Dear Sirs

Based on NRC-2009-0096, Amendments to Material Control and Accounting Regulations, the following are comments for the preliminary proposed rule language to the Material Control and Accounting Regulation:

10CFR74.19(c) currently states:
"...shall conduct a physical inventory of all special nuclear material in its possession under license at intervals not to exceed 12 months."

This frequency of 12 months was clarified in the NRC's response to an NEI correspondence dated March 13, 2007 titled "Frequency of the Physical Inventory of Special Nuclear Material Required by 10 CFR 74.19(c)". In the aforementioned letter, the following was stated "If a licensee completed the physical inventory in a given month, the next physical inventory must be completed by the last day of the same month in the following year."

The proposed rule language for 10CFR74.19(c)(2) states:
"...Conduct a physical inventory of all special nuclear material in its possession under the license at intervals not to exceed 370 calendar days..."

The "not to exceed 370 calendar days" is a shortening of the time allotted to complete the inventory. The issue is that the inventory normally takes more than 5 days to complete. Sometimes the inventory from start to finish could take up to a month to complete, depending on the location of some SNM. Thus the in order to ensure that the 370 day cycle is met; the licensee may have to short cycle the calendar date of the performance of the physical inventory. This would mean that the physical inventory would move up on the calendar date. This was the original concern that prompted the NEI correspondence. The new rule language can cause duress with the licensee in that the physical inventory could end up moving to a date that is during a high work period (e.g. a scheduled outage) and could cause the inventory to have to be performed at a frequency less than a year. It is recommended that the wording remain the same, as it has already been clarified for the nuclear power plant licensee.

MC&A as controlled by 10CFR74.19 has led to the requirement of inventorying and controlling items which contain minute quantities of Special Nuclear Materials (SNM) that pose no security risks. The requirements have also caused dose to be acquired at nuclear reactor licensees to inventory and track these minute quantities of SNM. In an effort to focus MC&A resources on items that truly pose a security risk and in an effort to work with ALARA in mind, the following text is a proposed change to MC&A to focus resources to quantities of SNM requiring transaction reports as per §§ 74.15(a) and NUREG/BR–0006 (proposed changes to existing regulations are italicized and in red).

74.19 Recordkeeping

(a) Licensees subject to the recordkeeping requirements of §§ 74.31, 74.33, 74.43, or 74.59 of this part are exempt from the requirements of paragraphs (a)(1) through (4) of this section. Otherwise:

(1) Each licensee, *other than nuclear reactor licensees as defined in §§ 50.22 of this chapter*, shall keep records showing the receipt, inventory (including location and unique identity), acquisition, transfer, and disposal of all special nuclear material in its possession regardless of its origin or method of acquisition.
(i) Nuclear reactor licensees as defined in §§ 50.22 of this chapter shall keep records showing the receipt, inventory (including location and unique identity), acquisition, transfer, and disposal for items of special nuclear material containing quantities requiring transaction reports as per §§ 74.15(a) and NUREG/BR–0006 in its possession regardless of its origin or method of acquisition.

...

(3) Each record of receipt, acquisition, or physical inventory of special nuclear material that must be maintained pursuant to paragraph (a)(1) *and (a)(1)(i)* of this section must be retained as long as the licensee retains possession of the material and for 3 years following transfer or disposal of the material.

...

(c) Other than licensees subject to §§ 74.31, 74.33, 74.41, or 74.51, *and other than nuclear reactor licensees as defined in §§ 50.22 of this chapter,* each licensee who is authorized to possess special nuclear material, at any one time and site location, in a quantity greater than 350 grams of contained uranium-235, uranium-233, or plutonium, or any combination thereof, shall conduct a physical inventory of all special nuclear material in its possession under license at intervals not to exceed 12 months.
(i) Nuclear reactor licensees as defined in §§ 50.22 of this chapter shall conduct a physical inventory of items of special nuclear material containing quantities requiring transaction reports per §§ 74.15(a) and NUREG/BR–0006 in its possession under license at intervals not to exceed 12 months

This would establish a minimum threshold of SNM required to be tracked at nuclear facilities. The current regulation has no minimum and has led to a requirement to track items that contain as little as 0.0041 g of SNM, such as moveable incore detectors. This has created a perplexing situation in the commercial nuclear industry with respect to SNM. An item with small quantities of SNM (less than 1 gram) is received with no special requirements due to the SNM contained in the item and shipped out with no special requirements due to the SNM contained in the item. Yet, while the item is at nuclear power plant licensees it is treated the same as an item with significant quantities of SNM (i.e.

fuel). The process required to inventory irradiated items is resource intensive due to the radiation associated with the item, regardless of the amount of SNM in the item. In fact, the process to inventory irradiated items can lead to significant dose as well. This fact alone requires us to evaluate the benefits of inventorying items that contain milligrams (and sometimes micrograms) of SNM, when these items have little to no security risk associated with them. This is where the rule change to 10CFR74 can better focus resources on SNM that does have risk associated with it.

Another issue with nuclear power plant licensees is the transmutation of elements into minute quantities of SNM. For example, some excore vessel detectors used for neutron fluence measurement for vessel embrittlement calculations start with 0.02g of Np. This Np, through transmutation, becomes a much smaller amount of Pu. The exact amounts are difficult to determine, as it depends on neutron fluencies, which is what these detectors measure. Also, nuclear power plant licensees can not remove these detectors to inspect them, as once removed they can not be replaced. But the regulation, as written, could require them to be inventoried. If the regulation is changed as suggested above, these difficult questions become mute.

Rulemaking Comments

From: Delfini, Giancarlo [GDelfin@entergy.com]
Sent: Friday, June 10, 2011 7:38 AM
To: Rulemaking Comments
Subject: Comments on ID NRC-2009-0096
Attachments: 10cfr74 rule change.doc

See attached memo.