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Kilowatt deaths

The recent letter by Paul Baldwin (December, page 13) shows half lives of persons engaging continuously in various activities.

I have another table that I find useful in expressing health problems. This comes from knowing—or estimating—accidents and disease deaths from various power uses. The rates can be expressed in the useful unit "Death/Kilowatt hour" (for electricity use, multiply by 3 for the efficiency of generation).

Deaths per Kilowatt Hour in USA (based on 1965 figures)	
Coal mining:	
Black Lung disease	10^{-9}
accidents	6×10^{-11}
Petroleum refining	
oil-well accidents	7×10^{-12}
Uranium mining cancers	
no breeder	1.5×10^{-11}
breeder	7×10^{-14}
Uranium processing	
fuel fabrication	
accidents (estimate)	
no breeder	2×10^{-11}
breeder	2×10^{-13}
Coal/gas/oil	
air-pollution deaths	3×10^{-9}
Radiation cancers from	
normal operation	
of reactors and	
processing plants	3×10^{-13}
(0.1 mr/yr at year 2000)	
Potential reactor accidents	
(1 per 30 years of WASH 740	
severity by year 2000):	
direct deaths	3×10^{-11}
possible extra	
cancer deaths	3×10^{-11}
Gas main explosions	3×10^{-12}
Gas poisoning	6×10^{-12}
Dam failures	
(1 per 50 years as in Vaiont, Italy)	6×10^{-10}

Again this table does not express the whole problem—people have become more careful since 1965, but these figures indicate where physicists should express their public concern. It can also be a stimulus to thought as you turn on the light.

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