Early Fatality Calc:

2/10/00 1

$$H_i = .693 \left(\frac{DOSE_i}{EFFACA_i} \right)^{EFFACB_i}$$ organ i

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

$$\left[H_i = 0 \quad if \quad DOSE_i < EFFTHR_i \right]$$

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

applied to population in a spacial sector on the grid

$$RISK = 1 - e^{-(H_R + H_L)}$$

{ R = red marrow
L = lungs

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

Dose thresholds are: D_R - 150 rem
D_L - 500 rem

F/26

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