



Global Nuclear Fuel

A Joint Venture of GE, Toshiba, & Hitachi

Global Nuclear Fuel – Americas, LLC
Castle Hayne Rd., Wilmington, NC 28401

October 8, 2010

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

Subject: 30-day Report of Event – Gad Slugger IROFS Degradation

References: 1) NRC License SNM-1097, Docket 70-1113
2) GNF-A Event Report 46244, 9/10/10

Dear Sir or Madam:

In accordance with 10CFR70.50(c)(2), the Global Nuclear Fuel – Americas L.L.C. (GNF-A) facility in Wilmington, North Carolina hereby submits the required written report for the September 10, 2010 notification (Reference 2) involving a loss of a criticality safety control in the Fuel Manufacturing Operation gadolinium powder process area.

The applicable information required by 10CFR70.50(c)(1) was submitted by facsimile on September 10, 2010 and is included as an attachment to this letter.

Additional information is provided as follows:

Event Details and Safety Significance

At approximately 10:00 AM on September 10, 2010 during normal operation of a uranium process slugger hood in the gadolinium area, it was discovered that a portion of a geometry related Item Relied on for Safety (IROFS) between the powder hopper and the vibratory feeder was not properly secured. The flexible connection between these pieces of equipment did not provide adequate containment and uranium powder leaked onto the base of the feed food. The base of the hood is equipped with a photo-sensor that detected the powder accumulation and automatically shut down the vibrating feeder to stop the leak. A total of 2.2 kg of uranium powder was removed from the hood and the equipment remained shut down while the issue was investigated.

While this discovery did not result in an unsafe condition, it was reported pursuant to the requirements of 10CFR70 Appendix A(b)(2) within 24 hours.

Immediate Corrective Actions

- Shutdown affected equipment pending implementation of procedural instructions for proper reassembly of vibratory feeders and flexible connections.
(Completed September 10, 2010)
- Inspect other equipment that utilizes vibratory feeders and flexible connections to ensure proper installation.
(Completed September 10, 2010)
- Implement temporary procedural instructions for proper reassembly of vibratory feeders and flexible connections following cleanout and require independent verification prior to use.
(Completed September 10, 2010)

Probable Cause of Event

The event occurred due to improper installation of a clamp on the flexible connection following cleanout.

An investigation determined equipment procedures were deficient and lacked sufficient detail on how to properly reassemble the vibratory feeder and flexible connections following equipment cleanouts. There was also no requirement for independent verification of proper installation prior to use. In addition, the design of the vibratory feeder and slugger/press feed piping contains a number of clamped connections that provide numerous potential failure modes that may lead to a loss of geometry control.

Near-term Corrective Actions Taken

- Update operating procedures for equipment using similar connections to include the specific reassembly instructions and required independent verification.

Scheduled completion – October 29, 2010

- Install longer vibratory feeder flexible connections for equipment using similar connections to ensure the connection properly overlaps the feeder and hopper flanges.

Scheduled completion – November 30, 2010

Long-term (Preventative) Corrective Actions

- Evaluate improvements to clamp design for securing flexible connections used in uranium powder processing equipment

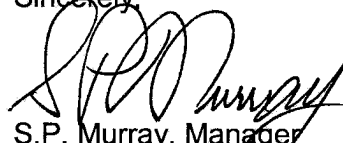
Scheduled completion – November 30, 2010

- Evaluate replacing vibratory feeder technology with improved powder feeding system.

Scheduled completion – December 31, 2010

If additional information is needed regarding this report, please contact me on (910) 819-5950.

Sincerely,



S.P. Murray, Manager
Licensing and Liabilities

Attachment

cc: SPM 10-042
NRC Region II Administrator, Atlanta, GA
M.T. Adams, HQ Washington, DC
R. Gibson, Region II, Atlanta, GA

Attachment – Event Description

At approximately 10:00am on September 10, 2010 during normal operation of a Gad slugger feed hood in the Fuel Manufacturing Building, a connection between the powder hopper and the vibrating feeder was observed as being not properly secured. After starting the vibrating feeder a small amount of powder leaked from the vibrating feeder into the hood. The base of the hood is equipped with a photo-sensor that detected the powder accumulation and automatically shut down the vibrating feeder to stop the leak. A total of 2.2 kg of powder was removed from the hood. An investigation determined that a clamp on the feed tube had not been properly reinstalled following an equipment cleanout.

The two controlled parameters for criticality safety of this equipment are moderation and geometry and Items Relied on for Safety (IROFS) are established for both. With the clamp improperly installed, the geometry-related IROFS was in a degraded state. Additional IROFS on moderation remained available to perform their intended safety functions and were not challenged. Geometry control was maintained by the photo-sensor interlock; however this IROFS is not credited for this accident sequence in the ISA.

Although, this event did not result in an unsafe condition and double contingency was maintained, the performance requirements could not be met when taking no credit for the degraded IROFS. As a result, this report is conservatively being made per 10CFR70 Appendix A (b)(2).

The Gad slugger and similar equipment have been shutdown pending implementation of additional corrective actions.

S. P. Murray, Manager
Licensing and Liabilities
1700 9/10/10