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 –Incomplete Documentation of Controls in ISA Summary for Hydrogen Containment

References: 1) NRC License SNM-1097, Docket 70-1113
2) GNF-A Event Report 46243, 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 incomplete documentation of safety controls in the Fuel Manufacturing Operation (FMO) Integrated Safety Analysis (ISA) Summary. This condition was reported within 24 hours by telephone to the NRC Operations Center in accordance with 10CFR70 Appendix A (b)(1).

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 2:30 PM on September 9, 2010, during a GNF-A review of the FMO ISA, it was determined that the accident evaluation associated with hydrogen containment in the Dry Conversion Process was improperly analyzed in the ISA. A loss of hydrogen containment was analyzed in the ISA; however, appropriate Items Relied on for Safety (IROFS) to prevent or mitigate a potential hydrogen explosion resulting in a loss of UF6 or hydrogen containment were not identified in the ISA.

While this discovery did not result in an unsafe condition, it was reported pursuant to the requirements of 10CFR70 Appendix A (b)(1) within 24 hours.

Immediate Corrective Actions

After an initial review on September 9, 2010 determined the safety controls associated with hydrogen containment and detection were incomplete, the affected equipment was promptly shut down and the controls were evaluated. Existing hydrogen detection systems were augmented to assure adequate controls were available and reliable to perform their intended safety functions as interim compensatory measures. These controls were functionally verified prior to restart of the affected operations at 22:30 on September 9, 2010.

At no time was an unsafe condition present.

Probable Cause of Event

The original ISA for the dry conversion process was reviewed for completeness and technical accuracy by a subsequent review team. It was determined that the original ISA determined a hydrogen leak would not result in a high consequence event, and as a result no IROFS were declared for this type of accident sequence. Under the original ISA analysis, it is believed a hydrogen leak was assumed to be controlled by other existing protections and mitigations.

The subsequent review team postulated additional accident scenarios involving hydrogen leaks and determined that these scenarios were credible. An evaluation was required to determine these scenarios likelihood and severity. This evaluation indicated that the unmitigated risk from certain types of hydrogen leaks could exceed the performance requirements of 10 CFR 70.61 and additional controls were required.

Near-term Corrective Actions Taken

Following the GNF-A approved ISA methodology, a quantitative risk assessment was performed for the additional potential hydrogen leak scenarios and determined that IROFS were needed to meet performance requirements. The additional IROFS for hydrogen containment and detection were identified in the ISA and assurance measures applied. These actions were completed on October 7, 2010.

Long-term (Preventative) Corrective Actions

1. Investigate the feasibility of moving potential hydrogen leak points outside of the DCP facility to minimize potential for all leaks and reduce or eliminate potential accident scenarios.

   Scheduled completion - June 1, 2011

2. Review remainder of FMO facility for similar scenarios. Results to be incorporated into final ISA report and summary. Initial review complete. Additional ISA evaluations ongoing per GNF-A ISA Action Plan.

   Scheduled completion - November 30, 2011

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

Sincerely,

Scott P. Murray, Manager
Licensing and Liabilities

Attachment

cc: SPM 10-043
NRC Region II Administrator, Atlanta, GA
M.T. Adams, HQ Washington, DC
R. Gibson, Region II, Atlanta, GA

Attachment – Event Notification Description

During a GNF-A review of the Fuel Manufacturing Operation (FMO) Integrated Safety Analysis (ISA), it was determined at 2:30 PM on September 9, 2010 that the accident evaluation associated with hydrogen containment in the Dry Conversion Process was improperly analyzed in the ISA. A loss of hydrogen containment was analyzed in the ISA, however appropriate Items Relied on for Safety (IROFS) to prevent or mitigate a hydrogen explosion, resulting in a loss of UF_6 or HF containment, were not identified in the ISA.

The affected equipment was promptly shut down on September 9, 2010. Existing hydrogen detection systems were augmented to assure controls are available and reliable to perform their intended safety functions as interim compensatory measures. These controls were functionally verified prior to restart of the affected operations at 22:30 on September 9, 2010. The interim controls will be designated as IROFS upon completion of the ISA documentation update currently underway.

This event is being reported pursuant to the reporting requirements of 10CFR70 Appendix A (b)(1) within 24 hours of discovery.

Scott Murray
Manager, Licensing and Liabilities
2:00 PM 9/10/10