



American National Standard for Training Requirements for Homeland Security Purposes Using Radiation Detection Instrumentation for Interdiction and Prevention

Accredited by the American National Standards Institute

Sponsored by the
National Committee on Radiation Instrumentation, N42

IEEE
3 Park Avenue
New York, NY 10016-5997, USA
12 April 2007

ANSI N42.37-2006

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Secretariat

Institute of Electrical and Electronics Engineers, Inc.

Approved 12 December 2006

American National Standards Institute

Abstract: Training requirements for homeland security purposes using radiation detection instrumentation for interdiction and prevention are described.

Keywords: homeland security, interdiction and prevention, radiation detection instruments, training

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3 Park Avenue, New York, NY 10016-5997, USA

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Print: ISBN 0-7381-5558-6 SH95637
PDF: ISBN 0-7381-5559-4 SS95637

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Introduction

This introduction is not part of ANSI N42.37-2006, American National Standard for Training Requirements for Homeland Security Purposes Using Radiation Detection Instrumentation for Interdiction and Prevention.

This standard is the responsibility of the Accredited American Standards Committee on Radiation Instrumentation, N42. The standard was approved by the N42 letter ballot of September–October 2006.

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1. Overview

1.1 Scope

The scope of this standard describes requirements for training in the use of personal radiation detectors (see ANSI N42.32¹), portable radiation detection instruments (see ANSI N42.33), portable radionuclide identifiers (see ANSI N42.34), and portal radiation monitors (see ANSI N42.35). Other types of radiation detectors may be included in revisions of this standard as new equipment is developed.

This standard provides training requirements for three identified and defined levels of training. Students who successfully complete training at the minimum requirements of this standard shall have a demonstrated competency appropriate for that training level. This includes a general understanding and background of the principles of ionizing radiation, radiation effects, and radiation detection. The individual user organizations should develop training programs with content specific to their organizations and requirements. Training for incident manager or incident commander and response post-identification of a radiation source are beyond the scope of this standard.

1.2 Purpose

This standard establishes minimum requirements and provides recommendations and guidelines for training users in basic radiation detection and the proper use of radiation detection instrumentation for homeland security interdiction and prevention applications. Reference to response in this document is only for pre-event preparations. This standard does not cover mission-specific procedures and protocols. This training is intended primarily for organizations involved in detection and interdiction efforts, including law enforcement, transit police, private sector security personnel, the U.S. Postal Service, and private shippers.

¹ For information on references, see Clause 2.

1.3 Background

This standard is a strategic document outlining requirements for pre-event training. The details of post-event training of specific individuals for specific purposes are located in related documents developed and being developed by ASTM (American Society for Testing and Materials) and the NFPA (National Fire Protection Association), as referenced by ANSI N13.

The intention of the first level of training is to provide a limited understanding of radiation without creating a sense of fear or overloading the student with extensive details traditionally presented with radiation training sessions. The overview should describe radioactivity in the context of detecting the presence of illicit radioactive material and nuclear/radiological weapons of mass destruction. The natural radioactivity discussion should help the student understand that radiation is omnipresent and encountered in daily life. The discussion of radiation protection principles shall focus on the basic operation of radiation detectors and how radiation exposures can be minimized.

The objectives of the second and third levels of training are to present additional tasks in radiation detection, assessment, and identification and to present instrument training for usage in interdiction and prevention. Those objectives are outlined in Clause 5.

Note that the NFPA 472 training levels of operational, operational with mission-specific competencies, and hazardous materials technician for response are equivalent to levels 1, 2, and 3, respectively, described in this standard. Note also that NFPA 472 describes an awareness level of training. Awareness level training is the responsibility of individual organizations and is outside of the scope of this standard.

The instruments addressed in this standard are intended for use in radiation detection and not as traditional health physics instrumentation for radiation protection or radiation dosimetry. However, these instruments may also be used to evaluate radiation hazards. Many of the core training competencies may be currently included in existing training programs. This standard emphasizes the additional specialized knowledge and training needed for use of these instruments for Homeland Security applications. The precise definition of “appropriate actions” to be taken in a given situation is the responsibility of the user organization and is outside the scope of this standard.

The Annexes to this standard include illustrations of potential training level and job category relationships for responder organizations; information related to the general types of instruments covered by Department of Homeland Security standards; examples of common problems and errors associated with the use of radiation detection instrumentation that can be avoided by adequate training; and trainer qualification examples.

1.4 Special word usage

The following word usage applies throughout this standard:

- “Shall” signifies a mandatory requirement. Where appropriate a qualifying statement is included to indicate that there may be an allowable exception.
- “Should” signifies a recommended specification or method.
- “May” signifies an acceptable method or an example of good practice.