

## References

- Altshuler, 1963. LLD calculations.
- American National Standards Institute (ANSI). 1986. *Quality Assurance Program Requirements for Nuclear Facilities*. Report No. ANSI/ASME NQA-1.
- Bernabee, R., Percival, D., and Martin D. 1980. "Fractionation of Radionuclides in Liquid Samples from Nuclear Power Facilities," *Health Physics*, 39, pp. 57-67.
- Currie, 1968. LLD calculations.
- Department of Energy (DOE). 1988. *The Environmental Survey Manual. Appendix D-Part 4 (Radiochemical Analysis Procedures)*. Second Edition. (DOE/EH-0053)
- Environmental Protection Agency (EPA). 1986. *Test Methods for Evaluating Solid Waste (SW846): Physical/Chemical Methods*. Third Edition. Office of Solid Waste.
- Environmental Protection Agency (EPA). 1988. Federal Guidance Report No. 11.
- Environmental Protection Agency (EPA). 1989. Integrated Risk Information System (IRIS) (data base). Office of Research and Development.
- Environmental Protection Agency (EPA). 1990. *Health Effects Assessment Summary Tables. First and Second Quarters FY 1990*. Office of Research and Development. (OERR 9200.6-303).
- Environmental Protection Agency (EPA). 1991. *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, Part A*. Office of Solid Waste and Emergency Response. EPA/540/1-89/002. (OSWER Directive 9285.7-01A).
- National Council on Radiation Protection and Measurements (NCRP). 1978. *Instrumentation and Monitoring Methods for Radiation Protection*. NCRP Report No. 57.
- Nuclear Regulatory Commission (NRC). 1979. *Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment*. Regulatory Guide 4.15, Revision 1.
- Pasternak and Harley, 1971. LLD calculations.
- Schaeffer, R. L., Mendenhall, W., and Ott, L. 1979. *Elementary Survey Sampling*, Duxbury Press, North Scituate, Massachusetts.
- Walpole, R. E., and Meyers, R. H. 1978. *Probability and Statistics for Engineers and Scientists*, MacMillan, New York.



# Index

## A

- Absorbed dose, radiation 3
- Activity 4, 8-10, 29
- Air data collection
  - background sampling 33
  - sampling locations 22
- Analytical methods 3, 7, 17, 24, 29
- Animal studies 5
- Averaging time 4

## B

- Background
  - naturally occurring 33, 34
  - regional 10
  - site specific 15, 22, 23, 29, 33
- Blanks 22, 27
- Body weight 4

## C

- Calibration 7, 15, 26, 27, 29
- Carcinogenesis 5
- Carcinogens 5, 8
- Contract Laboratory Program 9, 26

## D

- Data qualifiers 26
- Data quality objectives (DQOs) 3, 7, 24
- Decay products 4, 8, 9, 17, 33
- Detection limits 1, 7, 9, 26, 29
  - lower limit of detection (LLD) 7, 9, 10, 29, 37
  - minimum detectable concentration (MDC) 7, 9, 10, 29
  - sample quantitation limit (SQL) 9
- Dose
  - effective dose equivalent (H) 4, 5
- Dose conversion factor (DCF) 4

## E

- EPA Radiation Program Staff 1
  - National Air and Radiation Environmental Laboratory (NAREL) 24
  - Office of Radiation Programs (ORP) 25
- Exposure, radiation
  - assessment 3, 4, 5, 15, 17, 22, 26, 33
  - definition 4
  - external 10, 13
  - internal 10, 13
- Exposure pathways 3, 4, 5, 17, 22, 33

## G

- Guidance for Data Useability in Risk Assessment - Part A 1

## H

- Half-life 8, 9, 13, 17
- Health Effects Assessment Summary Tables (HEAST) 4
- Health physicist 1, 5, 9, 10, 22
- Hot spot 22
- Human health evaluation manual (HHEM) 4

## I

- Instrument detection limit (IDL) 9
- Intake 3, 4
- Integrated Risk Information System (IRIS) 4
- Ionizing radiation 3, 5

## L

- Lower limit of detection (LLD) 7, 9, 10, 29

## M

- Minimum detectable concentration (MDC) 7, 9, 10, 29

## N

- National Air and Radiation Environmental Laboratory (NAREL) 24
- National Institute of Standards and Technology (NIST) 27
- Nuclear Regulatory Commission (USNRC) 7, 25, 26

## O

- Office of Radiation Programs (ORP) 25

## P

- Preliminary assessment/site inspection (PA/SI) 7

## Q

- Quality assurance/quality control (QA/QC) 24, 26, 27, 33
- Qualifiers 26
- Quality assurance project plan (QAPjP) 7
- Quantitation limit 9

## R

- Radiation detection instruments 7, 8
  - Geiger-Muller (GM) counters 13
  - ionization chamber 17
  - scintillation detectors 13

Radioactive decay 4, 9  
Radiochemist 1, 5, 8-10, 22, 25, 26  
Radionuclide 1, 3-5, 8-10, 12, 13, 17, 22, 24, 33  
    alpha particles 3, 8, 9, 13, 17, 29  
    beta particles 3, 8, 9, 13, 17  
    neutrons 8  
    photons 3, 8, 10  
    relative biological effectiveness (RBE) 3, 8, 24  
Remedial investigation/feasibility study (RI/FS) 1  
Remedial project manager (RPM) 5, 8, 9, 17  
Risk assessor 1, 5, 8, 9, 12, 13, 15, 17, 25-  
    27, 29, 33

## **S**

Sample quantitation limit (SQL) 9  
Sampling and analysis plan 3, 7, 8, 10,  
    13, 17, 33  
Surface water data collection 24  
Surveys, external radiation  
    mobile 4, 12, 13, 17, 22  
    systematic grid 7

## **T**

Target Compound List (TCL) 9  
Toxicity 3, 4, 5, 8  
Trip blanks 10