

70-687

SGFF:DRJ  
70-143

APR 20 1984

Nuclear Fuel Services, Inc.  
ATTN: Mr. K. D. Hensley, Manager  
Materials Control  
Erwin, Tennessee 37650

Gentlemen:

The purpose of this letter is to provide clarification and guidance relative to the interpretation, intent, and permissible exceptions to the requirements for "current knowledge" as it applies to strategic special nuclear material (SSNM).

The current knowledge requirements, as specified in 10 CFR 70.58(h), actually apply to all SNM, not just SSNM. However, since it is anticipated that low enriched uranium facilities will be subject to a new LEU Reform Rule in the near future, the guidance in the attachment to this letter is written for SSNM facilities only.

Should you have any questions on this matter, please feel free to contact either Don Joy or Mike Smith of my staff.

Sincerely,

*Original signed by Willard B. Brown*  
Willard B. Brown, Chief  
Fuel Facility Safeguards  
Licensing Branch  
Division of Safeguards, NMSS

Attachment:  
As stated

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Docket files 70-27, 70-734, 70-687, 70-143, 70-25, 70-371

OFFICE	SGFF	SGFF	SGFF				
SURNAME	Joy:mb	Smith	Brown				
DATE	4/20/84	4/20/84	4/20/84				

The Same Letter Went to All of the Following Licensees

SGFF:DRJ  
70-143

Nuclear Fuel Services, Inc.  
ATTN: Mr. K. D. Hensley, Manager  
Materials Control  
Erwin, Tennessee 37650

70-734

GA Technologies, Inc.  
Nuclear Materials Control Division  
ATTN: Mr. William R. Mowry  
Licensing Administrator  
P.O. Box 85608  
San Diego, California 92138

70-25

Rockwell International  
Energy Systems Group  
ATTN: Dr. M. E. Remley, Director  
Health, Safety, and  
Radiation Services  
8900 DeSoto Avenue  
Canoga Park, California 91304

70-687

Union Carbide Subsidiary B, Inc.  
(Company B)  
Sterling Forest Research Center  
ATTN: Mr. J. J. McGovern  
P.O. Box 324  
Tuxedo, New York 10987

70-371

United Nuclear Corporation  
ATTN: Mr. William F. Kirk, Manager  
Nuclear and Industrial  
Safety  
67 Sandy Desert Road  
Uncasville, Connecticut 06382

70-27

Babcock and Wilcox Company  
Naval Nuclear Fuel Division  
ATTN: Mr. N. Regan  
Nuclear Safety and Licensing  
Officer  
P.O. Box 785  
Lynchburg, Virginia 24505

GUIDANCE FOR STATIFYING THE REQUIREMENTS OF 10 CFR 70.58(h)---"CURRENT KNOWLEDGE"---AND PERMISSIBLE EXCEPTIONS APPLICABLE TO STRATEGIC SPECIAL NUCLEAR MATERIAL

10 CFR 70.58(h) requires a system of storage and internal handling controls to be established, maintained, and followed to provide current knowledge of the identity, quantity and location of all SSNM within a plant that is contained in discrete items or containers.

Notwithstanding the language of 70.58(h); we do not believe that all items have to be included in the program for maintaining current knowledge. That is, one would not expect the current knowledge requirement to apply to such items as (1) instrument calibration sources containing microgram or milligram quantities of SSNM, (2) partially filled and unsealed waste containers, (3) laboratory samples containing less than 10 grams SSNM, (4) discrete containers of SSNM undergoing a processing step (such as furnace trays, dissolver trays, blenders, etc.), and (5) ventilation filters.

Before discussing acceptance criteria and permissible exceptions, the following definitions for current knowledge, identity, quantity and location are provided for clarification purposes:

- o "CURRENT KNOWLEDGE" means continuous knowledge of discrete items or containers and associated records. The NRC, in an official policy letter sent to all applicable licensees in 1976 defined the maximum time delay for keeping records current as being 24 hours for SSNM items. Thus, the records system(s) that reveals all items on hand (along with their associated SSNM quantities and locations) should reflect the existing status of each item, with the possible exception of items created or consumed within the past 24 hours.
- o "IDENTITY" means an unique identity that distinguishes a given SSNM item from all other SSNM items on hand (see 70.51(e)(1) which 70.58(h) explicitly refers to).

The NRC has not officially defined or clarified how permanent or how dependable the identity mechanism must be. However, the intent is to have an item identification system that is both fully reliable under normal conditions, and not easily compromised under abnormal conditions. The NRC recognizes that any identity system can be compromised under certain specific situations, but the intent is to minimize the possibility of either accidental or deliberate breakdown of the unique identity system (whether it be in terms of a single item or many items).

- o "QUANTITY," as generally used in 70.58, means the amount of SSNM. Specifically, it means the element and fissile isotope for uranium materials and element only for plutonium materials. However, for the purpose of current knowledge in 70.58(h), the SSNM quantity associated with each item need not be a fully measured quantity (e.g., derived from weighing plus sampling and analysis). That is, the net weight of an item may suffice for quantity provided the material form is identified, and in the case of HEU materials, the enrichment is known and stated. When not using a fully measured quantity, the material form must be indicated either by (1) chemical

formula (e.g., "UO<sub>2</sub>"); (2) a code name that implies a specific chemical composition, or (3) a less specific term that also identifies the processing activity that generated the material (e.g., "resin from ADU filtrate column"). For the purposes of inventory listing, shipping, or transferring SSNM to another MBA or to an ICA, however, all item quantities must be fully measured SSNM values. To continuously maintain current knowledge of quantity (of a given SSNM item), the item must be (1) tamper-safe sealed, (2) stored in a sealed storage area, (3) maintained under continuous two-person surveillance, or (4) a sealed source.

- o "LOCATION" designations need not be unique for each item, but must be specific enough to enable one to verify the physical presence of an item within an hour.

It should be noted that the NRC is willing to exempt certain types of "in-process" items from the current knowledge requirement, as listed below, without a justification being provided in the FNMC Plan. A licensee must identify those type of items in the FNMC Plan, however, that are to be exempt.

- 1) Discrete containers of SSNM (such as furnace trays, pellet boats, blenders, etc.) that are undergoing a processing operation.
- 2) Items that have a lifetime of less than 8 hours.
- 3) Items containing less than 50 grams U-235, U-233, or plutonium, or any combination thereof.

NRC licensing criteria accepts the following as means for providing unique identity:

- a) An unique alpha and/or numeric identification on a tamper-safe seal that has been applied to a container of SSNM,
- b) An unique alpha and/or numeric identification permanently inscribed, embossed, or stamped on the container or item itself (regardless of whether the item is sealed or unsealed), or
- c) An uniquely pre-numbered label, having good adhesive qualities such that its removal from a container would preclude its reuse, applied to a container (either sealed or unsealed).

We do not mean to imply that some other equivalent means would not also be acceptable. Two examples, however, of identification techniques that are not acceptable (for full compliance) would be:

- o Loosely attached labels (cards, etc.) that could easily fall off or be removed.
- o Painted (stenciled) alpha/numeric identifications that could easily be destroyed by wiping with a solvent, or painted over.

Any exceptions or exemptions, other than those discussed above, must be justified by alternative means and/or compensating measures that are fully described in the FNMC Plan. It should be noted that without a license condition granting a limited exception to 70.58(h), a commitment to full compliance is implied.

We urge you to review both your existing procedures (and practices) and your FNMC Plan to determine whether there are any conflicts or contradictions with our above stated criteria. If conflicts exist, revisions to Section 7.0 of your FNMC Plan and/or a request for a limited exception to 70.58(h) requirements will be in order.