



## Global Nuclear Fuel

A Joint Venture of GE, Toshiba & Hitachi

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June 29, 2006

Attn: Document Control Desk  
Director, Office of Nuclear Material Safety and Safeguards  
Incident Response  
U.S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Washington, D.C. 20555-0001

Subject: Reply to Notice of Violation

References:

- 1) NRC License SNM-1097, Docket 70-1113
- 2) NRC Inspection Report 70-1113/2005-202, 7/22/05
- 3) NRC Inspection Report 70-1113/2006-201, 2/24/06
- 4) GNF Reply to Notice of Violation, 3/21/06
- 5) NRC Reply to Notice of Violation 70-1113/2006-201-03 and Response to Disputed Violation 70-1113/2006-201-02 Regarding the Failure To Implement a Credited Safety Control Required by Approved Criticality Safety Analysis, 6/2/06.

Global Nuclear Fuel – America's facility, in Wilmington, N.C., hereby responds to the Reply to the Notice of Violations dated June 2, 2006. The two reported violations resulted from an NRC team inspection originally conducted at our licensed fuel fabrication facility by Inspectors D. Morey and N. Jordan during January 23-27, 2006.

Pursuant to 10CFR2.201, our reply to the items of apparent noncompliance with NRC requirements is provided as Attachment 1 to this letter. The NRC inspection report comments and suggestions are helpful to us in our constant efforts to improve our programs, to ensure continued health and safety of plant personnel, and to ensure our compliance with NRC regulations and licensed conditions.

Neither your inspection report (referred to above) nor our response contains information that we believe to be proprietary. We also welcome further discussion with your staff on our reply, as you deem appropriate.

Please contact me on (910) 675-5656 if you wish to discuss this matter further.

Sincerely,  
Global Nuclear Fuel - Americas

***Original signature on file***

C. M Vaughan  
Manager, Facility Licensing

Attachment

cc: CMV-06-049  
Chief, Technical Support Group, Fuel Cycle Safety and Safeguards, NMSS  
Regional Administrator, Region II

### **Attachment 1**

The information given below refers to the Notice of Violations dated February 24, 2006 (ref. 3) relative to original NRC Inspection Report 70-1113/2006-201 and subsequent NRC reply dated June 2, 2006 (ref. 5).

#### Original Violation (70-1113/2006-201-02, 2/24/06)

*Safety Condition No. 1 of License No. SNM-1097 requires that licensed materials be used in accordance with statements, representations, and conditions in the license application dated June 5, 1997, and December 7, 1999, and supplements thereto.*

- A. *Section 6.1.3 of the license application states, in part, that each area manager is responsible for developing and maintaining operating procedures that incorporate limits and controls established by the criticality safety function.*

*Contrary to above, as of January 25, 2006, the licensee was operating under a temporary operating procedure that did not implement a credited safety control required by approved criticality safety analyses. Specifically, the temporary operating procedure failed to require aging of waste boxed for 60 days prior to the uranium content verification by elephant-gun (E-GUN) scan.*

*This is a Severity Level IV violation (Supplement VI).*

#### Subsequent Reply. (70-1113/2006-201-02, 6/2/06)

*Specifically, the violation involved waste box operations being performed under a temporary operating procedure (TOP) that did not adequately implement a credited safety control required by approved criticality safety analysis.*

*When the TOP was created, Revision 2 of the waste box storage criticality safety analysis had been cancelled. Subsequently, Revision 3 of the waste box storage criticality safety analysis was approved but not implemented. During this interim period between Revision 2 being cancelled and Revision 3 being implemented, waste box storage operations continued under a TOP, which was being used without an underlying criticality safety analysis. Both revisions of the criticality safety analysis state, as a credited control for verifying uranium content, that waste boxes be separated and allowed to undergo a 60-day aging period before they are scanned and placed in high density storage without spacing requirements. The TOP only called for waste boxes to be scanned, and did not include the 60-day aging period before they are scanned and placed in high density storage without spacing requirements. The OP only called for the waste boxes to be scanned, and did not include the 60-day aging period. Based on our review of the information you provided in your response, the NRC has concluded that no new information was included that would change our earlier determination that a violation occurred.*

#### **GNF-A Response to Violation:**

GNF-A concurs with the violation.

Based on a review of prior correspondence between GNF-A and the NRC on this issue, it appears that the NRC's expectations on what constitutes an appropriate criticality safety review of Temporary Operating Procedures (TOP's) differed from GNF-A's. GNF-A believes that the violation was a result of this difference in expectations. GNF-A now concurs with the NRC's position that this is a violation primarily because we did not specify our expectations adequately within internal procedures.

Notwithstanding the information provided in our original response pertaining to the original IFI 2005-202-01 (ref. 2) and internal corrective actions outlined in UIR PP&SS-0519 (ref. 4), the following additional details are provided:

Root Cause: Procedures – Wrong: Situation Not Covered

GNF-A believes the root cause of this violation was a lack of procedural guidance on the expectation for review and approval of Temporary Operating Procedures (TOP's), specifically the expectations for nuclear criticality safety staff review and approval of TOPs was not adequately covered in internal procedures.

Procedural Responsibilities and Instructions (PRI 6-09), "FMO - Operating Procedures (OPs)", defines a temporary operating procedures as follows:

- *Temporary Operating Procedures (TOPs) – Temporary documents that are generated for specific needs of operating systems, temporary work, or new processes. They are intended to allow flexibility in operation as changes to existing systems or new systems are implemented and tested. They vary in maximum duration from 90 days to 1 year, but also include provisions to perform short-term temporary changes on an emergency basis. TOPs may be revised or extended.*

TOPs are typically issued to address changes in normal conditions that are not addressed in Operating Procedures (OPs). These conditions may be related to safety, quality, production, or maintenance concerns. If the changes implemented by a TOP are safety or quality significant, equipment will be shut down by shop supervision until the TOP is issued.

Procedure PRI 6-09 does stipulate an ISA review and disposition of all TOPs. The ISA reviewer designates appropriate EHS safety discipline approvals required for TOPs. Proposed TOPs that may have an impact on established nuclear criticality safety controls *shall be reviewed* by qualified nuclear criticality safety staff. The approval step simply instructs the designated reviewing functions and the Area Manager to *review and approve the TOP*. Further procedural guidance on what constitutes an adequate TOP review by the criticality safety function is not provided in PRI 6-09.

GNF-A considers an adequate criticality safety review to consist of a review of the nuclear safety bases (CSAs, NSR/Rs) that govern the equipment/processes related to the TOP subject matter to determine if double contingency will be satisfied (or maintained) through use of the TOP. Heavy reliance on the formal training and qualification of criticality safety staff was being used. If, and only if, double contingency is satisfied then the reviewer may approve the TOP. In this instance, the criticality safety function performed a review of the TOP and granted approval of the document after careful review and a determination that double contingency was satisfied. Thus the review met GNF-A internal expectations.

It is important to note that the operations were conducted meeting the double contingency requirement of our License and regulations at all times. GNF-A acknowledges that additional criticality safety controls may be added at our discretion in order to provide additional margin of safety. Therefore, when viewing criticality safety analysis it is not unreasonable to envision situations in which one or more controls (beyond double contingency) identified in a criticality safety analysis may not be fully implemented via a TOP (although acknowledged in an NSR/R) at the discretion of qualified criticality safety staff as long as double contingency is maintained.

### **Specific Corrective Action**

1. Following NRC Inspection 2006-201, Change Request 05.0298 (CR#2005298) that consolidated the Criticality Safety Analyses (CSA's) related to waste box storage and clarified existing criticality safety controls was completed. This CR package included the waste-box criticality safety analysis CSA 1080.12 (rev. 03), completion of the ISA review, issuance of revised NSR/R and OPs, verification of installation and preoperational audit postings, formal operator training, and a verification by Nuclear Safety that all waste-boxes that had not been Elephant Gun scanned (after 60-days aging) were being stored in low density arrays (1-foot edge-to-edge spacing). Approval for operation was granted on February 9, 2006 at which time all criticality safety controls identified in the most recent waste box CSA were fully implemented.

### **Preventative Corrective Actions**

1. Provide interim guidance to nuclear criticality safety staff with respect to TOP review / approval cycle. Emphasize that all TOPs involving nuclear criticality safety disposition should be verified against current criticality safety bases, including applicable NSR/Rs and CSAs - as necessary. Any deviation from current NSR/Rs or credited nuclear criticality safety controls should be clearly documented and justified within the context of the TOP instruction itself. This action was completed on 6/29/06.

2. Revise internal procedure PRI 6-09 instructions to specifically include guidance that all TOPs involving nuclear criticality safety disposition should be verified against current criticality safety bases, including applicable NSR/Rs and CSAs - as necessary. Any deviation from current NSR/Rs or credited nuclear criticality safety controls shall be clearly documented and justified within the context of the TOP instruction itself as follows: Modify the TOP form to include reference to applicable NSR/Rs and/or CSAs (if applicable). Action to be completed on or before 7/30/06.

GNF-A believes the above actions will prevent recurrence and prevent TOPs instructions that are contrary to established nuclear safety controls.

GNF-A is currently in full compliance.

Original Violation (70-1113/2006-201-03, 2/24/06)

- B. Section 3.9 of the license application states, in part, that licensed material processing or activities will be conducted in accordance with properly issued and approved practices and procedures, plant procedures, or operating procedures.*

*Contrary to above, as of January 25, 2006, the licensee displayed an NCS posting in the waste box storage area corresponding to a criticality safety analysis which had been cancelled.*

*This is a Severity Level IV violation (Supplement VI).*

Subsequent Reply. (70-1113/2006-201-02, 6/2/06)

*We have reviewed your reply to Notice of Violation 70-1113/2006-201-03 and have determined that although you have identified the reason for the violation, listed a number of broad corrective actions that will be taken to avoid further violations, and the date when full compliance was achieved, you have not provided, in sufficient detail, a description of the root cause nor the specific corrective actions taken. Your response should include further explanation of the administrative error identified as the root cause as well as all of the action taken as part of your change request process for corrective actions regarding the incorrect posting violation.*

**GNF-A Response to Violation:**

GNF-A concurs with the violation. Notwithstanding the information provided in our original response (ref. 4), the following additional details are provided:

**Root Cause: Procedures Followed Incorrectly – Ambiguous Instructions**

The former Nuclear Safety Instruction (NSI) E-10.0, "NSR/R Program", Section 5.0, included the following key instructions relating to NSR/R review, approval, and electronic issuance of new and revised NSR/Rs:

- The NS Engineer provides the signature copy NSR/R (with the comparison sheet for revisions) to the Area Engineer, Area Manager for signature. These signatures acknowledge operations have appropriately implemented the specified requirements for safe operation of the defined process.
- After these signatures have been obtained and all requirements for approval have been satisfied, the NS Engineer changes the status of the CR to approved for operation (unless no analysis necessary assigned).
- The Manager NS then reviews the new/revised NSR/R against the CSA and/or RSA and signs the signature NSR/R copy. If there are radiological changes, the Program Manager RS also signs the signature copy. At this point, the Manager NS electronically approves the new/revised NSR/R for use using the correct password.

The Manager Nuclear Safety (NS) incorrectly electronically approved and issued the NSR/R and allowed the revision to be posted by Configuration Management personnel prior to the corresponding operating procedure being updated and the CR fully implemented. By virtue of the signed copy, the NSI E-10.0 instruction would infer that operations had appropriately implemented the specified requirements for the defined operation. The instruction was therefore

considered ambiguous. To complicate matters, two separate organizations were required to formally "issue" required CR documentation; a) Nuclear Safety (approval and issuance of the NSR/Rs) and b) Configuration Management organization (approval and issuance of the corresponding operating procedure).

### **Specific Corrective Actions**

1. The associated posted NSR/R at the waste box storage location was replaced with the final (corrected, revision 5) version pursuant to completion of Change Request 05.0298 (CR#2005298). This CR consolidated the Criticality Safety Analyses (CSA's) related to waste box storage and clarified existing criticality safety controls. This CR package included the waste-box criticality safety analysis (rev. 03), completion of the ISA review, issuance of revised NSR/R and OPs, verification of installation and preoperational audit postings, formal operator training, and a verification by Nuclear Safety that all waste-boxes that had not been Elephant Gun scanned (after 60-days aging) were being stored in low density arrays (1-foot edge-to-edge spacing). Approval for operation was granted on February 9, 2006 at which time all criticality safety controls identified in the most recent waste box CSA were fully implemented

### **Preventative Corrective Actions – Configuration Management Changes**

To prevent recurrence, Nuclear Safety group has worked with the Configuration Management organization to improve the process for review, approval, and issuance of new/revised/cancelled Nuclear Safety Release / Requirements (NSR/Rs):

1. Internal procedure NSI E-5.0, "Nuclear Safety Release Requirements" (new) was developed to replace the former complex process with a new simplified process that consolidates the electronic approval and web issuance of eNSRRs under the Configuration Management organization. The instruction is clear that approval to operate must be obtained prior to electronic release (including posting) of the NSR/R. Final implementation via Change Request (CR) 2006 25 was completed on 6/15/06.
2. Internal change request procedure, P/P 10-10, "Configuration Management Program – Fuel Manufacturing" was also revised to acknowledge the new electronic release process specified in NSI E-5.0. Final implementation via Change Request (CR) 2006 25 was completed on 6/15/06.

GNF-A believes the above actions provide the requested additional details and will prevent an NSR/R being inadvertently posted before a CR is completed as Configuration Management is now responsible for issuance and posting of NSR/Rs. Internal audits have identified no additional problems of this nature.

GNF-A is currently in full compliance.