



State of Utah

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DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL

Ty L. Howard
Director

July 21, 2020

David Frydenlund
Chief Financial Officer, General Counsel and Corporate Secretary
Energy Fuels Resources (USA) Inc.
225 Union Blvd., Suite 600
Lakewood, CO 80228

RE: Energy Fuels Resources, June 25, 2020, *Receipt and Processing of Ores from Chemours at the Energy Fuels Resources (USA) Inc. (EFRI) White Mesa Mill*, Utah Division of Waste Management and Radiation Control Request for Additional Information (RAI)
Utah Radioactive Materials License No. UT 1900479 (License)
Utah Groundwater Discharge Permit No. UGW370004 (Groundwater Permit)

Dear Mr. Frydenlund:

The Utah Division of Waste Management and Radiation Control (DWMRC) has reviewed the following Energy Fuels Resources (USA) Inc. (EFRI) document:

EFRI, June 25, 2020, *Receipt and Processing of Ores from Chemours at the Energy Fuels Resources (USA) Inc. (EFRI) White Mesa Mill*.

The EFRI letter is regarding potential receipt and processing of Chemours material, which is separated monazite mineral sand, at the White Mesa Uranium Mill (Mill). The material would be received from the Chemours' Offerman Mineral Separation Plant located in Pierce County, GA. It was noted that the Chemours Material will initially comprise material from the Mission Mine but may include material from the Amelia Mine and other mine sources in the future.

Based on the DWMRC review, additional information is needed to supplement the original EFRI submittal to evaluate whether the processing of this material will require modifications to the Mill's License and/or Groundwater Permit.

(Over)

Requests for Additional Information (RAI's) are numbered and included, following:

RAI 1 – Additional information needed to support claims of 0.26% U₃O₈ in the Chemours Monazite Mineral Sand meet the definition of uranium ore

EFRI states on page 4 of the letter that the Chemours material has a grade of 0.26% U₃O₈. The EFRI letter includes an Attachment D Table which is referred to as “*a summary of the mineral composition of a typical ore produced in 2019*” (Page 4). It is assumed that the EFR letter is claiming that the Chemours monazite sand will contain a consistent percentage of recoverable uranium, however, there is no source for the data provided in Attachment D and no way to confirm that consistent percentages will be present for all material accepted at the Mill. Please provide the data and sources used to claim the U₃O₈ concentrations of the Chemours Material as well as justification that all material received from the Mission mine and the multiple future mines and sources of mineral sand will contain a consistent percentage of recoverable uranium.

At a minimum, it needs to be documented with analytical data that the Chemours material will always meet the definition of source material ore per the Utah Administrative Code R-313-12-3 (see also 10CFR40.4) contain by weight one-twentieth of one percent (0.05 percent) of uranium for acceptance at the White Mesa Uranium Mill.

RAI 2 – Additional information needed to evaluate potential changes to Mill Tailings Constituent Inventory and concentrations for evaluation of Groundwater Permit Monitoring Requirements

The EFRI letter does not include specific evaluation of the impacts to the mill tailings due to the processing and disposal of the Chemours material tailings. Page 4 of the EFRI letter generally discusses that the Chemours material should not require any additional mill processes; however, DWMRC notes that monazite sand is not chemically consistent with uranium/vanadium ores from the Colorado Plateau and Arizona Strip which were evaluated when determining compliance monitoring requirements of the Mill in the Groundwater Permit Statement of Basis. Please submit a more detailed EFRI evaluation of the uranium/rare earth mineral ore which will be processed and disposed of in the tailings cells using the anticipated Mill processes (existing or new), including an evaluation of expected changes in constituent concentrations in the tailings management system and potential new constituents which may need to be included in the Groundwater Permit as a result of processing a uranium ore with rare earth minerals.

RAI 3 – Additional information is needed regarding changes or additions that may be required in the uranium extraction circuits

It is unclear in the information submitted where in the process the rare earth minerals would be extracted, and what physical alterations to the mill works would be necessary. Please describe changes necessary to the plant and the processes. If no changes are needed, please explain/justify why not.

RAI 4 – Additional information for compliance with U.S. Department of Transportation requirements

On June 26, 2020 in an email request, the Division requested to see an old manifest of the monazite sand material when it was being sent to China. After reviewing both the letter of June 25, 2020 and the manifest please provide the following information:

- The manifest provided listed the “chemical form” as monazite sand. This is not a chemical form description according to U.S. Department of Transportation. Please provide the correct chemical form for the uranium/rare earth mineral ore. (i.e. U_3O_8 other appropriate chemical descriptions).
- In the EFRI’s letter it states that supersaks in intermodal containers will be used to transport the uranium ore to the Mill. Please provide information that the supersaks and intermodal containers are IP-1 containers which are the appropriate transport containers for LSA-1 material.
- Please indicate the shipment of the uranium/rare earth mineral ore will be exclusive use shipments.
- Please provide a detailed description of transportation route(s) that will be used to transport the ore to the Mill.
- Please update the transportation emergency response plan to include the transportation of the uranium/rare earth mineral ore from Georgia to the Mill.
- Please provide a description of all other transportation requirements regarding labeling, placarding, transportation papers, etc.

RAI 5 – Assess the Radiological and Non-radiological effects of processing uranium ore with rare earth minerals

From the 1978 Environmental Report for the White Mesa Uranium Project, Section 1.0 Proposed Activities, it states “*Energy Fuels Nuclear, Inc. proposes to construct and operate an acid leach uranium mill-and associated facilities for producing yellowcake uranium concentrate and, when economically feasible, limited quantities of copper and/or vanadium concentrates.*” In EFRI’s June 25, 2020 letter, it proposes to process a uranium ore for yellowcake uranium concentrate and a rare earth mineral concentrate. The process of extracting a rare earth mineral concentrate has not been environmentally evaluated for the White Mesa Uranium Mill.

Please evaluate the radiological and non-radiological effects of processing a uranium ore with rare earth minerals. Please include occupational and public exposure and short and long-term effects of processing uranium ore with rare earth minerals.

Please discuss any adjustments needed to the radiation safety program, environmental monitoring program and groundwater monitoring to process the ore. If no changes are needed, please explain/justify why not.

The previous RAI items were discussed between DWMRC and EFRI during a conference call on July 21, 2020.

If you have any questions, please call me at (801) 536-4044.

Sincerely,

A handwritten signature in blue ink, appearing to read "Phil Goble".

Phil Goble, Uranium Mills and Radioactive Materials Manager
Division of Waste Management and Radiation Control

PG/TR/as

c: Kirk Bengel, Health Officer, San Juan Public Health Department
Rick Meyer, Environmental Health Director, San Juan Public Health Department
Russell Seeley, UDEQ District Engineer
Logan Shumway, Mill Manager, EFRI