American Nuclear Society

administrative practices for nuclear criticality safety

an American National Standard

REAFFIRMED

August 22, 2019

ANSI/ANS-8.19-2014 (R2019)

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American National Standard Administrative Practices for Nuclear Criticality Safety

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American National Standard

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Foreword

(This Foreword is not a part of American National Standard "Administrative Practices for Nuclear Criticality Safety," ANSI/ANS-8.19-2014.)

Administrative practices for nuclear criticality safety evolved in the various organizations processing fissionable materials in ways appropriate to these organizations. In response to interest expressed by the U.S. Nuclear Regulatory Commission, Subcommittee ANS-8 of the Standards Committee of the American Nuclear Society initially established this standard in 1984 to codify the best of those administrative practices. Typical of the differences among organizations is the nature of the nuclear criticality safety staff. While the functions assigned to the staff by this standard are being carried out by all these organizations, the administrative arrangements are so diverse that a concise definition of the term "nuclear criticality safety staff" has not been developed. In essence, the staff comprises those elements of the organization that, in concert, carry out the functions described.

During the 2005 revision of this standard, there was much discussion regarding the use of the term "fissile." Some think the broader term "fissionable" should be used in place of "fissile," while others held to the opinion that the standard does not apply to all fissionable materials. The term "fissile" is the most commonly used term and is appropriate in the majority of applications, although it does not include every nuclide that could present a nuclear criticality safety concern. Facilities that have nuclear criticality safety concerns with nuclides that are fissionable, but not fissile, can also apply this standard to those situations. For the purposes of this standard, the term "fissile" is intended to apply to any nuclide that presents a nuclear criticality safety concern.

This revision provides additional clarification, while retaining well-established safety principles consistent with the evolution of this standard and industry practices. This revision also recognizes that some sites and facilities face changing missions, or in some cases decommissioning. As a result, this revision recommends continued application of these safety principles with an acceptable and practical balance of risk and benefit. Some sections of the standard were reordered to improve overall cohesiveness.

This standard might reference documents and other standards that have been superseded or withdrawn at the time the standard is applied. A statement has been included in the references section that provides guidance on the use of references.

This standard does not incorporate the concepts of generating risk-informed insights, performance-based requirements, or a graded approach to quality assurance. The user is advised that one or more of these techniques could enhance the application of this standard.

This revision was developed under the direction of Subcommittee ANS-8, Fissionable Materials Outside Reactors. The working group would like to acknowledge the significant contributions of Leslie C. Davenport, who died prior to this revision's gaining approval. The membership of the working group at the time of the revision was as follows:

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Contents

Section		Page
1	Introduction	1
2	Scope	1
3	Definitions	1
	3.1 Shall, should, and may	1
4	Management responsibilities	1
5	Supervisory responsibilities	2
6	Nuclear criticality safety staff responsibilities	2
7	Evaluations for nuclear criticality safety	3
8	Implementation and maintenance of nuclear criticality safety controls	3
9	References	5