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DRAFT REGULATORY GUIDE

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PROPOSED REVISION 1 TO REGULATORY GUIDE 3.58

CRITICALITY SAFETY FOR HANDLING, STORING, AND TRANSPORTING LWR FUEL AT FUELS AND MATERIALS FACILITIES

A. INTRODUCTION

Section 70.22, "Contents of Applications," of 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," requires that applications for a specific license to own, acquire, deliver, receive, possess, use, or initially transfer special nuclear material contain proposed procedures to avoid accidental conditions of criticality. This regulatory guide provides guidance for complying with this portion of the Commission's regulations by describing procedures acceptable to the NRC staff for preventing criticality accidents in operations involving handling, storing, and transporting light water reactor (LWR) fuel at fuels and materials facilities, i.e., fuel cycle facilities other than nuclear reactors.

Any information collection activities mentioned in this regulatory guide are contained as requirements in 10 CFR Part 70, which provides the regulatory basis for this guide. The information collection requirements in 10 CFR Part 70 have been cleared under OMB Clearance No. 3150-0009.

This regulatory guide is being issued in draft form to involve the public in the early stages of the development of a regulatory position in this area. It has not received complete staff review and does not represent an official NRC staff position.

Public comments are being solicited on the draft guide (including any implementation schedule) and its associated regulatory analysis or value/impact statement. Comments should be accompanied by appropriate supporting data. Written comments may be submitted to the Regulatory Publications Branch, DFIPS, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Copies of comments received may be examined at the NRC Public Document Room, 2120 L Street NW., Washington, DC. Comments will be most helpful if received by July 13, 1990.

Requests for single copies of draft guides (which may be reproduced) or for placement on an automatic distribution list for single copies of future draft guides in specific divisions should be made in writing to the U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Director, Division of Information Support Services.

B. DISCUSSION

ANSI/ANS-8.17-1984, "Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors,"[1] was prepared by Subcommittee 8, Fissionable Materials Outside Reactors, of the Standards Committee of the American Nuclear Society. ANSI/ANS-8.17-1984 was approved by the American National Standards Committee N16, Nuclear Criticality Safety, in 1983 and by the American National Standards Institute (ANSI) on January 13, 1984. It was reaffirmed without any changes as ANSI/ANS-8.17-1984 (R1989) by Subcommittee 8 on August 29, 1989.

ANSI/ANS-8.17-1984 (R1989) provides guidance for preventing criticality accidents in operations involving handling, storing, and transporting LWR fuel rods and units in any phase of the fuel cycle outside reactor cores. This guidance includes general safety criteria and criteria to establish subcriticality.

C. REGULATORY POSITION

The general safety criteria and criteria to establish subcriticality contained in ANSI/ANS-8.17-1984 (R1989) provide procedures acceptable to the NRC staff for preventing accidental conditions of criticality in handling, storing, and transporting LWR fuel at fuels and materials facilities. The only exception is that credit for fuel burnup may be taken only when the amount of burnup is confirmed by reactivity or quantitative measurements that ensure that each fuel unit meets the prescribed limits for storage. The measurements should be appropriate for each type of fuel unit in the environment in which it is to be stored. Use of ANSI/ANS-8.17-1984 (R1989), however, is not a substitute for detailed nuclear criticality safety analyses for specific operations.

Section 6 of ANSI/ANS-8.17-1984 (R1989) lists documents referred to in the standard. The specific applicability or acceptability of two of these listed documents has been addressed in the latest version of the regulatory guides identified below:

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[1]Copies may be obtained from the American Nuclear Society, 555 North Kensington Avenue, La Grange Park, IL 60525.

Standard	Regulatory Guide
ANSI/ANS-8.1-1983 (R1988)[1]	3.4 - Nuclear Criticality Safety in Operations with Fissionable Materials at Fuels and Materials Facilities
ANSI/ANS-8.3-1986[1]	8.12 - Criticality Accident Alarm Systems

D. IMPLEMENTATION

The purpose of this section is to provide information to applicants and licensees regarding the NRC staff's plans for using this regulatory guide.

This proposed revision has been released to encourage public participation in its development. The methods described in this guide have been applied to a number of specific cases during reviews and selected licensing actions. These methods reflect the latest general NRC approach to criticality safety in operations with LWR fuel at fuels and materials facilities. Therefore, except in those cases in which the applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the methods to be described in the final Revision 1 of this guide will be used after its issuance in the evaluation of submittals in connection with license applications submitted under 10 CFR Part 70.

VALUE/IMPACT STATEMENT

The NRC staff performed a value/impact assessment to determine the proper procedural approach for providing guidance on criticality safety for handling, storing and transporting LWR fuel at fuels and materials facilities. The NRC staff was involved in the development, review, and approval of ANSI/ANS-8.17-1984, "Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors," which was approved by the American National Standards Institute on January 13, 1984 and reaffirmed on August 29, 1989. The assessment resulted in a decision to develop a regulatory guide that would endorse, with possible supplemental provisions, ANSI/ANS-8.17-1984. The results of this value/impact assessment were included in a draft regulatory guide on this subject, CE 407-4, entitled "Criticality Safety for Handling, Storing, and Transporting LWR Fuel Outside Reactors," that was issued for public comment in July 1985. The title of the guide was subsequently changed to clarify its applicability.

The value/impact statement published with the proposed guide in July 1985 is still applicable to this proposed Revision 1 to Regulatory Guide 3.58, which endorses the reaffirmed ANSI/ANS-8.17-1984 (R1989), since only editorial changes are to be made in this revision. A copy of the draft regulatory guide (identified by its task number, CE 407-4) and its associated value/impact statement is available for inspection and copying for a fee at the NRC Public Document Room at 2120 L Street NW., Washington, DC.