March 20, 2013

Lee J. Alter, Chairman
Government Affairs Committee
Tallahassee Area Community, Inc.
0489 Fremont County Road 21A
Cañon City, CO 81212

Dear Mr. Alter:

This letter responds to your letter dated December 14, 2012, to Bill Von Till and myself regarding your concerns about the use of Uranium Bore Hole Mining and the ablation process in uranium recovery in the State of Colorado. We have reviewed your letter and the letter sent to Steve Tarlton of the Colorado Department of Public Health and Environment (CDPHE) dated December 5, 2012, the issues you raised and our responses are provided in the enclosure.

We understand that although at this time there have not been any applications submitted to CDPHE for licenses or permits to use this technology, there are companies in Colorado investigating the possibility of doing so in the near future. As an Agreement State, CDPHE has the authority to regulate potential licensees using this new technology if they are required to have a license to handle specific types of radioactive materials. The CDPHE may also request technical assistance from the U.S. Nuclear Regulatory Commission (NRC) to help assess this new technology for uranium recovery. The NRC will also evaluate the technology in order to consider how it may fall within the NRC's regulatory jurisdiction. As part of its oversight responsibility, the NRC will review regulatory actions taken by CDPHE on uranium recovery facilities, including those involving this technology, through the Integrated Materials Performance Evaluation Program.

If you have any further questions or concerns regarding ablation technologies and their implementation in the State of Colorado, we suggest that you direct them to CDPHE.

Sincerely,

R/A

Duncan White, Chief
Agreement States Program Branch
Division of Materials Safety and State Agreements
Office of Federal and State Materials
and Environmental Management Programs

Enclosure: Statement of Points & NRC Response

cc: STarlton, CDPHE

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ENCLOSURE

STATEMENT OF POINTS & NRC RESPONSES

Point 1:

In your letter, you quote Mr. Tarlton as stating with regard to the ablation process, “the proposed process, if implemented as we now understand it, would result in the possession of source material and would, therefore, require a source material radioactive material license at a minimum.”

Based on the above statement, the Tallahassee Area Community (TAC) states, “TAC understands that to mean that both the waste rock (approximately 90 percent of the total volume recovered from the underground cavern) and the process water is 11e.(2) byproduct and must be handled as uranium mill tailings and be subject to the requirements of Appendix A (essentially the same in both Colorado and Federal radiation control regulations).”

The TAC requested the U.S. Nuclear Regulatory Commission (NRC) staff to comment on their interpretation.

Response:

After review of the ablation process, it appears that the proposed surface ablation processing is an ore grinding or refining process that is subject to source material licensing under 10 CFR Part 40 (or Agreement State equivalent regulations). A source material license is required because the ablation process physically changes the ore.

Historically, the NRC has required source material licenses for ore buying, ore sorting, and mine water ion exchange (IX) (for uranium) facilities and has not treated them as uranium milling facilities. The first two types of facilities would have ore crushers and sometimes ore sorters which separated the ores after crushing to sizes approximately 2 inches or less into separate ore piles based on the uranium concentration. The third type (IX facilities) is considered as a secondary recovery facility and the source material loaded on the IX is the licensed material, not the mine water.

As stated above, the ablation process would, at a minimum, be required to have a source material license. The NRC is also evaluating whether the application of this process to uranium recovery should be licensed as uranium milling.

This determination coincides and supports Mr. Tarlton’s statement.

Point 2:

In your letter, you posed the following question:

Does the Commission position stated in HPPOS 184 remain current and is our argument outlined in the letter to Mr. Tarlton a reasonable one?

The staff has reviewed the letter that you provided Mr. Tarlton, and we interpret your argument as being that since the Uranium Bore Hole Mining (UBHM) ore fragmentation process alters both its gross appearance (unrefined and unprocessed ore) and its chemical state from the condition it was in just after removal from its place of deposit in nature, then the process should be considered as material processing, and that UBHM should be defined as such in the Colorado Radiation Regulations.

Response:

The NRC staff does consider the position stated in HPPOS 184 as current.

However, the NRC disagrees with your argument that the UBHM process is uranium milling.

10 CFR Part 40.4 and the HPPOS 184, defines unrefined and unprocessed ore to mean "ore in its natural form prior to any processing, such as grinding, roasting, or beneficiating, or refining." Although, as you stated, the mining process alters both its gross appearance and possibly its chemical state (to a limited and unintentional amount), the ore that is brought to the surface does not undergo a process that includes grinding, roasting, or beneficiating, or refining so it still meets the regulatory definition of unrefined and unprocessed ore.

After review of the UBHM process, it appears that the proposed process can be considered as something similar to hydromining or hydraulic mining and not uranium milling. The UBHM process is a mining process that breaks up the ore and transports it to the surface. As stated in the HPPOS 184, "Further, by drawing the exemption lines at unprocessed and unrefined ore (i.e., ore whose gross appearance and chemical state has not been altered from the point of mining)," would support finding the UBHM as being a continuous mining process until the slurry created underground has been brought to the ground surface. Water recovery would be considered mining.

The UBHM process is not in-situ recovery which employs intentional chemical extraction of the uranium while leaving the rock matrix in place underground.