



Global Nuclear Fuel

A Joint Venture of GE, Toshiba, & Hitachi

GE Hitachi Nuclear Energy

Phillip D. Ollis
Licensing Engineer

3901 Castle Hayne Road
P.O. Box 780
Wilmington, NC 28402
USA

T 910-616-4018
Phillip.Ollis@ge.com

M170200
PDO 17-016

August 15, 2017

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

Subject: GNF-A Written Follow-up Report – Gadolinia Additive Hood

References: 1) NRC License SNM-1097, Docket 70-1113
2) GNF-A Event Report 52811, 6/16/2017

Dear Sir or Madam:

In accordance with 10 CFR 70.74(b), Global Nuclear Fuel–Americas, LLC (GNF-A) hereby submits a written follow-up report for Event Notification 52811 that was provided to NRC on June 16, 2017 (Reference 2). As discussed in the initial event report, GNF-A reported an unanalyzed condition associated with a non-radioactive additive in the Fuel Manufacturing Operations (FMO) building. Consistent with 10 CFR 70.74(a) and 70.50(c)(1), an email was submitted on June 16, 2017 providing additional information and is included as an attachment to this letter.

Additional information is provided as follows:

Event Details and Safety Significance

At 17:00 on June 16, 2017 it was determined that an unanalyzed condition was identified that failed to meet performance criteria and NRC Event Notification 52811 was made in accordance with 10CFR70 Appendix A (b)(1) within 24 hours of discovery.

In the FMO gadolinia powder process, a non-radioactive additive is added to a can of uranium in a hood. A previous process hazard analysis (PHA) determined that a criticality in the associated HEPA filters was not credible during this step. A recent update to a criticality analysis identified a potential condition where small amounts of uranium could build up in the HEPA filter over an extended time. The ISA team met and decided that current safety controls will need to be implemented as IROFS to assure that performance criteria are met. There was no release of material and at no time was an unsafe condition present.

Immediate Corrective Actions Taken

On June 16, 2017, the gadolinia additive operation was shut down and a stop work notice was issued. Other similar exhaust systems were inspected and no similar conditions were identified.

Probable Cause of Event

An investigation determined that a revised criticality safety analysis for exhaust ventilation filters was approved on June 16, 2017 that identified a credible scenario for an unsafe mass of uranium to accumulate in the HEPA filter over an extended time. A previous process hazard analysis had listed this scenario as not credible. Although some management measures on ventilation systems were in place to minimize accumulations, sufficient items relied on for safety (IROFS) were not established in the integrated safety analysis (ISA) to meet performance requirements once the sequence was identified as credible.

Short Term Corrective Actions

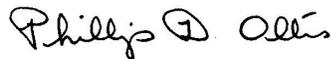
- 1) The gadolinia additive hood exhaust system was modified on June 21, 2017 to change the existing filter to one that is geometrically safe.
- 2) ISA documentation was updated on June 22, 2017 to establish two additional IROFS at the gadolinia additive hood location.

Longer Term Corrective Action

None

If you have any questions regarding this matter, please contact me at (910) 616-4018 or Scott Murray at (910) 819-5950.

Sincerely,



Phillip Ollis
Facility Licensing

Attachment: Event Description

Commitment: None

cc: NRC Region II Administrator, Atlanta, GA
T. Vukovinsky, NRC RII Atlanta. GA
T. Naquin, NRC NMSS, Washington, DC

Attachment 1

Event Notification Description

At 17:00 on June 16, 2017 it was determined that an unanalyzed condition was identified that failed to meet performance criteria. The report is conservatively being made in accordance with 10CFR70 Appendix A (b)(1).

In the powder process, a non-radioactive additive is added to a can of uranium in a hood. A previous process hazard analysis (PHA) determined that a criticality in the associated HEPA filters was not credible during this step. A recent update to a criticality analysis identified a potential condition where small amounts of uranium could build up in the HEPA filter over decades. The ISA team met and decided that current safety controls will need to be implemented as IROFS to assure that performance criteria are met. The operation is currently shut down and no unsafe condition existed.

While this did not result in an unsafe condition, the event is being reported pursuant with the reporting requirements of 10CFR70 Appendix A (b)(2) within 24 hours of discovery.

Phill Ollis
Facility Licensing Engineer
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