



REGULATORY GUIDE

OFFICE OF NUCLEAR REGULATORY RESEARCH

REGULATORY GUIDE 10.3

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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 Material,” of the *Code of Federal Regulations* (10 CFR Part 70) (Ref. 1), SNM is defined as: (1) any isotope of plutonium, uranium 233 (U-233), uranium-235 (U-235), uranium enriched in the isotopes U-233 or U-235; or (2) any material artificially enriched by any of the foregoing; and any other material which the Commission determines to be special nuclear material, but does not include source material.

This guide is intended for applicants requesting authorization to possess and use up to 2,000 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” (Ref. 2). The latter quantities are considered to be up to 350 grams of U-235, pure or contained in enriched uranium, 200 grams of U-233, pure or contained in enriched uranium, 200 grams of Pu in any form other than Pu-Be neutron sources, or any combination of these in accordance with the following formula:

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

The NRC issues regulatory guides to describe and make available to the public methods that the NRC staff considers acceptable for use in implementing specific parts of the agency’s regulations, techniques that the staff uses in evaluating specific problems or postulated accidents, and data that the staff needs in reviewing applications for permits and licenses. Regulatory guides are not substitutes for regulations, and compliance with them is not required. Methods and solutions that differ from those set forth in regulatory guides will be deemed acceptable if they provide a basis for the findings required for the issuance or continuance of a permit or license by the Commission.

This guide was issued after consideration of comments received from the public.

Regulatory guides are issued in 10 broad divisions—1, Power Reactors; 2, Research and Test Reactors; 3, Fuels and Materials Facilities; 4, Environmental and Siting; 5, Materials and Plant Protection; 6, Products; 7, Transportation; 8, Occupational Health; 9, Antitrust and Financial Review; and 10, General.

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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” (Ref. 3), as a process that the NRC staff finds acceptable for meeting the regulatory requirements.

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.

This regulatory guide contains information collection requirements covered by 10 CFR Part 70 and NRC Form 313 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 Material 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 method of complying with NRC regulations and is not intended to be the only means of satisfying the regulatory requirements.

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 regulatory guide. The NRC does not intend or approve any imposition or backfit in connection with its issuance.

In some cases, applicants or licensees may propose or use a previously established acceptable alternative method for complying with specified portions of the NRC's regulations. Otherwise, the methods described in this guide will be used in evaluating compliance with the applicable regulations for license applications, license amendment applications, and amendment requests.

REFERENCES

1. 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," U.S. Nuclear Regulatory Commission, Washington, DC.¹
2. 10 CFR Part 150, "Exemptions and Continued Regulatory Authority in Agreement States and in Offshore Waters under Section 274," U.S. Nuclear Regulatory Commission, Washington, DC.
3. NUREG-1556, Volume 17, "Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Special Nuclear Material of Less than Critical Mass Licenses," U.S. Nuclear Regulatory Commission, Washington DC, most current date and revision.²
(<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/>)

¹ All NRC regulations listed herein are available electronically through the Electronic Reading Room on the NRC's public Web site, at <http://www.nrc.gov/reading-rm/doc-collections/cfr/>. 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 is USNRC PDR, Washington, DC 20555; telephone (301) 415-4737 or (800) 397-4209; fax (301) 415-3548; and email PDR@nrc.gov.

² The multivolume NUREG-series report listed herein was published by the U.S. Nuclear Regulatory Commission. These volumes are available electronically through the Electronic Reading Room on the NRC's public Web site, at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/>. 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 is USNRC PDR, Washington, DC 20555; telephone (301) 415-4737 or (800) 397-4209; fax (301) 415-3548; and email 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.