

readily relatable to the original measurement data and to all relevant measurement control information, including pertinent calibration data. Records must be available for NRC inspection.

(c) Applicants and licensees subject to the provisions of paragraph (b) of this section shall submit to the Commission for approval a detailed plan describing the program that will be used to comply with said provisions. The plan submitted shall include the identification of those measurements to be contracted and shall describe the steps the licensee shall take to assure the adequacy of such procedures. Licensee's plans shall be submitted on or before November 11, 1975.

(d) Licensees subject to the provisions of paragraph (b) of this section shall follow the plans submitted pursuant to paragraph (c) of this section after May 11, 1976, or thirty days after the submitted plan is approved by the NRC whichever is later. After May 11, 1976, an applicant subject to the provisions of paragraph (b) of this section shall immediately implement his plan, submitted pursuant to paragraph (c) of this section, following incorporation of said plan as a condition of license.

[40 FR 33652, Aug. 11, 1975, as amended at 40 FR 50704, Oct. 31, 1975; 42 FR 25721, May 19, 1977; 53 FR 19254, May 27, 1988]

§ 70.58 Fundamental nuclear material controls.

(a) Each licensee who is authorized to possess at any one time and location strategic special nuclear material in irradiated fuel reprocessing operations or special nuclear material of moderate strategic significance in a quantity exceeding one effective kilogram, and to use such special nuclear material except for sealed sources and those uses involved in the operation of a nuclear reactor licensed pursuant to part 50 of this chapter and those involved in a waste disposal operation, shall establish, maintain, and follow written material control and accounting procedures in compliance with the fundamental nuclear material control requirements specified in paragraphs (b) through (k) of this section and such other controls as the Commission determines to be essential for the control

of and accounting for special nuclear material.

(b)(1) The overall planning, coordination, and administration of the material control and accounting functions for special nuclear materials shall be vested in a single individual at an organizational level sufficient to assure independence of action and objectiveness of decisions. In manufacturing organizations, such individual shall be independent of individuals or units that are solely responsible for production functions.

(2) Material control and accounting functions shall be identified and assigned in the licensee organization to provide a separation of functions so that the activities of one individual or organizational unit serve as controls over and checks of the activities of other individuals or organizational units.

(3) Material control and accounting functional and organizational relationships must be set forth in writing in job descriptions, organizational directives, instructions, procedure manuals, etc. This documentation must include position qualification requirements and definitions of authorities, responsibilities, and duties. Delegations of material control and accounting responsibilities and authority must be in writing. The licensee shall retain this documentation as a record until the Commission terminates each license that authorizes the activity that is subject to retention of the documentation, and if any portion of the documentation is superseded, retain the superseded material for three years after each change.

(c) A management system shall be established, maintained, and followed to provide for the development, revision, implementation, and enforcement of nuclear material control and accounting procedures. The system shall include:

(1) Provisions for written approval of such procedures and any revisions thereto by the individual with overall responsibility for the material control and accounting function and by licensee plant management.

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(2) Provision for a review at least every 12 months of the nuclear material control system by individuals independent of both nuclear material control management and personnel who have direct responsibility for the receipt, custody, utilization, measurement, measurement quality, and shipment of nuclear material. Such a review shall include a review and audit of material control and accounting procedures and practices and an audit of the nuclear material records. The results of the review and audit along with recommendations for improvements shall be documented, reported to the licensee's corporate and plant management, and kept available at the plant for inspection for a period of five years.

(d) Material Balance Areas (MBA) or Item Control Areas (ICA) shall be established for physical and administrative control of nuclear material.

(1) Each MBA shall be an identifiable physical area such that the quantity of nuclear material being moved into or out of the MBA is represented by a measured value determined pursuant to paragraph (e) of this section.

(2) The number of MBAs shall be sufficient to localize nuclear material losses, or thefts and identify the mechanisms.

(3) The custody of all nuclear material within any MBA or ICA shall be the responsibility of a single designated individual.

(4) ICAs shall be established according to the same criteria as MBAs except that control into and out of such areas shall be by item identity and count for previously determined special nuclear material quantities, the validity of which shall be assured by tamper-safing unless the items are sealed sources.

(e) A system must be established, maintained, and followed for the measurement of all special nuclear material received, produced, or transferred between MBAs, transferred from MBAs to ICAs, on inventory, or shipped, discarded, or otherwise removed from inventory and for the determination of the limit of error associated with each such measured quantity except for plutonium-beryllium sources; samples that have been determined by other means to contain less than 10 grams U-

235, U-233, or plutonium each; and reactor-irradiated fuels involved in research, development, and evaluation programs in facilities other than irradiated-fuel reprocessing plants. The system must be described in writing and provide for sufficient measurements to substantiate the quantities of element and isotope measured and the associated limits or error. The licensee shall record the required measurements and associated limits of error and shall retain any record associated with this system for three years after the record is made.

(f) A program must be established, maintained, and followed pursuant to § 70.57(b) for the continuing determination and control of the systematic and random errors of measurement processes at a level commensurate with the requirements of § 70.51(e)(5). The licensee shall retain each completed record required by the program for three years after the record is made.

(g) Procedures shall be established, maintained, and followed to:

(1) Assure accurate identification and measurement of the quantities of special nuclear material received and shipped by a licensee;

(2) Review and evaluate shipper-receiver differences on an individual container or lot basis, as appropriate, on a shipment basis, and on a cumulative basis for shipments of like type material;

(3) Take appropriate investigative and corrective action to reconcile shipper-receiver differences that are statistically significant at the 95 percent confidence level except those shipments which involve differences of 50 grams or less of U-235, U-233, or plutonium; and

(4) Maintain records of shipper-receiver difference evaluation, investigations, and corrective actions on file at the plant for a period of five years.

(h) A system of storage and internal handling controls must be established, maintained, and followed to provide current knowledge of the identity, quantity, and location of all special nuclear material contained within a plant in discrete items and containers. The licensee shall include procedures as specified in § 70.51(e)(1) and retain any

record associated with the procedures for six months after the record is made;

(i) Procedures for special nuclear material scrap control must be established, maintained, and followed to limit the accumulation and the uncertainty of measurement of these materials on inventory. The licensee shall retain a copy of the current procedures as a record until the Commission terminates each license that authorizes the activity that is subject to the retention of procedures and, if any portion of the procedures is superseded, retain the superseded portion for three years after each change. Such procedures must include:

(1) Identification and classification of special nuclear material scrap;

(2) Regular processing and recovery of scrap so that no item of such scrap generated in the licensee's plant measured with an uncertainty of greater than ± 10 percent remains on inventory longer than six months when such scrap contains plutonium, U-233, or uranium enriched 20 percent or more in the isotope U-235 or twelve months when such scrap contains uranium enriched less than 20 percent in the isotope U-235 or plutonium containing 80 percent or more by weight of the isotope Pu-238.

(j) Physical inventory procedures must be established, maintained, and followed so that special nuclear material balance and their measurement uncertainties can be determined on the basis of measurements in compliance with the material balance and inventory requirements and criteria specified in § 70.51. The licensee shall retain a copy of the current procedures as a record until the Commission terminates each license that authorizes the activity that is subject to the retention of procedures and, if any portion of the procedures is superseded, retain the superseded portion for three years after each change.

(k) A system of records and reports must be established, maintained, and followed that will provide information sufficient to locate special nuclear material and to close a measured material balance around each material balance area and the total plant, as specified in § 70.51. As required by § 70.51, the licensee shall retain the records associ-

ated with this system for three years after the records are made. This system must include:

(1) A centralized accounting system employing double-entry bookkeeping;

(2) Subsidiary accounts for each material balance area and item control area;

(3) Records pertinent to the requirements of § 70.51(e)(1);

(4) Procedures for the reconciliation of subsidiary accounts to control accounts at the end of each accounting period; and

(5) Procedures for reconciliation of control and subsidiary accounts to the results of physical inventories.

(1) Each licensee subject to the requirements of this section shall submit by January 24, 1975, a full description of his program for control of and accounting for special nuclear material in his possession under license to show how compliance with the requirements of this section, except for paragraph (f), will be accomplished. This program shall be followed by the licensee after July 24, 1975, or sixty days after the program is approved by the NRC, whichever is the later.

[39 FR 37766, Oct. 24, 1974, as amended at 40 FR 33653, Aug. 11, 1975; 49 FR 19628, May 9, 1984; 50 FR 7579, Feb. 25, 1985; 52 FR 10038, Mar. 30, 1987; 53 FR 19255, May 27, 1988]

§ 70.59 Effluent monitoring reporting requirements.

(a) Each licensee authorized to possess and use special nuclear material for processing and fuel fabrication, scrap recovery, conversion of uranium hexafluoride, or in a uranium enrichment facility shall:

(1) Submit a report to the appropriate NRC Regional Office shown in appendix D of part 20 of this chapter, with copies to the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555, within 60 days after January 1, 1976, and July 1, 1976, and within 60 days after January 1 and July 1 of each year thereafter, specifying the quantity of each of the principal radionuclides released to unrestricted areas in liquid and gaseous effluents during the previous six