Environmental Aspects of Fusion Power

1.) Curies/unit power = C

2.) Biological Hazard Potential

$$BHP^i = \frac{C^i}{(MPC)_i}$$

where $(MPC)_i$ is the maximum permissible concentration of radioisotope i in :

- **air (inhalation) mainly for accidents**

- **water (ingestion) mainly for leakage in waste storage facilities**

MPC Example - ^{55}Fe

	Occupational microcurie/ml		General Public microcurie/ml	
Form	**Air**	**Water**	**Air**	**Water**
soluble	**9×10^{-7}**	**2×10^{-2}**	**3×10^{-8}**	**8×10^{-8}**
insoluble	**1×10^{-6}**	**7×10^{-2}**	**3×10^{-8}**	**2×10^{-3}**

$$MPC..\,\alpha\,\frac{1}{Eff.\,Half - Life..\,t^{E}_{1/2}}$$

$$\frac{1}{t^{E}_{1/2}} = \frac{1}{t^{B}_{1/2}} + \frac{1}{t^{P}_{1/2}}$$

if $t^{P}_{1/2} >> t^{B}_{1/2}$ **then MPC** $\alpha\ \frac{1}{t^{B}_{1/2}}$

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