



July 29, 2015

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

Re: Strata Energy Ross In Situ Recovery Project
Source Materials License SUA-1601, Docket No. 040-09091
Response to Comments on Submittal for License Condition 12.9

To Whom It May Concern:

By letter dated July 23, 2015, the Nuclear Regulatory Commission (NRC) submitted to Strata Energy, Inc. (Strata) a technical review of Strata's February 13, 2015 letter addressing License Condition (LC) 12.9 (ADAMS Accession No. ML15069A438). The technical review had several comments regarding the material submitted in the Attachment to the February 13, 2015 letter. LC 12.9 states:

"Prior to the preoperational inspection, the licensee shall submit to the NRC staff, for review and verification, procedures by which it will ensure that unmonitored employees will not exceed 10 percent of the dose limits in 10 CFR Part 20, Subpart C."

The responses to the comments are provided in Attachment 1. A revised procedure to ensure that unmonitored employees will not exceed 10 percent of the dose limits in 10 CFR Part 20, Subpart C is provided in Attachment 2.

Please contact me if you have any questions. You can reach me at (307) 686-4066 or mgriffin@stratawyo.com.

Sincerely,

Strata Energy, Inc.

Michael Griffin
Vice President of Permitting, Regulatory and Environmental Compliance

Cc: Mr. John Saxton, NRC Project Manager – via email

NM5501

Attachment 1

ROSS URANIUM PROJECT SOURCE MATERIALS LICENSE SUA-1601 Response to NRC Comments

NRC Comment No. 1 - Clarification of TEDE

Strata stated in the first paragraph of its Attachment to its February 13, 2015, letter that, "The TEDE [total effective dose equivalent] will be a summation of the external exposure or deep dose equivalent determined in accordance with TR [Technical Report] Section 5.7.2.3, 'Personal Dosimetry.'"

Comment: Please clarify that the TEDE is a sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).

Response to Comment No. 1:

Strata has revised the program description of procedures to clarify that the TEDE is a sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures). The appropriate sentence in the program now states:

"The TEDE will be a summation of the external exposure or deep dose equivalent and the committed effective dose equivalent (CEDE) determined in accordance with TR Section 5.7.4.3, Radiation Dose Calculations."

NRC Comment No. 2 – Determination of CEDE for Workers Outside of CPP

Strata did not explain how it would determine committed effective dose equivalent (internal exposures) for groups that work outside the Central Processing Plant (CPP). This is related to License Condition 12.7(C), which requires Strata to discuss how it will account for occupational dose throughout the entire License Area (i.e., outside the Central Processing Plant) for employees for whom individual monitoring is required in accordance with 10 CFR 20.1502.

Comment: Please explain how it will determine the committed effective dose equivalent (internal exposures) for groups that work outside the Central Processing Plant.

Response to Comment No. 2:

A thorough program for determination of the committed effective dose equivalent (CEDE) (internal exposure) for groups that work outside the Central Processing Plant has been submitted to the NRC for review and verification. The program was submitted to meet the requirements set forth in Source Material License SUA-1601 License Condition 12.7. As the program is still being reviewed by NRC staff, Strata will not make any specific commitments in this submittal regarding determination of CEDE. Rather, Strata understands that when commitments outlined for LC 12.7 are verified, those commitments will be used in determination of CEDE for workers outside the CPP.

NRC Comment No. 3 – Procedures for Unmonitored Employees

Strata also explained that it will determine external exposures using personal monitoring devices (either thermoluminescent dosimeters or optically-stimulated luminescent dosimeters). It will also conduct surveys of general area gamma dose rates. Strata will determine internal exposures using either air

sample results or bioassays, as described in TR Sections 5.7.3 and 5.7.4, but only for in-plant exposures. Strata also stated, "Since there will be no yellowcake processing or drying at the Project, the airborne uranium monitoring results will use Solubility Class D DAC's for dose calculations." This statement contradicts a previous commitment in TR Section 5.7.4.1, in which Strata stated, "However, at startup, Strata will consider the Ross ISR product ICRP 19/30 solubility Class W until its molecular composition has been characterized to demonstrate similarities with the other ISR products for which definitive solubility data has been reported (see Metzger et al. 1997 and Tairova et al. 2010)." (Strata 2011).

Comment No. 3: Please revise the program description of procedures by which it will ensure that unmonitored employees will not exceed 10 percent of the dose limits in 10 CFR 20, Subpart C to be consistent with statements in the TR that Strata will use the DAC for uranium for pulmonary retention class W.

Response to Comment No. 3:

Strata has revised the program description of procedures. The statement relating to using Solubility Class D DAC's for dose calculations has been removed. Strata understands that the previous commitment outlined in the TR Section 5.7.4.1 of using solubility Class W will be used.

Attachment 2

Procedure for Ensuring that Unmonitored Employees will not Exceed 10 Percent of the Dose Limits in 10 CFR Part 20, Subpart C

The occupational dose (Total Effective Dose Equivalent or TEDE) will be determined for all fulltime employees working at the Ross Uranium Project for at least the first year of uranium production operations. The TEDE will be a summation of the external exposure or deep dose equivalent and the committed effective dose equivalent (CEDE) determined in accordance with TR Section 5.7.4.3, Radiation Dose Calculations. All fulltime employees will be provided with a personal monitoring device such as a thermoluminescent dosimeter (TLD) or optically-stimulated luminescent dosimeter (OSL) to determine the employees' exposure to gamma radiation. In addition general area gamma dose rates will be monitoring by placing area dosimeters in fixed locations and conducting surveys as described in TR Section 5.7.2, 5.7.2.1, and 5.7.2.2. The committed effective dose equivalent (CEDE) or internal dose component of the occupational exposure will be calculated from air sampling results from the Central Processing Plant (CPP) and other areas of the license area and/or bioassays. In accordance with TR Section 5.7.3 "In-Plant Airborne Radiological Monitoring", airborne uranium and radon progeny will be routinely monitored by taking air samples and determining the concentration of uranium and radon progeny concentrations in the air in the work place above background. In accordance with TR Section 5.7.4 "Exposure Calculations" radiation doses to all employees will be determined using the methodology described in NRC Regulatory Guides 8.30 and 8.34. This includes adding the external gamma dose to the internal dose determined from air monitoring data for uranium and radon progeny, taking into account the employee's occupancy time at various locations of the Project.

In accordance with TR Section 5.2.2- "Radiation Work Permits" internal and external doses to radiation will also be determined for non-routine exposures when Radiation Work Permits (RWP's) are issued for non-routine work activities where there is a potential for exposure to radioactive materials. In accordance with TR Section 5.7.5- "Bioassay Program" internal doses to radiation will also be determined from bioassay results. It is anticipated that non-routine exposures and doses calculated from bioassay results will be relatively limited due to the lack of yellowcake processing and drying.

Additionally, visitors and other occasional personnel will not be permitted access to any area in which the dose rate exceeds 2 mrem/hr. without being provided personnel dosimetry.

After completion of the first year of monitoring the RSO will conduct an analysis of monitored exposures. This analysis will include a review of the results of the exposure monitoring program for employees or groups of employees. The groups will be based on those employees that have similar work duties, work locations, stay times, and potential for exposure. A preliminary list of possible work groups that are exposed to similar radiological conditions includes:

- Administrative staff
- Geology staff
- Safety, Health, and Environment staff
- Plant Operations and Maintenance staff
- Wellfield Operations and Maintenance staff

- Wellfield Construction staff
- Contract drilling staff

Based upon the analysis including the exposure data the RSO will determine whether each specific group of employees is likely to exceed 10 percent of the dose limits in 10 CFR Part 20, Subpart C. For groups that are likely to exceed 10 percent of the dose limits monitoring will be continued as required in 10 CFR §20.1502(a) and (b). The RSO's analysis will be documented.

As part of the RSO's annual review of the results of the exposure monitoring program an evaluation will be conducted to determine whether there has been a change to exposure conditions that would indicate whether the need to monitor an individual or a group of employees should be reevaluated. This evaluation will review the results of dosimetric, direct radiation, and airborne contamination measurements made during the year and any changes to work activities, locations, and stay times. The evaluation could indicate that monitoring should be required in cases where the dose may exceed 10 percent of the limits or, conversely, terminated where the dose is likely to be below 10 percent of the limits. The evaluation will be documented.

Occupational doses for all employees will be determined on at least a quarterly basis and recorded in a computer based program. The quarterly doses will be totaled each year to determine the annual TEDE. These procedures, combined with the commitment to monitor all fulltime employees for at least the first year of uranium production operations and to conduct an annual evaluation of exposure monitoring data, will ensure that unmonitored employees will not exceed 10 percent of the dose limits in 10 CFR Part 20, Subpart C.