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August 8, 2014

Mr. Ron Linton, Project Manager
Decommissioning & Uranium Recovery Licensing Directorate
Division of Waste Management & Environmental Protection
Office of Federal & State Materials & Environmental Management Programs
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Mail Stop T7-E18
Rockville, Maryland 20852-2738

Re: License Condition 9.8 and 9.12, Materials License SUA-1341

Dear Mr. Linton:

In response to your letter of June 3, 2014 please find the requested information as required by License Condition 9.8 and 9.12. Uranium One is providing within this submittal the following documents:

- Contamination Control Plan for NRC review and written verification as stipulated in License Condition 9.8 provided in Attachment 1.
- Training used Qualify Operations Personnel to perform the Daily Inspection in the temporary absence of the Radiation Safety Officer ("RSO") or Radiation Safety Technician ("RST") is being submitted to NRC for review and written verification as specified by License Condition 9.12 provided in Attachment 2.
- Description of training utilized to qualify site personnel to perform radiological surveys for transportation of resin trucks using personnel other than the RSO or RST is being submitted to NRC for review and verification as required by License Condition 9.12 provided in Attachment 3.

If you have any questions or need further information in regards to this matter please contact by email at scott.schierman@uranium1.com or by phone (307) 234-8235 ext. 330.

Sincerely,

Scott Schierman
Sr. Health Safety and Environmental Specialist

cc: Jon Winter
Tim McCullough
Ryan Schierman

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Attachment 1

Contamination Control Plan

Uranium One Americas, Inc.
Contamination Control Program

I. Purpose:

License Condition 9.8 of SUA 1341 calls for Uranium One to develop a written Contamination Control Plan. This Contamination Control Plan is intended to provide an overview of Uranium One's expectations, on how the company handles equipment, materials, and tools that are potentially contaminated with natural uranium radioactive materials from the in-situ recovery (ISR) mining process. The purpose of the plan is to ensure that the handling and movement of contaminated equipment, from and to wellfield areas and the Satellite facility, does not result in the uncontrolled release and contamination of non-operational (unrestricted) areas within the license area. The implementation of the program will assist in the control of contamination and maintain exposures As Low as Reasonably Achievable (ALARA)

II. Definitions:

Restricted Area - an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials. At the Willow Creek facilities the Christensen Satellite Plant, Irigaray Central Processing Plant, wellfield modular buildings, and ponds are considered Restricted Areas. Wellfield Modular Buildings are considered restricted due to the potential for elevated gamma levels and are posted as a "Radiation Area" as required in 10 CFR 20.

Radiation Area - an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent of 0.005 rem (5mrem) in one hour. At the Willow Creek facility areas typically posted as "Radiation Areas" result from elevated external radiation levels associated with stored yellowcake, certain process tanks, and filtration systems.

Controlled Area - an area, outside a restricted area but inside the site boundary, access to which can be limited by the licensee for any reason. Controlled areas at Willow Creek reside within fenced boundaries, such as wellfields, with access points conspicuously posted "Any Area Within This Facility May Contain Radioactive Material".

Unrestricted Area - an area, access to which is neither limited nor controlled by the licensee. At the Willow Creek facility areas between wellfield and/or Satellite Facility that are not specifically fenced by Uranium One are considered unrestricted and non-operational areas.

Contaminated Equipment - Equipment or materials that have been potentially exposed to ISR licensed materials and could have radiological contamination present above background levels.

Conditional Release - The release of radioactive material for use outside a restricted area under strict controls and conditions.

Contamination - The disposition of radioactive material in an undesired area.

Contamination Fixed - Contamination that is trapped within the matrix of the material.

Surface Contamination - Contamination that can be removed from the surface of the material.

Survey - an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other source of radiation. A survey can be a visual assessment of potential surface contamination resulting from contact with ISR mining fluid which contains uranium. When appropriate, such an evaluation includes physical survey of the location or radioactive material and measurement or calculation of levels of radiation, or concentrations or quantities of radioactive material present. A physical survey for the location and concentration of radiation levels present on equipment/material will be performed for items released for unrestricted use.

III. Contamination

Uranium One has developed the Contamination Control Plant to provide guidance to site personnel with the performance of their daily activities and ensure the proper implementation of control practices to limit the spread of radiological contamination to uncontrolled areas at the Willow Creek license area as an ALARA measure.

NRC regulations require that materials and equipment potentially contaminated with radioactive material at controlled or restricted areas, be surveyed for contamination prior to unrestricted release from the control of the licensee to ensure that radioactive contamination release levels are not exceeded.

Uranium One considers all equipment that may come in contact with ISR uranium production fluids as radiologically contaminated unless a physical survey has been conducted. Material will be considered free of contamination only after surveys demonstrate otherwise. Surveys for unrestricted release are only performed by an RST or RSO. The alpha survey is the primary survey method used to determine surface radiological contamination from at ISR operations. The beta-gamma survey is also used to identify contaminated material. The beta-gamma survey is especially important when the equipment or material requiring release is of an irregular shape(s) and does not readily allow scanning with an alpha detector, or the potential contamination could be covered by an alpha absorbing material such as dust, dirt, or paint.

Equipment and material(s) must meet NRC established limits, as specified in the 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, before it can be released offsite for unrestricted use. Standard Operating Procedure (SOP) HP-10 Equipment or Materials Released to Unrestricted Areas outlines the steps in determining if given materials meet these standards. For equipment or material that are to remain within the control of the licensee and is intended to remain within the controlled or restricted areas of the licensed boundary a conditional release may be performed.

IV. Conditional releases

Conditional releases are used to transport potentially contaminated equipment or materials outside a controlled or restricted area to another controlled or restricted area. In this transfer of potentially contaminated materials from one location to the next it may be necessary to travel through unrestricted areas that may have access by other personnel that would be considered general members of the public. Unrestricted roadways at the Willow Creek are private roadways in which Uranium One does not control access. No standards exist for the transfer of potentially contaminated material between restricted/controlled areas; therefore Uranium One will use DOT regulations for excepted packages when transferring potentially contaminated material. While DOT regulations are not applicable for private roads, it is Uranium Ones position that the DOT criteria for contamination control would be protective for members of the general public that could have landowner permission to travel private roadways which would meet the definition of an unrestricted area as defined in this document.

DOT regulations outline the limits for excepted packages, which should be adequate to prevent the spread of contamination to these private roadways. Uranium One will adhere to the uranium criteria as found within the DOT regulations. Analysis conducted on wellfield lixiviant indicates uranium makes up roughly 97% of the radioactivity and is the primary contamination source of our process solutions. Excepted packages can contain no more than 15g of U-235. Natural uranium contains 0.7

% U-235, and therefore to meet the 15g limit, 2134 grams of natural uranium as contamination could be present. The likelihood 2134g of natural uranium adhering to any equipment or materials in the wellfield is very unlikely. Therefore all materials leaving the wellfield will be considered an excepted package.

Additionally for conditional releases of materials all visible removable contamination will be removed or materials will packaged to prevent contamination from surface contamination. It is Uranium One's position that DOT limits will be sufficient to prevent spread of contamination during transportation of materials across unrestricted areas using the conditional release criteria. The limits for these packages are 22,000dpm/100cm^2 for low toxicity alpha emitters. Low toxicity alpha emitters are defined in 10 CFR 71.4 "as natural uranium, depleted uranium, natural thorium, uranium-235, uranium-238, thorium-232, thorium-228 or thorium-230 when contained in ores or physical or chemical concentrates or tailings; or alpha emitters with a half-life of less than 10 days".

As part of the restriction on conditional releases potentially contaminated material must remain in control of the licensee until it has reached its destination. Once the material is loaded it will go to the desired location and will be unloaded within Uranium One's controlled or restricted areas. Stored materials will remain in these areas until a physical survey is performed which verifies material meets unrestricted release criteria or it is disposed of as 11e.2 byproduct material.

Conditional releases apply to materials in the wellfield and modular buildings that come into contact with ISR uranium production fluids. In the modular buildings contaminated materials include but are not limited to wellfield pumps, valves and flow meters, tools, filters, filter canisters, booster pumps, floor grates, basement floor surfaces, and possibly inside walls/roofs of the buildings. In the wellfield materials that have the potential to become contaminated include but are not limited to wellfield pumps, piping utilized for production and injection wells, valves, electrical cables and wires used to power pumps, and well casing.

When handling potentially contaminated materials the following controls have been created to limit the potential spread of contamination. Employees who handle potentially contaminated materials will wear the appropriate PPE for the task. At a minimum, this includes the use of gloves suitable for the conditions. Wet material such as filters, pumps, and valves that have come in to contact licensed material (uranium bearing solutions) will be bagged or placed into a container to minimize the potential spread of contamination. Other materials such as piping and casing will be capped to prevent the potential spread of contamination. Typically contamination is found on the inside surface of pipes and casing; which are the areas that are in contact with the solution. Tools utilized by wellfield personnel that may have contamination will be placed within the tool box of the wellfield vehicles. Prior to placement of tools into the tool box a visual inspection for loose contamination will be conducted. The tool box will be utilized to contain and minimize potential spread of contamination. Electrical cables/wires used to power pumps in production wells are typically only slightly contaminated and can be placed directly in the truck bed. The above containment practices in conjunction with the use of dedicated trucks that do not routinely leave the site will minimize potential spreading of contamination. Visual inspections will be conducted and documented by the Radiation Safety Department to ensure contamination control practices are being followed.

All trucks used for conditional release purposes will be equipped with a radio in case of an accident. In the event of an accident involving transportation of conditional release materials the Radiation Safety Department and the Supervisor will be notified immediately. If injuries are involved treatment of injured individuals take precedence over radioactive control measures. The RSO or designee will investigate the incident and assess if there was any spread of contamination, and if cleanup is required. The RSO or designee will document these activities in an incident report which will be maintained on site.

V. Characterization of Potentially Contaminated Material

As described above material being transported as a conditional release have surface contamination requirements along with dose rate requirements. Once the material is in the truck loaded in the truck, the truck becomes the package. Contaminated material will only be loaded in designated trucks. Initially trucks containing potentially contaminated material will be surveyed to demonstrate that the package, is below 22,000 dpm/100cm^2 and 0.5 mr/hr. Once it is shown that packages meet this criteria truck beds utilized to transport potentially contaminated materials will be surveyed quarterly to demonstrate that the conditional release criteria is still being met. Uranium One will conduct alpha surveys, by the Radiation Safety department, on a quarterly basis for toolboxes and vehicles. Any tools or vehicles with alpha contamination levels above those outlined for conditional releases will be investigated by the RSO.

Wellfield personnel entering modular buildings or handling equipment or materials with the potential to have radiological levels above background from licensed activities are required to perform an alpha contamination survey upon return to Satellite Facility or alpha survey at a location at the wellfield as provided. Quarterly spot alpha surveys will be conducted by the Radiation Safety Department to observe and document employee practices and assess contamination levels on clothes.

On a quarterly basis the Radiation Safety Department will perform and document results of the spot checks performed on designated vehicles utilized to perform conditional releases to ensure that all the elements of the Contamination Control Plan are being carried out as required.

VI. Training

All employees will be given radiation training as specified in Section 5.5 of the LRA. The Contamination Control Plan will be included as part of the training. Additionally the Contamination Control Plan will be included as part of the annual radiation training refresher for all site personnel. Proficiency of training will be demonstrated through a written exam and task observations.

VII. Conclusion

The Contamination Control Plan allows for material to move between restricted or controlled areas to other restricted or control areas. Using the contamination criteria as outlined will minimize the potential spread of contamination, exposures to the public, and minimize potential impacts to the environment. The program will be reviewed on an annual basis to determine if the program is adequately achieving its intended purpose.

Attachment 2

Training for Operations Personnel to Perform Daily Inspection

Qualified Designated Operator Daily Inspections

Uranium One Qualifications to Conduct Daily Walkthrough Inspections

Regulatory Guide 8.31 stipulates that daily walk-through (visual) inspection be conducted by the Radiation Safety Officer ("RSO") or designated Radiation Safety Technician ("RST"). In the Uranium One license renewal application, Uranium One states that the RSO or qualified designee conducts the daily documented walk-through inspections of the plant.

NRC has required in License Condition 9.12 that Uranium One shall describe in an SOP the training provided and procedures used by the RSO designate to conduct daily inspections in the temporary absence of the RSO or RST. From discussion held with NRC during a public meeting on May 27, 2014 NRC clarified that they did not intend to have Standard Operating Procedures ("SOP's") submitted to NRC for written review and approval but rather the program used qualify designee's other the RSO or RST to conduct the daily inspection in their absence and on weekends.

The Uranium One RSO will qualify Designated Operators to conduct daily walkthrough inspections of the plant/satellite. The Designated Operators will only conduct the inspections on weekends and holidays when neither the RSO nor RST are present. For holidays, the Designated Operator will not conduct the inspections for more than five consecutive days.

Any problems noted by the Designate Operator during the daily inspection will be recorded on the inspection form, signed, dated, and retained on file. The RSO will review the inspection forms and take the appropriate action to correct the noted problems or ensure the identified problem has been corrected.

Before a Designated Operator may conduct such inspections, he must be qualified by reason of training and experience to observe proper implementation of good radiation safety practices. In addition to the annual radiation worker training required by Section 5.5 of the approved License Renewal Application ("LRA"), the operator seeking to be qualified to conduct daily inspections must complete training specific to daily inspections. The additional training will emphasize housekeeping and working conditions as they relate to employee safety and contamination control. Proficiency will be demonstrated through the use of testing and observed task training

At a minimum, the operator seeking designation 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 review and approve on a case by case basis.
>
> **Training:** New employee radiation safety training as specified in Section 5.5 of the LRA, and additional training specific to conducting daily inspection at Uranium One ISR facilities. In addition the Designated Operator will need to demonstrate proficiency to the RSO for conducting daily plant/satellite inspections. Specific training and proficiency requirements to perform the daily inspection are included below.

Attachment 3

Training for Resin Truck Surveys Operations Personnel

Qualified Designees to Survey Resin trucks

Uranium One Qualifications for Resin Transfer Qualified Designee

Releases of surface contaminated equipment, materials, or packages from restricted areas shall be in 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, Sources, or Special Nuclear Material," dated April 1993. Personnel performing contamination surveys for items released for unrestricted use shall meet the qualifications as health physics technician or radiation safety officer as defined in Regulatory Guide 8.31.

License Condition 9.12 states in part " The licensee will develop an SOP and specific training for personnel that do not meet the qualifications of RSO or Health Physics Technician (HPT), as defined in Regulatory Guide 8.31, as revised, that are designated to survey resin trucks leaving a restricted area and traveling to another restricted area authorized by the licensee. The SOP and training shall be submitted to the NRC for review and verification." NRC clarified in their May 27, 2014 public meeting it was not intended that Uranium One submit SOP's.

The use of designee(s) in conducting radiological surveys for the release of resin trucks between the satellite and the Irigaray processing 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 resin trucks for transportation between licensed facilities. Transportation of the resin trucks between the satellite and Irigaray processing facilities is performed on private roadways in which access is granted by the land owner. Before designated personnel may conduct resin truck radiological release 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 surveying resin trucks. 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.
>
> **Training:** New employee radiation safety training as specified in Section 5.5 of the LRA, and additional training specific to surveying resin trucks at Uranium One ISR facilities. Specific training and proficiency requirements necessary to perform the resin truck surveys 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.

Resin Shipment Training

The training program for designated resin truck shipment 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
  - Bill of Lading

In addition to training, worksheets will be used to show the designated individual is capable of correctly generating the required paperwork to meet regulatory requirements.

Resin Shipment Task Observation

Qualified Designees will demonstrate competency in performing resin truck surveys through the use of task observations. Prior to becoming a qualified designee, personnel will observe the RSO or RST survey a resin truck. The trainee will demonstrate proficiency by performing a resin truck radiological 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 to perform resin truck surveys. 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 resin truck surveys.

To remain authorized as a qualified designee for resin truck 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 resin shipments are performed in accordance with regulatory requirements. This designation is solely used to designate individuals to release resin trucks utilized to transfer resin between sites. A qualified designee for resin truck surveys will not be given authority to release any item, object, or equipment for unrestricted use.

Review of required paperwork will be done by the RSO on a weekly basis in order to ensure and demonstrate proficiency. Any deficiencies observed in paperwork will be corrected by the RSO and discussed with the qualified designee in a timely manner.