American Nuclear Society

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research reactor site evaluation

an American National Standard

WITHDRAWN

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Research Reactor Site Evaluation

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Foreword

(This Foreword is not a part of American National Standard Research Reactor Site Evaluation, ANS/ANSI-15.7-1977)

The American Nuclear Society Standards Committee established Subcommittee ANS-15 in the fall of 1970 with the task of preparing a standard for the operation of research reactors. In January, 1972 this charter was expanded to include the multiple tasks of preparing all standards for research reactors. To implement this enlarged responsibility, a number of subcommittee work groups were established to develop standards for consideration and complementary action by Subcommittee ANS-15. ANS-15.7 is one of these work groups.

Work Group ANS-15.7 was formed in 1973 to develop ideas and concepts leading to a draft standard for guidance on siting of a research reactor, taking into account (a) site and facility features, (b) dispersion models, and (c) maximum dose commitments associated with boundaries.

The currently available guidance on reactor siting comes largely if not exclusively from Title 10-CFR-Part 100, Reactor Site Criteria, which was written specifically for nuclear power and test reactors which have significant fission product inventories and energy control systems. At the time of the Atomic Safety and License Appeal Board decision in support of the research reactor license at Columbia University (May 1972) a decision had been made by the Board that Title 10-CFR-Part 100, Reactor Site Criteria, did not apply to research reactors and that there were no other Atomic Energy Commission regulations which specifically defined the criteria for evaluating the effects of a postulated design basis accident at a research reactor. Further, it was stated that Title 10-CFR-Part 20, Standards for Protection Against Radiation, may be overly restrictive in this regard. Hearing board and courts essentially decreed that standards applicable to research reactor site evaluation would be developed.

The original draft of ANS-15.7 utilized definitions and terms similar to Title 10-CFR-Part 100, Reactor Site Criteria. The January, 1975 review by the ANS-15 General Subcommittee revealed that these concepts were confusing and difficult to apply to a much simpler reactor such as a research reactor. This draft standard has attempted to establish definitions, criteria, and depth sufficiently different from those used in familiar Title 10-CFR-Part 100, Reactor Site Criteria, so that definitions and radiation dose parameters will relate to a facility markedly different from a nuclear power plant or test reactor.

The draft standard developmental program reflects the extensive interplay of ANS-15 and the daughter work groups, from the establishment of the working group in 1972 through development of the final draft in January, 1977.

In this process of creating standards against the background of established and varied practices in many operating facilities, it is important to consider that:

a. It is not intended that the standard be used as a demand model for backfitting purposes.
b. It should be a vital aid for the new owner-agency.
c. It should be helpful for the facility undergoing change or modification.
d. Its thoughtful use by industry should ease the burden of regulatory agencies.

We affirm, further, that the use of any standard of performance, conduct, or excellence is volitional. The decision to use a standard is a management matter, presumably on technical advisement. The institutionalizing of a standard can and almost must be conditional; i.e., high probability exists that some exception or addition will compromise the absolute, unconditional application of a document which was composed to cross lines of functional and material discipline.

This standard is promulgated in the context of these considerations and in the context of a family of related research reactor standards, a work group, and an actively participating subcommittee in an atmosphere of direct exchange of ideas across multi-discipline and multi-system boundaries.

The family of standards and task assignments include:

ANS-15.1	(N378):	Development of Technical Specifications (ANSI N378-1974)
ANS-15.2	(N398):	Quality Verification for Plate-type U-AL Fuel Elements (ANSI N398-1974)
ANS-15.3	(N399):	Records and Reports (ANSI N399-1974)
ANS-15.4	(N380):	Selection and Training of Personnel
ANS-15.6	(N401):	Review of Experiments (ANSI N401-1974)
ANS-15.7	(N379):	Site Evaluation
ANS-15.8	(N402):	Quality Assurance Program Requirements
ANS-15.10	(N440):	Decommissioning
ANS-15.11	(N628):	Radiological Control
ANS-15.12	(N647):	Design Criteria for Systems Controlling Effluents
ANS-15.14	(N700):	Physical Security
ANS-15.15	(N701):	Core Protective Systems
ANS-15.16	(N17.2):	Emergency Planning
ANS-15.17		Fire Protection

Working Group ANS-15.7 of the Standards Committee of the American Nuclear Society had the following membership:

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Lloyd Bonzon, *Sandia Laboratory Albuquerque*
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The membership of ANS-15 at the time of approval of this Standard was:

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The American National Standards Committee N17, Research Reactors, Reactor Physics, and Radiation Shielding, had the following membership at the time it reviewed and approved this Standard:

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R. S. Carter, Secretary

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