



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 23, 2015

Ms. Jennifer T. Opila, MPA, Manager
Radiation Control Program
Colorado Department of Public Health
and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Dear Ms. Opila:

This letter is in response to your e-mail dated July 17, 2015 in which you requested the U.S. Nuclear Regulatory Commission (NRC) staff to provide feedback on an information paper provided by Ablation Mining Technology (AMT) to the Colorado Department of Public Health and the Environment (CDPHE) with regard to a description of the ablation technology process applied to uranium deposits.

The NRC staff has reviewed the paper and has highlighted several areas where more information would be helpful:

- 1) AMT should provide more specific details of the separation or screening process referenced on page 5.
- 2) On page 6, paragraph one, it states, "Upon separation the waste rock stream typically comprises approximately ninety (90) percent of the mass but contains five (5) percent of the uranium (and any other minerals) that was present in the pre-AMT material." AMT needs to provide data related to the concentrations of the products in the output after the screening process.
- 3) On page 11, paragraph 2, it states, "The steel tanks, pipes and water act as shields that offer workers protection from the very low level of radiation present in the host rock as it passes through the AMT system." AMT needs to provide data of the radiation levels as the material passes through the system.
- 4) On page 11, paragraph 3, it states, "As such these are removed from the remnant coarsed-grained waste, leaving a "clean" waste product that can be emplaced and stored for the long term either on the surface or returned to the mine as backfill." AMT needs to provide data on the uranium and thorium concentrations related to the waste referenced in this statement.
- 5) On page 11, paragraph 4, it states, "If however, at a particular mine site, it becomes necessary to dispose of excess water, it is considered it will be both economically beneficial as well as environmentally preferable to treat the water to recover any uranium and remove any other potential constituents of concern (COC) that may be present in solution prior to disposal." AMT needs to provide data and more information on the constituents of the water referenced in this statement.

- 6) On page 12, paragraph 1, it states, "The moisture, coupled with the containing barrier(s) will attenuate radioactive emissions, thereby minimizing any potential radiological hazard." AMT needs to provide data on the radioactive emissions referenced in the statement and data on the attenuation of the emissions.
- 7) On page 13, paragraph 4, it states, "For example, consumption of sulfuric acid is expected to be substantially reduced because of the uranium minerals will be in higher concentrations, present with a finer grained medium, and include less gangue material than a non-AMT ore." AMT needs to provide data on the concentrations of the material discussed in the statement.

The NRC staff would appreciate Colorado keeping the NRC informed as it continues working with AMT to understand the process the company plans to use in recovering uranium from deposits. After a review of their white paper, NRC staff finds that AMT has not progressed much farther along since NRC's last public meeting with AMT on December 19, 2013. The NRC staff has many of the same questions as was provided in the December 12, 2013 letter (ML13345A266). In short, AMT should provide more specific information with regard to its process. As discussed in our previous correspondence on this issue, it appears that a source material license would be required for the use of ablation on uranium ore (see ML13077A177). The NRC has not made a determination as to whether the application of ablation technology on uranium ore would be considered milling.

The NRC staff is interested in the outcome of the Colorado public hearing process you referenced in your email. As CDPHE continues its evaluation process, the NRC staff is available to provide assistance should CDHPE have any technical, regulatory or policy questions.

If you have any additional questions feel free to contact me or Stephen Poy.

Sincerely,

/RA/

Christian E. Einberg, Chief
Agreement State Programs Branch
Division of Material Safety, State, Tribal,
and Rulemaking Programs
Office of Nuclear Material Safety
and Safeguards

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Christian E. Einberg, Chief
 Agreement State Programs Branch
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NAME	SPoy	DMandeville	BVonTill	ADWhite	CEinberg
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