

From: [Priya Yadav](#)
To: ["Stephen Cohen"](#)
Cc: [Douglas Mandeville](#); [Jane Marshall](#); [Duane White](#); [Adam Gendelman](#); [Mikhail Pellegrino](#); [Karen Pinkston](#); [Andrea Kock](#); [Ariano Munden](#); [Greyson Buckingham](#)
Subject: RE: Equivalent Feed vs. Alternate Feed - Docket No. 40-38417
Date: Wednesday, April 1, 2026 7:37:00 PM

Steve,

Thank you for the analytical data on the HPSA fines and your responses to the questions I sent in the email below (ML26081A002).

To complete our evaluation, NRC staff needs more detailed information in the areas below.

- Please provide analytical data on the HPSA fines as they would exist after all chemical additions (i.e., DUSTREAT DC6109 surfactant and Superfloc A-100 flocculant).
 - As you note, DISA determined during recent laboratory testing that these chemicals are needed for the HPSA process, and DISA believes they are innocuous chemicals. Because DISA is asking the NRC to determine the final HPSA fines concentrates to be equivalent to ore, the data of the fines with the use of the chemicals is the important analytical information. Analytical data are needed to support DISA's statements that the two chemicals "will not react with the waste rock or fines concentrates, and will not alter the chemical or mineralogical composition."
- Please demonstrate how the HPSA fines compare to ore received at conventional mills. That part of bullet 5 of my previous email below is needed to determine the two streams are the same. In particular, please provide tables similar to pages 45 to 49 in the linked files for the RAI response.
 - I mentioned before that Energy Fuels Resources previously submitted a justification to Utah DWMRC for a Chemours Rare earth metal stream and Utah agreed that no further licensing was needed to accept this stream. This information is publicly available and this is the level of information DISA should provide to demonstrate the HPSA fines are equivalent (and the basis for the questions in my first email below).

Original justification:

[DRC-2020-011981](#)

From <https://lf-public.deq.utah.gov/WebLink/DocView.aspx?>

[id=72657&dbid=0&repo=Public](#)>

RAI response:

[DRC-2020-015241](#)

From <<https://lf-public.deq.utah.gov/WebLink/DocView.aspx?id=73494&dbid=0&repo=Public&cr=1>>

Utah approval

<https://lf-public.deq.utah.gov/WebLink/DocView.aspx?id=73483&dbid=0&repo=Public&cr=1>

Once you provide this information, staff will continue this evaluation. Please give me a call if you have any questions.

Priya Yadav, P.E.

Project Manager

U.S. Nuclear Regulatory Commission

Low-level Waste and Projects Branch

Division of Decommissioning, Uranium Recovery, and Waste Programs

Office of Nuclear Material Safety and Safeguards

Office phone: 301-415-6667

Work phone: 650-274-9376

From: Priya Yadav

Sent: Thursday, March 19, 2026 4:02 PM

To: 'Stephen Cohen' <s.cohen@disausa.com>

Cc: Greyson Buckingham <greyson@disausa.com>; Darren Love <d.love@disausa.com>; Douglas Mandeville <Douglas.Mandeville@nrc.gov>; Jane Marshall <Jane.Marshall@nrc.gov>; Duane White <Duane.White@nrc.gov>; Adam Gendelman <Adam.Gendelman@nrc.gov>; Mikhail Pellegrino <Mikhail.Pellegrino@nrc.gov>; Karen Pinkston <Karen.Pinkston@nrc.gov>; Kathryn Brock <Kathryn.Brock@nrc.gov>; Andrea Kock <Andrea.Kock@nrc.gov>

Subject: RE: Equivalent Feed vs. Alternate Feed - Docket No. 40-38417

Steve,

As discussed, the concept of equivalent feed in RIS 2012-06 was originally envisioned to facilitate the processing of ion exchange resins that are generated at community water systems at ISR facilities. Ion exchange resins are man-made materials that have relatively limited variability between facilities.

To employ the same concept to a conventional uranium mill, the regulator would need to determine that the proposed feed material is essentially chemically and radiologically the same as the feedstocks currently processed. Because conventional mills have the ability to process materials with a greater amount of natural variability, regulators need to assess the following information to determine if the equivalent feed approach is appropriate for conventional uranium mills:

- Provide a schematic of the HPSA process including all physical and chemical steps, demonstrating that the fines concentrates resulting from the process are not chemically changed or altered in any way from the AUM waste in its natural or native state.
- Provide details of the physical separations, including wet processes. Demonstrate that no flocculants, precipitants, surfactants, flotation agents, or chemical additives of any kind are used in the HPSA process and that no reactions or chemical changes occur in the separation steps.
- Provide a summary of the mineral composition of the range of HPSA fines that are expected based on planned AUM waste piles.
- Provide the chemical form of the fines (e.g., U_3O_8) and the range of the expected grade.
- Demonstrate that the fines are similar in radionuclide and chemical content and will have a uranium grade consistent with natural uranium ores routinely received and processed at conventional mills historically operating in the US, Canada, or other countries.
- Provide details demonstrating where the fines would be introduced into the process at a conventional mill (e.g., leaching process) or if a new entry point into the process would need to be created. If no changes are needed, please explain/justify why not.
- Demonstrate how the HPSA fines would affect the 11(e)2 tailings from a conventional mill. If no impact, justify why not.
- Please evaluate the radiological and non-radiological effects of processing HPSA fines. Please include occupational and public exposure and short and long-term effects of processing the fines.

The above information will allow staff to determine if the equivalent feed policy should be extended to conventional uranium mills.

Thank you,

Priya Yadav, P.E.

Project Manager

U.S. Nuclear Regulatory Commission

Low-level Waste and Projects Branch

Division of Decommissioning, Uranium Recovery, and Waste Programs

Office of Nuclear Material Safety and Safeguards

Office phone: 301-415-6667

Work phone: 650-274-9376

From: Stephen Cohen <s.cohen@disausa.com>

Sent: Thursday, February 12, 2026 10:32 AM

To: Priya Yadav <Priya.Yadav@nrc.gov>

Cc: Greyson Buckingham <greyson@disausa.com>; Darren Love <d.love@disausa.com>

Subject: [External_Sender] Equivalent Feed vs. Alternate Feed - Docket No. 40-38417

Hello Priya:

I have a request regarding our ongoing discussions with Energy Fuels. Energy Fuels insists that our fines concentrates are alternate feed and that an amendment would be required to accept and recycle these materials. As we discussed this further, I checked our application for language on equivalent vs alternate feed. We state in Section 1.0 that the fines concentrates will be equivalent feed as defined in the RIS 2012-06. Since the license was issued and our application was incorporated by reference, DISA's position is that the fines concentrates is equivalent feed. However, Energy Fuels insists that this particular decision does not relate to the White Mesa Mill unless the NRC staff writes a separate determination that our material is equivalent feed and may be processed without a license amendment.

So, may we request that the NRC staff issue a written determination that our fines concentrates is equivalent feed? To substantiate our request, I'm providing an excerpt from a draft letter we prepared for Energy Fuels and other parties.

The issue has been raised regarding the need for a license amendment to accept the fines concentrates from DISA's HPSA treatment process for further processing to yellowcake. The point of concern appears to be whether the fines concentrates constitutes a natural material that is equivalent to typical ore feed at the White

Mesa Mill or whether it is not a natural material that requires an alternate feed license amendment.

To examine this issue, we first need to review the definitions of alternate feed and equivalent feed. The interim guidance on uranium mill feed other than natural ores Regulatory Information Summary (RIS) 00-23, states for tailings and wastes from the proposed processing to qualify as 11e.(2) byproduct material, the feed material must qualify as "ore." In determining whether the feed material is ore, the following definition of ore will be used:

Ore is a natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.

When processing a feed other than natural ores, an alternate feed request must be submitted by the licensee.

From Regulatory Information Summary (RIS) 2012-06, equivalent feed is defined as follows:

Consequently, in this guidance, the staff is defining the term "equivalent feed" to apply to those circumstances where the feed material is essentially the same chemically and physically as the source material that is normally processed at a uranium recovery facility. Such material should not be considered as alternative feed requiring license amendments as described in RIS 00-23 if it meets the equivalent feed criteria articulated in this RIS.

The purpose of RIS 2012-06 was to clarify that alternate feed requests are not required when the in-situ recovery (ISR) resin that is transported by one licensee to a uranium mill of another licensee, an alternate feed request is not required if the resin is chemically and physically the same as that already processed. This determination was important because at that time, stricter uranium drinking water standards were being implemented and water treatment plants were not in a position to fund and await license amendment requests for their resin.

Although RIS 2012-06 focuses on ISR, this guidance and its intent are perfectly transferable to conventional uranium recovery (UR) facilities. If a conventional UR facility receives a material that is natural and is physically and mineralogically similar to the ore or waste rock that the facility processes, then no alternate feed request is required.

The fines concentrates meet the definition of equivalent feed because it is

essentially the same chemical and physical form as the ore that is processed at the White Mesa Mill. First, the most common mineral that DISA treats, carnotite, is preserved in the waste rock and HPSA. However, the grain size is smaller than that of traditional ore feed. No chemicals are used during the HPSA process, so the feed material is not chemically altered. Because it is not chemically altered, the fines concentrates are equivalent to the ore that would be typically processed at White Mesa. Consequently, an alternate feed license amendment is not required.

From a more pragmatic perspective, consider the physical form of the feed material, fines concentrates, and the clean coarse material in the following images Figures 1 - 3 (Attached to this email). Clearly raw uranium mine waste would be an equivalent feed. However, a review of the fines concentrates and clean coarse material images indicates that the material to be received by EFR is equivalent in appearance to the feed. Furthermore, to demonstrate that the feed and fines concentrates are chemically similar, we provide TCLP results for both fractions from the Phase I Treatability Study at the OCRM (see Table 1 - Attached to this email).

A review of Table 1 indicates that the feed and the fines concentrates are chemically similar and that the HPSA treatment process does not chemically alter the uranium mineralogy.

In conclusion, the fines concentrates and the uranium mine waste are equivalent in nature, appearance, and chemical structure. Therefore, the fines concentrates are considered equivalent to uranium mine waste (which is an equivalent feed) and would not require an alternate feed request by EFR to process the fines concentrates.

I should mention that the Utah DEQ has not made a decision regarding this issue. Thank you for your time, and I will be available to discuss this week or next week.

Cheers,

Stephen J. Cohen, PG, CSP, CHMM

Chief Regulatory Affairs Officer

DISA Technologies, Inc.

1010 Falcon Ave.

P.O. Box 1846

Mills, WY 82644

Phone: 720.237.2358

Web: www.DisaUSA.com

