



**NUCLEAR FUEL SERVICES, INC.**  
a subsidiary of The Babcock & Wilcox Company

■ 1205 banner hill road ■ erwin tn 37650 ■ phone 423 743 9141  
■ www.nuclearfuelservices.com

6

**PR 72, 74 and 150  
(76FR28193)**

DOCKETED  
USNRC

30G-11-0168  
GOV-01-55-04  
ACF-11-0206  
Page 1 of 4

June 30, 2011 (11:37 am)

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

June 28, 2011

Ms. Annette L. Viette-Cook  
Secretary  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
ATTN: Rulemakings and Adjudications Staff

REFERENCE: (1) Docket ID NRC-2009-0096  
(2) NFS Comments on NRC Proposed Amendments to 10 CFR Parts 72, 74, and 150

**Subject** **NFS' Comments to Draft NRC Proposed Amendments to MC&A Regulations  
(Docket NRC-2009-0096)**

Dear Ms. Viette-Cook:

Enclosed are Nuclear Fuel Services, Inc. (NFS) comments on the preliminary draft proposed "Amendments to Material Control and Accounting Regulations," as published in the *Federal Register* on May 16, 2011 (76 FR 28193). If you have any questions concerning these comments, please contact me at 423-743-1705 or Clayton Brown, MC&A Section Manager, phone 423-735-5535.

Sincerely,

**NUCLEAR FUEL SERVICES, INC.**

Mark P. Elliott  
Quality, Safety & Safeguards  
Director

/bnm  
Enclosure (Reference 2)

Copy:

Galen Smith  
Senior Resident Inspector  
U.S. Nuclear Regulatory Commission

**Enclosure**

**NFS Comments on NRC Proposed Amendments to 10 CFR Parts 72, 74, and 150**

## NFS Comments on NRC Proposed Amendments to 10 CFR Parts 72, 74, and 150

Nuclear Fuel Services, Inc. (NFS) is providing comments on the preliminary draft rule language, "Amendments to Material Control and Accounting Regulations," published in the *Federal Register* on May 16, 2011 (76 FR 28193). NFS appreciates the U.S. Nuclear Regulatory Commission (NRC) providing this early opportunity for comments on the preliminary draft amendments.

**The following general comments are related to changes throughout the proposed amendments.**

In general there are words in the proposed amendments with potential broad interpretations. Depending on interpretation, implementation could have a significant financial/resource impact for the licensee. Wording in the General Performance Section (74.3), such as "accurate," "current," "reliable," "any," "anomaly," "rapid," "control access to MC&A information," "all items" etc., without guidance, can be too broadly interpreted. A review of the preliminary rule language effect is difficult without draft guidance documentation (such as NUREG 1065, 1280, etc.). NFS recommends using amendment wording that is less ambiguous. The comment period should be extended until after the draft guidance documentation is prepared. This guidance, with licensee meetings/workshops, will help the licensee better understand the effect of the rule changes.

Throughout the proposed amendments, the licensee will be required to change the name of "FNMC Plan" to "MC&A Plan." Changing reference to the FNMC Plan in licensing, contractual, and procedural documentation will be a significant effort for the licensee with no apparent added safeguards value.

**The following comments are related to the changes proposed to Definitions section (74.4).**

In the definition of "**custodian**," the statement "who maintains the accounting system" is unclear. Does this refer to the custodian or the licensee? Custodians at NFS do not "maintain" the accounting system; the custodians input information to the accounting system. Custodians' major function is to control/authorize movements of SNM into or out of material balance areas. The statement "who maintains the accounting system" has no apparent added value and should be removed.

The definition of "**item control system**" refers to the ability to track element and isotopic content on all items. Element content and isotope content of unmeasured intermediate materials in an item control system are not known prior to measurements. Currently, "quantity" may be the net amount in cases where the element and isotope content is not known. An item control system should track an item (identity, quantity, and location from creation through current disposition). The definition should also include some lower diminutive threshold on small quantities of little to no safeguards significance (such as samples and low level waste material).

The term "current knowledge" in the item control system definition needs a definition/guidance for current knowledge since the time limits of an item's existence have been removed by the proposed amendments. NFS recommends a graded definition/guidance to "current knowledge" based on the SNM category table.

The proposed definition of "**material balance area (MBA)**" defines MBA as an administrative area "within a material access area (MAA)." Some of NFS' designated MBAs are not entirely within an MAA and some of the MBAs are not within an MAA (as defined in 73.2). NFS recommends that "within the material access area" be removed.

The proposed MBA definition states, "that the quantity of material being moved into, out of, or within the MBA is an assigned value based on measurements of both the element content and the isotope content." There are instances where material is moved between MBAs without measured element and isotope. For example, the licensee moves material between MBAs because the measurement equipment is in another MBA, such as samples moved to a laboratory or containers moved to an NDA device in another MBA. NFS recommends "based on measurement of both the element content and isotopic content" be replaced with "based on measured quantity" where quantity is consistent with the comments to the proposed definition of an item control system.

In the definition of "**material control and accounting (MC&A)**" the terms "prevent and detect any loss" are used to define the purpose for an MC&A program. An MC&A program can assist in the detection of loss, theft, diversion, or unauthorized production of nuclear material. NFS recommends revising the second sentence to: **An MC&A program can aid in the detection of loss, theft, diversion, or unauthorized production of nuclear material.**

The proposed wording of the "**two-person rule**" definition/use is too general when broadly applied to tamper-safing, any nuclear material handling, physical inventory, and transfers of nuclear material. The proposed two-person rule implementation effect will necessitate significant additional analysis, retrofit, manpower, and cost to the licensee.

**The following comments are related to the changes proposed to Subpart C.**

In 74.31 (c) (6) the limit on the ability to locate an item within 14 days and the low limit of 500 grams U-235 have been removed in the proposed amendments. This removes the limits on how current knowledge is interpreted for category III material. The proposed amendments also eliminate diminutive limits for small quantities of material such as samples that have little safeguards significance. The wording has also been changed from "removal of a substantial quantity of material from items will be detected" to "removal of any quantity of material from items will be detected." This stricter interpretation will be a significant retrofit, manpower, and cost to the licensee for little safeguards value. NFS recommends the rule include a graded safeguards definition of current knowledge and diminutive quantities limits that will allow exclusion of sample and small quantities of material from item control system tracking in addition to exceptions for low level concentrations and waste.

Reword 74.31 (c) (7) to improve the clarity and to be consistent with 74.59 (h) (1) (ii). The term "statistically significant" means the same as "exceeds twice the estimated standard deviation of the difference estimator." NFS recommends rewording regulation for clarity to: ***Conduct and document shipper-receiver difference comparisons for all SNM receipts, in a container, lot, or shipment, as appropriate and, when required by part 75 of this chapter, on an individual batch basis. Investigate and resolve any shipper-receiver difference that exceeds both twice the estimated standard deviation of the difference estimator and 500 grams of uranium-235.***

In 74.31 (c) (10) the two-person rule has been imposed on tamper-safing, any material handling, performing physical inventories, and transferring nuclear materials. Since the two-person rule is new to category III material, it is hard to judge what impact this will have without guidance. If this means two persons in "line of sight" of all these functions, then this will have a substantial impact on resources and cost to the licensee. The two-person rule definition appears to be written for tamper-safing then applied to other tasks as well. More clarification and guidance is needed on this issue.

In Subpart C the proposed amendments change twelve-months to "intervals not to exceed 370 calendar days". The change is less flexible for allowing the licensee to set inventory dates. NFS recommends leaving the times as currently specified in the regulation.

**The following comments are related to the changes proposed to Subpart E.**

Throughout Subpart E the proposed amendments change "semiannual," "six-months," "consecutive three month period," and "monthly" to "not to exceed (180, 90, 30) calendar days." None of these changes allow for 31-day months and are less flexible for allowing the licensee to set inventory dates. NFS recommends leaving the times as currently specified in the regulation.

In 74.59 (h) (6) the proposed two-person rule applies to tamper-safing, any handling of nuclear materials, performing physical inventory, and transferring nuclear material. Without additional definition/guidance, the two-person rule effect on the licensee is unclear. For example: in the definition of the two-person rule, the persons must be "qualified" and must maintain "line of sight" on each other person and the task being performed. This could have a significant effect on process equipment design, resources, and cost if this two-person rule applies to "any handling of nuclear materials." More clarification and guidance is needed for the two-person rule.

## Rulemaking Comments

---

**From:** Lewis, Terry W. [TWLewis@nuclearfuelservices.com]  
**Sent:** Thursday, June 30, 2011 7:40 AM  
**To:** Rulemaking Comments  
**Cc:** Ward, Steven  
**Subject:** NFS' Comments on NRC Proposed Amendments to 10 CFR Parts 72, 74, and 150  
**Attachments:** NFS' Comments to Draft NRC Proposed Amendments to MC&A Regulations.pdf  
**Signed By:** twlewis@nuclearfuelservices.com

Please accept and consider the attached comments to the proposed amendments to 10 CFR Parts 72, 74, and 150.

Thanks,

Terry Lewis  
MC&A Specialist  
Nuclear Fuel Services, Inc.  
1205 Banner Hill Rd.  
Erwin, TN 37650  
Phone: (423) 735-5673  
E-Mail [twlewis@nuclearfuelservices.com](mailto:twlewis@nuclearfuelservices.com)