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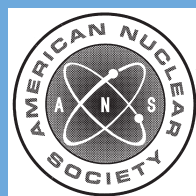
ANSI/ANS-15.1-2007 (R2013)

**the development of technical  
specifications for research reactors**

## an American National Standard

This standard has been reviewed and reaffirmed with the recognition that it may reference other standards and documents that may have been superseded or withdrawn. The requirements of this document will be met by using the version of the standards and documents referenced herein. It is the responsibility of the user to review each of the references and to determine whether the use of the original references or more recent versions is appropriate for the facility. Variations from the standards and documents referenced in this standard should be evaluated and documented.

This standard does not necessarily reflect recent industry initiatives for risk informed decision-making or a graded approach to quality assurance. Users should consider the use of these industry initiatives in the application of this standard.



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**American National Standard  
The Development of Technical  
Specifications for Research Reactors**

Secretariat  
**American Nuclear Society**

Prepared by the  
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## **American National Standard**

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## Foreword

(This Foreword is not a part of American National Standard “The Development of Technical Specifications for Research Reactors,” ANSI/ANS-15.1-2007.)

ANS-15.1, “The Development of Technical Specifications for Research Reactors,” is the principal standard developed under the direction of Subcommittee ANS-15, Operation of Research Reactors. This standard impacts research reactors of every type and size and has been widely used by most of them. Certain segments of this standard may be useful to critical experiment facilities and fast pulse reactors; however, these facilities should continue to use American National Standard ANSI/ANS-1-2000, “Conduct of Critical Experiments,” and ANSI/ANS-14.1-2004, “Operation of Fast Pulse Reactors.”

This standard uses the word “significant” throughout. This word must be defined on a case-by-case basis for each user of the standard based on that user’s specific facility and Safety Analysis Report.

The membership of the ANS-15.1 working group at the time of the revision of the standard was as follows:

A. Adams, Jr. (Cochair), *U.S. Nuclear Regulatory Commission*  
T. R. Schmidt (Cochair), *Sandia National Laboratories*

T. M. Raby, *National Institute of Standards and Technology*  
W. J. Richards, *National Institute of Standards and Technology*

In the process of creating this standard with respect to existing and varied practices in many operating facilities, it is important to consider the following:

- (1) It is not intended that the standard be used as a demand model for backfitting purposes;
- (2) Its provisions should be used only to the extent applicable to the individual facility;
- (3) It should be a significant aid for an existing and new owner or operator, or both;
- (4) It should be helpful for the facility undergoing change or modification, or both;
- (5) Its considered use should assist in implementing regulatory requirements.

This standard addresses itself to technical specifications for and administrative control of research and test reactors. However, Sec. 6, “Administrative Controls,” in this standard includes a review and audit section that effectively provides for the function of operational quality assurance at research reactors. Additional standards have been prepared addressing other areas of interest and concern to operators of research reactors. Guidance may be found in the following supplementary American National Standards developed for research reactors:

ANSI/ANS-15.2-1999, “Quality Control for Plate-Type Uranium-Aluminum Fuel Elements”

ANSI/ANS-15.4-1988 (R1999), “Selection and Training of Personnel for Research Reactors”

ANSI/ANS-15.7-1977; R1986 (W1996), “Research Reactor Site Evaluation” (withdrawn)

ANSI/ANS-15.8-1995 (R2005), “Quality Assurance Program Requirements for Research Reactors”

ANSI/ANS-15.10-1994 (W2004), “Decommissioning of Research Reactors” (withdrawn)

ANSI/ANS-15.11-1993 (R2004), “Radiation Protection at Research Reactor Facilities”

ANSI/ANS-15.15-1978; R1986 (W1996), “Criteria for the Reactor Safety Systems of Research Reactors” (withdrawn)

ANSI/ANS-15.16-1982; R1988; R2000, “Emergency Planning for Research Reactors”

ANSI/ANS-15.17-1981; R1987; R2000, “Fire Protection Program Criteria for Research Reactors”

ANSI/ANS-15.19-1991 (W2001), “Shipment and Receipt of Special Nuclear Material (SNM) by Research Reactor Facilities” (withdrawn)

ANSI/ANS-15.20-200x, “Criteria for the Reactor Control of Safety Systems of Research Reactors” (under development)

ANSI/ANS-15.21-1996; R2006, “Format and Content for Safety Analysis Reports for Research Reactors”

The membership of Subcommittee ANS-15 at the time of the standard revision was as follows:

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C. F. Sears, *The Pennsylvania State University*

Consensus Committee N17, Research Reactors, Reactor Physics, Radiation Shielding, and Computational Methods, had the following membership at the time it reviewed and approved this standard;

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A. Weitzberg (Vice Chair) *Individual*

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(Alt. R. D. Zimmerman, *American Institute of Chemical Engineers*)  
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