

N323D

American National Standard for Installed Radiation Protection Instrumentation

Accredited by the American National Standards Institute

Sponsored by the
National Committee on Radiation Instrumentation, N42



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Secretariat

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Abstract: Requirements for installed instruments that measure dose, dose rate, and equivalent dose or dose rate and for installed instruments that detect or measure radioactive contamination are established.

Keywords: dose, dose equivalent, dose rate, installed instrumentation, instrumentation, radiation, radiation protection

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Introduction

(This introduction is not part of ANSI N323D-2002, American National Standard for Installed Radiation Protection Instrumentation.)

This standard is the responsibility of the Accredited American National Committee on Radiation Instrumentation, N42. Committee N42 delegated the development of this standard to Subcommittee N42.RPI. Drafts were reviewed by Committee N42, Subcommittee N42.RPI, and other interested parties, and the comments received were utilized in producing the standard as finally approved. The standard was approved on N42 ballot of 3 September 2002.

Participants

At the time Committee N42 approved this standard, it had the following members:

Louis Costrell, *Chair*
Michael P. Unterweger, *Vice chair*
Sue Vogel, *Administrative Secretary*

<i>Organization Represented</i>	<i>Name of Representative</i>
American Conference of Governmental Industrial Hygienists.....	Jesse Lieberman
Bicron.....	Joseph G. Bellian
Consultant.....	Morgan Cox
Eberline Instruments.....	Mitchell Truitt
Entergy Operations.....	Ron Schwartz
Health Physics Society.....	Joseph R. Stencil
Institute of Electrical and Electronics Engineers (IEEE).....	Louis Costrell
	Julian Forster (<i>Alt.</i>)
	Anthony J. Spurgin (<i>Alt.</i>)
Lawrence Berkeley National Laboratory.....	Edward J. Lampo
Massachusetts Institute of Technology, Bates Linear Accelerator Center.....	Frank X. Masse
National Institute of Standards & Technology (NIST).....	Louis Costrell
	Michael P. Unterweger (<i>Alt.</i>)
Oak Ridge National Laboratory.....	Charles L. Britton
Oak Ridge National Laboratory, Instrumentation Division.....	Peter J. Chiaro, Jr.
ORTEC - Perkin Elmer.....	Ronald M. Keyser
Overhoff Technology Corporation.....	H. Overhoff
Pacific Northwest Lab.....	Joseph C. McDonald
Saint-Germain.....	Richard P. Oxford
Thermo Gamma Metrics.....	Ernesto A. Corte
U.S. Army.....	Edward Groeber
Wisconsin Public Service Corporation.....	Timothy Martinson
Members-at-Large.....	Paul L. Phelps
	Jack M. Selby
	Kenneth L. Swinth
	Carl R. Siebentritt
	Al N. Tschaeche
	Lee J. Wagner

At the time this standard was approved, Subcommittee N42.RPI had the following members:

Joseph G. Bellian
Peter J. Chiaro, Jr.
Morgan Cox
Henry Fong
Robert Ford
Mark M. Hoover

Joseph G. Johnson
Michelle E. Johnson
R. L. Kathren
Mike Lantz
Jimmy Little
Sergio Lopez
Joseph C. McDonald

Richard P. Oxford
Jack M. Selby
Carl R. Siebentritt
Al N. Tschaeche
Ed Walker
Chuan-Fu Wu

At the time this standard was completed, the ANSI N323D Working Group had the following members:

Peter J. Chiaro, Jr., *Chair*

Robert Ford
James K. Hesch
Cynthia G. Jones

Gary LaBruyere
Tim Martinson

Richard P. Oxford
Ron Schwartz
Mitchell Truitt

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American National Standard for Installed Radiation Protection Instrumentation

1. Scope

This standard establishes specific requirements for installed instruments that measure dose, dose equivalent, dose rate, or dose equivalent rate and for installed instruments used to detect and/or measure the presence of radioactive contamination. This standard does not address criticality detection systems.

For this standard, installed radiation protection instruments are instruments that operate using line power primarily. They are also *not* hand-carried during use, and they are typically operated at a fixed location. Instrument types include, but are not limited to, area, equipment, sample, personnel, and waste monitors.

Special purpose instrumentation, such as emergency post-accident radiological monitors, fall under the scope of other related ANSI standards. This standard is intended to supplement rather than replace them.

Low-range (i.e., near background to $< 10 \mu\text{Sv/h}$) instruments, air monitors, and air samplers are addressed by ANSI N323B and ANSI N323C, respectively.

Throughout this standard, three verbs have been used to show the degree of rigor intended for each specific criterion. The word *shall* is used to denote a requirement, the word *should* to denote a recommendation, and the word *may* to denote a permissible practice.

2. Definitions

Technical terminology used in this standard is generally consistent with the definitions in ANSI N1.1-1976 [B1]¹ and ICRU 60-1998 [B7] as well as IEC 60050-394-1995 [B8]. The following terms are defined specifically for use within this standard.

2.1 absorbed dose: The amount of ionizing energy absorbed in matter. The unit of absorbed dose is the gray.

2.2 acceptance testing: Evaluation or measurement of performance characteristics to verify that certain stated specifications and contractual requirements are met.

¹The numbers in brackets correspond to the numbers in the bibliography in Annex B.