



Standard Guide to In-Plant Performance Evaluation of Hand-Held SNM Monitors¹

This standard is issued under the fixed designation C 1237; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide is one of a series on the application and evaluation of special nuclear material (SNM) monitors. Other guides in the series are listed in Section 2, and the relationship of in-plant performance evaluation to other procedures described in the series is illustrated in Fig. 1. Hand-held SNM monitors are described in of Guide C 1112, and performance criteria illustrating their capabilities can be found in Appendix X1.

1.2 The purpose of this guide to in-plant performance evaluation is to provide a comparatively rapid procedure to verify that a hand-held SNM monitor performs as expected for detecting SNM or alternative test sources or to disclose the need for repair. The procedure can be used as a routine operational evaluation or it can be used to verify performance after a monitor is calibrated.

1.3 In-plant performance evaluations are more comprehensive than daily functional tests. They take place less often, at intervals ranging from weekly to once every three months, and derive their result from multiple trials.

1.4 Note that the performance of both the hand-held monitor and its operator are important for effective monitoring. Operator training is discussed in Appendix X2.

1.5 The values stated in SI units are to be regarded as standard.

1.6 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 The guide is based on ASTM standards that describe application and evaluation of SNM monitors, as well as technical publications that describe aspects of SNM monitoring.

2.2 ASTM Standards:

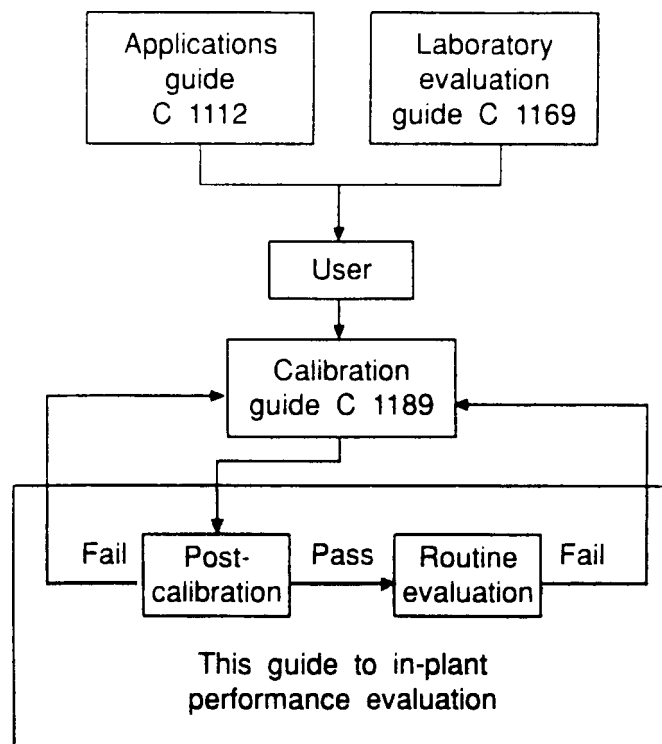
C 859 Terminology Relating to Nuclear Materials²

C 993 Guide for In-Plant Performance Evaluation of Auto-

¹ This guide is under the jurisdiction of ASTM Committee C-26 on Nuclear Fuel Cycle and is the direct responsibility of Subcommittee C26.12 on Safeguard Applications.

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² Annual Book of ASTM Standards, Vol 12.01.



NOTE 1—The procedures shown “above” the user provide the user with information before acquiring a monitor, and those “below” assist the user to obtain continuing acceptable performance from the monitor.

FIG. 1 The Relationship of In-plant Evaluation to Other Procedures Described in Guides for SNM Monitors

matic Pedestrian SNM Monitors²

C 1112 Guide for Application of Radiation Monitors to the Control and Physical Security of Special Nuclear Material²

C 1169 Guide for Laboratory Evaluation of Automatic Pedestrian SNM Monitor Performance²

C 1189 Guide to Procedures for Calibrating Automatic Pedestrian SNM Monitors²

C 1236 Guide to In-Plant Performance Evaluation of Automatic Vehicle SNM Monitors²

3. Terminology

3.1 Definitions:

3.1.1 *alarm*—the audible sound made by a hand-held SNM monitor to indicate that it has detected radiation intensity at or