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quality assurance program requirements for research reactors

an American National Standard

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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reviewed and reaffirmed with the recognition that it may reference other standards and documents that may have been superseded or withdrawn.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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Requirements for Research Reactors

Secretariat
American Nuclear Society

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American National Standard

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Comments on this standard are encouraged and should be sent to Society Headquarters.

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Foreword

(This Foreword is not a part of American National Standard Quality Assurance Program Requirements for Research Reactors, ANSI/ANS-15.8-1995.)

The first version of American National Standard Quality Assurance Program Requirements for Research Reactors, ANSI/ANS-15.8-1976, was approved August 19, 1976, and subsequently reaffirmed December 15, 1986. It has been twenty years since the first working group started development of the standard. During this period of time, significant changes have occurred in the requirements associated with management of research reactor facilities, particularly in the degree of rigor and documentation. This edition of the standard is a complete rewrite and provides the applicable quality assurance program requirements for all phases of a facility's life.

In the process of implementing this standard with respect to the existing and varied practices in many operating facilities, it is important to recognize that:

a. Considered use of the standard should assist in implementing regulatory requirements.
b. The standard is intended to be a significant aid for existing and new owners or operators.
c. The standard should be helpful for both the facility undergoing change or modification.
d. Each provision of the standard should be used only to the extent appropriate to the individual facility.
e. The standard is not intended to require backfitting.

With regard to this particular standard, it must be noted that research reactors have two characteristics which affect the type of quality assurance program that should be applied to them, when compared to power reactors. First, the reliability of most of the parts used in a research reactor is not relevant to the health and safety of the public since failure of the item generally shuts the system down and little else occurs. Second, the typical research reactor operates on a limited budget with its continued existence dependent upon maintaining a low-cost, reliable operation. Because of these inherent characteristics, the quality assurance program for research reactors is applied primarily to safety-related and important items, and should be graded appropriately to be economically feasible. It is the intent of this standard to state the requirements for such a program.

For those not yet exposed to modern quality assurance requirements, it is difficult to grasp the value of adequate documentation. Although documentation is not the totality of a quality assurance program, it is one element of an appropriate program for research reactors. Much of the documentation required by a quality assurance program already exists for an operating research reactor, and little additional documentation may be needed when the quality assurance program is established.

Appropriate application of a standard is very important, and a careful and comprehensive reading of this standard is highly recommended before use. Two comments are presented as aids to interpretation:

(1) It is recognized that it is not necessary to apply the same degree of control to all items in a research reactor. Where this standard uses words such as "as appropriate" or "as necessary," these are to be interpreted as meaning variation in the degree of application.

(2) It is not intended that this standard require modification of existing charter or licensing requirements, and should not be so interpreted.

The membership of Working Group ANS-15.8 at the time of the completion of the standard was:

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