



Standard Guide for Environmental Monitoring Plans for Decommissioning of Nuclear Facilities¹

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1. Scope

1.1 This guide covers the development or assessment of environmental monitoring plans for decommissioning nuclear facilities. This guide addresses: (1) development of an environmental baseline prior to commencement of decommissioning activities; (2) determination of release paths from site activities and their associated exposure pathways in the environment; and (3) selection of appropriate sampling locations and media to ensure that all exposure pathways in the environment are monitored appropriately. This guide also addresses the interfaces between the environmental monitoring plan and other planning documents for site decommissioning, such as radiation protection, site characterization, and waste management plans, and federal, state, and local environmental protection laws and guidance. This guide is applicable up to the point of completing D&D activities and the reuse of the facility or area for other purposes.

2. Referenced Documents

2.1 ASTM Standards:²

- E666 Practice for Calculating Absorbed Dose From Gamma or X Radiation
- E668 Practice for Application of Thermoluminescence-Dosimetry (TLD) Systems for Determining Absorbed Dose in Radiation-Hardness Testing of Electronic Devices
- E1167 Guide for Radiation Protection Program for Decommissioning Operations
- E1281 Guide for Nuclear Facility Decommissioning Plans
- E1892 Guide for Preparing Characterization Plans for Decommissioning Nuclear Facilities
- ISO/ASTM 51707 Guide for Estimating Uncertainties in Dosimetry for Radiation Processing

2.2 ANSI Standards:³

- ANSI N 545 Environmental Application of Thermoluminescent Dosimetry
- ANSI N 13.1 Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities
- ANSI N323AB Standard for Radiation Protection Instrumentation Test and Calibration, Portable Survey Instruments

2.3 Nuclear Regulatory Commission Documents:⁴

- NUREG CR-2082 Monitoring for Compliance with Decommissioning Termination Survey Criteria
- NUREG-1575 Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), Revision 1, August 2000
- NUREG-1576 Multi-Agency Radiological Laboratory Analytical Protocols (MARLAP)

2.4 U.S. Government Documents:

- 29 CFR Part 1910.120⁴

2.5 U.S. EPA Documents:

- OSWER-9950.1 RCRA Ground-Water Monitoring Technical Enforcement Guidance Document⁵
- SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods
- 40 CFR 302 Designation, Reportable Quantities, and Notifications
- 40 CFR 61 National Emission Standards for Hazardous Air Pollutants
- 40 CFR 58 Ambient Air Quality Surveillances

2.6 American Public Health Association Document:

- Standard Methods for Examination of Water and Wastewater⁶

3. Terminology

3.1 Definitions:

¹ This guide is under the jurisdiction of ASTM Committee E10 on Nuclear Technology and Applications and is the direct responsibility of Subcommittee E10.03 on Radiological Protection for Decontamination and Decommissioning of Nuclear Facilities and Components.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

⁴ Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

⁵ Available from U.S. Environmental Protection Agency, 401 M St. SW, Washington, DC 20460.

⁶ Available from American Public Health Association, 1015 15th St. NW, Washington, DC 20005.