

Radiological Assessment — Sources and Exposures, by R.E. Faw and J.K. Shultis, PTR Prentice-Hall, Englewood Cliffs, NJ, 1992, ISBN 0-13-751132-9, 681 pages, \$70.00.

The increasing awareness of radiation in our lives and environment make this volume very timely. Authored by two professors at Kansas State University Department of Nuclear Engineering, the term "radiological assessment" is defined as "the evaluation of radiation doses to individuals and population groups from radiation sources both external and internal to the human body, the characterization of radiation sources, and dispersal of radioactive materials into the environment." Basic information from numerous sources is presented.

The authors assume the reader possesses a level of mathematics to the level of algebra and solid geometry, and is familiar with nuclear physics of radioactive decay. A computer, plus a knowledge of calculus would be useful. In other words, the volume is not for light reading, but is a very valuable resource and training aid.

Beginning with a general introduction to radiological assessment, chapters discuss radiation interactions and response functions, the biologic effects of ionizing radiation from both high level and low-LET exposures, exposure to natural sources (including the much discussed Radon-222 and 220 decay series), exposures to medical sources, nuclear power, nuclear explosives, and the disposal of radioactive wastes, as well as gamma-ray and neutron shielding, electron penetration and dose evaluation, internal dose evaluation for various human organs, atmospheric dispersion of radionuclides, dispersion in surface and ground waters (from surface waters to the oceans), and concludes with environmental pathway monitoring. Each chapter is presented in a readable manner, and each contains typical problems which require the reader to do detailed analyses.

Reference sources are comprehensive, and several appendices are included listing international and national groups including the International Commission on Radiological Protection and the American National Standards.

This volume will doubtlessly be of great value in the hands of those with a background in radiation and mathematics, and is highly recommended.

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