



# DRAFT REGULATORY GUIDE

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## DRAFT REGULATORY GUIDE DG-0014

(Proposed Revision 2 to Regulatory Guide 10.3, dated April 1977)

# GUIDE FOR THE PREPARATION OF APPLICATIONS FOR SPECIAL NUCLEAR MATERIAL LICENSES FOR LESS THAN CRITICAL MASS QUANTITIES

## A. INTRODUCTION

This guide directs the reader to the type of information needed by the U.S. Nuclear Regulatory Commission (NRC) staff to evaluate an application for a specific license for the receipt, possession, use, and transfer of special nuclear material (SNM) in less than “critical mass” quantities. As defined in Title 10, Part 70, “Domestic Licensing of Special Nuclear Materials,” of the *Code of Federal Regulations* (10 CFR Part 70), SNM refers to (1) plutonium (Pu), uranium-233 (U-233), uranium enriched in the isotope 233 or in the isotope 235 (U-235), and any other material that the Commission determines to be SNM, not including source material, or (2) any material, not including source material, artificially enriched by any of the foregoing.

This guide is intended for applicants requesting authorization to possess and use up to 2000 grams of Pu, total, in the form of sealed plutonium-beryllium (Pu-Be) neutron sources, and any SNM in quantities and forms not sufficient to form a critical mass, as stated in 10 CFR 150.11, “Critical Mass.” The latter quantities are considered to be up to 350 grams of contained U-235, 200 grams of U-233, 200 grams of Pu (in any form other than Pu-Be neutron sources), or any combination of these in accordance with the following formula:

$$\frac{\text{grams U-235}}{350} + \frac{\text{grams U-233}}{200} + \frac{\text{grams Pu}}{200} \leq 1.0$$

This regulatory guide endorses the methods and procedures contained in the current revision of NUREG-1556, Volume 17, “Consolidated Guidance about Materials Licenses: Program-Specific Guidance About Special Nuclear Material of Less than Critical Mass Licenses,” as a process that the staff of the U.S. Nuclear Regulatory Commission (NRC) finds acceptable for meeting the regulatory requirements.

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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 final staff review or approval and does not represent an official NRC final staff position.

Public comments are being solicited on this 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 Rulemaking, Directives, and Editing Branch, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; e-mailed to [NRCREP@nrc.gov](mailto:NRCREP@nrc.gov); submitted through the NRC’s interactive rulemaking Web page at <http://www.nrc.gov>; faxed to (301) 415-5144; or hand delivered to the Rulemaking, Directives, and Editing Branch, Office of Administration, U.S. Nuclear Regulatory Commission, 11555 Rockville Pike, Rockville, MD 20852, between 7:30 a.m. and 4:15 p.m. on Federal workdays. Copies of comments received may be examined at the NRC’s Public Document Room, 11555 Rockville Pike, Rockville, MD. Comments will be most helpful if received by April 18, 2008.

Electronic copies of this draft regulatory guide are available through the NRC’s interactive rulemaking Web page (see above); the NRC’s public Web site under Draft Regulatory Guides in the Regulatory Guides document collection of the NRC’s Electronic Reading Room at <http://www.nrc.gov/reading-rm/doc-collections/>; and the NRC’s Agencywide Documents Access and Management System (ADAMS) at <http://www.nrc.gov/reading-rm/adams.html>, under Accession No. ML073470824.

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The NRC has revised the requirements for licenses for SNM of less than critical mass to implement a risk-informed, performance-based approach to regulation. NUREG-1556 incorporates this revised approach. The risk-informed, performance-based approach to licensing limited quantities of SNM used by NUREG-1556 reduces the amount of information needed from an applicant seeking to possess and use less than critical mass quantities of SNM.

The NRC issues regulatory guides to describe to the public methods that the staff considers acceptable for use in implementing specific parts of the agency's regulations, to explain techniques that the staff uses in evaluating specific problems or postulated accidents, and to provide guidance to applicants. Regulatory guides are not substitutes for regulations and compliance with them is not required.

This regulatory guide contains information collections that are covered by the requirements of 10 CFR Part 70 and NRC Form 313 and that the Office of Management and Budget (OMB) approved under OMB control numbers 3150-0009 and 3150-0120, respectively. The NRC may neither conduct nor sponsor, and a person is not required to respond to, an information collection request or requirement unless the requesting document displays a currently valid OMB control number.

## **B. DISCUSSION**

As part of its redesign of the materials licensing program, the NRC consolidated and updated numerous guidance documents for materials licenses into the multivolume NUREG-1556. Various volumes in the NUREG-1556 series provide current, program-specific guidance on testing, licensing, decommissioning, and terminating materials licenses.

Volume 17 of NUREG-1556 identifies the information applicants need to complete NRC Form 313, "Application for Materials License," for the use of unsealed and sealed quantities of SNM of less than critical mass and other licenses of limited scope. It contains appendices that include (1) copies of necessary forms, (2) sample applications and completed examples for different types of applications, and (3) examples of the types of supporting information, such as implementing procedures the applicant may need to prepare. The NRC is placing added emphasis on conducting its regulatory activities in a risk-informed and performance-based manner. This approach is intended to be less prescriptive and to allow licensees the flexibility to implement the agency's regulations in a manner that is more specific to their needs yet still meets the regulatory requirements. By supplying examples, the NRC seeks to provide information to meet the needs of applicants for licensure without being prescriptive. Guidance in NUREG-1556 represents one means of complying with NRC regulations and is not intended to be the only means of satisfying the regulatory requirements.

NUREG-1556 is available electronically through the Electronic Reading Room on the NRC's public Web site, at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/>. Copies are also available for inspection or copying for a fee from the NRC's Public Document Room (PDR) at 11555 Rockville Pike, Rockville, MD. The mailing address for the PDR is USNRC PDR, Washington, DC 20555; telephone (301) 415-4737 or (800) 397-4209; fax (301) 415-3548; and email [PDR@nrc.gov](mailto:PDR@nrc.gov). In addition, copies are available at current rates from the U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20402-9328, telephone (202) 512-1800; or from the National Technical Information Service (NTIS), at 5285 Port Royal Road, Springfield, VA 22161, online at <http://www.ntis.gov>, by telephone at (800) 553-NTIS (6847) or (703) 605-6000, or by fax to (703) 605-6900.

## **C. REGULATORY POSITION**

This regulatory guide endorses the method described in the current revision of NUREG-1556, Volume 17, as a process that the NRC has found to be acceptable guidance on how to prepare an application for quantities of SNM of less than critical mass.

## **D. IMPLEMENTATION**

The purpose of this section is to provide information to applicants and licensees regarding the NRC's plans for using this draft regulatory guide. No imposition or backfit is intended or approved in connection with its issuance.

The NRC has issued this draft guide to encourage public participation in its development. The NRC will consider all public comments received in development of the final guidance document. Except in those cases in which an applicant or licensee proposes or has previously established an acceptable alternative method for complying with specified portions of the NRC's regulations, the methods described in the active guide will be used in evaluating compliance with the regulations as discussed in this guide for license applications, license amendment applications, and exemption requests.

## **REGULATORY ANALYSIS**

### **1. Statement of the Problem**

The NRC published Revision 1 of Regulatory Guide 10.3 in April 1977 to provide licensees with agency-approved guidance for complying with the then current version of 10 CFR Part 70. The NRC's implementation of a risk-informed, performance-based approach, combined with multiple updates and revisions to the regulations, makes the current regulatory guide outdated.

### **2. Objective**

As part of its redesign of the materials licensing process, the NRC consolidated and updated numerous materials license guidance documents into a single comprehensive repository. This comprehensive repository is the multivolume NUREG-1556. Each volume of NUREG-1556 contains program-specific guidance for various materials licenses and licensee activities. The NRC developed and issued the multiple volumes of NUREG-1556 to provide both the licensee and NRC staff with current guidance.

The objective of this action is to provide clear and up-to-date information to support consolidated guidance for the preparation of applications for SNM licenses for less than critical mass quantities.

### **3. Alternative Approaches**

The NRC staff considered the following alternative approaches:

- Do not revise Regulatory Guide 10.3.
- Withdraw Regulatory Guide 10.3.
- Revise Regulatory Guide 10.3 to match or replace Volume 17 of NUREG-1556.
- Revise Regulatory Guide 10.3 to endorse Volume 17 of NUREG-1556.

### **3.1 Alternative 1: Do Not Revise Regulatory Guide 10.3**

Under this alternative, the NRC would not revise this document, and applicants would continue to use the original version of this regulatory guide. However, this alternative would leave conflicting guidance in place and could cause unnecessary confusion. This alternative is considered the baseline or “no action” alternative and, as such, involves no value/impact considerations.

### **3.2 Alternative 2: Withdraw Regulatory Guide 10.3**

Withdrawing this regulatory guide would eliminate the duplicative and somewhat contradictory information that currently exists in NUREG-1556 and the current version of Regulatory Guide 10.3. However, this action would leave a void in the regulatory guide system and provide no quick means for interested parties to identify the requirements necessary to prepare an application for SNM licenses for less than critical mass quantities that the NRC finds to be acceptable. Although this alternative would cost relatively little, it may impede the public’s accessibility to the most current information.

### **3.3 Alternative 3: Revise Regulatory Guide 10.3 to Match or Replace Vol. 17 of NUREG-1556**

NUREG-1556 is a multivolume document first published in May 1997 to provide consolidated guidance about materials licenses in accordance with the most current regulatory requirements. Regulatory Guide 10.3 contains specific guidance about only one of the many areas covered in NUREG-1556. Revising the regulatory guide to match the information in Volume 17 of NUREG-1556 would create duplicate sources of information and would require continuing staff resources to ensure that the separate documents continued to contain duplicate information. Revising this regulatory guide to replace Volume 17 of NUREG-1556 would require substantial expansion of the current guide and a large expenditure of labor without a noticeable enhancement in performance or efficiency for the NRC or its licensees. This alternative is considered to be an unnecessary use of staff resources.

### **3.4 Alternative 4: Revise Regulatory Guide 10.3 to Endorse Vol. 17 of NUREG-1556**

The April 1977 version of the regulatory guide no longer represents a method that is acceptable to the NRC for satisfying the requirements of 10 CFR Part 70. Failure to revise the regulatory guide will result in conflicting guidance documents and possible confusion to interested parties. Therefore, the staff has chosen to revise the regulatory guide to direct any interested parties to the most current guidance provided in Volume 17 of NUREG-1556.

## **4. Conclusion**

Based on this regulatory analysis, the staff recommends that the NRC revise Regulatory Guide 10.3 to endorse NUREG-1556, Volume 17, and thereby provide applicants with guidance on how to prepare an application for licenses for SNM of less than critical mass. The staff has concluded that the proposed action will reduce unnecessary burden on both the NRC and its licensees and will result in an improved and more uniform process. Moreover, the staff sees no adverse effects associated with issuing this regulatory guide.