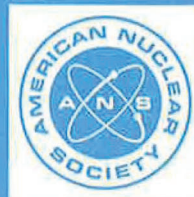


American Nuclear Society

WITHDRAWN

**requirements for reference
reactor physics measurements**

an American National Standard



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**American National Standard
Requirements for Reference
Reactor Physics Measurements**

Secretariat
American Nuclear Society

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Standards Committee
Working Group ANS-19.5**

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Abstract

This standard provides criteria for the qualification of "reference" reactor physics measurements for use in verifying reactor physics design and analysis methods. It provides minimum requirements for documentation of reactor physics data and guidelines for the evaluation of uncertainties in these data independent of eventual "reference data" applications.

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Foreword

(This Foreword is not a part of American National Standard Requirements for Reference Reactor Physics Measurements, ANSI/ANS-19.5-1978)

It is the intent of this American National Standard to provide minimum criteria of documentation and peer review for "reference" reactor physics data obtained primarily with "zero power" critical or exponential assemblies. This standard is intended for the qualification of "reference" reactor physics data based on experimental merit independent of potential design and analysis applications. In this regard, it supports other standards developed by ANS-19 working groups which require high quality reference data for the performance and validation of specific calculational methods. In applications of "reference" reactor physics data, it is assumed that other standards such as American National Standard for The Determination of Neutron Reaction Rate Distributions and Reactivity of Nuclear Reactors, N412-1976/ANS-19.3, and American National Standard for The Determination of Thermal Energy Deposition Rates in Nuclear Reactors, N676-1976/ANS-19.3.4, demonstrate the relevance and applicability of the reference data to methods being tested.

Compliance with this standard can be demonstrated by meeting the following requirements.

1. Citing clear and adequate documentation of the "reference" measurements.
2. Showing error estimates of the "reference" data are consistent with the available evidence.
3. Obtaining written concurrence from two or more independent experts in reactor physics that the "reference" data are of high quality and meet the documentation and error analysis requirements of this standard.

Because there may be continuing public interest in ascertaining what data have been qualified as reference data by this standard, it is recommended that evidence of reference data qualifications or changes in reference data qualifications be provided to the Brookhaven National Laboratory National Nuclear Data Center (NNDC). Such information can then be readily publicized or learned by contacting the NNDC.

A professional review of the reactor physics data by a panel of experts is recommended where wide public acceptance of "reference" data qualification efforts is desired. Compilation of data reviewed by such a panel would minimize the need for redundant reviews and requalifications of the same data. Reactor physics data not rigorously meeting the documentation criteria of the standard may also be useful for the validation of design methods providing a supporting rationale for its acceptability for reference use is also approved by at least two experts in reactor physics.

This standard was developed by Working Group ANS-19.5 of the American Nuclear Society Standards Committee which had the following members at the time it prepared and approved the standard:

- | | |
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Subcommittee ANS-19 of the American Nuclear Society had the following members at the time it processed and approved this standard:

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The American National Standards Committee N17 Research Reactors, Reactor Physics and Radiation Shielding, which reviewed and approved this standard had the following membership:

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