



January 11, 2018

Ron Linton/Project Manager
U.S. NRC
Office of Nuclear Material Safety and Safeguards
MS T-8F5, 11545 Rockville Pike
Rockville, MD 20852

SUBJECT: Uranium One USA, INC Response to NRC Comments to License Conditions 9.8 and 9.12 of Materials License SUA-1341 (ELECTRONIC SUBMITTAL ONLY)

Ron,

Thank you for the review of our submittal dated August 8, 2014 related to a revised contamination control program, designee qualifications and training programs. Uranium One would like to offer the following response to the November 6, 2017 and September 28, 2017 letters regarding NRC comments to the LC 9.12 and License Condition 9.8.

If you have any questions concerning this submittal please contact by phone at (307) 233-6330 or email at scott.schierman@uranium1.com.

Best Regards,

A handwritten signature in blue ink, appearing to read 'Scott Schierman', with a stylized flourish at the end.

Scott Schierman,
HSE Manager
Uranium One Americas.

Uranium One Responses to NRC Comments from November 6, 2017

License Condition 9.8 Contamination Control Plan

II NRC Staff Evaluation of Uranium Ones' Response

- 1) **NRC Comment:** But as stated in the first sentence of the fourth paragraph of LC 9.8, "Regulatory Guide 8.30 (as revised), Table 2, shall apply to the removal of equipment, materials, or packages that have the potential for accessible radiological surface contamination levels above background to unrestricted areas". Thus, Table 2 of Regulatory Guide 8.30 contains the applicable standards, and the required standard under the license condition, for the transfer of potentially contaminated material through unrestricted areas onsite.

Uranium One Response: *Uranium One is in agreement that the first sentence of the fourth paragraph of license 9.8 states "Regulatory Guide 8.30 (as revised), Table 2, shall apply to the removal of equipment, materials, or packages that have the potential for accessible radiological surface contamination levels above background to unrestricted areas". Uranium One was of the understanding based on the discussion during the License Renewal Process and statements in Section 5.6 of the Safety Evaluation Report that the proposed license condition shall conform to the requirements of 10 CFR Part 20, Subpart I and 10 CFR 71.5 and Uranium One could propose a Contamination Control Plan that conformed to these requirements and was not limited to compliance with Regulatory Guide Table 2 only.*

Uranium One proposed to transport potentially contaminated equipment or materials using the requirements listed for 49 CFR 173.421 Excepted Packages for limited quantities of Class 7 (radioactive) materials as specified in 49 CFR 173.443(a) Table 9 for low toxicity alpha emitters.

In an effort to move this issue forward Uranium One agrees to follow the limits specified in "Regulatory Guide 8.30 (as revised), Table 2 for the removal of equipment, materials, or packages that have the potential for accessible radiological surface contamination through unrestricted areas onsite.

- 2) **NRC Comment:** The licensee stated it would nonetheless adopt, for purposes of its contamination control program, DOT standards for excepted packages containing instruments or articles. But contrary to the licensee's assertion, the regulations in 10 CFR 71.5(a) provide that each licensee who transports licensed material outside the site of usage, as specified in the NRC license, shall comply with the applicable requirements in DOT regulations 49 CFR parts 107, 171 through 180, and 390 through 397, appropriate to the mode of transportation. Further, 10 CFR 71.5(b) requires the licensee to conform to the DOT standards and requirements specified in 10 CFR 71.5(a) even if DOT regulations are not applicable to a shipment of licensed material (for example, because the shipment occurs only on private roadways).

Uranium One Response: *Uranium One would like to clarify that 10 CFR 71.5(a) Transportation of Licensed Material applies to licensee's that transport licensed materials outside of site usage as specified in the NRC license. Please note that Section 3.1 Site Description and Facilities Layout of the approved License Renewal Application (LRA), figure 3.1 depicts the Mine Permit Boundary for the Christensen Satellite Facility and associated wellfields. Please note that outside of site of usage is not a defined term under 10 CFR 71 and activities conducted within*

the permit boundary could be considered site of usage as specified in the NRC license. If the permit boundary is considered as the point of site usage, 10 CFR 71.5(a) would not be applicable until the licensee was transporting materials outside the permit boundary as represented in the LRA for the Christensen and Irigaray Facilities. Transportation from the wellfield of potentially contaminated wellfield equipment or materials back to the Christensen Satellite facility does not have to access any public roadways or leave the Mine Permit Boundary as shown in the LRA. Based on the above discussion Uranium One does not believe that 10 CFR 71.5(a) or (b) are applicable until licensed materials are transported outside of the site of usage specified in the NRC License which is the Mine Permit boundary. Therefore, DOT regulations 49 CFR parts 107, 171 through 180, and 390 through 397, are not applicable until licensed materials are transported outside the site of usage or Mine Permit boundary specified in the license renewal application.

- 3) **NRC Comment:** Uranium One's proposed standards in lieu of using Regulatory Guide 8.30, Table 2, are adopted from 49 CFR 173.424, Excepted packages for radioactive instruments and articles." A radioactive instrument or article, as defined in 49 CFR 173.403, means any manufactured instrument or article such as an instrument, clock, electronic tube or apparatus, or similar instrument or article having Class 7 (radioactive) material in a gaseous or non-dispersible solid form as a component part.

Uranium One Response: *Uranium One disagrees with NRC statement that the proposed standard in lieu of using Regulatory 8.30, Table 2 were adopted from 49 CFR 173.424, Excepted packages for radioactive instruments and articles". Reference to 49 CFR 173.424 was utilized to limit the excepted package contents to no more than 15g of U-235 rather than the unlimited quantity specified for natural uranium in the A₂ value of 49 CFR 173.435. Contamination values listed in Table 4 of 173.425, are applicable to instruments, articles, and **limited quantities** subject to exceptions under 173.421 and 173.424.*

Uranium One to move this issue forward is no longer requesting standards in lieu of Regulatory Guide 8.30, Table 2 and will comply with contamination levels as specified in Regulatory Guide 8.30, Table 2 as specified in the fourth paragraph of LC 9.8.

- 4) **NRC Comment:** In addition, in its proposed Contamination Control Program, the licensee did not specify, in accordance with paragraph 5 of LC 9.8, its education, training and experience criteria, in addition to general radiation worker training, for designees who perform surveys in accordance with the proposed revised Contamination Control Program.

Uranium One Response: *Uranium One is in agreement with NRC that it did not specify, in accordance with paragraph 5 of LC 9.8 its education, training and experience criteria, in addition to general radiation worker training, for designees who perform surveys in accordance with the proposed revised Contamination Control Program. Uranium One considered the training specified for resin truck surveys comparable for designees performing surveys for equipment transferred from wellfield back to the satellite or Irigaray facilities for storage or disposal.*

Uranium One proposes to use the following for education, training and experience criteria for designees performing surveys as part of the Contamination Control Plan to address NRC comments.

The use of designee(s) in conducting radiological surveys for the transport of potentially radiologically contaminated materials between the wellfields and satellite facility is the primary focus of this document.

The Uranium One RSO will qualify operations personnel as designated individuals that are deemed qualified to perform surveys of potentially contaminated materials transported between licensed facilities. Transportation of the potentially contaminated materials between the wellfield and satellite or Irigaray facilities is performed on private roadways in which access is granted by the land owner. Before designated personnel may conduct radiological surveys, he must qualify through training and proper experience. In addition to the annual radiation worker training required by Section 5.5 of the approved License Renewal Application (“LRA”), the operator must receive training specific to the task of radiological surveying. Proficiency will be demonstrated through the use of testing and task observation.

At a minimum, personnel seeking “qualified designation” or equivalent must have the following combination of education, training, and experience.

Education: *A high school diploma or equivalent or relevant experience working in a uranium recovery facility. RSO will determine relevant experience necessary to perform this task on a case by case basis. NRC Regulatory Guide 8.31 allows for work experience to qualify an individual as RSO with 2 years of work experience being the equivalent of 1 year of college.*

Uranium One considers a person as having experience equivalent to a high school diploma as the following:

- *Successfully completed 8 hours of OSHA and new employee radiation safety training and demonstrated proficiency initially and annually thereafter. New hire training is detailed in the Site Industrial Safety and Health Plan for Willow Creek as well as Section 5.5 of the License Renewal Application.*
- *Completed and demonstrated understanding of operators training for the job task assigned at the Willow Creek facility. Typically, this will take an operator three months to complete before supervisor will sign-off operator as being qualified. This will vary with personnel and job duties and is at the supervisor and mine manager’s determination;*
- *Successfully completed training and demonstrated proficiency for performing Contamination Control Program, Resin Truck Surveys, Designated Operator training or other specialty training needed to complete job assignments;*
- *Successfully completed DOT and Site Specific Hazardous Materials Training initially and every three years;*

- *Successful completion of specialty training as required by job description, (this could include obtaining Commercial Driver's License CDL hazardous materials certification, forklift training etc.)*

Training: *New employee radiation safety training as specified in Section 5.5 of the LRA, and additional training specific to contamination control program at Uranium One ISR facilities. Specific training and proficiency requirements necessary to perform the Contamination Control Program are included below.*

Experience: *A minimum of three months work experience in operations or maintenance at a uranium recovery facility, a basic knowledgeable of health physics, industrial safety and industrial hygiene practices used to maintain radiological levels ALARA.*

Radiological Survey Training

The training program for designated radiological survey for transport of wellfield potentially radiologically contaminated materials survey personnel will cover critical items necessary for personnel to perform required surveys. Retention and proficiency of training will be demonstrated through the use of worksheets and quizzes. On quizzes and worksheets, a proficiency of at least 80% is required in order to perform tasks, Training will be in addition to required radiation training and will cover the following topics:

- *Radiation fundamentals*
 - *Radioactive Decay*
 - *Radioactive Contamination*
 - *Forms of Decay*
 - *Ionizing vs. Non Ionizing Radiation*
- *Instrumentation*
 - *Operation*
 - *Care/Maintenance*
 - *Calibration*
 - *Response Checks*
 - *Efficiency*
- *Survey Requirements*
- *Documentation*
- *NRC and DOT requirements*
 - *Limits*

Task Observation

Qualified Designees will demonstrate competency in performing contamination control surveys through the use of task observations. Prior to becoming a qualified designee, personnel will observe the RSO or RST survey of potentially contaminated materials being transported from the wellfield to the satellite or Irigaray facilities. The trainee will demonstrate proficiency by performing a contamination survey to the satisfaction of the

RSO or RST present to observe the task. The RSO will sign a task training form that documents the trained personnel have demonstrated competency. Additionally, within 6 months after the first RSO sign off, the qualified designees will be observed again to demonstrate retention of training. Records of training and task training will be maintained on site for each qualified designee authorized to conduct contamination control surveys.

To remain authorized as a qualified designee for contamination control surveys, the qualified designee will attend and successfully complete an abbreviated refresher training every 2 years. In addition to the refresher qualified designees will undergo task observations annually to demonstrate continued proficiency by the RSO or RST. Demonstration of these task observations will be maintained on site.

Justification

The above mentioned training program ensures that contamination control surveys are performed in accordance with regulatory requirements. This designation is solely used to designate individuals to release contamination control surveys to transport potential radiologically contaminated from the wellfield to the satellite or central processing plant for storage or disposal. A qualified designee for contamination control surveys will not be given authority to release any item, object, or equipment for unrestricted/unconditional use.

III Further Observations:

NRC Comment: The staff believes noted inconsistencies could be clarified, for example, by revising the references in the first paragraph of Condition 9.8 to “unrestricted use” instead of “from restricted areas.”

Uranium One Response: *Uranium One is in agreement with this change and would propose that the first paragraph of License Condition 9.8 be modified to read as follows:*

- 9.8 *Release of surface contaminated equipment, materials, or packages for unrestricted/unconditional release shall be accordance with the NRC guidance document “Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material,” dated April 1993 (ADAMS Accession No. ML003745526) (the Guidelines) or suitable alternative procedures approved by NRC prior to any such release.*

NRC Comment: Similarly, the fourth paragraph could be revised, for example, to clarify that Regulatory Guide 8.30 applies to the release of equipment, materials, or packages to unrestricted areas within the licensed boundary. Release of these materials outside the licensed area, and beyond the licensees control, would be considered release for unrestricted use subject to the requirements of the first paragraph of LC 9.8.

Uranium One Response: *Uranium One is in agreement with the changes to paragraph 4 to LC 9.8 while transporting potentially contaminated equipment, materials, or packages (ie pumps, valves, piping, filter, etc) from wellfield areas (restricted or controlled areas) through unrestricted areas. Uranium One would propose to modify the fourth paragraph of LC 9.8 as follows:*

Regulatory Guide 8.30 (as revised), Table 2, contamination limits shall apply to the transportation of potentially contaminated equipment, materials or packages from wellfield areas through unrestricted areas within the licensed boundary (site of usage). Packages release for unrestricted/unconditional release shall be in accordance with NRC guidance document “Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material,” dated April 1993 (ADAMS Accession No. ML003745526) (the Guidelines) or suitable alternative procedures approved by NRC prior to any such release.

Uranium One Responses to NRC Comments from September 28, 2017

License Condition 9.12 Designee to Conduct Daily Inspection

NRC Comment: Please provide a revised program description for the qualification, experience, and training of designees other than an RSO or HPT who perform daily visual inspection that addresses the following deficiencies identified in Table 1.

- a) Regarding the minimum education requirements for a designee candidate, the minimum standard is a high school diploma or equivalent. In this context, equivalent education means General Educational Development (GED), high school equivalent certificate, or equivalent level of education. The NRC staff has not accepted work experience in lieu of the minimum education requirement.

Uranium One Response: *From discussion during a PM to PM meeting Uranium One was to propose an alternative criteria of work experience and training that is equivalent to a high school diploma. Uranium One has limited operations personnel for each 12 hour shift and may have only one person available to perform an inspection. Operations personnel are not required to have a high school diploma as qualifications to be an operator at the wellfields, satellite plant or Irigaray Facility. Uranium One Human Resources does not track if site operations personnel have a high school diploma. NRC Regulatory Guide 8.31 allows for work experience to qualify an individual as RSO with 2 years of work experience being the equivalent of 1 year of college. Surely work experience/training should be allowed to demonstrate equivalence for a high school diploma.*

Uranium One proposed that a person having experience/training as listed below would be considered equivalent to a high school diploma:

- *Successfully completed 8 hours of OSHA and new employee radiation safety training and demonstrated proficiency initially and annually thereafter. New hire training is detailed in the Site Industrial Safety and Health Plan for Willow Creek as well as Section 5.5 of the License Renewal Application.*
- *Completed and demonstrated understanding of operators training for the job task assigned at the Willow Creek facility. Typically, this will take an operator three months to complete before supervisor will sign-off operator as being qualified. This will vary with personnel and job duties and is at the supervisor and mine manager's determination;*
- *Successfully completed training and demonstrated proficiency for performing Contamination Control Program, Resin Truck Surveys, Designated Operator training or other specialty training as needed to complete job assignments;*
- *Successfully completed DOT and Site Specific Hazardous Materials Training initially and every three years;*

- *Successful completion of specialty training as required by job description, (this could include obtaining Commercial Driver's License CDL hazardous materials certification, forklift training etc.)*

- b) Regarding designee training, the minimum standard includes at least observations of 5 daily visual inspection performed by the RSO or RST, and 4 daily visual inspections performed by the trainee without the direct supervision by the RSO, or HPT, but which are assessed by the RSO or HPT as part of the designee's training.

Uranium One Response: *Uranium One commits to performing 5 observed daily visual inspections and 4 daily visual inspections performed by the designee without direct supervision but evaluated by the RSO or HPT.*

- c) Regarding the maximum duration of performance by a qualified designee, the standard is that this duration is not more than 4 days during specified holidays, as stated in Table 1.

Uranium One Response: *This was discussed during the December 12, 2017 PM to PM discussion and determined that 4 consecutive days during holiday periods and 3 consecutive days would be appropriate for the current work schedule. Uranium One currently is on a 4-day work schedule for non-operations staff and during holiday periods a designee could perform 4 consecutive inspections when the RSO or HPT are absent. During a normal week the designee will perform up to 3 consecutive inspections on a routine basis.*

- d) Regarding designee requalification training, the standard includes a written examination with a minimum passing grade of 80%.

Uranium One Response: *Uranium One commits to the designee requalification training including a written examination which the designee must achieve a passing grade of 80%.*

- e) Regarding the timeliness of RSO or HPT review of designee daily visual inspection checklists, the standard is that the checklist is reviewed and signed off by the RSO or HPT by close of business on the day the RSO or HPT returns to work.

Uranium One Response: *Uranium One commits to review of the designee daily visual inspection by the RSO or HPT by close of business on their day of return to work.*

- f) Regarding availability of the RSO or HPT during times the designee is performing daily visual inspections, the RSO or HPT must be available by telephone or equivalent means of communication.

Uranium One Response: *Page 2 Paragraph 4 of the Designee Inspection Program states; In the event of an emergency the on-call RSO or RST will be responsible for decisions regarding radiological issues. All plant personnel have access to the RSO and RST home and or cell phone numbers. Discussions during the December 12, 2017 PM to PM meeting indicated the on-call reference addressed the concern that the RSO or RST were available by telephone or equivalent means of communication.*