

July 20, 2012

via email and FedEx

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

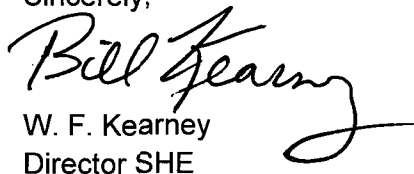
RE: Source Materials License SUA-1341, Docket Number 040-08502  
Willow Creek Uranium Project  
NRC Inspection Report 040-08502/12-001- Reply to Notice of Violation

Dear Sir/Madam:

On April 16-18, 2012 the NRC conducted an "announced routine" inspection at the Willow Creek Project. As described in the Inspection Report and Notice of Violation dated June 20, 2012, two violations of NRC requirements were identified. The violations were identified as Severity Level IV, which are characterized as less serious, but more than a minor concern.

Attached, please find Uranium One USA, Inc.'s response to the Notice of Violation. If you have any question, or need additional information, please contact me at (307) 233-6329.

Sincerely,



W. F. Kearney  
Director SHE

Cc Elmo E. Collins Regional Administrator, NRC Region IV  
Linda Gersey, NRC Region IV  
Nancy Nuttbrock, Administrator, WDEQ-LQD  
Donna Wichers- SVP Uranium One USA, Inc.  
Barry Koch- Mine Manager  
Larry Arbogast- RSO  
Tim McCullough- Manager Site SHE

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RHNIR

## **Reply to Notice of Violation**

### **Violation A**

10 CFR 20.1501 (a)(2)(i) states, in part, that the licensee shall make or cause to be made, surveys that are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels.

Contrary to the above, on April 16, 2012, the licensee failed to survey Precipitation Tank Number 3 in the Central Processing Plant, to evaluate the magnitude and extent of radiation levels. On this date, the inspector determined that the radiation level near the Precipitation Tank Number 3 was 0.05 milliSieverts per hour (5 millirem per hour) at 30 centimeters from the tank surface, making it a radiation area as defined by 10 CFR 20.1003.

Additionally, contrary to the above, on April 16, 2012, the licensee failed to perform surveys in Module 8-1 to evaluate the magnitude and extent of radiation levels. Specifically, the inspector determined that the radiation level at 30 centimeters from a bag filter in Module 8-1 was 0.08 milliSieverts per hour (8 millirems per hour), making it a radiation area as defined by 10 CFR 20.1003.

### **Reason for Violation**

In accordance with the approved Radiation Protection Program, Uranium One conducts gamma radiation surveys at the Irigaray Plant. The gamma radiation surveys conducted at the precipitation tank area did not show levels above 0.05 milliSieverts per hour (5 millirem per hour) prior to the April 16, 2012 survey conducted by NRC.

It should be noted that it was not possible to verify the inspector's gamma survey result at the time of the inspection or the next day. However, it was determined that during the inspection, the precipitation tank had recently been emptied. Therefore it is assumed that the observed gamma levels were the result of radon daughters in the empty tank. It has also been observed that the elevated levels of gamma radiation resulting from the radon daughters in empty tanks quickly decays to levels less than 5 millirems per hour if the tank remains empty. When the tanks are filled with process fluids (mostly water) the gamma levels are maintained well below the 5 millirems per hour limit. Accordingly, it is likely that the gamma surveys conducted by Uranium One were completed when either the precipitation tanks were full of process fluids, or the radon daughters had decayed if the tanks were empty. During routine operational periods these tanks

are typically full, or nearly full, with process fluids. Therefore, it is concluded that the elevated gamma level determined by the inspector at this tank was likely not a routine occurrence, and is very transient in nature.

Uranium One conducts gamma radiation surveys at the wellfield module buildings, including the Module 8-1 building, on at least a quarterly basis. The gamma level measurement frequency at the Module 8-1 building had been changed to a monthly basis in March 2012 as gamma levels were observed to be slightly above the administrative action level of 0.02 milliSieverts per hour (2 millirem per hour) at 0.024 milliSieverts per hour (2.4 millirem per hour). Uranium One gamma survey results did not identify gamma levels greater than 5 millirems per hour at the Module 8-1 building that would have required posting as a Radiation Area. Similar to conditions observed at the Irigaray plant precipitation tanks, it was determined that the conditions observed by the inspector were the result of radon daughters. In this case, the radon daughters are attached to bag filters that were just removed from their filter pods. It has been determined that the elevated gamma levels associated with the sock filters only last for approximately 3-4 hours due to decay of the radon daughters. Accordingly, due to the relatively short duration of this condition, Uranium One did not observe the elevated gamma levels during the routine gamma surveys.

### **Corrective Steps Taken**

The frequency of gamma surveys at the precipitation tank area was increased to a weekly basis after the inspection (from April 16, 2012 to July 15, 2012) to better understand gamma level fluctuations at this area. These additional surveys of the precipitation tank area indicate the highest gamma level measured in this area was 0.038 milliSieverts per hour (3.8 millirem per hour). None the less, due to the gamma survey result obtained by the inspector and the apparent transient nature of conditions at these tanks, they have been posted as a Radiation Area.

The frequency of gamma surveys at wellfield module buildings was increased to a weekly basis after the inspection (from April 16, 2012 to July 15, 2012) to better understand gamma level fluctuations at this area. These additional surveys conducted in the module buildings sporadically showed gamma levels at or above the 0.05 milliSievert per hour (5 millirem per hour) and the door entrances to these buildings have been posted as a Radiation Area as defined in 10 CFR 20.1003.

### **Date Full Compliance Will be Achieved**

Full compliance with the requirement as stipulated in 10 CFR 20. 1003 was achieved the week of May 13, 2012 when both areas were posted as Radiation Areas.

### **Violation B**

10 CFR 20.1301 (a)(2) states, in part, that each licensee shall conduct operations so that the dose in any unrestricted area from external sources does not exceed 0.02 milliSieverts (2 millirem) in any one hour.

Contrary to the above, on April 16, 2012, the licensee failed to maintain doses in an unrestricted area less than 0.02 milliSieverts (2 millirems) in any one hour. Specifically, the inspector determined that the dose in an unrestricted area, adjacent to Module building 8-1, was 0.03 milliSieverts (3 millirems) per hour. Additionally, the inspector determined that the dose in an unrestricted area adjacent to an enclosed truck bed trailer, being used as storage for full yellowcake drums, was 0.03 milliSieverts (3 millirems) per hour.

### **Reason for Violation**

Uranium One was conducting gamma radiation surveys inside the Mine Unit 8 module buildings on a monthly basis since March 2012. However, gamma surveys were not conducted outside of the module buildings or the yellowcake trailer, as Uranium One was not aware of NRC's interpretation of their policy concerning "dose to the public" concerns for locations within the Controlled Areas of the project.

### **Corrective Steps Taken**

A fence has been installed on the outside of the module buildings to restrict access to the side of the buildings where the bag filters are located to prevent a "dose to the public" in a Unrestricted Area to gamma radiation greater than 0.02 milliSieverts (2 millirems) in any one hour. The fencing has been posted with "Restricted Area" signs. The fence is approximately four feet out from the side of the buildings. Weekly gamma surveys taken since the inspection at the fences verify gamma levels at the fence boundary meet the requirements of 10 CFR 20.1301(a)(2) of less than 2 millirems in any one hour.

A removable fence was also installed around the yellowcake trailer. The fencing has been posted with "Restricted Area" signs. The fence is approximately four

feet out from the sides of the trailer and runs the length of the tractor and trailer with a locked gate at the front. The fence is far enough from the trailer to prevent a gamma dose from the trailer to exceed 0.02 milliSieverts (2 millirems) in any one hour.

**Date of Full Compliance Will be Achieved**

Full compliance with the requirement as stipulated in 10 CFR 20. 1301(a)(2) was achieved the week of May 20, 2012 when fencing and posting of Restricted Area signs was completed.