DRAFT ENVIRONMENTAL ASSESSMENT
AND FINDING OF NO SIGNIFICANT IMPACT
FOR THE PROPOSED RULE
AMENDING 10 CFR PARTS 40, 70, 72, 74, AND 150

AMENDMENTS TO MATERIAL CONTROL AND ACCOUNTING REGULATIONS

Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission

I. INTRODUCTION AND BACKGROUND

The U.S. Nuclear Regulatory Commission (NRC) is proposing to amend, clarify, update, and strengthen its regulations regarding the material control and accounting (MC&A) of special nuclear material (SNM). These regulations are located in Title 10 of the *Code of Federal Regulations* (10 CFR) part 74. The current MC&A requirements in subpart D of 10 CFR part 72 would be consolidated in subpart B of 10 CFR part 74.

The proposed substantive changes to the MC&A regulations would affect NRC licensees who are authorized to possess SNM in a quantity greater than 350 grams. Plain language revisions to 10 CFR 74.13 would clarify the material status reporting requirements within the Nuclear Materials Management and Safeguards System (NMMSS), and conforming changes would be made to the parallel Agreement State reporting requirements in 10 CFR 150.17. Agreement States do not have authority to issue a license to possess SNM in a quantity greater than 350 grams. A person desiring to possess and use such quantities would be required to submit an application to the NRC under 10 CFR part 70.

II. THE PROPOSED ACTION

As part of the proposed rulemaking action, the MC&A requirements for independent spent fuel storage installations (ISFSIs) in subpart D of 10 CFR part 72 would be consolidated with the MC&A regulations in subpart B of 10 CFR part 74. The 10 CFR part 72 requirements at issue are repeated in 10 CFR part 74 and the redundant 10 CFR part 72 requirements in §§ 72.72, 72.74, 72.76, and 72.78 would be removed.

The majority of the changes would be to the MC&A provisions in subparts A-E of 10 CFR part 74, and are intended in general to reduce ambiguity, facilitate implementation, and better align the requirements with current standards of practice for MC&A of SNM. Such changes would include (1) adding general performance objectives (GPOs) to subpart A of 10 CFR part 74 (GPOs are informational activities to deter, detect, or aid in responding to any loss, theft, diversion or misuse of SNM) that would apply to all NRC licensees that are authorized to possess SNM in quantities greater than 350 grams; (2) adding item control requirements to subpart B to better ensure that NRC licensees under 10 CFR part 50 or 52 or 72 will be able to adequately deter or detect any diversion or misuse of SNM; (3) adding a "two-person" rule (*i.e.*, requiring the presence of at least two qualified and authorized individuals) to subparts C-E, applicable to actions involving tamper-safing, performing physical inventories, transferring SNM, or any handling of SNM that is not under an active control measure or monitoring or surveillance condition; (4) removing or modifying some current exemptions in subparts C, D, and E of 10 CFR part 74**;** and (5) revising 10 CFR part 74 subparts C, D, and E to require that certain procedures be established for tamper-safing containers or locations, and to require that procedures be established for designating material balance areas, item control areas, and custodial responsibilities for these areas.

Plain language revisions to 10 CFR parts 74 and 150 would clarify the required elements of an MC&A program and the various systems that comprise the MC&A program. Existing references to the fundamental nuclear material control (FNMC) plan in 10 CFR part 74 would be replaced by references to an MC&A plan.

In addition, the proposed action would add new definitions and modify some existing definitions in 10 CFR part 74. The proposed new defined terms are: *accounting, custodian, item control system, item control area, material balance area, material control and accounting*, and *two-person rule*. To improve clarity, the term *formula quantity* would be modified by describing it as a Category I quantity of material, consistent with the existing definitions of this term in 10 CFR parts 70 and 73. Similarly, the terms *SNM of moderate strategic significance* and *SNM of low strategic significance* would be modified by describing them as a Category II quantity of material and a Category III quantity of material, respectively, consistent with the existing definitions of these terms in 10 CFR parts 70 and 73. The term *effective kilogram of special nuclear material* would be removed from 10 CFR part 74 so that all MC&A definitions of the various types of SNM (and the affected MC&A provisions) would refer to gram quantities of nuclear material.

A new Appendix A, entitled “Categories of Special Nuclear Material,” would be added to 10 CFR part 74. The Appendix would include a table showing the Category I, II, and III quantities of SNM, the corresponding subpart in 10 CFR part 74 which governs NRC licensees authorized to hold Category I, II, and III quantities of SNM, and formulae to calculate Category I, II, and III quantities of SNM.

The following guidance documents would be revised and updated in conjunction with the proposed action. In addition, a guidance document for Category II facilities (SNM of Moderate Strategic Significance) would be updated and issued with the existing guidance documents below:

- NUREG-1280, “Standard Format and Content Acceptance Criteria for the Material Control and Accounting (MC&A) Reform Amendment”
- NUREG-1065, “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”
- NUREG/BR-0096, “Instructions and Guidance for Completing Physical Inventory Summary Report”

III. THE NEED FOR THE PROPOSED ACTION

Many of the current MC&A requirements were developed over 20 years ago and need to be updated, in part, to reflect advances in technology. As discussed above, some MC&A requirements in 10 CFR part 72 that apply to ISFSIs are repeated in 10 CFR part 74 and the redundant 10 CFR part 72 requirements would be deleted. The NMMSS reporting requirements for an ISFSI fall into this category, and §§ 72.72, 72.74, 72.76, and 72.78 would be consolidated in subpart B of 10 CFR part 74. Also, GPO requirements are being extended to cover all NRC licensees that are authorized to hold more than 350 grams of SNM and item controls are being extended to include NRC licensees subject to 10 CFR part 50 or 52, and the ISFSIs licensed under 10 CFR part 72, to better ensure that such licensees will be able to adequately deter or detect any diversion or misuse of SNM.

IV. ENVIRONMENTAL IMPACTS OF PROPOSED ACTION

The proposed amendments will not result in any significant environmental impact. The proposed rule pertains to MC&A program requirements, which consist of administrative procedures and operations to track and control SNM and related information, in order to deter and detect any loss, theft, diversion, or unauthorized production of nuclear material. The amendments are intended to strengthen MC&A programs and plans that have already been approved by the NRC. Under the proposed revisions to subpart B of 10 CFR part 74, licensees authorized to hold more than 350 grams of SNM (but which are not authorized to hold Category I-III quantities of SNM), would be required to establish, implement, and maintain an MC&A program to achieve the GPOs that would be added to subpart A. Unlike the MC&A plans that must be approved by the NRC before they are implemented (under the existing subpart C-E requirements of 10 CFR part 74), MC&A programs to be established at non-Category I-III facilities would not require NRC approval before implementation, but these programs would be subject to NRC inspection. As discussed above, licensees subject to 10 CFR part 50 or 52, and ISFSI licensees under 10 CFR part 72, would also be required to establish, implement, and maintain item controls.

As the proposed amendments pertain to information collection and reporting requirements, adopting them would have no significant impact on the quality of the human environment. The proposed action does not alter the amounts of any radioactive effluents that could be released offsite from an NRC-licensed facility, and does not cause a significant increase in individual or cumulative radiological exposures to plant workers or members of the public. Further, the proposed action does not result in any significant increase in the potential for accidents at NRC-licensed facilities.

V. ALTERNATIVES TO THE PROPOSED ACTION

The alternative to this proposed action is to take no action. Under the no-action alternative, the NRC would not amend the current regulations. Thus, the more risk-informed and performance-based proposed changes, and their associated program and safety enhancements, would not be achieved.

Under the no-action alternative, licensees would continue to comply with existing regulations. The existing MC&A requirements would not be updated, clarified, or consolidated as described above.

VI. ALTERNATIVE USE OF RESOURCES

No irreversible commitments of resources would occur under this proposed action.

VII. AGENCIES AND PERSONS CONTACTED

No agencies or persons outside the NRC were contacted in connection with the preparation of this draft environmental assessment.

VIII. FINDING OF NO SIGNIFICANT IMPACT

The NRC has determined under the National Environmental Policy Act and its regulations in subpart A of 10 CFR part 51, that this rule, if adopted, would not have any significant environmental impacts. Therefore, this proposed action does not warrant the preparation of an environmental impact statement. As discussed above, the amendments

pertain to information collection and reporting requirements, and adopting them would have no significant impact on the quality of the human environment.