Global Nuclear Fuel

A Joint Venture of GE, Toshiba, & Hitachi

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

January 14, 2011

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

Subject: 30-day Report of Event – Loss of HF Detector in Test Loop

References: 1) NRC License SNM-1097, Docket 70-1113
2) GNF-A Event Report 46486, 12/17/10

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 December 17, 2010 notification (Reference 2) involving a loss of a safety control in the Global Laser Enrichment (GLE)Test Loop area.

The applicable information required by 10CFR70.50(b)(2) was submitted by facsimile on December 17, 2010, and is included as an attachment to this letter.

Additional information is provided as follows:

Event Details and Safety Significance

At approximately 10:44 a.m. on December 16, 2010, during a performance of an internal procedure to verify functionality of installed hydrogen fluoride (HF) detectors (manufactured by Enmet) in the Test Loop Gas Handling Room, it was discovered that both IROFS TL-HF-01 and IROFS TL-HF-02 failed to pass internal test requirements. At least one of these HF detector IROFS is required to be available and operable to meet 10CFR70.61 performance requirements. The independent IROFS TL-HF-04 (an administrative control) remained intact, but the one remaining functional IROFS (TL-HF-04) is insufficient to meet 10CFR70.61 performance requirements. 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

- Moisturize sensors and verify proper operation on at least one detector.
  Completed 12/16/10
- Secure operation of the Collector Module (source term in the Test Loop area).
  Completed 12/16/10
- Notify the NRC in accordance with 10CFR70 Appendix A(b)(2).
  Completed 12/17/10

Probable Cause of Event

- The installed HF detector electrochemical sensors performance appears to have been degraded as a result of low room "relative humidity" due to unusually cold outdoor conditions. The potential effects of low room "relative humidity" were not considered in design or management measures.

Near-term Corrective Actions Taken

- Per ISA team guidance, monitor relative humidity in areas where Enmet HF detectors are used and establish management measure(s) which specify minimum relative humidity requirements for proper operation of Enmets.
  Scheduled Completion date – 1/30/11

Long-term (Preventive) Corrective Actions

- Determine the extent of condition for all areas in GNF that use electrochemical sensors for HF detection.
  Complete – 12/30/10
- Conduct ISA Team review of bench scale equipment node(s) loss of containment accident sequences and reevaluate an enhanced IROFS control scheme using preventative controls (where applicable) for safe operation of the Collector Module.
  Scheduled Completion date – 1/30/11
- Evaluate new style HF detectors (Mil-Ram) in Test Loop Facility.
  Scheduled Completion date – 2/18/11
- Review event with Area Engineers as lessons learned for instrument specification.
  Scheduled Completion Date – 2/14/11
- Update Area Engineer training checkout cards to include review of this event to communicate importance of understanding environmental conditions on instrumentation.
  Scheduled Completion Date – 2/14/11
- Update management measures based on Bench Scale Experiment loss of containment reevaluation IROFS in accordance with internal configuration management procedures (e.g., update Operating Procedures(s), Process Hazards Analysis, ISA Summary, Functional Test Instructions, etc...).
  Scheduled Completion Date – 2/14/11

Evaluation for 10 CFR Part 21 Notification

This event was caused by exceeding the range of environmental conditions for the Enmet HF detectors, not a component defect or failure. Therefore, GNF-A has determined that Part 21 notification requirements do not apply.

If additional information is needed regarding this report, please contact me on (910) 819-4799.

Sincerely,

Julie Olivier, Manager
Global Laser Enrichment Licensing and
Regulatory Affairs

Attachment: Event Description

cc: NRC Region II Administrator, Atlanta, GA
Nick Baker, HQ Washington, DC
David Hartland, Region II, Atlanta, GA

Attachment – Event Description

During a performance of internal procedure to verify functionality of installed HF detectors in the Test Loop (TL) Gas Handling System (GHS) room, it was discovered at ~1044 a.m. (12/16/10) that both IROFS TL-HF-01 and IROFS TL-HF-02 failed to pass internal test requirements. At least one of these HF detector IROFS is required to be available and operable to meet 10CFR70.61 performance requirements.

The installed HF detector electrochemical sensors performance appears to have been degraded as a result of low room "relative humidity" as a result of unusually cold outdoor conditions. The independent IROFS TL-HF-04 (an administrative control) remained intact, thus no unsafe condition existed. While one documented IROFS remained functional (TL-HF-04), to assure the consequence of chemical and radiological exposure is maintained low, TL-HF-04 could not alone meet 10CFR70.61 performance requirements.

No loss of UF6 containment occurred in affected process equipment. The degradation of TL-HF-01 and TL-HF-02 was observed as part of the IROFS' periodic surveillance. This event is therefore being reported pursuant to the requirements of 10CFR70 Appendix A(b)(2) within 24 hours. The affected TL bench scale experiment equipment will remain shut-down pending further investigation and implementation of associated corrective actions.

Julie Olivier
Licensing and Regulatory Affairs Manager