (\text{cloudshine} + \text{groundshine} + \text{inhalation})_{Cs-137}$$

ICRP 2

- a. 25% of inhaled activity is exhaled
- b. 25% deposited in lungs
- c. 50% swallowed

→ if soluble, then transferred to blood

→ a fraction (f_1) entered the blood

} a fraction (f_2') was
passed to the
critical organ

dose to lung was ignored for soluble nuclides