

Monitoring for Radionuclides in the Environment



This 5-day course will provide health physics and environmental monitoring professionals with a practical knowledge of the design and operation of radioactivity environmental monitoring programs. Relevant NRC, EPA and DOE regulations will be discussed. Sources of radiation and radionuclides in the environment will be presented. The instructor will focus on the steps involved in developing a technically sound environmental monitoring program. Key aspects of developing and implementing preoperational and operational

monitoring programs will be covered, including sampling media and equipment, required procedures, quality assurance, reporting requirements, and actual radionuclide transport in the environment.

Regulatory Requirements

- Code of Federal Regulations (CFR's)
- DOE Regulations
- NUREG's
- Regulatory Guides
- NESHAP
- EPA Standards

Radionuclide Sources and Distribution in the Environment

- Naturally Occurring
- Artificially Produced
- Technologically Enhanced Naturally

Implementing an Environmental Monitoring Program

- Types of Programs
- Preoperational and Operational Programs
- Background Radioactivity
- Selection of Sample Media
- Program Designs

Decommissioning Monitoring Program

- Decommissioning issues
- Post operational programs

Sample Media and Equipment

- Direct Exposure
- Liquid-Borne
- Airborne

QA/QC and Procedures

- Sampling and Analysis Plan
- Chain of Custody
- Quality Control Checks

Radionuclide Transport Liquid and Gaseous Systems

- Mechanisms for Dilution
- Mechanism for Depletion
- Pathways for Bioaccumulation

Environmental Factors Affecting Transport

Physical Terrain

- Climate
- Land Use
- Aquatic Systems
- Predictive Impact Calculations
- Gaussian Plume Dispersion
- Liquid Flume Dispersion

Offsite Dose Calculations

- Regulatory Guide 1.109
- NUREG-0133
- COMPLY
- CAP88
- Hotspot

Emergency Conditions and Environmental Programs

- Protocols for sample collections
- Use in decision making
- Considerations for personnel

Onsite Training

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THE AMERICAN ACADEMY OF HEALTH PHYSICS (AAHP) HAS AWARDED THIS COURSE 32 CONTINUING EDUCATION CREDITS.
ASSIGNED ID NUMBER: 2011-00-005

FOR FURTHER INFORMATION OR ASSISTANCE, PLEASE CONTACT:

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