

§ 74.31

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[67 FR 78145, Dec. 23, 2002]

Subpart C—Special Nuclear Material of Low Strategic Significance

§ 74.31 Nuclear material control and accounting for special nuclear material of low strategic significance.

(a) *General performance objectives.* Each licensee who is authorized to possess and use more than one effective kilogram of special nuclear material of low strategic significance, excluding sealed sources, at any site or contiguous sites subject to control by the licensee, other than a production or utilization facility licensed pursuant to part 50 or 70 of this chapter, or operations involved in waste disposal, shall implement and maintain a Commission approved material control and accounting system that will achieve the following objectives:

(1) Confirm the presence of special nuclear material;

(2) Resolve indications of missing material; and

(3) Aid in the investigation and recovery of missing material.

(b) *Implementation.* Each applicant for a license, and each licensee that, upon application for modification of its license, would become newly subject to the performance objectives of paragraph (a) of this section, shall submit a fundamental nuclear material control (FNMC) plan describing how the requirements of paragraph (c) of this section will be met. The FNMC plan shall be implemented when a license is issued or modified to authorize the activities being addressed in paragraph (a) of this section, or by the date specified in a license condition.

(c) *System capabilities.* To meet the general performance objectives of paragraph (a) of this section, the material control and accounting system must include the capabilities described in paragraph (c) (1) through (8) of this section. The licensee shall:

(1) Establish, document, and maintain a management structure which

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assures clear overall responsibility for material control and accounting functions, independence from production responsibilities, separation of key responsibilities, and adequate review and use of critical material control and accounting procedures;

(2) Establish and maintain a measurement system which assures that all quantities in the material accounting records are based on measured values;

(3) Follow a measurement control program which assures that measurement bias is estimated and significant biases are eliminated from inventory difference values of record;

(4) In each inventory period, control total material control and accounting measurement uncertainty so that twice its standard error is less than the greater of 9,000 grams of U-235 or 0.25 percent of the active inventory, and assure that any measurement performed under contract is controlled so that the licensee can satisfy this requirement;

(5) Unless otherwise required to satisfy part 75 of this chapter, perform a physical inventory at least every 12 months and, within 60 days after the start of the inventory, reconcile and adjust the book inventory to the results of the physical inventory, and resolve, or report an inability to resolve, any inventory difference which is rejected by a statistical test which has a 90 percent power of detecting a discrepancy of a quantity of uranium-235 established by NRC on a site-specific basis;

(6) Maintain current knowledge of items when the sum of the time of existence of an item, the time to make a record of the item, and the time necessary to locate the item exceeds 14 days. Store and handle, or subsequently measure, items in a manner so that unauthorized removals of substantial quantities of material from items will be detected. Exempted are items individually containing less than 500 grams of U²³⁵ up to a total of 50 kilograms of U²³⁵, solutions with a concentration of less than 5 grams of U²³⁵ per liter, and items of waste destined for burial or incineration;

(7) Resolve, on a shipment basis and when required to satisfy part 75 of this chapter, on a batch basis, shipper/receiver differences that exceed both

twice the combined measurement standard error for that shipment and 500 grams of U²³⁵; and

(8) Independently assess the effectiveness of the material control and accounting system at least every 24 months, and document management's action on prior assessment recommendations.

(d) *Recordkeeping.* (1) Each licensee shall establish records that will demonstrate that the requirements of paragraph (c) of this section have been met and maintain these records for at least 3 years, unless a longer retention time is required by part 75 of this chapter.

(2) Records which must be maintained pursuant to this part may be the original or a reproduced copy or a microform if such reproduced copy or microform is duly authenticated by authorized personnel and the microform is capable of producing a clear and legible copy after storage for the period specified by Commission regulations. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, specifications, must include all pertinent information such as stamps, initials, and signatures.

The licensee shall maintain adequate safeguards against tampering with and loss of records.

[50 FR 7579, Feb. 25, 1985, as amended at 53 FR 19262, May 27, 1988; 56 FR 55998, Oct. 31, 1991; 67 FR 78145, Dec. 23, 2002]

§ 74.33 Nuclear material control and accounting for uranium enrichment facilities authorized to produce special nuclear material of low strategic significance.

(a) *General performance objectives.* Each licensee who is authorized by this chapter to possess equipment capable of enriching uranium or operate an enrichment facility, and produce, possess, or use more than one effective kilogram of special nuclear material of low strategic significance at any site or contiguous sites, subject to control by the licensee, shall establish, implement, and maintain a NRC-approved material control and accounting system that will achieve the following objectives:

(1) Maintain accurate, current, and reliable information of and periodically confirm the quantities and locations of source material and special nuclear material in the licensee's possession;

(2) Protect against and detect production of uranium enriched to 10 percent or more in the isotope U²³⁵;

(3) Protect against and detect unauthorized production of uranium of low strategic significance;

(4) Resolve indications of missing uranium;

(5) Resolve indications of production of uranium enriched to 10 percent or more in the isotope U²³⁵ (for centrifuge enrichment facilities this requirement does not apply to each cascade during its start-up process, not to exceed the first 24 hours);

(6) Resolve indications of unauthorized production of uranium of low strategic significance;

(7) Provide information to aid in the investigation of missing uranium;

(8) Provide information to aid in the investigation of the production of uranium enriched to 10 percent or more in the isotope U²³⁵; and

(9) Provide information to aid in the investigation of unauthorized production of uranium of low strategic significance.

(b) *Implementation dates.* Each applicant for a license who would, upon issuance of a license pursuant to any part of this chapter, be subject to the requirements of paragraph (a) of this section shall:

(1) Submit a fundamental nuclear material control plan describing how the performance objectives of § 74.33(a), the system features and capabilities of § 74.33(c), and the recordkeeping requirements of § 74.33(d) will be met; and

(2) Implement the NRC approved plan submitted pursuant to paragraph (b)(1) of this section prior to:

(i) The cumulative receipt of 5,000 grams of U²³⁵ contained in any combination of natural, depleted, or enriched uranium or

(ii) NRC's issuance of a license to test or operate the enrichment facility; whichever occurs first.

(c) *System features and capabilities.* To meet the general performance objectives of paragraph (a) of this section, the Material Control and Accounting