

**Garrett, Betty**

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**From:** Jon Winter (USA - Casper) [Jon.Winter@uranium1.com]  
**Sent:** Friday, July 02, 2010 2:59 PM  
**To:** Mandeville, Douglas  
**Cc:** Donna Wichers (USA - Casper); Mike Griffin (USA - Casper)  
**Subject:** Uranium One comments on Draft Materials License SUA-1596  
**Attachments:** U1 MR draft License SUA-1596 comments & cover 7.2.10.pdf

**Importance:** High

Doug, attached are our comments on the Draft Moore Ranch License conditions. If you have any questions please do not hesitate to call or email.

Jon F. Winter  
Manager Environmental & Regulatory Affairs, Wyoming

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From: "Jon Winter (USA - Casper)" <Jon.Winter@uranium1.com>

To: "Mandeville, Douglas" <Douglas.Mandeville@nrc.gov>

CC: "Donna Wichers (USA - Casper)" <Donna.Wichers@uranium1.com>, "Mike  
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Date: Fri, 2 Jul 2010 12:58:46 -0600

Subject: Uranium One comments on Draft Materials License SUA-1596

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Return-Path: Jon.Winter@uranium1.com



July 2, 2010

Douglas T. Mandeville  
Project Manager Uranium Recovery Licensing Branch  
U.S. NRC  
11545 Rockville Pike  
M.S. T8F5  
Rockville, MD 20852

RE: Uranium One comments on Draft Materials License SUA-1596 (TAC J00546)

Dear Mr. Mandeville,

Please find attached comments on the Draft Materials License SUA-1596 under cover dated June 22, 2010 and received in our office June 25, 2010. We look forward to discussing the details of the license conditions and information presented in your cover letter at our upcoming meeting on July 14<sup>th</sup>. Uranium One appreciates the opportunity to provide comments and looks forward to a timely issuance of a final License. If you have any questions please do not hesitate to contact me at 307-234-8235, ext. 331 or via email at [jon.winter@uranium1.com](mailto:jon.winter@uranium1.com).

Sincerely,

Jon Winter  
Manager: Wyoming Environmental and Regulatory Affairs  
Uranium One Americas

Encl: Comments on Draft Materials License Conditions SUA-1596

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License Condition

Comment

9.4A

Second line, it appears there should be a “the” between “in” and “application”.

The license condition states: *The licensee's determinations as to whether the above conditions are met will be made by a Safety and Environmental Review Panel (SERP). The licensee shall make such determinations prior to submitting a license amendment request to the NRC.* For changes that require an obvious license amendment, Uranium One believes that the licensee may proceed with the amendment application without performing a SERP review. These types of obvious activities would include a facility expansion, new ponds or an expansion of the License boundary. Therefore, an approved license amendment may or may not be preceded by a SERP. Uranium One requests that the condition be revised to remove the requirement to complete a SERP evaluation before submitting a license amendment request.

9.5

For surety estimates, the license condition states: *All costs will be third-party costs and documented by industry invoices or proposals.* Uranium One notes that there will not be invoices for work that has not been performed and this condition would seem to indicate that the NRC expects Uranium One to solicit proposals each year to be used in the annual update and surety revision. This language would preclude the past practice where surety estimates are prepared by the licensee or by a consulting firm based on the latest industry cost data. Uranium One notes that SUA-1341 currently requires that Uranium One “*submit supporting documentation, showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation*”. Uranium One therefore requests that the current SUA-1596 language noted above for third-party costs be replaced with the language noted from SUA-1341.

The last sentence of the license condition should read Appendix C and not Appendix E of NUREG-1569.

9.6

What is the definition of “volumetrically contaminated equipment, materials, or packages” identified in this license condition?

9.8 The license condition states: *Before engaging in any developmental activity not previously assessed by the NRC, the licensee shall administer a cultural resource inventory.* All areas identified in the License application for development have been covered by a Class III cultural resource survey which has received concurrence from the Wyoming State Historic Preservation Office. Thus, no additional surveys are required for the planned activities at the site. Final approval of additional survey work required as a result of the discovery of previously unknown cultural artifacts should be from the Wyoming State Historic Preservation Office in consultation with NRC.

9.11 What is the basis for the requirement of records of “*emergency generator use and maintenance records*”?

The statement “required by NRC regulation or this license” should be added to the end of the first sentence of this condition to make it clear that these recordkeeping requirements only apply to NRC-regulated activities.

10.1 Section 3.1.4.1 of the Technical Report states: *The project will use a carbonate/or bicarbonate recovery solution consisting of varying concentrations and combinations of sodium carbonate (Na<sub>2</sub>CO<sub>3</sub>), sodium bicarbonate (NaHCO<sub>3</sub>), oxygen, and carbon dioxide (CO<sub>2</sub>) added to the native groundwater.* The license condition may be limiting because it states the lixiviant will be “*composed of native ground water, carbon dioxide gas or sodium bicarbonate, and dissolved oxygen, as specified in the approved license application*”. To accurately reflect the application, the license condition should be revised to include sodium carbonate and “or” should be replaced with “and/or. In addition, Uranium One requests that hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) be added to this condition. It is identified in Section 1.6 of the Technical Report of the application as a potential source of the dissolved oxygen added to the lixiviant.

10.4 USNRC Regulatory Guide 8.31 (incorporated by reference in this license condition) states that an RWP shall include “*The radiological monitoring and sampling necessary before, during, and following completion of the job*” as determined by the RSO. Uranium One questions the basis for NRC requiring a “*breathing zone air sample or applicable area air sample*” for all RWPs issued under this license. RWPs are required when the potential for significant exposure to radioactive material exists and for an activity where

no standard operating procedure is available. Uranium One notes that exposure to airborne radioactivity may not always be the basis for requiring an RWP, and that not all RWPs should require an air sample. It is the responsibility of the RSO to determine if an air sample is needed to safely conduct the work during the evaluation and preparation of an RWP.

10.6 Uranium One interprets bimonthly as meaning one meeting conducted during the span of a two month period. Bimonthly could be defined as occurring every two months or as occurring twice per month. Please clarify this license condition.

10.8 The license states that SOPs are required for "*all operational activities involving radioactive and non-radioactive materials*". What is the regulatory basis for adding "and nonradioactive" to this condition when compared with current licenses including SUA-1341? Uranium One interprets the inclusion of "*non-radioactive materials*" as giving the NRC the authority to regulate all materials at Moore Ranch. Uranium One suggests striking *non-radioactive materials* from this condition.

10.9 This license condition requires testing at 125% of the maximum operating pressure, while the Uranium One NRC and WDEQ Permit to Mine applications proposed 120%. Uranium One requests that this condition be revised to remove the reference to the specific testing pressure and instead reference the applicable section of the application. An example would be SUA-1341, License Condition 10.2, which references the application. Uranium One also notes that SUA-1341 requires a test to 120% of the maximum operating pressure.

In addition, this condition allows for single point resistance testing with another approved method. Uranium One did not propose single point resistance testing and requests that this be removed from the condition.

10.10 Uranium One requests that NRC provide the criteria and regulatory guidance that will be used by NRC staff to approve wellfield data packages.

10.11

The second paragraph of License Condition 10.11 states: “Ground water shall be restored to the ground water protection standards presented in 10 CFR 40, Appendix A, Criterion 5(B)(5) on a parameter-by-parameter basis”. Uranium One suggests that “presented in” be replaced with “consistent with” since literal compliance with Criterion 5(B)(5) is not feasible as discussed below.

Criterion 5(B)(5) requires the following:

*5B(5)--At the point of compliance, the concentration of a hazardous constituent must not exceed-*

*(a) The Commission approved background concentration of that constituent in the ground water;*

*(b) The respective value given in the table in paragraph 5C if the constituent is listed in the table and if the background level of the constituent is below the value listed; or*

*(c) An alternate concentration limit established by the Commission.*

As drafted, License Condition 10.11 would indicate that NRC requires literal compliance with Criterion 5(B)(5). In the response to Request for Additional Information (RAI) item 6.1(a) submitted on October 27, 2008 (Energy Metals Corporation, 2nd Response to NRC Request for Additional Information for Moore Ranch Uranium Project Source Material License Application, Section 4-1 through Section 7-1, ADAMS accession number ML090370542), Uranium One identified several requirements of Criterion 5(B)(5) that required clarification to be applied to groundwater restoration at an in situ uranium recovery facility as follows:

- The point of compliance is defined in 10 CFR 40 Appendix A as “*the site specific location in the uppermost aquifer where the ground-water protection standard must be met*”. The restoration wells proposed in the application for measuring the effectiveness of groundwater restoration at Moore Ranch are located in the 70 Sand and do not meet this regulatory definition. Please clarify the point of compliance for Moore Ranch.
- The concentrations identified in Table 5C referenced in Criterion 5B(5)(b) are dated and have been superseded by more recent MCLs promulgated by EPA. Please clarify whether the concentrations listed in Table 5C or the current MCL under EPA regulations will be applied at Moore Ranch.

- Table 6.1-1 of the Moore Ranch Application Technical Report lists the baseline water quality parameters that are proposed to measure the effectiveness of groundwater restoration at Moore Ranch. The proposed list is more extensive than the parameters included in Appendix A Table 5C but there are a number of parameters in Table 5C that are not included in Table 6.1-1. Please clarify what parameters will be used to measure the effectiveness of groundwater restoration at Moore Ranch.

Uranium One requests that License Condition 10.11 be revised to provide clear direction on the application of Criterion 5(B)(5) to groundwater restoration at Moore Ranch.

11.3D

The construction of this condition would indicate that all four samples for all baseline and monitor wells must be analyzed for the full list of parameters in 11.3D. The Uranium One application proposed that the wellfield baseline restoration wells be sampled for the Wyoming Department of Environmental Quality, Guideline 8 parameters for the first two samples and that a reduced list be used for the third and fourth samples (i.e., removing not-detects) as discussed in section 5.7.8.2 of the Technical Report. For perimeter, overlying, and underlying monitor wells, the application proposed that the first sample be analyzed for the full Guideline 8 suite and that the remaining three samples be analyzed for just excursion parameters (i.e., chloride, total alkalinity, and conductivity). This is consistent with current licenses and is allowed in NUREG-1569. For example, Uranium One references the current baseline monitoring program approved in SUA-1341. Please revise this license condition to reflect the baseline program proposed in the application.

11.4A

Uranium One proposed one overlying and underlying monitor well on a density of one per four acres, not five. In addition, it would appear that the sampling and analysis requirements for monitor wells in this condition overlap with the sampling requirements of license condition 11.3 above and also do not reflect the proposed program. Please revise this license condition to reflect the baseline program for monitor wells proposed in the application.

11.4C

Uranium One proposed that the upper control limit (UCL) for chloride include the provision to allow setting the UCL at 15 mg/l above the average if that value was higher than the average plus five standard deviations. This is in accordance with current licenses (e.g., SUA-1341) and NUREG-1569 (Section 5.7.8.3 (2)). Please revise the license

condition to reflect the proposed method of calculating the UCLs contained in the application.

11.5 The condition states: *If the third sample does not show that the excursion criteria in (a) or (b) are present, the first sample shall be considered to be an error and the well is removed from excursion status.* Uranium One notes that the well is not technically on excursion status until two samples indicate that the UCLs are exceeded.

Criterion (b) under Excursion Monitoring would define an excursion as any sample exceeding a single UCL by 20%. This criterion is not consistent with the proposed program in the application or Section 5.7.8.3 (5) of NUREG 1569. In addition, this condition is not consistent with other licenses, such as SUA-1341. Uranium One requests that criterion (b) be removed from the license condition.

Uranium One notes that there is no section 5.7.9.6 in the application. The correct reference is 5.7.8.2.

The condition requires that the 60-day report “*contain a schedule for submitting additional reports to the NRC*”. The condition later specifies quarterly reports so it would appear that the requirement to provide a schedule for submitting additional reports is unnecessary and could be removed.

Uranium One suggests that condition 11.5 in the draft license could be replaced with the language presented in License Condition 11.2 of SUA-1341. This language is more consistent with NUREG 1569 and will make the Moore Ranch license consistent with SUA-1341. This would ease the process of combining the Moore Ranch License with SUA-1341 in the future.

11.6 This condition requires that records be maintained of spills of process chemicals. It then requires information for each spill, some of which would not pertain to process chemical spills (e.g., radiological survey results). What is the regulatory basis for requiring by license condition that Uranium One maintain records of chemical spills that do not involve radioactive materials and which are regulated by the EPA and WDEQ? Uranium One requests that “and process chemicals” be deleted from this license condition.

- 11.7 The language in this condition should reference the proposed airborne monitoring in the application. Specifically, “isotopic” analysis is not specific enough; this license condition should reference the specific isotopes that Uranium One proposed in Section 5.7.3.1 of the application (i.e., natural uranium, Th-230, and Ra-226). In addition, Uranium One proposed isotopic analysis after initial facility startup and does not believe based on data from existing facilities that continuing isotopic analysis on a semiannual or annual basis will be warranted. Uranium One suggests that this condition require additional analysis only if the results of the initial radioisotopic analysis fail to confirm that natural uranium is the primary radionuclide of concern in the air particulate samples and that other uranium daughters cannot be disregarded as provided in 10 CFR §20.1204(g),
- 11.8 Uranium One objects to the requirement in this condition that release surveys for resin shipments during off-hours be performed by personnel that have the training and experience specified for the radiation safety staff in Regulatory Guide 8.31. In response to an Open Issue, the application described the training that will be provided to the limited number of personnel that will perform this function. The proposed training will be detailed, documented, and specific to the task. The concepts involved with performing these release surveys is not unlike personnel contamination surveys, which all radiation workers are trained to perform. Uranium One notes that current licensees have similar provisions for off-hour shipments and that these surveys have been subjected to NRC inspections with no violations of NRC regulations that we are aware of. Uranium One also notes that Section 2.4 of Regulatory Guide 8.31 is not a “regulatory position” as stated in the draft license and that applicants are allowed to propose alternatives to such guidance. Uranium One notes that this facility-specific condition is unnecessary since the license in condition 9.2 specifically incorporates by reference the commitments made in the application. Section 5 of the Technical Report clearly describes the proposed contamination control program and commits that, with the exception of off hour resin shipments, all release surveys will be performed by a member of the radiation safety staff. Uranium One requests that this condition be removed.
- 11.9 Uranium One is not familiar with the term “gas breakout event”. In addition, wells and lixiviant distribution systems routinely collect gas at the wellheads and system high points, primarily from dissolved oxygen coming out of solution, which has to be vented. Due to the routine nature of system venting, this license condition is not practical. Uranium One requests that this license condition be removed. We will be happy to

further discuss with NRC and explain gas routine gas venting that occurs at a typical ISR facility.

- 12.1 Uranium One requests that the term “including the aquifer exemption boundary” be deleted from this license condition because the term “aquifer exemption” implies an EPA designation that is not part of the Wyoming UIC Primacy Program.
- 12.2 Uranium One will establish and routinely maintain contact with local emergency service providers and agencies, providing site contact information, analysis of hazards present, site materials and storage information, and coordinating response needs. However, Memorandums of Agreement (MOA’s) as specified in this condition have not been routinely established in the past and the establishment of a formal agreement has never been identified as a necessity by the licensees or local authorities and EMS providers. Where local providers require or desire formal agreements, Uranium One will certainly cooperate. However, we do not believe that NRC should dictate this requirement by license condition. Uranium One suggests that this condition state the licensee will coordinate critical emergency response requirements with local authorities and emergency service providers and agencies as appropriate and document these activities and/or agreements.
- 12.5 Uranium One requests that NRC provide specific details for the preoperational radiological environmental monitoring data needs that were not already presented in Section 2.9 of the Technical Report of the license application.
- 12.6 Section 5.7.4 of the Technical Report states: *“During initial operation of the Moore Ranch facility, all workers will be monitored for external and internal exposure. Once an adequate exposure history is established, EMC may discontinue monitoring for worker classifications that have been shown to have no likelihood of exceeding 10 percent of the allowable occupational dose limit”*. Additionally Section 5.7.4.3 of the Technical Report states *“The RSO will use historical and current monitoring and survey data to ensure that external radiation doses are less than 10% of the dose limit”*. Uranium One contends that the application describes the manner in which we will insure that unmonitored employees

will not exceed 10% of the dose limit and requests that the NRC clarify why the approaches presented in the Technical Report, which were not identified as open issues, are unsatisfactory and require a facility-specific preoperational license condition.

12.8A-D

In response to open issues identified by NRC staff in 2009, Uranium One provided a discussion of 40.65 reporting and the estimation method for radon releases. Uranium One noted that 10 CFR 20.1302 allows determining maximum dose to the public by *“Demonstrating by measurement or calculation that the total effective dose equivalent to the individual likely to receive the highest dose from the licensed operation does not exceed the annual dose limit; or (2) Demonstrating that--(i) The annual average concentrations of radioactive material released in gaseous and liquid effluents at the boundary of the unrestricted area do not exceed the values specified in table 2 of appendix B to Part 20”*, which is part of the proposed operational environmental monitoring program. Since to our knowledge the issues discussed in the draft license condition are not the topic of current Commission guidance, Uranium One requests that NRC staff provide such guidance on acceptable approaches.

12.9

The application did not identify a Quality Assurance Manager. The QA Plan provided as an addendum to Section 5 of the Technical Report references a Senior Environmental Specialist as responsible for implementing the QA Program. In the Open Issue responses in 2009, Uranium One indicated that the QA Plan was intended for all Wyoming operations and that the SES role would be filled by the RSO at Moore Ranch.

12.11, 12.12

Uranium One notes that the application already provides the referenced sampling locations and requirements discussed in the two license conditions and in our opinion incorporates the guidance of Regulatory Guide 4.14. If the proposed locations and monitoring program are unacceptable, NRC should identify the deficiencies in the proposed program.

12.13

Uranium One notes that the proposed contamination control program in our application meets NRC regulatory requirements and implements the guidance contained in Regulatory Guide 8.30. If there are specific deficiencies in the proposed program that do

not meet current Commission rules or guidance, Uranium One requests that NRC identify these deficiencies.

In addition to the comments provided above Uranium One would request that a new license condition be added to exempt the project from the requirements of Section 20.1902(e) of 10 CFR 20 for areas within the Moore Ranch facilities, provided that all entrances to the facility are conspicuously posted in accordance with Section 20.1902(e) and with the words, "ANY AREA WITHIN THIS FACILITY MAY CONTAIN RADIOACTIVE MATERIAL." This additional condition would be consistent with license condition 9.11 of SUA-1341. The omission of this exemption request in the license application was an oversight. Uranium One will insert language in the final revised Technical Report of the application requesting exemption from Section 20.1902(e) requirements.