GNF
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October 9, 2003

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Response to NRC Bulletin 2003-03: Potentially Defective 1-inch Valves for Uranium Hexafluoride Cylinders

Reference: NRC License SNM-1097, Docket 70-1113

Dear Sir or Madam:

Global Nuclear Fuel – Americas, L.L.C. (GNF-A) in Wilmington, N. C. hereby responds to the subject bulletin in accordance with the requested actions identified as A – E.

Item A: GNF-A does not currently possess any Hunt valves in our stores of 1-inch valves, however, we do own a number of 2.5-ton model 30B cylinders of which approximately [redacted] are outfitted with 1-inch Hunt valves. These cylinders have just completed a recertification within the past year and are back in service at this time. Additionally, GNF-A receives other 2.5-ton model 30B cylinders from the uranium supply chain, and some of these will be fitted with 1-inch Hunt valves over the next three to four years as best we can tell at this time. In accordance with the bulletin, GNF-A is therefore also responding to items B-E as required.

Item B1: GNF-A has no Hunt valves that are in stores and not installed on cylinders. Therefore, there are no valves to replace. Additionally, GNF-A has already implemented quality assurance measures in accordance with our quality program to restrict the future purchases and receipt of 1-inch Hunt valves for applications involving 2.5-ton model 30B cylinders.

Item B2: GNF-A does not have plans to install Hunt valves on any cylinders after the date of this letter.

Item C: GNF-A currently does not have any cylinders of depleted material onsite that are outfitted with Hunt valves. The only two cylinders with depleted material in them are our MC&A cylinder artifact mass standards, and they are outfitted with plugs rather than valves.

Item D1: GNF-A has evaluated the bulletin and has determined that the movement of cylinders on site, while either full or containing heels, does not represent a safety hazard relative to the valve, because the cylinders are never moved under conditions where the UF6 is in a liquid form. Under these conditions, a failed or leaking valve would not cause a safety problem.

NMSS30
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GNF-A processes UF6 cylinders in stainless steel autoclaves. The autoclaves were tested to [redacted], which is in excess of the cylinder pressure during processing. In addition, the autoclave is filled with inert and non-reactive dry nitrogen gas during the vaporization of the UF6. Using this equipment and under these conditions, leak management and containment associated with any portion of the cylinder of process equipment is easily performed.

Upon receipt of full cylinders of UF6, the Receiving Team conducts a complete inspection of the cylinders during the receiving and weighing operation. This inspection includes the cylinder valve stem and packing nut. The operators are procedurally instructed to look for cracks on the packing nut, valve body and threaded areas. In addition, verify that no corrosion or foreign material exists and that the packing nut is not loose.

The Vaporization Team is also procedurally instructed to perform the same inspection of the UF6 cylinder valve when loading the cylinder into the autoclave. This provides a redundant and independent visual inspection of the valve assembly before processing.

Once loaded into the autoclave, the hook-up is given a "pig-tail" leak check using dry nitrogen at [redacted] In addition to verifying the "pig-tail" connections, the test also detects any packing nut leaks.

Following this test, the cylinder pressure is checked to verify that the cylinder is at a negative pressure. This is a key indication that the valve is not leaking.

The cylinder is then heated and processed until empty.

Once empty, the cylinder is then evacuated to a negative pressure of [redacted] and the valve is closed. Processing and evacuation of the cylinders produce heels of below 25 pounds.

Before the heels are shipped for refilling or cleaning, they are given a visual inspection that includes the same procedural steps as the visual inspection performed upon receipt. No other checks are performed at this point, because a long operational history has demonstrated that the cylinders maintain a negative pressure. From a safety standpoint, UF6 heels, even with a slightly leaking valve, would not constitute a safety risk since they have been emptied at an elevated temperature during the processing and would yield little if any UF6 leak even in an accident involving a fire.

Item D2: GNF-A is not in the practice of replacing cylinder valves on this site. We have performed a limited amount of this work in the past. GNF-A does plan to replace the Hunt valves on the cylinders we own and currently expect to complete this within the suggested 1-year time period (September 1, 2004). We are currently not sure if we will do this onsite or contract the service or possibly use some combination of both approaches. GNF-A will ensure that valve changes comply with the requirements of ANSI N14.1 regardless of where they are replaced.

Item E: GNF-A maintains the procedures; records and documentation mentioned in this response and will make them available for inspection.

In summary, the following key points relative to GNF-A's response to the bulletin should be noted:

- GNF-A currently plans to replace or have replaced all Hunt valves in the cylinders we own by September 1, 2004. If we are not able to accomplish this, we will notify the NRC and arrange alternative mutually acceptable solutions.

- GNF-A plans to continue to process UF6 cylinders with Hunt valves utilizing the process equipment and procedures outlined herein as long as these cylinders exist in the UF6 supply chain. We believe this will extend out 3 to 4 years to some degree.

- GNF-A plans to ship heel cylinders (cylinders which have been processed and evacuated so that they contain less than 25 pounds of indicated heel) outfitted with Hunt valves with the controls indicated in our response as long as these cylinders exist in the UF6 supply chain.

If the NRC believes that GNF-A's response is not satisfactory relative to the bulletin, we request that we be notified of such situations, and GNF-A will be responsive in addressing any such additional concerns.

Please contact Charlie Vaughan on (910) 675-5656 if you have questions or would like to discuss this matter further.

Affirmation

I declare under penalty of perjury that the foregoing is true and correct.

Executed on October 9, 2003

Jack D. Fuller, Chief Operating Officer / Facility Manager
Global Nuclear Fuel – Americas, LLC

cc: Director, ONMSS - Washington, DC
Regional Administrator - Atlanta, GA
M. A. Lamastra - USNRC