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COMPUTATION SHEET

LOCATION	ENGINEER	NUMBER
Sr^{90} Dispersal	W.H. Ray	
PROJECT	**UNIT**	**DATE**
19-1398-29		7-6-64

730 kc × 6.5 watts/kc → 4,725 watts
× 14.33 cal/min watt

12.5 cc/min evaporated of 3 curie/cc solution = $\frac{6.78 \times 10^4 \text{ cal/min}}{540 \text{ cal/cc}}$

Half is vented to cell atmos. 10^{-4} activity entrainment factor

$\frac{125 \times 3 \times 10^{-4}}{2} \rightarrow 1.88 \times 10^{-2}$ c/min dispersed into air
$= 3.13 \times 10^{-4}$ c/sec

5,800 cfm = 1585 m^3/min = 2.64 m^3/sec stack dilution

$\frac{1.88 \times 10^{-2}}{1.585 \times 10^2} = 1.19 \times 10^{-4}$ c m^{-3} = χ in Khard

for 10 m stack:

Condition "C" slightly unstable, max concentration ~60 m. with 5 m/sec wind. $\left(\frac{\chi}{Q}\right)_{max} = 3.6 \times 10^{-4}$

Condition "F" moderately stable, max concentration ~500 m with 3 m/sec wind. $\left(\frac{\chi}{Q}\right)_{max} = 3.2 \times 10^{-4}$

$3.13 \times 10^{-4} \times 3.6 \times 10^{-4} = 1.13 \times 10^{-7}$ c m^{-3}

$\frac{25 \text{ rem}}{36 \text{ rem/uc inhaled}} = 6.95 \times 10^{-7}$ curies inhaled → 25 rem from Sol. Sr^{90}

$\frac{6.95 \times 10^{-7} \text{ c}}{1.13 \times 10^{-7} \text{ c m}^{-3} \times 3.47 \times 10^{-4} \text{ m}^3 \text{ sec}^{-1}} = 1.77 \times 10^4$ sec. to inhale 25 rem dose
$= 4.92$ hrs.

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