



charles lowe

**Let's begin learning
Radiation Safety.**



charles lowe

Listen and learn.

Ask questions.

Take notes, use highlighter.

Master it!



charles lowe

Editor's Preface

Editor's Preface

SI radiographic units.

Quantity	SI Name	Former Designation
radiation activity	becquerel (Bq)	curie (Ci) Strength
radiation exposure	coulomb per kilogram (C/kg)	roentgen (R) Vicinity
absorbed dose	gray (Gy)	rad Absorption
dose equivalent	sievert (Sv)	rem Human

Editor's Preface

Conversion to SI radiographic units.

Traditional Unit	Symbol	Multiply	Resulting SI Unit	SI Symbol
curie	Ci	3.7×10^{10} 37	becquerel gigabecquerel	Bq GBq
rad	rad ^a	10^{-2} 10	gray milligray	Gy mGy
rem	rem	10^{-2} 10	sievert millisievert	Sv mSv
roentgen	R	2.58×10^{-4} 258	coulomb per kilogram microcoulomb per kilogram	C/kg mC/kg

a. The abbreviation rd may be used for radiation absorbed dose where there is possibility of confusion with radian (rad), the SI unit for plane angle.

Reprinted from *Nondestructive Testing Handbook*, third edition: Volume 4, *Radiographic Testing*. Columbus, OH: American Society for Nondestructive, 2002, p. 31.

Editor's Preface



Gigabecquerel (Gbgq.)

- # curies x 37 = # Gbgq.
- 100 curies x 37 = 3,700 Gbgq.



charles lowe

End of Editor's Preface



charles lowe

Preface

Preface: Who Is This Manual For?



Who Is This Manual For?

- Classroom training.
- Train you to be safe working with Ionizing Radiation.
- Meet training requirements.

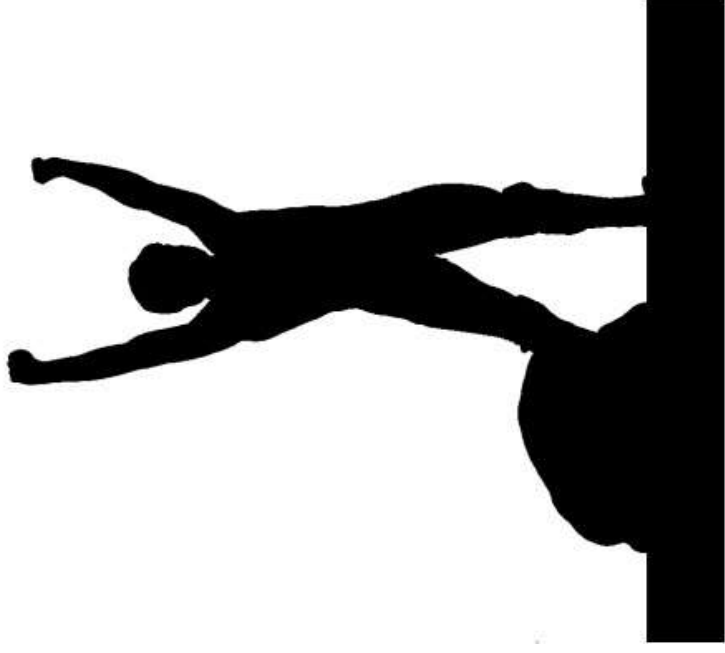
Preface: Who Is This Manual For?



Why Are You Here?

- To train you to protect yourself and members of the general public from the dangers of ionizing radiation.

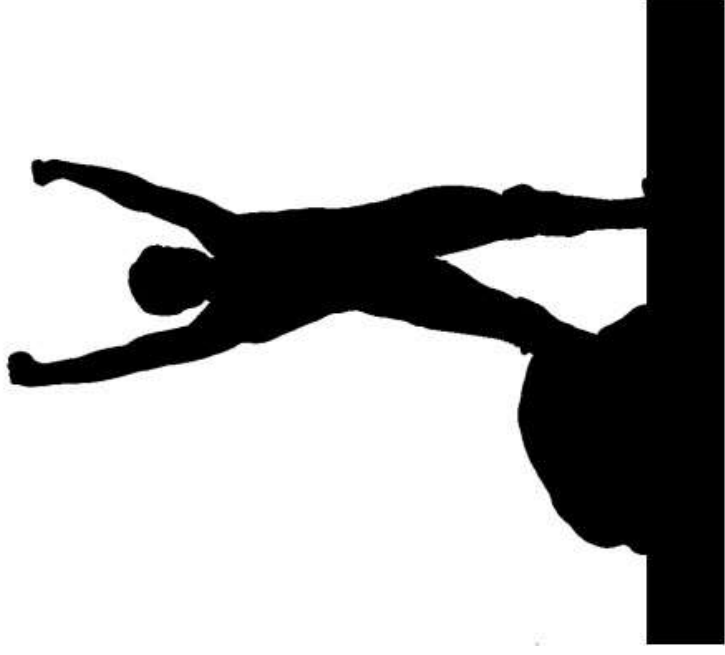
Preface: Who Is This Manual For?



Extracurricular?

- Course requires studying beyond classroom.
- Study, study, study!
- Company exam and Certified Radiographer exam.

Preface: Who Is This Manual For?



Extracurricular?

- Seek our website at www.charleslowerso.com
- Seek the Radiation Safety Training link.
- Scroll down to find 44 study guides.

Preface: Preface: Quiz 1 of 6

Quiz 1 of 6:

What is the equivalent of 30 curies to Gbq.?

30 curies x 37 = 1,110 Gbq.

Preface: Preface: Quiz 2 of 6

Quiz 2 of 6:

1.25 Rem is the equivalent of _____ mrem.

1.25 Rem x 1000 = 1,250 mrem.

Preface: Preface: Quiz 3 of 6

Quiz 3 of 6:

Why must I protect members of the general public from Ionizing Radiation?

Prior to making an exposure, you must vacate all members of the general public out of the established safety area. The general public are not as knowledgeable about radiation as you are.

Preface: Preface: Quiz 4 of 6

Quiz 4 of 6:

Convert 3.50 R to mR?

3.50 R x 1000 = 3,500 mR.

Quiz 5 of 6:

Name 3 reasons to continue studying radiation safety after completing the course?

- 1) Stay educated about your upcoming job.**
- 2) Prepare for the company radiation safety exam.**
- 3) Prepare for the Certified Radiographer exam.**

Quiz 6 of 6:

Name a few study materials you will gain from this course.

- 1) Training manual.**
- 2) Notes.**
- 3) Handouts.**
- 4) Downloadable files at Charles Lowe website.**



charles lowe

End of Preface