

DRAFT SUPPORTING STATEMENT
FOR
10 CFR PART 74
MATERIAL CONTROL AND ACCOUNTING
OF SPECIAL NUCLEAR MATERIAL

NUREG-1065, REV. 1, ACCEPTABLE STANDARD FORMAT AND
CONTENT FOR THE FUNDAMENTAL NUCLEAR MATERIAL
CONTROL (FNMC) PLAN REQUIRED FOR LOW-ENRICHED
URANIUM FACILITIES

NUREG/CR-5734, RECOMMENDATIONS TO THE NRC ON
ACCEPTABLE STANDARD FORMAT AND CONTENT FOR THE
FUNDAMENTAL NUCLEAR MATERIAL CONTROL (FNMC) PLAN
REQUIRED FOR LOW-ENRICHED URANIUM ENRICHMENT FACILITIES

AND

NUREG-1280, REV. 1, STANDARD FORMAT AND CONTENT
ACCEPTANCE CRITERIA FOR THE MATERIAL CONTROL
AND ACCOUNTING (MC&A) REFORM AMENDMENT

(3150-0123)

EXTENSION REQUEST WITH BURDEN REVISIONS

Description of the Information Collection

NRC regulations in 10 CFR Part 70 establish procedures and criteria for the issuance of licenses to receive title to, own, acquire, deliver, receive, possess, use, or transfer special nuclear material (SNM). NRC regulations in 10 CFR Part 74 establish requirements for material control and accounting (MC&A) of SNM applicable to licensees in general, and also specific performance based regulations for (1) licensees authorized to possess and use strategic special nuclear material (SSNM) and (2) licensees authorized to possess and use, or produce, SNM of low strategic significance licensed pursuant to Part 70. The regulations are issued pursuant to the Atomic Energy Act of 1954, as amended, and Title II of the Energy Reorganization Act of 1974, as amended.

A. Justification

1. Need for and Practical Utility of the Collection of Information

Part 74 incorporates recordkeeping and reporting requirements for licensees that possess and use SNM. The records required to be maintained pursuant to Sections 74.11, 74.13, 74.15, 74.17, 74.31, 74.33, 74.57, and 74.59 are those deemed necessary for the timely discovery of inadvertent losses of SNM to the environment, or the theft or diversion of SNM by potentially hostile groups. Either of these events could endanger the public health and safety. The reporting requirements imposed on the licensee are intended to point up record anomalies which might indicate loss of material control, to provide necessary information to resolve identified anomalies, to alert the Commission to the condition, and to supply information that would assist in the recovery of SNM in the event of a confirmed loss. Certain of the requirements are necessary to satisfy obligations of the United States government under its agreement with the International Atomic Energy Agency.

The MC&A requirements applicable to licensees that possess and use formula quantities of SSNM are contained in §§ 74.51, .53, .55, .57, and .59. The recordkeeping and reporting requirements in the indicated sections of Part 74 provide timely detection and enhanced localization of anomalies that could be potentially indicative of a theft or diversion of SSNM. The information aides the NRC to determine whether an MC&A alarm is due to a loss or theft of material. In the latter case, the probability of material recovery will be significantly enhanced.

Section 74.11 requires that each licensee who possesses 1 gram or more of contained uranium-235, uranium-233, or plutonium and each licensee who operates a uranium enrichment facility notify the NRC Operations Center within one hour of discovery of any loss, other than normal operating loss, or theft or other unlawful diversion of special nuclear material, or any incident in which an attempt has been made or is believed to have been made to commit a theft or unlawful diversion of such material, or any unauthorized production of enriched uranium. The information is used by the NRC staff to determine whether there has been a diversion or loss of material or any unauthorized production of enriched uranium and to initiate prompt action to recover the material or stop the unauthorized production in order to protect public health and safety. The NRC staff will respond according to the significance of the event. Response to a significant event is usually made by the regional staff and Headquarters staff within 24 hours.

Section 74.13(a) requires each licensee authorized to possess at any one time and location SNM in a quantity totaling more than 350 grams of contained uranium-235, uranium-233, or plutonium, to submit DOE/NRC Form 742 on a semi-annual basis. These reports summarize the quantities of SNM received, produced, possessed, transferred, consumed, disposed of, or lost by the licensee. DOE/NRC Form 742C, which reflects the composition of the ending inventory, is also submitted. These forms have been previously cleared under the following OMB clearances:

DOE/NRC Form 742	OMB No. 3150-0004
DOE/NRC Form 742C	OMB No. 3150-0058

The licensee reports are sent to a DOE contractor facility for recording in an SNM tracking system. NRC staff review these reports. Discrepancies between the reports and licensees' records are investigated and reconciled.

Since 1994, NRC has required submission of these forms in computer readable form. This change has eliminated the need for hard copy forms, thus reducing the burden on the NRC and licensees.

Section 74.13(b) requires each licensee subject to the requirements of §70.51(e) to submit a report to the Director, Office of Nuclear Material Safety and Safeguards within 30 calendar days after the start of each annual physical inventory if the inventory difference exceeded both: (i) its associated limit of error; and (ii) 200 grams of plutonium or U-233, 300 grams of high enriched uranium (HEU) or U-235 contained in HEU or 9,000 grams of U-235 contained in low enriched uranium (LEU) ; a statement of possible causes for the inventory differences, and action taken or planned to be taken to correct the inventory difference. This section also requires that, if the limit of error of the inventory difference for any material balance period exceeds any applicable limits specified in 10 CFR §70.51(e)(5) or approved pursuant to 10 CFR §70.51(e)(6), a statement must be submitted of the probable reasons for the limit of error and actions taken or planned to be taken with respect to the limit of error.

The report is used to alert the NRC staff to a potential material discrepancy at a licensee site. If the size of the inventory difference is significant, an inspector from the NRC Headquarters

usually visits the site to oversee and review the resolution of the inventory difference and the corrective action to be taken.

Section 74.15(a) requires each licensee who transfers and each licensee who receives special nuclear material to complete and distribute a Nuclear Material Transaction Report on DOE/NRC Form 741. This should be done in accordance with the printed instructions for completing the form whenever the licensee transfers or receives a quantity of SNM of 1 gram or more of contained uranium-235, uranium-233, or plutonium. DOE/NRC Form 741 has previously been approved under OMB clearance number 3150-0003, which should be referred to for further supporting information and burden data. Since 1994, NRC has required submission of this and other DOE/NRC forms in computer readable form. This change has eliminated the need for hard copy forms, thus reducing the burden on the NRC and licensees.

Prior to a site visit, the NRC inspection staff obtains a computer printout of nuclear material transactions from the DOE/NRC database. The inspectors review licensee records with the printout data to assure agreement between the record and the report and to assure that shipper-receiver differences have been reconciled.

Section 74.17 requires that each licensee subject to the requirements of Sections 70.51(e), 74.31, 74.33, or 74.51 must submit a completed Special Nuclear Material Summary Report on NRC Form 327 to the Director, Office of Nuclear Material Safety and Safeguards. The reporting period corresponds to the required inventory frequency. The frequency depends essentially on the strategic significance of the SNM covered by the particular license. Licensees possessing either SSNM or SNM of moderate strategic significance are required to inventory every six months. Licensees having LEU of low strategic significance must conduct inventories annually.

Special nuclear material is required to be controlled and accounted for because of the government's national security obligation to prevent or detect loss, diversion or theft, or the appearance thereof, of quantities of SNM that could potentially be used for an unauthorized production of nuclear devices. To meet this obligation, NRC's safeguards material control and accounting regulations for fuel facilities require the conduct of physical inventories of SNM on a periodic basis by licensees. Section 74.17 requires the reporting of physical inventory results on NRC Form 327 each time that a physical inventory is conducted by a major fuel facility.

Section 74.31 - LEU facilities - contains the following requirements for licensees that possess and use SNM of low strategic significance: Section 74.31(a) requires that licensees authorized to possess and use more than one effective kilogram of special nuclear material of low strategic significance implement and maintain an NRC approved MC&A system that will confirm the presence of SNM at the licensee facility, resolve indications of potentially missing material, and aid in investigation and recovery of material that is determined to be actually missing. Section 74.31(b) established a time requirement for the submission and implementation of MC&A plans for licensees authorized to possess and use more than one effective kilogram of SNM of low strategic significance, as required by §74.31(a). The objectives of the plan are to confirm the presence of SNM at the licensee facility, resolve indications of potentially missing material, and aid in investigation and recovery of material that is determined to be actually missing. This was a one-time submittal. All currently affected licensees have submitted the required plans. Changes to the Fundamental Nuclear Material Control (FNMC) plan can be made through license amendments (licensing process). Section 74.31(c) describes the system capabilities that must be addressed in the plan in order to meet the general performance objectives of §74.31(a). Guidance for preparing the plan is provided in the Acceptance Criteria document (NUREG-1065). The plan is reviewed by the NRC staff to determine whether the performance criteria have been satisfied. Initial NRC response to the plan is usually sent to the licensee within 60 days of receipt and docketing. The approved plan will be used by the

appropriate NRC staff to monitor actual licensee performance in reaching the performance objectives. Section 74.31(d) requires each licensee to establish records that will demonstrate that the requirements of 74.31(c) have been met and to maintain those records for three years. The records to be maintained are selected by the licensee. The 3-year retention period is the shortest time span which assures the NRC that all data is available for the inspection.

Section 74.33 - Enrichment facilities -contains the following requirements for licensees that possess equipment capable of enriching uranium or who operate an enrichment facility and produce, possess, or use SNM of low strategic significance. Section 74.33(a) requires that each licensee authorized to possess equipment capable of enriching uranium or authorized to operate an enrichment facility and produce, possess, or use more than one effective kilogram of special nuclear material at any site or contiguous sites subject to control by the licensee, establish, and submit for NRC approval, an MC&A system that will maintain current knowledge of source material and special nuclear material, prevent and detect the production of uranium enriched to 10 percent or more U^{235} , prevent and detect undeclared production of enriched uranium of low strategic significance, and resolve any indications of missing uranium, production of uranium enriched to 10 percent or more U^{235} , or undeclared production of uranium of low strategic significance. The licensee must also provide information to aid in the investigation of missing uranium and the production of enriched uranium of 10 percent or greater enrichment or the undeclared production of SNM of low strategic significance. This information is used by the licensee to keep track of how much uranium is possessed and its location, to prevent the illicit production of higher than authorized enrichment of uranium which could include weapons-grade material, and to protect against the unauthorized production of enriched uranium of low strategic significance. These objectives are designed to protect the health and safety of the public against possible diversion of material for illicit purposes. Guidance for preparing the plan is provided in the Acceptance Criteria document (NUREG/CR-5734). Section 74.33(b) requires that no later than two years prior to uranium enrichment facility startup, a "Fundamental Nuclear Material Control Plan" (FNMC) must be submitted to NRC describing how the performance objectives of

§ 74.33(a) and the system features and capabilities of § 74.33(c) will be met. Section 74.33(c) describes the system capabilities that must be addressed in the plan in order to meet the general performance objectives of §74.33(a). The licensee must have a physical inventory program that ensures accurate, current, and reliable knowledge of source material and SNM. Such a program is maintained by performing a dynamic (non-shutdown) physical inventory at specified intervals, and by adjusting the book inventory to the physical inventory and resolving, or reporting within 60 days the inability to resolve, any inventory difference exceeding a quantity set by the NRC. The licensee must also have: a detection program that will provide a high assurance of detection of unauthorized production of enriched uranium of low strategic significance or uranium enriched to 10 percent or more; an item control program that provides knowledge of the identity and location of source material and SNM items kept for 14 days or more in inventory to deter and detect any loss or theft of 500 grams or more of U^{235} ; a resolution program for shipper-receiver differences that will resolve any statistically significant differences in excess of 500 grams U^{235} ; and an assessment program that independently reviews and documents the effectiveness of the MC&A program at least every 24 months. Section 74.33(d) requires each licensee to establish records that will demonstrate that the requirements of §§ 74.33(a) and (c) have been met and to maintain those records for three years. The records are needed for inspection by NRC to ascertain the continued effectiveness of the MC&A system. The records must be retained for three years unless a longer retention is required by 10 CFR Part 75.

Subpart E Sections 74.51-74.59: HEU facilities.

Section 74.51(a) requires licensees authorized to possess and use five or more formula kilograms of SSNM to establish, implement, and maintain a Commission-approved MC&A system that meets specified objectives.

Section 74.51(c) requires licensees authorized to possess and use five or more formula kilograms of SSNM to submit a FNMC plan that describes how the licensee intends to comply with Section 74.51(b) in order to achieve the general performance objectives of Section 74.51(a). Guidance for preparing the plan is provided in the Standard Format and Content Acceptance Criteria document (NUREG-1280). Review of the FNMC plan enables the NRC to make a judgment on each licensee's capabilities to meet regulatory requirements. After approval, the plans are used by NRC inspectors to monitor licensee performance. This was a one-time submittal. All currently affected licensees have submitted the required plans. Future changes can be made through license amendments (licensing process).

Section 74.57(c) requires that a licensee must notify NRC immediately any time the licensee is unable to resolve a loss detection alarm within the time limit specified in its FNMC plan. In the case of a five formula kilogram loss, the maximum time for resolution is 24 hours. The early notification puts the NRC on alert to a potential loss of SSNM and thus allows for contingency planning in the event a diversion or theft is indicated. NRC and possibly other federal agency involvement at an early stage will enhance the likelihood of material recovery.

Section 74.57(d) requires that once an anomaly has been resolved, records must be updated and corrected to enable the licensee to maintain continuing compliance with detection and response requirements and permit NRC inspectors to evaluate the adequacy of the licensee's resolution procedures. A key factor in the resolution of alarms is the availability of auditable records that provide a history of the processing and storage of SSNM in bulk and item form. The majority of occurrences which cause false alarms are expected to be identifiable from a review of pertinent records. The involved records will have been generated in the process of complying with the requirements of §§ 74.53, .55 or .59.

Section 74.57(f)(2) requires that licensees notify NRC within 24 hours if an abrupt loss detection estimate exceeds five formula kilograms of strategic special nuclear material. The early notification puts the NRC on alert to a potential loss of SSNM and thus allows for contingency planning in the event a diversion or theft is indicated. NRC and possibly other federal agency involvement at an early stage will enhance the likelihood of material recovery.

Section 74.59 contains the quality assurance and accounting requirements for HEU facilities. Section 74.59(b) requires that licensees establish and maintain management structure, policies and procedures. Section 74.59(c) requires that licensees provide for personnel training and qualification. Section 74.59(d) requires that licensees establish and maintain a system of measurements for material control and accounting. Section 74.59(e) requires that licensees establish and maintain a system of measurement quality control, perform statistical analyses and process and engineering tests, and generate data on the performance of measurement processes. Section 74.59(f) requires that licensees perform a physical inventory every six months and perform inventory difference/standard error of inventory difference (ID/SEID) calculations, and ID/SEID investigations. Licensees must investigate and report the failure to resolve any excessive inventory difference. They must reconcile and adjust the plant and subsidiary book records to the results of the physical inventory. Licensees must maintain records and procedures to ensure the quality of physical inventories. Section 74.59(g) stipulates that licensees shall establish auditable records sufficient to demonstrate that the requirements of §§ 74.53, .55, .57 and .59 have been met and retain those records for at least three years. Section 74.59(h) requires that licensees establish procedures for shipper-receiver difference evaluations and investigations.

Information recorded and reported in accordance with the requirements in this section will enable NRC inspectors and licensing personnel to assess licensees' ongoing capabilities to control and account for SSNM in their possession. As indicated previously, these records and reports will be invaluable to the licensees and the NRC in the event of an attempted diversion or theft since they will permit localization of losses in space and time.

2. Agency Use of Information

Fundamental Nuclear Material Control (FNMC) Plans that describe how licensees intend to comply with the requirements of the regulations are required to be submitted for review and approval. Approved plans are the basis for inspections by NRC inspectors who must verify that the licensee is in compliance with the performance objectives specified in the regulations. Plan reviews are initiated within 30 days after submittal. The availability of supporting acceptance criteria contributes to expeditious plan reviews. Reports of unresolved inventory differences and abnormalities identified through physical inventories, material control tests, and item monitoring are reviewed by NRC as soon as possible after receipt. Records of material control tests and anomaly investigation are maintained by the licensees in order that inspectors may determine that performance objectives and commitments have been met.

3. Reduction of Burden Through Information Technology

There are no legal obstacles to reducing the burden associated with this information collection. Applicants and licensees may use electronic information processing systems to prepare and submit required information. Licensees have had the option of preparing certain of the reports on a computer generated facsimile of the report form and transmitting the information electronically. Since 1994, NRC has required those licensees using DOE/NRC Forms 741, 741A, 740M, 742, and 742C to submit those reports in computer readable form. This change eliminated the need for hard copy forms, thus reducing the burden on NRC and the licensees through the use of current information technology. Almost 100 percent of the forms are now submitted electronically. However, they are accounted for under other clearances. Other submittals under Part 74, such as the NRC Form 327 and the FNMC Plans are submitted in paper copy to the NRC.

4. Effort to Identify Duplication and Use Similar Information

In an effort to minimize duplication and licensee burden, NRC and the Department of Energy (DOE) jointly utilize a Nuclear Materials Management and Safeguards System (NMMSS). Common reporting forms are used to minimize the reporting burden on industry members required to provide nuclear materials data to one or both agencies in accordance with prevailing regulations or contractual obligations. The licensee is thus able to file one report to meet the requirements of both agencies.

The Information Requirements Control Automated System (IRCAS) was searched to determine duplication. None was found.

To the extent possible the information collection requirements have been structured to permit licensees to use information already generated for other purposes such as production control, quality control, product certification, etc. Where new information must be generated, there is no other source that could be used.

5. Effort to Reduce Small Business Burden

A number of licensees who use special nuclear material are small businesses. Since the consequences to the common defense and security or to the health and safety of the public of the improper control or use of a given quantity of special nuclear material are the same for large and small entities, it is not possible to reduce the burden on small businesses by less frequent or less complete accounting or control procedures.

6. Consequences to Federal Program or Policy Activities if the Collection Is Not Conducted or is Conducted Less Frequently

If the information collection is not conducted, NRC will have no way to assess whether licensees are operating within the material control and accounting requirements and certain other requirements applicable to the possession, use, and transfer of special nuclear material.

Applications for new licenses and amendments may be submitted at any time. Applications for renewal of licenses are submitted every five years. Information submitted in previous applications may be referenced without being resubmitted. The Loss of Material Report required by §74.11 is submitted on the average of five times per year. In four out of five occurrences, the cause is usually found in less than 1 week and is a result of measurement error, accounting error, number transposition, or failure to list all inventory items.

Approximately once a year the quantity of material which is reported as lost requires further evaluation and a submission of a detailed report and proposed action plan to the NRC. Less frequent reporting would preclude the NRC from being notified in time to provide rapid response and quick assistance in achieving timely resolution.

7. Circumstances Which Justify Variation from OMB Guidelines

Contrary to the OMB Guidelines in 5 CFR 1320.5(d), certain sections of Part 74 require that licensees submit reports to the NRC in less than thirty days.

Section 74.11 requires that reports of loss or theft or unauthorized production of SNM must be made within one hour of discovery. This requirement is needed to permit NRC to determine whether there has been a loss or diversion of special nuclear material or unauthorized production of material and to assist in initiating prompt action for recovery of such material.

Section 74.13(b), Inventory Difference Exceeds Limit of Error, must be reported within thirty days after the start of the inventory. This requirement is needed to alert the NRC to a potential material discrepancy at a licensee site. If the report indicates that the size of the inventory difference is significant, an NRC inspector and/or licensing reviewer will usually be dispatched to the site to observe the resolution and corrective action.

Sections 74.57(c), (d) and (f) specify that a confirmed loss of an item and the failure to resolve loss detection alarms within agreed upon times must be reported to the NRC immediately. The reason for the short reporting times is to permit the Commission to take appropriate response actions in a timely manner in the event a diversion or theft is indicated.

8. Consultations Outside the Agency

An opportunity to comment on the information collection requirements for this clearance extension and associated guidance documents has been published in the Federal Register.

9. Payments or Gifts to Respondents

Not applicable.

10. Confidentiality of the Information

None, except for proprietary or safeguards information.

11. Justification for Sensitive Questions

There are no sensitive questions.

12. Estimated Burden and Burden Hour Cost

Reporting Requirements

Section	Number of Respondents	Number of Licensee Responses per Respondent	Burden Per Response	Total Annual Burden (Hrs)	Comments
74.11	3	1	15	45	
74.13(a)					See OMB Clearance Nos. 3150-0004 & 3150-0058
74.13(b)	1	1	100	100	
74.15(a)					See OMB Clearance No. 3150-0003
74.17					See OMB Clearance No. 3150-0139
74.31(a),(b),(c)	7	1	80	560	
74.33(a),(b),(c)	2	1	80	160	
74.51(c)	4	1	100	400	
74.57(c)	2	1	8	16	
74.57(f)(2)	2	1	4	8	
74.59(f)	2	2	20	80	
TOTALS	23	25		1,369	

Recordkeeping Requirements

Section	Number of Recordkeepers	Average Annual Burden per Recordkeeper	Total Annual Burden (Hrs)	Record Retention Period (Years)
74.31(d)	7	195	1,365	3
74.33(d)	2	415	830	3
74.51(a)	2	1375	2,750	3
TOTAL	11		4,945	

Total Number of Recordkeepers: 11

Total Recordkeeping Hours: 4,945

TOTAL ANNUAL BURDEN HOURS FOR PART 74: 6,314

Estimated Cost to Public to Respond to the Collection

The estimated annual cost to licensees to respond to the collection requirements is \$909,216 (1,369 reporting and 4,945 recordkeeping hrs X \$144/hr).

13. Estimate of Other Additional Costs

NRC has determined that the records storage costs is roughly proportional to the recordkeeping burden cost. Based on a typical clearance, the records storage cost has been determined to be equal to 0.04 percent of the recordkeeping burden cost. Therefore, the records storage cost for this clearance is insignificant as shown below:

- \$285 (4,945 recordkeeping hours x \$144/hr. x 0.0004)

14. Estimated Annualized Cost to the Federal Government

A. Review of Licensee Reports

Section	No. of Licensee Responses Annually	NRC Staff Time to Review Responses	Total Annual Hours	Comments
74.11	3	20	60	
74.13(a)				See OMB Clearance Nos. 3150-0004, 3150-0058
74.13(b)	1	40	40	
74.15(a)				See OMB Clearance No. 3150-0003
74.17				See OMB Clearance No. 3150-0139
74.31(a),(b),(c)	7	100	700	
74.33(a),(b),(c)	2	100	200	
74.51(c)	4	150	600	
74.57(c)	2	10	20	
74.57(f)(2)	2	10	20	
74.59(f)	4	30	120	
TOTALS	25		1,760	

B. Review of Licensee Records

<u>Avg No. of Inspections/Year</u>	<u>No. ofMC&A Record Reviews Inspectors</u>	<u>Total NRC Inspection Hours Per Inspector</u>	<u>Hours</u>
10	2	90	1,800

The annual cost for NRC licensing and inspection staff to review the records and reports required by 10 CFR Part 74 is estimated to be 3560 hrs (i.e., 1,760 + 1800) @ \$144/hr or \$512,640.

This cost is fully recovered through fee assessments to NRC licensees pursuant to 10 CFR Parts 170 and/or 171.

15. Reasons for Changes in Burden or Cost

The original burden estimates only took into consideration the one-time submittal of the FNMC plans. The slight increase in burden is because recent experience has indicated that licensees will now be filing amendments and revisions to those plans. Under section 74.59(f), two facilities provide semi-annual reports to NRC. The burden per response for this section has increased from 4 hours to 20 hours to accurately reflect the additional time required by the licensee to complete the complex inventory process. The previously reported 4 hours per response was inaccurate. There has also been an increase in the cost because the hourly rate has increased to \$144/hr.

16. Publication for Statistical Use

None.

17. Reason for Not Displaying the Expiration Date

For requirements contained in 10 CFR 74, amending the Code of Federal Regulations to display information that, in an annual publication, could become out of date would confuse the public. Additionally, for the information collections contained in the guidance documents NUREG-1065, NUREG/CR-5734, and NUREG-1280, revising the guidance documents merely to update the expiration date unnecessarily expends scarce agency resources.

18. Exceptions to the Certification Statement

There are no exceptions.

B. Collection of Information Employing Statistical Methods

Statistical methods are not used in this collection of information.