



U.S. NUCLEAR REGULATORY COMMISSION

# REGULATORY GUIDE

OFFICE OF STANDARDS DEVELOPMENT

REGULATORY GUIDE 8.5

## CRITICALITY AND OTHER INTERIOR EVACUATION SIGNALS

### A. INTRODUCTION

Section 70.24, "Criticality Accident Requirements," of 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," requires criticality detection and alarm systems in any area containing special nuclear material when the licensee is authorized to possess such special nuclear material in excess of certain specified amounts. This guide defines the characteristics of an audible signal acceptable to the NRC staff for use where prompt, complete evacuation is required to prevent serious injury from radiation exposure.

### B. DISCUSSION

ANSI/ANS N2.3-1979,<sup>1</sup> "Immediate Evacuation Signal for Use in Industrial Installations," which is a revision of USASI N2.3-1967, was approved by the American National Standards Institute (ANSI) on September 13, 1979. The standard defines the characteristics of an immediate evacuation signal system.

Whereas USASI N2.3-1967 specified the characteristics of a unique audible signal for evacuation of the area potentially affected by the consequences of a nuclear criticality accident, ANSI/ANS N2.3-1979 presents the recognized desirable characteristics of signal systems and good practices in their

<sup>1</sup>The substantial number of changes in this revision has made it impractical to indicate them with lines in the margin.

<sup>2</sup>Copies may be obtained from the American Nuclear Society, 555 North Kensington Avenue, LaGrange Park, Illinois 60525.

conception, installation, and operation. A description of typical characteristics for an evacuation signal and the signal generator that were included as requirements in the body of USASI N2.3-1967 have been placed in Appendix B to ANSI/ANS N2.3-1979 simply as an example of compliance with the standard.

### C. REGULATORY POSITION

The characteristics of an immediate evacuation signal described in ANSI/ANS N2.3-1979, "Immediate Evacuation Signal for Use in Industrial Installations," are generally acceptable to the NRC staff for use wherever such a system may be needed or required except that the minimum duration of the signal should be sufficient to ensure evacuation and permit implementation of access control.

### D. IMPLEMENTATION

The purpose of this section is to provide information to applicants and licensees regarding the NRC staff's plan for using this regulatory guide. This guide reflects practices currently acceptable to the NRC staff. Except in those cases in which the applicant or licensee proposes acceptable alternative practices or methods for complying with specified portions of the Commission's regulations, the practices or methods described herein will be used as a basis for evaluating applications for licenses to possess special nuclear material in quantities subject to §70.24 of 10 CFR Part 70.

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Comments and suggestions for improvements in these guides are encouraged at all times, and guides will be revised, as appropriate, to accommodate comments and to reflect new information or experience. This guide was revised as a result of substantive comments received from the public and additional staff review.

Comments should be sent to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch.

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