Gamma Radiation Safety Study Guide, second edition

Text Corrections

The following text corrections apply to the second edition printing of the *Gamma Radiation Safety Study Guide, second edition (02/01)*. Subsequent printings of the document will incorporate the corrections into the published text.

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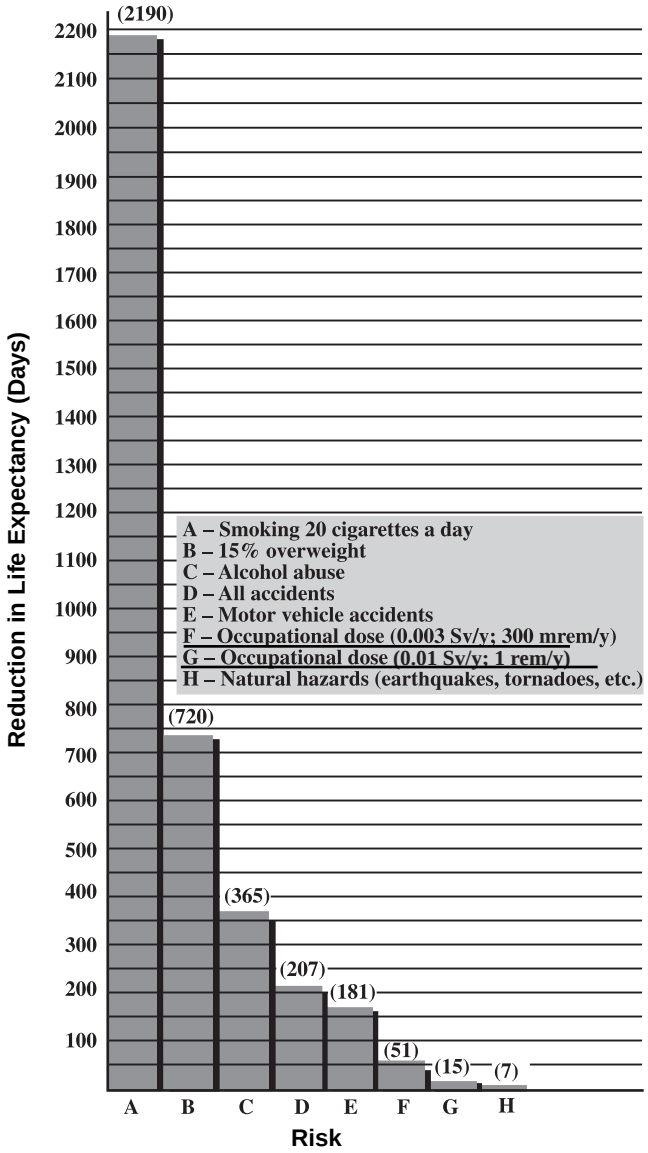
Figure 4.3 should be changed as indicated.

Figure 4.3: Estimated loss of life expectancy from risks in life compared to a radiographer's risk from radiation.



Sources: NRC Regulatory Guide 8.29, 1996, and *The World Almanac© and Book of Facts 1997*.

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The equation in Example 2 should read:

$$\frac{0.002\ \mathrm{R/h}}{416\ \mathrm{R/h}} = \frac{1\ \mathrm{ft}^2}{(D_1)^2}$$

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In Table 8.2: Warning label use, the Transport Index for Yellow II Label and Yellow III Label should be changed as indicated.

Transport Index	Maximum Radiation Level at Any Point on the External Surface
White I Label	
0	≤ 0.5 mR/h (≤ 0.005 mSv/h)
Yellow II Label	
> 0 but ≤ 1	> 0.5 mR/h but ≤ 50 mR/h (>0.005 mSv/h but ≤ 0.5 mSv/h)
Yellow III Label	
> 1 but ≤10	> 50 mR/h but ≤ 200 mR/h (>0.5 mSv/h but ≤ 2.0 mSv/h)
Yellow III Label (must be shipped under exclusive use provisions)	
> 10	> 200 mR/h ≤ 1000 mR/h (>2.0 mSv/h but ≤ 10 mSv/h)

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In the Answers to Review Questions, two answers are incorrect.

- The answer to Chapter 4, Question 7 should be a.
- The answer to Chapter 6, Question 3 should be b.
- The answer to Chapter 8, Question 4 should be b.

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The solution to Example 1 should read:

$$(0.04216\ \mathrm{Sv/h} \times 0.09\ \mathrm{m}^2) \div 57.76\ \mathrm{m}^2 =$$
$$0.0000656\ \mathrm{Sv/h}\ \text{or}\ \underline{0.0656\ \mathrm{mSv}}$$

Example 2 should read:

Example 2: Using the same set of circumstances as Example #1, how far from the source would the radiation be reduced to 0.00002 Sv (0.02 mSv)?

$$\frac{0.04216\ \mathrm{Sv/h}}{0.00002\ \mathrm{Sv/h}} = \frac{(D_2)^2}{(0.3\ \mathrm{m})^2}$$

$$(0.04216\ \mathrm{Sv/h} \times 0.09\ \mathrm{m}^2) \div 0.00002\ \mathrm{Sv/h} = (D_2)^2$$

$\underline{189.72\mathrm{m}^2} = (D_2)^2$ Take the square root

$13.77\mathrm{m} = D_2$