

ANSI N15.8-2009

American National Standard

*for Methods of Nuclear Material Control –
Material Control Systems –
Special Nuclear Material Control
and Accounting Systems
for Nuclear Power Plants*



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ANSI[®]
N15.8-2009
Revision of
ANSI N15.8-1974

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for Methods of Nuclear Material Control –

**Material Control Systems –
Special Nuclear Material Control
and Accounting Systems
for Nuclear Power Plants**

Secretariat

Institute of Nuclear Materials Management

Approved February 18, 2009

American National Standards Institute, Inc.

American National Standard

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Foreword (This foreword is not part of American National Standard ANSI N15.8-2009.)

This standard was revised under the procedures of the American National Standards Institute by Accredited Standards Committee N15 on Methods of Nuclear Material Control. The secretariat of N15 is held by the Institute of Nuclear Materials Management (INMM). Committee N15 has the following scope:

Standards for the protection, control, and accounting of special nuclear materials in all phases of the nuclear fuel cycle, including analytical procedures where necessary and special to this purpose, except that physical protection of special nuclear materials within a nuclear power plant is not included.

The Institute of Nuclear Materials Management has long recognized that a well-developed and established material control and accounting system is one of the elements essential for preventing and detecting loss, theft, or diversion of special nuclear material. This standard provides the principal elements of a system for controlling and accounting for special nuclear material at a nuclear power plant. ANSI N15.8-1974 was written when the fuel assembly was the primary unit of interest for control and accounting of special nuclear material. At the time, there were no plans for reconstitution of fuel assemblies and therefore no specific guidance on fuel rods separated from the parent assembly. There was also no specific guidance on control and accounting of pieces resulting from fuel damage. The revised standard provides clearer guidelines on controlling and accounting for these materials.

Suggestions for improvement of the standard will be welcome. They should be sent to the Institute of Nuclear Materials Management, 111 Deer Lake Road, Suite 100, Deerfield, IL 60015. (Additional information about the INMM may be found at <http://www.inmm.org>.)

This standard was prepared by Committee N15 following ANSI requirements for due process and for obtaining consensus. N15 Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the N15 Committee had the following members:

- Carrie Mathews, Chair
(Pacific Northwest National Laboratory)
- Melanie May, Vice-Chair
(U.S. Department of Energy)
- Lynne Preston, Secretary
(U.S. Department of Energy)

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American Society of Industrial Security (ASIS)	Robert D. Hulshouser
American Society for Quality Control (ASQC)	Chuck Moseley
American Society for Testing and Materials (ASTM)	Charles Pietri
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Sandia National Laboratories (SNL)	Allen Stanley
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<i>Organization Represented</i>	<i>Name of Representative</i>
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Member at Large	Yvonne Ferris
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Member at Large	Bruce Moran
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The Writing Group for N15.8, Special Nuclear Material Control and Accounting Systems for Nuclear Power Plants, which is a revision of ANSI N15.8-1974, Nuclear Material Control Systems for Nuclear Power Plants, had the following members:

- Martha Williams, Chair
(U.S. Nuclear Regulatory Commission)
- Paul D. Adam
(Wolf Creek Nuclear Operating Corporation)
- James Crabtree
(U.S. Department of Energy)
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(Entergy Nuclear Operations)
- Frank J. Fresella
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(Southern Nuclear Operating Company)
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- Melanie May
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- Thomas Morello
(Constellation Energy)
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(U.S. Nuclear Regulatory Commission)
- Dori Votolato
(U.S. Nuclear Regulatory Commission)

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American National Standard
for Methods of Nuclear Material Control

Material Control Systems - Special Nuclear Material Control and Accounting Systems for Nuclear Power Plants

1 Scope

This standard establishes guidelines concerning control of and accounting for special nuclear material (SNM) at nuclear power plants.

The guidelines set forth in this standard are applicable to SNM and various material mixtures containing SNM. Generally, the SNM involved is plutonium, ^{233}U , or uranium enriched in the isotope ^{235}U . The ^{235}U content will vary depending on the type of reactor and various reactor parameters. SNM is typically in the form of pellets encapsulated in fuel rods.

Guidelines are set forth for the fundamentals of a SNM control and accounting system, including criteria for the receipt, internal control, physical inventory, and shipment of SNM.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

Title 10, Code of Federal Regulations (CFR), Part 20, *Standards for protection against radiation*

Title 10, CFR, Part 72, *Licensing requirements for the independent storage of spent nuclear fuel, high-level radioactive waste, and reactor-related greater than Class C waste*

Title 10, CFR, Part 73, *Physical protection of plants and materials*

Title 10, CFR, Part 74, *Material control and accounting of special nuclear material*

(All references are to Title 10 as of January 1, 2008.)