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September 21, 2012

via Overnight Mail

Mr. Elmo E. Collins, Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
1600 East Lamar Blvd
Arlington, TX 76011-4511

RE: Uranium One USA, Inc. Response to Confirmatory Action Letter ("CAL")
Required Actions Nos. 2, 3 and 4
Willow Creek ISR Project - NRC License Number SUA-1341

Dear Mr. Collins:

By Confirmatory Action Letter ("CAL") dated July 5, 2012, the U.S. Nuclear Regulatory Commission (the "NRC") requested certain information from Uranium One USA, Inc. ("Uranium One") regarding the pressurized drum of yellowcake incident that occurred at a uranium refinery operated by Cameco in Blind River, Ontario. In a separate submittal, dated July 9, 2012, Uranium One responded to the NRC's Required Action No. 1. By this letter Uranium One responds to the NRC's Required Actions Nos. 2 through 4, which provide as follows:

NRC Required Actions Nos. 2-4

2. Conduct an investigation to determine causes of the pressurization of yellowcake drums shipped from your Wyoming facilities and identify corrective action(s) to prevent recurrence.
3. Provide this office with the results of your investigation and corrective actions taken or planned to prevent recurrence.
4. Shipments of uranium product will not be resumed until the NRC has completed its inspection and review of your actions listed above.

The following are Uranium One's written responses to required actions Nos. 2, 3 and 4 of the CAL.

NRC Required Action 2

Uranium One retained Golder Associates to conduct the investigation of the incident involving a pressurized drum of Willow Creek dried uranium yellowcake produced at the Irigaray Processing Plant that occurred at the Cameco Blind River Uranium Refinery on June 23, 2012. Golder Associates

Uranium One USA, Inc.
tel +1 307-234-8235 • fax +1 307-237-8235
907 N. Poplar Street
Suite 260 • Casper
Wyoming • 82601
www.uranium1.com

completed its investigation on August 27, 2012 and determined the causes for the pressurization of yellowcake drums and corrective actions to prevent recurrence of a similar incident. The results of the investigation were reviewed by NRC inspectors at the Willow Creek site on September 11 through 13, 2012.

NRC Required Action 3

As noted above, the NRC conducted a non-routine inspection at the Willow Creek Project on September 11-13, 2012 to discuss and assess the results of the investigation that determined the causes for the pressurization of a drum of yellowcake shipped from the facility, and the corrective actions planned to prevent a recurrence of a similar incident. Region IV personnel Ms. Linda Gersey and Mr. Robert Evans conducted the inspection. Numerous Willow Creek Project personnel and several Uranium One corporate staff, as well as Mr. Erich Tiepel, Golder Associates principal for the investigation, assisted with the NRC inspection.

As discussed in detail at the inspection, Golder Associates determined that the fundamental cause of the drum pressurization was a build-up of oxygen gas generated by the decomposition of residual uranyl peroxide hydrates and/or hydrogen peroxide in the dried yellowcake product. It was concluded that the pressurization resulted from two conditions at the Irigaray Processing Plant relating to:

1. The time period for cooling and venting of dried yellowcake in drums prior to lid closure.
2. The time period that the yellowcake remains in the dryer.

The NRC inspection determined, after review of the investigation findings, conditions at the facility, and interviews with facility personnel, that there were two primary contributing causes to the event, both of which confirmed Golder Associate's conclusions. These included:

1. The 3-hour delay in the drum lidding requirement, specified in the 1999 NRC Information Notice, was not effective, as the drum became pressurized.
2. The drying time used at the facility for Lot 7 had been shortened. Additionally, because the percent moisture of the yellowcake is the only product specification routinely checked/analyzed during drying, complying with the moisture specification does not always ensure that the hydrogen peroxide (H₂O₂) decomposition process has been completed.

During the inspection the NRC also determined a "Root Cause" for the event as "an inadequate drying procedure at the Willow Creek Facility". The NRC and Uranium One discussed four (4) corrective actions that must be taken prior to Uranium One being allowed by NRC to resume shipments of yellowcake from the facility. These include:

1. Increase the packaged drum venting (lidding) time (amount of time the full drum sits prior to having the lid permanently attached for loading and transport) to a time period greater than the 3 hours specified in the existing facility procedure (SOP) and the NRC 1999 Information Notice.
2. Increase the required dryer residence (drying) time to at least 4.5 to 5.0 hours per drum of yellowcake.
3. Update SOP's for yellowcake drying and packaging to include the above details for the "lidding time", residence (drying) time and some additional items such as the temperature of the dryer.
4. Revise the yellowcake shipping SOP to include an enhanced inspection process for sealed drums readied for transport to assess any indications of drum pressurization prior to shipment.

All of the above corrective actions were completed by September 21, 2012. It should be noted that the first corrective action taken, which involves the packaged drum "lidding" time, was completed on June 24, 2012 immediately after Uranium One first became aware of the condition from the Blind River Refinery. At that time, Uranium One increased the "lidding" time from a minimum of 3 hours to a minimum of 24 hours. This change has proven to be effective in eliminating any pressurization in drums of dried yellowcake.

Several additional recommendations developed by Golder Associates were discussed during the NRC inspection. It was determined that these particular recommendations were not critical to preventing a recurrence of a similar incident involving the pressurization of dried uranium yellowcake drums. These recommendations included items related to the inspection of the dryer temperature controls and dryer internal parts as well as recommendations with the operation of the uranium precipitation circuit, filter press, and associated process streams that generate waste water. Accordingly, because it was determined that these recommendations were not critical to preventing a recurrence of a similar incident, NRC staff noted that Uranium One could assess these recommendations in the future, and NRC would review Uranium One's actions pertaining to these recommendations at the next inspection. Uranium One intends to complete the assessment of these recommendations during the next yellowcake drying campaign which is expected to start in late September. Therefore, Uranium One expects to have the related activities, and any subsequent changes implemented for operations processes and procedures, completed by December 15, 2012.

After completion of the inspection, NRC requested (via a phone conversation with Mr. Evans on September 18, 2012) that Uranium One assess an additional potential corrective action. This request included having Uranium One obtain samples of wet and dried yellowcake to confirm that there is no free hydrogen peroxide (H_2O_2) present in the dried yellowcake going into drums. As discussed during the NRC inspection, Uranium One had collected a sample of wet yellowcake from the filter press on August 24, 2012. This sample was analyzed by Intermountain Labs (Sheridan, WY) the following day and the results indicated zero "free" hydrogen peroxide (H_2O_2) in the wet yellowcake. The filter press

process occurs prior to the storage and drying of the uranium. Therefore, given these conditions upstream of the dryer, and the fact that the yellowcake is dried at temperatures in the range of 1000 degrees F, Uranium One does not expect that any “free” hydrogen peroxide survives the drying process. This conclusion is supported by available literature pertaining to uranium processing and the chemical behavior of hydrogen peroxide. Nonetheless, this is a relatively simple condition to confirm, and Uranium One will complete additional H₂O₂ testing of both wet and dried yellowcake during the next drying campaign with sample results available by or before November 15, 2012.

NRC Required Action 4

Given that Uranium One has completed the requested investigation, identified corrective actions and implemented all required corrective actions to prevent the recurrence of a similar incident, and the NRC has conducted the required inspection, Uranium One respectfully requests that the NRC close the CAL and provide Uranium One permission to resume shipment of yellowcake drums from the Willow Creek Project.

If you should have any questions, please contact me at (307) 234-8235 ext. 333 or by email at donna.wichers@uranium1.com.

Sincerely,



Donna Wichers
President

cc: Blair Spitzberg, Linda Gersey, Robert Evans- NRC Region IV
Ron Linton- NRC Headquarters

Mr. Carl Anderson, Administrator
Wyoming Department of Environmental Quality
Solid and Hazardous Waste Division
122 West 25th Street
Cheyenne, Wyoming 82002

Ms. Nancy Nuttbrock, Administrator
Wyoming Department of Environmental Quality
Land Quality Division
1122 West 25th Street
Cheyenne, Wyoming 82002