



Nuclear Criticality Accident Emergency Planning and Response

An American National Standard

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Nuclear Criticality Accident
Emergency Planning and
Response**

Secretariat
American Nuclear Society

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Foreword

(This foreword is not a part of American National Standard “Nuclear Criticality Accident Emergency Planning and Response,” ANSI/ANS-8.23-2019, but is included for informational purposes only.)

This standard provides criteria for emergency planning and response to a nuclear criticality accident for facilities outside reactors that process, store, or handle fissionable material. This standard focuses on those elements of planning and response needed specifically in the event of a criticality accident. It is not a general emergency planning and response standard.

This revision removes the assumption from the previous editions [ANS-8.23-1997 and ANS-8.23-2007 (R2012)], that user facilities have an alarm system that complies with ANSI/ANS-8.3-1997 (R2017), “Criticality Accident Alarm System.” Elements of this standard might be appropriate for certain facilities that are not using an alarm system compliant with ANSI/ANS-8.3-1997 (R2017) yet have credible and non-trivial hazards from a criticality accident. This revision emphasizes that an immediate evacuation zone should be established based on multiple factors and not solely based on dose estimates. The recent update of ANSI N13.3-2013 (R2019), “Dosimetry for Criticality Accidents,” for criticality accident dosimetry is included, and a few additional clarifications have been made. Appendix C now includes references to additional methods for estimating fission yield for a criticality accident. Users should understand the assumptions and limitations of these methods and use them only where applicable. Appendix C is not intended to be a tutorial on the complex topic of criticality accident analysis. Appendix D is added to help users select a dose criterion that corresponds to radiation levels immediately dangerous to life and health.

This standard might reference documents and other standards that have been superseded or withdrawn at the time the standard is applied.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.

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