Contamination Control Training for Biomedical Facilities

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CONTAMINATION CONTROL TRAINING FOR BIOMEDICAL FACILITIES

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HISTORY

In 1991, a contamination control course was developed for the Biology and Biotechnology Research Program (BBRP) at the Lawrence Livermore National Laboratory (LLNL). This course was based on the developer's experience in Radiation Safety at the University of Utah and University of Kansas Medical Center. This course has been well received at LLNL because it addresses issues that are important to individuals handling small quantities of radioactive materials. This group of users is often overlooked. They are typically very well educated and are expected to "know" what they should do. Many of these individuals are not initially comfortable working with radioactive materials. They appreciate the opportunity to be introduced to contamination control techniques and to discuss issues they may have. In addition, we benefit by experience that researchers bring from other facilities.

The Brookhaven National Laboratory (BNL) and the Los Alamos National Laboratory (LANL), in reviewing this training, noted that it would be valuable to make the material generic so that it or parts of it could be incorporated into their training. A small group of interested individuals was formed. The course was reviewed by BNL, LANL, and the University of Kansas Medical Center and revisions made to address their comments.

DOE CORE TRAINING

To the surprise of the group, the training was listed as core (standardized) training in a response of the Department of Energy Office of Environmental, Safety and Health to the Defense Nuclear Facilities Safety Board (a Board appointed by the Executive Branch to provide independent oversite of the DOE and DOE contractor facilities).

The reference is as follows:

"CONTAMINATION CONTROL FOR BIO-MEDICAL RESEARCHERS"

"Requirement:" Radiological Worker II training is required for all individuals working at DOE facilities in contaminated areas. Bio-medical researchers at DOE facilities typically handle only small amounts of radionuclides while conducting their experiments at DOE facilities. Radiological Worker II training is overly detailed for the radiological hazard associated with the levels of contamination which are possible in the conduct of bio-medical research. Therefore, specific training for contamination control for bio-medical researchers is warranted.

Discussion: The training course will address the specific radiological training requirements for chemists, biologists, and medical researchers who are using small amounts of dispersible radionuclides in tabletop experiments, and will not be exposed to other radiation sources. The training will include the potential hazards of typical radionuclides, contamination control procedures, and guidance for developing and including site-specific information. The training course will eliminate the need for Radiological Worker II training for bio-medical researchers. The target audience for this training course is bio-medical researchers.

The commitment by DOE to this course, and the importance of tailoring a course to a special audience was perceived as a challenge to ensure that this course would be a valuable addition to the DOE core training.
Although the training is taught routinely at the LLNL, it was important that it undergo a wide review. The Conference of Radiation Control Programs Directors (CRCPD) and the Campus Radiation Safety Officers (CRSO) were contacted to coordinate review by their members. They were very supportive and responsive to this request. In August 1994, a draft of the course was circulated to a select number of individuals for review. The following entities volunteered to review the course and provided valuable comments.

- Radiation Control Program, The Commonwealth of Massachusetts
- Colorado Department of Public Health and Environment
- Division of Radiation Protection, State of Washington
- University Radiation Protection Facility, Arizona State University
- University Health and Safety Office, The University of North Carolina at Chapel Hill
- Office of Radiation, Chemical and Biological Safety, Michigan State University
- Health and Safety Office, The University of Kansas Medical Center
- Radiological Health Department, The University of Utah

The comments received were incorporated into the course by LLNL. In addition, slight revisions and the addition of an expanded practical exercise were incorporated. Efforts were made to align this course with the DOE Radiological Worker II Contamination Control Module to allow use of applicable items in the core test bank. In addition, the extensive training effectiveness evaluations which should be available from the Radiological Worker training could be utilized for improvements in this course.

**COURSE CONTENT**

- Introduction
- Radiological Contamination
- Characteristics of Commonly Used Radionuclides
- Preparation of Areas and Materials
- Marking, Labeling, and Posting
- Personnel Protective Equipment
- Storage and Containment of Radioactive Materials
- Special Precautions for Liquids
- Radioactive Waste Management and Minimization
- Monitoring for Contamination
- Decontamination
- Release of Materials
- Contamination Control Lessons Learned
FUTURE

This course should be released toward the end of 1994. LLNL has volunteered to chair the maintenance committee for this course. The maintenance committee will resolve comments and suggested changes. It is expected that revisions will be issued on a frequency not to exceed one year. For information on this course, contact Paula Trinoskey at Lawrence Livermore National Laboratory.

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