PUBLIC PARTICIATION SUMMARY

Radioactive Material License UT 1900479 Amendment 10
11e.(2) Annual Limit Increase, Silmet and Moffat Tunnel Alternate Feeds
Energy Fuels Resources (USA) Inc. (Energy Fuels)
White Mesa Uranium Mill
San Juan County, Utah

GLOSSARY OF TERMS

Below is a list of words, terms, and acronyms used for this licensing action. These words, terms and acronyms are based on regulatory, technical, and industry definitions and are not always the same definition found in dictionaries and other common reference sources. The definitions that come from regulatory sources are the required definitions the Utah Division of Waste Management and Radiation Control Staff (the Division, or Staff) use.

11e.(2) - Refers to the paragraph in the Atomic Energy Act (AEA) of 1954, as amended, which defines source material and byproduct material.

11e.(2) Byproduct Material - As stated in the AEA: "The term 'byproduct material' means…(2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." 11e.(2) byproduct material generated at in-situ leach (ISL) uranium recovery facility or more appropriately, in-situ recovery (ISR) facility is sometimes referred to as ISL byproduct material, ISL decommissioning debris or ISR decommissioning debris.

As Low As Reasonably Achievable (ALARA) - In the Utah Administrative Code (UAC) R313-12-3 ALARA is defined as: "making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical, consistent with the purpose for which the licensed or registered activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed or registered sources of radiation in the public interest."

Agreement State - As defined in UAC R313-12-3: "Any State with which the Nuclear Regulatory Commission has entered into an effective agreement under subsection 274b. of the Atomic Energy Act of 1954, as amended." (Also found in 10 CFR 40.4)

Atomic Energy Act (AEA) of 1954 - The Act requires that civilian uses of nuclear materials and facilities be licensed, and it empowers the NRC to establish by rule or order, and to enforce such standards to govern these uses as "the Commission may deem necessary or desirable in order to protect health and safety and minimize danger to life or property." Under section 274 of the Act, the NRC may enter into an agreement with a State for discontinuance of the NRC's regulatory authority over some materials' Licensees within the State. The State must first show that its regulatory program is compatible with the NRC's and adequate to protect public health and safety. The NRC retains authority over, among other things, nuclear power plants within the State and exports from the State. (https://www.nrc.gov/about-nrc/governing-laws.html)

Conventional Impoundment - 40 CFR 61.125 defines a conventional impoundment as a permanent structure located at any uranium recovery facility which contains mostly solid

uranium byproduct material or tailings from the extraction of uranium from uranium ore. This feature is distinguished from a non-conventional impoundment, which is defined below.

A conventional impoundment cannot receive anything that is not classified as 11e.(2) byproduct material or decommissioning debris from uranium recovery facilities. Other waste streams cannot be placed therein.

Department - As defined in UAC R313-12-3, Department means the Utah Department of Environmental Quality (DEQ).

Director - As defined in UAC R313-12-3, Director means the Director of the Division of Waste Management and Radiation Control (DWMRC).

Dose - As defined in UAC R313-12-3, dose "is a generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent." For purposes of this document, "radiation dose" is an equivalent term.

Department of Transportation (DOT) - As defined in 49 CFR 171.8, as incorporated by reference in UAC R313-19-100, means the U.S. Department of Transportation.

Environmental Report (ER) - The Environmental Report for the White Mesa Uranium Project written by Dames and Moore for Energy Fuels Nuclear, Inc. in January 1978.

Final Environmental Statement (FES) – Refers to the FES for the White Mesa Uranium project written by the NRC in May 1979. (NUREG-0556)

Radioactive Material License (RML) – Also simply called a license. As defined in UAC R313-12-3, license "means a license issued by the Director in accordance with the rules adopted by the Board."

Licensee - As defined in UAC R313-12-3, licensee "means a person who is licensed by the Department in accordance with these rules and the Act."

Licensed Material - As defined in UAC R313-12-3, licensed material "means radioactive material, received, possessed, used or transferred or disposed of under a general or specific license issued by the Director."

MILDOS-AREA - A computer code developed by Argonne National Laboratory. It is used to estimate the radiological impacts from airborne emissions from uranium milling facilities. The code is used by license applicants and U.S. Nuclear Regulatory Commission or Agreement State staff to perform routine radiological impact and compliance evaluations for various uranium recovery operations.

Mill - Means the White Mesa Uranium Mill.

Monitoring - As defined in UAC R313-12-3, monitoring "means the measurement of radiation, radioactive material concentrations, surface area activities or quantities of radioactive material, and the use of the results of these measurements to evaluate potential exposures and doses. For purposes of these rules, radiation monitoring and radiation protection monitoring are equivalent terms."

Natural Uranium - As defined in 49 CFR 173.403, as incorporated by reference in UAC R313-19-100, natural uranium "means uranium (which may be chemically separated) containing the naturally occurring distribution of uranium isotopes (approximately 99.28% uranium-238 and 0.72% uranium-235 by mass)." From the glossary at nrc.gov: "Uranium containing the relative concentrations of isotopes found in nature (0.7 percent uranium-235, 99.3 percent uranium-238, and a trace amount of uranium-234 by mass). In terms of radioactivity, however, the radiation emitted by natural uranium comes approximately 2.2 percent from uranium-235, 48.6 percent from uranium-238, and 49.2 percent from uranium-234. Natural uranium can be used as fuel in nuclear reactors."

National Standards for Hazardous Air Pollutants (NESHAP) - 40 CFR Part 61 Subpart W is the National Emission Standards for Radon Emissions from Operating Mill Tailings. These standards are part of the Mill's Air Approval Order issued by the Utah Division of Air Quality.

Non-conventional impoundment - 40 CFR 61.125 defines a non-conventional impoundment as an impoundment used for managing liquids from uranium recovery operations and contains uranium byproduct material or tailings suspended in and/or covered by liquids. These structures are commonly known as holding ponds or evaporation ponds and can be located at any uranium recovery facility. They are typically not permanent structures unless they transition to become used as conventional impoundments. Impoundments constructed for the purpose of managing liquids from closure or remediation activities (e.g., contaminated groundwater), and which are used solely for that purpose, are not subject to the requirements of 40 CFR Part 61 Subpart W. Note that the function of non-conventional impoundments is fluid management, and any tailings introduced therein, if any, will be of a negligible quantity.

Non-conventional impoundments at the White Mesa Mill were designed to transition to conventional use. Conventional impoundment design standards are more stringent than those for non-conventional impoundments, so the same engineering and construction standards were applied to the non-conventional impoundments at the White Mesa Mill as would apply to conventional impoundments.

Nuclear Regulatory Commission (NRC) - The NRC was established by the Energy Reorganization Act of 1974. The NRC is assigned the regulatory and licensing responsibilities for the civilian uses of nuclear materials and facilities. (NRC.gov)

Occupational Dose - As defined in UAC R313-12-3, occupational dose "means the dose received by an individual in the course of employment in which the individual's assigned duties

for the Licensee or registrant involve exposure to sources of radiation, whether or not the sources of radiation are in the possession of the Licensee." As per R313-15-301, the occupational dose must not exceed a total effective dose equivalent of 5 rem (5000 mrem) in a year.

Operation - There are two definitions of operation that apply here, depending on the context:

1. As defined by 10 CFR 40 Appendix A as is incorporated by reference in UAC R313-24-4, operation "means that a uranium or thorium mill tailings pile or impoundment is being used for the continued placement of byproduct material or is in standby status for such placement. A pile or impoundment is in operation from the day that byproduct material is first placed in the pile or impoundment until the day final closure begins."

2. As defined by 40 CFR 61 subpart W (NESHAP), operation "means that an impoundment is being used for the continued placement of uranium byproduct material or tailings or is in standby status for such placement." An impoundment is in operation from the day that uranium byproduct material or tailings are first placed in the impoundment until the day that final closure begins.

Ore - In the September 22, 1995, Federal Register Vol. 60 No. 184 pg. 49296 the NRC defined ore as: "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."

Optically Stimulated Luminescence (OSL) Badges - These dosimetry badges are made by Landauer. The Mill uses these badges to measure exposure to gamma radiation for occupational dose, environmental, and public dose calculations.

Pico - From the glossary at nrc.gov: "A prefix that divides a basic unit by one trillion (10^{-12}). For example, picocurie (pCi): 1.00E-12 = 0.000000000001.

Public Dose - As defined by UAC R313-12-3, public dose "means the dose received by a member of the public from exposure to radiation or to radioactive materials released by a Licensee, or to any other source of radiation under the control of a Licensee or registrant. Public dose does not include occupational dose or doses received from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released in accordance with Rule R313-32, or from voluntary participation in medical research programs." As per R313-15-301, the total effective dose equivalent to a member of the public from a licensed facility must not exceed 0.1 rem (100 mrem) in a year. The dose in any unrestricted area from external sources must not exceed 0.002 rem (2 mrem) in any one hour.

Rad - As defined in UAC R313-12-3, rad "means the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 erg per gram or 0.01 joule per kilogram."

Radiation - As defined in UAC R313-12-3, radiation "means alpha particles, beta particles, gamma rays, x-rays, neutrons, high speed electrons, high speed protons, and other particles capable of producing ions. For purposes of these rules, ionizing radiation is an equivalent term. Radiation, as used in these rules, does not include non-ionizing radiation, like radiowaves or microwaves, visible, infrared, or ultraviolet light."

Radiation Area - As defined in UAC R313-12-3, radiation area "means an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.005 rem (5 mrem), in one hour at 30 centimeters from the source of radiation or from a surface that the radiation penetrates.'

Radiation Level - As defined in 49 CFR 173.403, as incorporated by reference in UAC R313-19-100, radiation level "means the radiation dose-equivalent rate expressed in millisieverts per hour or mSv/h (millirems per hour or mrem/h). It consists of the sum of the dose-equivalent rates from all types of ionizing radiation present including alpha, beta, gamma, and neutron radiation."

Radiation Safety Officer (RSO) - As defined in UAC R313-12-3, radiation safety officer "means an individual who has the knowledge and responsibility to apply appropriate radiation protection rules and has been assigned such responsibility by the Licensee."

Radioactive Material - As defined in UAC R313-12-3, radioactive material "means a solid, liquid, or gas which emits radiation spontaneously." In addition, as defined in 49 CFR 173.403, as incorporated by reference in UAC R313-19-100, "means any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in the table in§ 173.436 or values derived according to the instructions in § 173.433."

Radioactivity - As defined in UAC R313-12-3, radioactivity "means the transformation of unstable atomic nuclei by the emission of radiation."

Rem - As defined in UAC R313-12-3, rem "means the special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem is equal to the absorbed dose in rad multiplied by the quality factor."

Restricted Area - As defined in UAC R313-12-3, restricted area "means an area, access to which is limited by the Licensee for the purpose of protecting individuals against undue risks from exposure to sources of radiation."

Safety and Environmental Review Panel (SERP) Committee - This committee is required by License Condition 9.4. At a minimum, the committee is comprised by someone from Mill

management, someone from Operations, and the Radiation Safety Officer. This committee is to evaluate any changes to the facility or its processes, changes to procedure, and/or conduct tests or experiments to determine if these changes meet applicable regulations, do not degrade environmental and safety commitments, and are consistent with approved Mill operations.

Site Boundary - As defined in UAC R313-12-3, site boundary "means that line beyond which the land or property is not owned, leased, or otherwise controlled by the Licensee or registrant."

Source Material – means (1) Uranium or thorium, or any combination thereof, in any physical or chemical form or (2) ores which contain by weight one-twentieth of one percent (0.05%) or more of: (i) uranium, (ii) thorium or (iii) any combination thereof. (10 CFR 40.4)

Source Material Milling - For this Licensing action, source material milling is known as Uranium Milling. As defined in UAC R313-12-3, source material milling "means any activity that results in the production of byproduct material as defined by (b) of "byproduct material.'"

Source of Radiation - As Defined in UAC R313-12-3, source of radiation "means any radioactive material, or a device or equipment emitting or capable of producing ionizing radiation."

Surety - Surety is used in this licensing action to describe the decommissioning funding plan that is required by UAC R313-22-35 for facilities that possess radioactive materials with half-lives greater than 120 days such as Uranium Mill facilities. R313-22-35(3)(h) requires Licensee's surety to meet the applicable criteria found in the NRC document NUREG-1757, Volume 3, *Consolidated NMSS Decommissioning Guidance: Financial Assurance, Recordkeeping, and Timeliness* (9/2003). The Licensee is also required to follow the requirements found in the RML in License Condition 9.5.

Survey - Also known as Radiological Survey. As defined in UAC R313-12-3, survey "means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of sources of radiation. When appropriate, such evaluation includes, but is not limited to, tests, physical examinations, and measurements of levels of radiation or concentrations of radioactive material present."

Total Effective Dose Equivalent (TEDE) - As defined in UAC R313-12-3, total effective dose equivalent means "the sum of the effective dose equivalent for external exposures and the committed effective dose equivalent for internal exposures." (TEDE=EDE+CEDE)

Utah Administrative Code (UAC) - The Utah Administrative Code is the body of all effective administrative rules as compiled and organized by the State of Utah's Office of Administrative Rules. The State of Utah's Radiation Control Rules are found in Title R313 and the Ground Water Protection Rules are found in Title R317.

Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 – Is a federal law that provides for the safe and environmentally sound disposal, long-term stabilization, and control of uranium tailings in a manner that minimizes or eliminates health hazards to the public.

Units of Exposure and Dose - As defined by UAC R313-12-20(2)(a)(b)(c)&(d), the units of dose are:

(a) Gray (Gy) is the SI unit of absorbed dose. One gray is equal to an absorbed dose of one joule per kilogram. One gray equals 100 rad.

(b) Rad is the special unit of absorbed dose. One rad is equal to an absorbed dose 0.01 joule per kilogram. One rad equals 0.01 Gy.

(c) Rem is the special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem is equal to the absorbed dose in rad multiplied by the quality factor. One rem equals 0.01 Sv.

(d) Sievert (Sv) is the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sievert is equal to the absorbed dose in gray multiplied by the quality factor. One Sv equals 100 rem.

Units of Radioactivity - As defined by UAC R313-12-40. For purposes of the Radiation Control Rules, activity is expressed in the SI unit of becquerel (Bq), or in the special unit of curie (Ci), or their multiples, or disintegrations or transformations per unit of time.

Unrestricted Area - As defined by UAC R313-12-3, unrestricted area "means an area, to which access is neither limited nor controlled by the Licensee or registrant. For purposes of these rules, "uncontrolled area" is an equivalent term."

Waste - As defined in UAC R313-12-3, waste "means those low-level radioactive wastes containing radioactive material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level radioactive waste means radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in paragraphs (b), (c), and (d) of the definition of byproduct material found in Section R313-12-3."

In addition, in the glossary section of nrc.gov, "waste, radioactive" is defined as "Radioactive materials at the end of their useful life or in a product that is no longer useful and requires proper disposal."

Week - As defined in UAC R313-12-3, week "means seven consecutive days starting on Sunday."

Whole Body - As defined in UAC R313-12-3, whole body "means, for purposes of external exposure, head, trunk including male gonads, arms above the elbow, or legs above the knees."

Worker - As defined in UAC R313-12-3, worker "means an individual engaged in work under a license issued by the Director and controlled by a Licensee or registrant, but does not include the Licensee or registrant."

Year - As defined in UAC R313-12-3, year "means the period of time beginning in January used to determine compliance with the provisions of these rules."

Yellowcake - From the glossary at nrc.gov: "The solid form of mixed uranium oxide, which is produced from uranium ore in the uranium recovery (milling) process. The material is a mixture of uranium oxides, which can vary in proportion and color from yellow to orange to dark green (blackish) depending on the temperature at which the material is dried (which affects the level of hydration and impurities), with higher drying temperatures producing a darker and less soluble material. Yellowcake was commonly referred to as U_3O_8 because that chemical compound historically comprised the majority of the yellowcake produced by uranium recovery facilities utilizing conventional milling methods. Most modern uranium recovery facilities utilize in situ recovery methods and produce a yellowish compound comprised mostly of uranyl peroxide dihydrate. This material is then transported to a uranium conversion facility, where it is transformed into uranium hexafluoride (UF_6), in preparation for fabricating fuel for nuclear reactors."

INTRODUCTION

The Radiation Control Act, Utah Code Title 19 Chapter 3, provides the Department of Environmental Quality's Waste Management and Radiation Control Board the authority to make rules to protect the public and environment from significant sources of radiation. Acting through its director, the Division of Waste Management and Radiation Control (DWMRC or the Division) is the agency charged with administering these rules and regulating activities in the State of Utah that involve radioactive materials. Pursuant to regulation implementation, the Division has issued a RML to the Licensee to possess and manage radioactive materials and 11e.(2) byproduct material.

As part of its legal responsibility, the Division enforces requirements defined by the State of Utah rules. The specific rule that deals with uranium mills is found in the Utah Administrative Code (UAC), Section R313-24, "Uranium Mills and Source Material Mill Tailings Disposal Facility Requirements." Section R313-24 references other rules that are contained in the UAC including: Sections R313-12 "General Provisions," R313-15, "Standards for Protection Against Radiation," R313-18 "Notices, Instructions and Reports to Workers by Licensees or Registrants – Inspections," R313-19 "Requirements of General Applicability to Licensing of Radioactive Material," R313-21 "General Licenses," R313-22, "Specific Licenses," and R313-70 "Payments, Categories and Types of Fees." Federal regulations and NRC Regulatory Guides are also applicable via reference in UAC R313-24, in License Conditions contained in the Licensee's RML.

The White Mesa Mill is licensed by the Division under State of Utah Radioactive Materials License No. UT1900479 (License or RML). This license and its amendments authorize Energy

Fuels Resources (USA) Inc. (Energy Fuels or EFRI)[1] to receive and process natural uranium-bearing ores and certain specified alternate feed materials, to dispose of certain specified byproduct materials, and to possess byproduct material in the form of uranium milling tailings and other uranium byproducts generated by milling operations.

Pursuant to requests received from Energy Fuels and lingering concerns over potential discovery of small quantities of orphaned tailings from previously decommissioned uranium mill sites, the Division prepared a Statement of Basis for each change being proposed for the Energy Fuels Radioactive Materials License and Ground Water Discharge Permit. The Division also prepared Technical Evaluation and Environmental Assessment (TEEA) documents for the proposed Moffat Tunnel and Silmet alternate feed materials. The Ground Water Discharge Permit modification was completed through a separate administrative process and is now final. This Public Participation Summary (PPS) addresses the matters relating to License Amendment No. 10. The TEEAs summarize the information EFRI provided to the Division in its original submittals for the requested actions and the Division's interrogatories related thereto.

These documents provided the grounds upon which the Division staff concluded whether regulatory requirements were satisfied for amendment of EFRI's radioactive materials license.

DWMRC conducted a 47-day general public comment period for License Amendment No. 10, beginning on Monday, April 20, 2020, when the public notice was posted on the Division webpage. The public comment period would have ended at 5:00 p.m. on Friday, June 5, 2020. However, two written requests to extend the comment period were received by DWMRC. The Director decided to grant the extension request for an additional 35 days, for a total of 82 days; thereby the public comment period ended on July 10, 2020.

A Hearing was held on Wednesday May 20, 2020 in Salt Lake City Utah. The purpose of this Hearing was to allow the opportunity for cross examination, thus meeting the requirements of the Atomic Energy Act for Agreement States, found in 42 U.S.C. § 2021(o)(3)(A)(i)(ii). Pursuant to guidance received from then-Governor Gary R. Herbert regarding public meetings during the COVID-19 pandemic, the public hearing was held by video conferencing. One organization participated in the Hearing and two other organizations provided oral comment only at the time of the Hearing:

Organization	Representative	Participated
Uranium Watch	Sarah Fields	Hearing and Oral Comment
Grand Canyon Trust	Aaron Paul	Oral Comment
Ute Mountain Ute Tribe	Scott Clow	Oral Comment

Note: These three organizations also provided written comments following the Hearing.

[1] Over the life of the Mill, different business entities have owned and operated the Mill, including International Uranium Corporation, Denison Mines Corp., and Energy Fuels Inc. To avoid confusion and unless otherwise specified, the name "Energy Fuels" will be used in this PPS to refer to the current licensee and owner of the White Mesa Mill.

DWMRC received a large volume of comments in various forms, both through the public comment process and the Hearing. To create a more balanced and complete administrative record, the Director invited Energy Fuels to provide a response to the comments. The Director's invitation to Energy Fuels to provide response comments was treated as a limited extension of the general public comment period which was closed at that time. Energy Fuels provided a detailed response to a number of public comments. *See* Energy Fuels Response to Public Comments (September 25, 2020) (EFRI Response). Following the EFRI Response, the Director further extended the public comment period on a limited basis by inviting the Ute Mountain Ute Tribe, the Grand Canyon Trust, and Uranium Watch to provide sur-reply comments as to the matters addressed in the Energy Fuels Response. The invitation to submit sur-reply comments was limited to the scope of the matters addressed in the EFRI Response. The invitation to submit sur-reply comments was provided to create a more balanced and complete administrative record to enable the Director to review, weigh, balance, and consider all relevant information before issuing a final licensing action. In response to the Director's invitation, the Ute Mountain Ute Tribe, Grand Canyon Trust, and Uranium Watch did provide sur-reply comments.

The Division has carefully reviewed, evaluated, and considered the public comments, the EFRI Response, and the Sur-Reply Comments and exhibits presented. The primary purpose of this PPS is to document the Division's evaluation and consideration of these comments. This PPS may be considered as a supplement to the Statement of Basis and the underlying documents and analyses relating to the Statement of Basis, including, specifically, the technical analyses regarding the Silmet and Moffatt Tunnel alternate feeds.

Based on the foregoing and the matters addressed below, the Director has determined that the Administrative Record is now complete and that there exists adequate information to render a final agency action on Amendment 10. Based on the Administrative Record as a whole, the Director has determined that there is adequate legal and technical basis to find that Energy Fuels has provided reasonable assurance that Amendment 10, in the form originally proposed by DWMRC, is legally and technically justified. As a result, the Director has made the determination to approve Amendment 10 as proposed, without changes.

Explanation of the Response to Public Comments

The purpose of this PPS is to provide the DWMRC's responses to public comments received during the general public comment period between May 20 and July 10, 2020 by the DWMRC regarding the EFRI license amendment 10 for License RML No. UT1900479. The DWMRC has reviewed and evaluated the information provided in the Reply and Sur-Reply Comments that were submitted in response to the Director's specific information. In its evaluation of the comments, the EFRI Response, and the Sur-Reply Comments, the Division credits the EFRI Response but without necessarily concurring with all the statements in the EFRI Response. Nevertheless, this PPS does not specifically reference the supplemental comments provided in the Reply and Sur-Reply comments. Rather, the Division considered and evaluated the supplemental information provided in the Reply and Sur-Reply comments in order to develop this PPS. In other words, this PPS focuses specifically on the comments received during the general public comment period, which ended on July 10, 2020 and in doing so, relies in part, on the supplemental information provided by EFRI and certain Sur-Reply commenters.

The topics addressed in public comments received by the DWMRC (including both oral and written comments) during the general public comment period are summarized in Table 1. For ease of reference, the DWMRC categorized the comments by subject, resulting in 22 separate topics. Following Table 1, the DWMRC will provide responses to these comments, organized pursuant to the same categories. Table 2 provides a cross-reference as to the topic categories raised by each commenter during the general comment period, which ended on July 10, 2020.

Table 1 – General Response Topics

#1 General Statement
#2 Division and Director Authority
#3 Why is the White Mesa Uranium Mill Located Where it is?
#4 Alternate Feed
#5 Silmet and Moffat Tunnel Alternate Feed Amendment
#6 11e.(2) (ISR (ISL) Disposal)
#7 Surety (Financial Assurance)
#8 Conventional and Non-Conventional Impoundments
#9 Environmental Response for Release Detection
#10 Dose to the Public
#11 Radon
#12 Drinking Water Quality
#13 Groundwater and the Groundwater Discharge Permit
#14 NRC Import License for the Silmet Alternate Feed
#15 Access to Public Records and Confusion over the Word "Renewal"
#16 Cultural Resources
#17 Transportation
#18 Licensing the White Mesa Uranium Mill
#19 History of the White Mesa Uranium Mill
#20 The Division and Alleged Mining Approval
#21 Social Injustice Towards the Native American Communities
#22 Protection of Public Lands

In response to the public comment process described above, 12,092 people and organizations provided comments by email and by letter by the close of the general public comment period.[2] Several comments were received after the close of the general public comment period (some several months late) but are not included in this count. The majority of the comments received were from individuals living outside of the State of Utah. Table 2 provides a summary of the written comments as well as a cross-reference to the general topics identified in Table 1.

[2] It should also be noted that the general comment period also involved a modification to the groundwater discharge permit at the Mill. The comments related to the Mill's groundwater discharge permit have been addressed separately in PPS for the Groundwater Permit modification signed by the Director on March 8, 2021. The Groundwater Permit modification, and the associated comments, is now final and the matters addressed in that administrative action fall outside the scope of this PPS.

Due to the large number of comments received, the Division will not address each comment individually in this PPS.[3] Instead, general responses to comments have been developed to respond to the substance of the comments received. The DWMRC's responses to comments are organized by topic.

Table 2 presents the DWMRC's categorization of the specific comments that each commenter raised. Thus, the DWMRC's responses to each commenter's comments may be derived through review of the referenced comment categories in the Division's responses, below.

Table 2 – Summary of Comments Received and Division Response by General Response Topic

Comments Received	Division Response Comment #s
Form Email #1	1
Form Email #2 (Sponsored by Grand Canyon Trust and SUWA)	1
Form Email #3 (Sponsored by Sierra Club)	1
Form Email #4 (Sponsored by HEAL Utah)	1
Form Email #5	1
Ute Mountain Ute Tribe	1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21
Navajo Utah Commission	1, 21
Uranium Watch	1, 4, 5, 6, 11, 14, 15
Grand Canyon Trust, et al.	1, 2, 4, 5, 6, 14, 18, 19
Bike Packing Roots	1, 13
Citizens Education Project	1
Aaron Peterson	1, 12
Alev Arli	1
Abigail Lynch	1
Aimee Burrows	1
Alex Cooper	1
Alex Steckel	1, 10, 12
Alexander Parvaz	1
Alexis Young	1, 18
Alfred Burse	1
Alice	1
Alicia Smith	1
Alison Mahoney	1, 18, 20
Amanda Lundberg	1
Amanda Theobald	1

[3] The Division notes that the EFRI Response follows a different format. It does provide specific responses to many (but not all) specific comments submitted during the general comment period. The Division has reviewed and relies upon, in part, the EFRI Response in creating this PPS.

Amy Foster	1, 10, 12
Amy Nava	1, 3, 12, 18
Amy Williams	1
Andrea Martin	1, 18
Andrew Lam	1, 18
Angela Deneris	1
Anna Kobb	1
Anna Sharp	1
Anna Ohara	1
Anne Elizabeth Ashworth	1
Annie Rotondi	1, 18
Anthony Daniel Narag	1, 10
Ari Ferro	1, 3, 7, 8, 12, 13
Aron Wahkinney	1
Ashleigh Hamilton	1
Betty Stearns	1
Blake Lyle	1
Bobby Kennedy	1, 10
Bonnie Cooper	1, 17
Boyack Family	1
Bradford Lardner	1
Brandon Ray	1, 10, 13
Bridget M. Koza	1, 10, 13
Brienna Kerr-Atkinson	1, 10, 13
Brigette Dunbeck	1
Brighid Mckenzie	1
Britta Stumpp	1
Brooke Lowrie	1
Byron Pittam	1
Carol Kruep	1
Carl Granfors	1
Carly Stephenson	1
Carloline Mileson	1, 10, 13, 18
Casey Mullen	1
Catherine Shank	1
Cathy Cowels	1, 17
Cha Tori	1, 7
Cheri Brisendine	1, 17
Chris Butcher	1
Chris Johnson	1
Christian Williams	1
Christopher Franzes	1
Christopher Lish	1
Cindy Maughan	1
Citizens Education Project	1

Claire Adler	1
Clare Vergobbi	1
Clarissa Hernandez	1
Corlerain Mack	1, 17
Corrina Paul	1
Courtney Leigh Johnson	1, 8, 13
Craig Attebery	1, 13
Cristiyna Galarza	1
Cynthia Mason	1
Dan Tobin	1
Daniel Moncolva	1
Daniel Wilson	1, 13
Danny Rossi	1
Darrah Appelfeller	1
Dave Jolley	1, 17
David Grimes	1
David Pace	1
Deborah Banton	1
Deborah Westfall	1, 8, 12, 13
Dee Downing	1
Diana Relth	1
Dillon Maxwell	1
Don Nash	1
Ebba Safverbald-Nelson	1, 18
Ed Adams	1
Ed Moss	1, 10, 11, 17, 18
Eirene Hamilton	1
Elise Poll	1
Elizabeth Cohen	1, 18
Elizabeth Mathieu	1
Elliot Goldman	1
Emily A	1
Emily Neisig	1
Emily Wicke	1
Emma Hartman	1
Emma Urofsky	1
Eric Johnson	1, 13, 18
Eva Eagle	1
Evan Daniel	1
Finn Christensen	1
Fiona Raison	1
Flutura Hajdini	1
Frances Chamberlin	1
Gabe Graves	1
George Chapman	1, 7

Grace Tuttle	1
Graham Bailey	1, 18
Hannah Firestone	1
Hannah Fleming	1
Heidi Olsen	1
Henry Austin	1
Hong Son	1
Iain Hueton	1, 8
Iris Moulton	1
Jack Marston	1
Jackie Anderson	1, 21
Jackie Baxton	1
Jackie Shea	1, 12, 13
Jaclyn Hoffman	1
Jan Ellen Burton	1
Jane Bowman, MD	1, 13
Jane Philips	1, 21
Jean Matyczy	1, 21
Jeff Moore	1
Jeff Sindt	1
Jeff Thompson	1, 12, 13, 17
Jeffrey Harding	1, 21
Jennifer Ekstrom	1, 12, 13, 21
Jerry and Edna Taylor	1
Jillian Tomlinson	1
Jim Lantz	1
Joanne Carrubba	1, 21
John Borstelmann	1
John Rogers	1, 12, 13
John Stephens	1
Jordan Rodes	1
Jordan Schupbach	1
Joseph Kenney/Christine Kenney	1
Joseph Litts	1, 21
Julia and Tyler Devrell	1, 12, 13
Juliette C	1, 12, 13, 21
K Bybee	1, 18
Kara Downey	1
Kate Duker	1
Katelin Ong	1, 21
Katherine Seiber	1, 12, 13
Kathleen Bagley	1
Kathleen McKelvey	1, 12, 13
Kathy Carson	1, 12, 13, 21
Kathy and Ross Elliott	1, 8, 12, 13, 18

Kathy English, PhD	1
Kathy Sauer	1
Katie O'Connell	1
Katrina Collins	1, 18
Katrina Vogt	1, 12, 13
Kay Sauer	1
Keith Hack	1, 13
Kelly Varga	1
Ken McClure	1
Kevin Schuster	1, 13
Kira Barsten	1
Kira Curtis	1, 21
Korina Riggin	1, 21
Kristen Clifford	1, 17, 21
Kristi Boyce	1
Kurt Fladger	1
Lacy Haggerty	1
Laura Cortez	1, 21
Laura Ray	1
Laurel Clayson	1, 21
Lauren Elisabeth Haupt	1
Lauren Hebert	1
Leath Tonino	1
Leland and Mary Binns	1
Leo Sharp	1
Leonard Ramos	1
Lexi Daoussis	1, 21
Lila Leatherman	1
Linda Cobb	1, 13
Lindsay Gartner	1
Lisa Scharin	1, 21
Lissa Paak and Gordon Henriksen	1, 13
Liz Montague	1
Liz W	1
Lois Young	1
Lora Matway	1
Lori Le	1
Louis Williams	1, 13
Louise Teal	1
Lydia Trettis	1
Maddie Anzovino	1
Madeleine Goertz	1
Madeline Newel	1
Maija Petterson	1
Malkie Wall	1

Marc Coles-Ritchie	1
Margaret McCoy	1
Margaret Redsteer	1
Margaret Zwick	1
Maria Bisaga	1
Marjean Mckenna	1
Marjorie Connolly	1, 12, 13
Mark Bartlett	1
Mark Jenkins	1
Mary Costello	1
Mary Jo Eichner	1
Mary Moran	1
Mary Stone	1, 18
Matt Noel	1, 13
Matt Thibodeau	1
Matthew Kahabka	1
McCall James	1
Megan Roberto	1
Megan Walsh	1, 8, 12, 13
Megan West	1
Melissa Estep	1, 18
Michael Gadsden	1
Michael Lyman	1
Michael Moir	1
Michael Wauschek	1
Michelle Budge	1
Michelle Pahl, MD	1
Michelle Reott	1, 18
Mollie Podmore	1
Molly Barnewitz	1
Molly Schupbach	1
Molly Scoville	1, 18
Morgan Chappell	1
Natalie Buckley-Medrano	1
Neil	1
Nick Burns	1
Nicola Nelson	1
Nicole Butler	1
Nicole Land	1
Niko Hudson	1
Noel R. Poe	1
Nola Thorne	1
Olivia Evans	1
Pam Hinrichs	1
Pamela and Quentin Baker	1

Patricia Miller	1
Paul Sigler	1
Paul Zuckerman	1
Paul Zuckerman	1
Peter Finn	1
Rachel Frank	1
Rachel Lyman	1
Reed Frick	1
Rhonda Lashley Lopez	1
Rich Holubkov and Dai Cui	1
Richard Eichner	1
Richard Li	1, 21
Richard Spotts	1, 21
Robert & M. Honer Orton	1
Robin Kalsbeek	1
Roger G. Faix, M.D.	1, 21
Ron Andelora	1
Roy H. May, Jr	1
Rossy Sanchez	1
Ryan Sarka	1
Saint Nash/C. Erdmann	1
Sam Wagner	1, 13, 21
Sara Hanks	1
Sara Kenney	1, 21
Sarah Casson	1
Sarah Cate	1
Sarah Emmett	1, 21
Sarah Kelley	1, 18, 21
Sarah Wakeen	1, 21
Scott Miller	1
Scott Thomas	1, 21
Scott and Lori Reichard	1
Scott Williams	1, 2
Shana Klein	1
Sharon Baudelaire	1
Shauna Jones	1
Shaydon Armstrong	1
Sheila Smithson	1
Sheri Elliott Harris	1, 21
Shylah Ogle	1
Sky Funmaker	1
Sonia Gomez	1
Sonia Schreier	1
Sophie Babka	1
Soyoung Kim	1

Stacey Cole	1
Stefan Tangen	1, 21
Stephen Leimgruber	1
Steve Halvorson	1
Steven Summers	1
Sue Johnson	1
Susan Bloyer	1
Susan Jacobson	1
T Chiodo	1
Tasha Keyes	1
Taylor Burke	1
Tenzin Chophel	1
Teppei Fujimoto	1, 21
Teresa Fuster	1, 21
Theresa Ballaron Titone	1
Thomas Wm Hamilton	1
Tim Tait	1
Todd Dell	1
Tom Mavilia	1, 13, 21
Tom Sullivan	1
Trilby Nelson	1
Ty Eldridge	1
Tyler Markham	1
Valerie Fuller	1
Van Peterson	1
Vickie Morgan	1
Walt Williams	1, 6, 8

SECTION 1.0 SUMMARY OF COMMENTS RECEIVED

The table below shows the breakdown of the written comments received in terms of supporting and opposing Amendment 10.

Types of Comments Received	Number of People/Organizations
Form Email #1 Against	3
Form Email #2 Against	4,600
Form Email #3 Against	6,681
Form Email #4 Against	152
Form Email #5 Against	25
Emails For	312
Original Emails Against	319

Comments Received from San Juan County, Utah

For the Proposed Actions	Against the Proposed Action

151	30

The White Mesa Uranium Mill is located in San Juan County, Utah. Comments were received from several different communities within the county. Several individuals identified themselves as Native American, and of those some commented in favor of the proposed actions and some commented against the proposed action.

People and organizations from San Juan County that are for the proposed actions:

- Stated that their jobs and/or the jobs of family and friends (directly and indirectly) depend on the Mill. A few claim that jobs at the Mill pay more than jobs associated with tourism;
- Urged the State of Utah to listen to local citizens and allow the Mill to operate;
- Claimed that tax revenue from the Mill supports local public institutions, such as the San Juan County School District and San Juan County; and
- Claimed that reprocessing alternate feed material is an environmentally responsible activity.

People and organizations from San Juan County that are against the proposed actions:

- Expressed concern of negative effects on health of the local population and surrounding environment;
- Urged the State of Utah to listen to local citizens and not allow the Mill to operate;
- Claimed that the existence of the Mill is a negative impression on tourists and has a negative effect on people's jobs that depend on the tourism industry; and
- Expressed concerns over the negative impact on cultural resources and public lands.

Comments Received from within the State of Utah (Not including San Juan County)

For the Proposed Actions	Against the Proposed Action
23	1592

People and organizations from the rest of Utah that are for the proposed actions:

- Stated that the jobs of family and friends (directly and indirectly) depend on the Mill;
- Claimed that tax revenue from the Mill supports local public institutions such as the San Juan County School District and San Juan County;
- Claimed that nuclear energy is an environmentally friendly way to produce electricity; and
- Claimed that reprocessing alternate feed material is an environmentally responsible activity.

People and organizations from the rest of Utah that are against the proposed actions:

- Expressed concern of negative effects on health of the local population and surrounding environment;
- Urged the State of Utah to listen to Utah citizens and not allow the Mill to operate;
- Claimed that the existence of the Mill is a negative impression on tourists and has a negative effect on people's jobs that depend on the tourism industry; and

- Expressed concerns over the negative impact of cultural resources and public lands.

Comments Received from Outside the State of Utah

For the Proposed Actions	Against the Proposed Action
138	**9954**

As stated above, most of the comments received were from individuals who do not live within the State of Utah. These comments also include individuals that did not indicate where they were from. Comments were received from all 50 States, the District of Columbia and several from outside the United States.

People and organizations from outside the State of Utah that are for the proposed actions:

- Stated that the jobs of family and friends (directly and indirectly) depend on the Mill;
- Claimed that the tax revenue from the Mill supports local public institutions such as the San Juan County School District and San Juan County;
- Claimed that nuclear energy is an environmentally friendly way to produce electricity;
- Stated that the U.S. should be obtaining the uranium the country uses from domestic sources (referring to the Moffat Tunnel material); and
- Claimed that reprocessing alternate feed material is an environmentally responsible activity.

People and organizations from outside the State of Utah that are against the proposed actions:

- Expressed concern of negative effects on health of the local population and surrounding environment;
- Urged the State of Utah to listen to the U.S. citizens and not allow the Mill to operate;
- Claimed that the existence of the Mill is a negative impression on tourists and has a negative effect on people's jobs that depend on the tourism industry;
- Expressed concerns over the negative impact of cultural resources and public lands; and
- Claimed it constitutes social injustices to indigenous people.

SECTION 2.0 DIVISION GENERAL RESPONSES

Division Response #01: General Statement

The DWMRC would like to thank the commenting parties for their time and effort in connection with the proposed license amendment. The DWMRC recognizes that the License and associated operations are subject to complex technical, permitting, and legal requirements and that operations at the Mill potentially impact various interests and stakeholders. The DWMRC's goal is to ensure that operations under the License are conducted in compliance with all applicable legal and technical requirements and in this matter, the Division is satisfied that this goal is being achieved.

The Division appreciates that by a count of the comments, most commenters oppose the Mill and its operations. However, this public comment process is an opportunity to present evidence and

information that is relevant to the administrative action at issue. It is not a referendum (voting) process. The Division understands that the Mill is an unpopular land use, and uranium production is an unpopular type of operation, among a segment of the population. Applying Utah land use law by analogy, it is settled in Utah appellate courts that public clamor, standing alone, is not sufficient basis for a land use authority to deny the lawful use of private property:

> Indeed, there is almost uniform public clamor when any mental health facility, halfway house, jail or prison is proposed. The public realizes the need for such facilities, but they should always be located somewhere else.... Citizen opposition is a consideration which must be weighed, but cannot be the sole basis for the decision to deny.

Uintah Mountain RTC, L.L.C. v. Duchesne County, 2005 UT App 565, ¶ 29 (citation omitted). *See also Thurston v. Cache County*, 626 P.2d 440, 445 (Utah 1981); *Ralph L. Wadsworth Construction, Inc. v. West Jordan City*, 2000 UT App 49, 999 P.2d 1240; *Davis County v. Clearfield City*, 756 P.2d 704 (Utah Ct.App.1988). While this line of cases arises under Utah land use laws, the principle of public clamor applies to this licensing action. Public opposition to the Mill and its operations is a consideration, but cannot be accorded substantial weight without valid evidentiary, technical, and legal support. The fact that the Mill and its operations are unpopular to a segment of the public is noted and has been accorded appropriate weight.

Division Response #02: Division and Director Authority

One commenter requested that the State clearly define that it has regulatory authority over radioactive materials. Other commenters contend that DWMRC has the discretion to implement the state's uranium mill program in a manner that is more stringent than the NRC's program and that DWMRC should exercise that discretion to deny Amendment 10 and to curtail the NRC-approved alternate feed program in the State of Utah. The Division disagrees with these comments.

This topic is addressed in detail in other parts of the Administrative Record. *See* Technical Evaluation and Environmental Analysis: Silmet Alternate Feed Request, DRC-2020-007005. By way of summary, on March 29, 1984, the State of Utah became an NRC Agreement State, which gave Utah the authority to begin regulating radioactive materials. The State of Utah maintains authority to regulate uranium mills within its borders. The State of Utah received this regulatory authority in an amended agreement with the NRC in August 2004. Under the amended agreement, the state of Utah agreed to implement NRC's radiation control program and maintain compatibility. The NRC is authorized to enter into an agreement with the State of Utah in the Atomic Energy Act under Section 274. The State of Utah's Legislature granted authority to regulate radioactive materials, including uranium mills, in the State of Utah's Radiation Control Act (Title 19, Chapter 3 Part1), in the Utah Administrative Code R313-12-2 and the RML's opening paragraph. Additional details regarding the NRC's approved alternate feed program are addressed below in Division Response #04: Alternate Feed. The specific topic addressed in this Division Response #02 is DWMRC's (and its Director's) legal authority with respect to the alternate feed program.

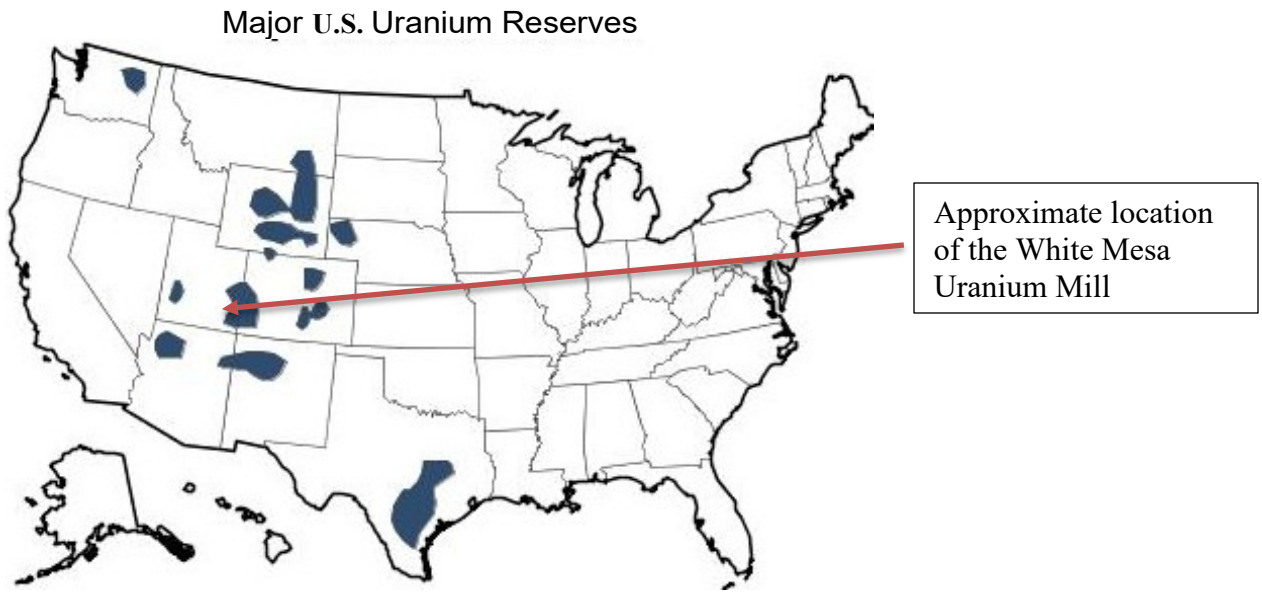
One commenter suggested that the DEQ failed to provide public notice and comment to the effect that the state would be following the NRC's alternate feed program, following NRC guidance and precedents. This comment is misplaced. The state's decision to become an agreement state was made by other branches of government, namely the Legislature and the Governor. This was a political decision. Moreover, while the legislature has the power to curtail the NRC's alternate feed program, it has done just the opposite. As explained more fully below in Division Response #04, the legislature has adopted statutory definitions to make it clear that as a matter of law in Utah, alternate feed is not defined as radioactive waste and a facility that processes alternate feed is not a radioactive waste facility. DWMRC is bound to follow the Utah Code in connection with its licensing actions. See Division Response #05.

The same commenter also raised objections to the NRC's development of its alternate feed program, such as the NRC failed to provide adequate public notice and comment. These comments are misplaced and untimely. These comments should be directed to the NRC, not to the DWMRC. In any event, these comments are untimely because they amount to a collateral attack as to administrative and legal matters that have been final for decades. The DWMRC finds that these comments are not relevant to the present licensing action because this action is to review and determine the acceptability of two specific alternate feed materials and not the alternate feed program as a whole.

Division Response #03: Why is the White Mesa Uranium Mill Located where it is?

Several commenters questioned why a uranium mill would be allowed to be built where the Mill is located. The siting and location of the Mill is not at issue in Amendment 10 and amounts to public clamor. The decision on the Mill location was made decades ago by entities other than DWMRC, including the NRC and San Juan County. Objections to the location of the Mill at this time are not only public clamor but collateral attacks to policy and other administrative actions that became final and unappealable decades ago. *See* Division Response #21: Social Injustice Towards the Native American Communities.

That being said, to respond to comments, the Division will provide its understanding as to why the Mill was sited by other agencies and decisionmakers in its current location. The White Mesa Uranium Mill is located six miles south of Blanding, Utah and approximately four miles north of the Ute Mountain Ute Tribe White Mesa community. Below is a map from the U.S. Energy Information Administration website (eia.gov). This map shows the uranium reserves in the United States. The map demonstrates that the White Mesa Uranium Mill is in close proximity to the major uranium reserves located in the Colorado Plateau, the Arizona Strip and the Henry Mountains.



Sources: Based on U.S. Department of Energy, Grand Junction Project Office (GJPO). National Uranium Resources evaluation. Interim report (June 1979) Figure 3.2:and GJPO data files.

The original 1978 *Environmental Report for the White Mesa Uranium Project* discusses how the Mill's location was chosen due to its close proximity to the existing uranium mines at the time. In 1979, the local communities of San Juan County, Utah, including the Ute Mountain Ute and Navajo Tribes, wrote the NRC asking for the Mill to be sited where it is now located. The NRC approved this choice of location after a full analysis of the Mill site was done, and this analysis is documented in the 1979 *Final Environmental Statement related to operation of the White Mesa Uranium Project* (NUREG-0556). Appendix A of the 1979 *Final Environmental Statement related to operation of the White Mesa Uranium Project* (NUREG-0556) has copies of letter received by the NRC from the local communities. The Mill siting decision became final decades ago and as discussed, is not a topic that is properly before the Division in connection with the present licensing action.

Division Response #04: Alternate Feed

Many commenters questioned why processing alternate feed is allowed in the State of Utah at all. Other commenters acknowledged that while there may be authority for DWMRC to sanction the alternate feed program, DWMRC, acting alone, has discretion to end the program. Moreover, many of the comments on the alternate feed topic amount to collateral attacks on long-established questions of law. The DWMRC does not accept these comments.

Overview

The alternate feed program is part of the NRC's long-established uranium mill program which the State of Utah now implements. Accordingly, it is legal under Utah law for the Mill to process alternate feeds for their uranium content. Utah Code Section 59-24-102 (1) defines what alternate feed is and 19-3-105 states in part that the definition of a "Radioactive Waste Facility" does not include facilities that receive alternate feed material for reprocessing. Thus, under Utah

statutory law, the residual wastes derived from the processing of alternate feeds does not render the Mill a radioactive waste facility. The Mill has a different regulatory status under both federal and state law. The NRC developed its alternate feed policy and program in response to a court interpretation (*Kerr-Mcgee vs NRC*). This decision held that under the congressional acts of the AEA and UMTRCA, there is ample legal support for processing alternate feed type materials for source material. This judicial decision makes processing alternate feeds legal under federal law as well. (See table in this section for more discussion on the *Kerr-Mcgee vs NRC* court decision)

Based on the TEAA documents, processing the two alternate feed materials at issue in this licensing action does not change or increase the impacts on workers and the public from the impact of processing native ores. On November 14, 2001, the NRC discussed the approach to take when considering license amendment requests pertinent to a facility with ongoing operations.[4] The NRC wrote: "Since a license amendment involves a facility with ongoing operations, a petitioner's challenge must show that the amendment will cause a 'distinct new harm or threat apart from the activities already licensed.'"[5] Comments that did not provide such a demonstration were accepted as indicative of the commenter's opinion, but were not used as grounds to challenge the proposed license amendment. The Mill is proposing to use the same methods to process the two alternate feed materials at issue in this licensing action as they currently use to process native ores. The transportation routes for alternate feeds to get to the Mill are the same routes that trucks hauling native ore use. The uranium content in the two alternate feeds at issue in this licensing action is in the same range as the native ores processed at the Mill. By State Law (59-24-102 (1)) alternate feeds are not allowed to include EPA listed hazardous wastes. Both alternate feed materials at issue in this licensing action have been assessed and determined that they do not contain hazardous wastes. Therefore, there is no *"distinct new harm or threat apart from the activities already licensed"* at the White Mesa Uranium Mill.

DWMRC's Discretion to Curtail the Alternate Feed Program

The comments suggesting that DWMRC exercise its discretion to deny Amendment 10 and to otherwise end the NRC-approved alternate feed program at the Mill are mis-directed. Under separation of powers, DWMRC is a regulatory agency within the executive branch of Utah's government. As such, DWMRC has the responsibility to implement and enforce the policies adopted by the legislative branches of state government, specifically the legislature and the Waste Management and Radiation Control Board. In addition to the wording in the NRC agreements with the State of Utah referenced above, signed by the Governor, there are several provisions of the Utah Code that DWMRC interprets as establishing that DWMRC is expected to implement the NRC's program—neither more nor less stringent than the NRC would implement if the NRC were still the regulating agency for the Mill.

First, as relating to alternate feeds, the legislature has included a statutory definition of "alternate feed material" in the Utah Code (*see* Sections 59-24-102(1) and 19-3-105(1)(a)). The legislature further excluded a facility that processes alternate feed material from the definition of

[4] CLI-01-21, ML030420224, pp. 247-254.
[5] Ibid. p. 248

"radioactive waste facility" (*see* Section 19-3-105(1)(d)(ii)(A)). Thus, the tailings resulting from the processing of alternate feeds are not "radioactive waste" within the meaning of the Radiation Control Act. These statutory references are consistent with the NRC's approved alternate feed program. Instead of prohibiting the NRC's approved alternate feed program, the Utah legislature has indicated express legislative intent that the processing of alternate feed material in Utah does not render the processing facility a radioactive waste facility. DWMRC does not enact laws or set policy. DWMRC follows and implements the apparent intent of the legislature as provided in the Utah Code. The comments about the impropriety of processing alternate feed materials in Utah would be properly directed to the legislature, not to DWMRC.

Second, the legislature has created the Waste Management and Radiation Control Board and has delegated limited, quasi-legislative functions to the board (*see* Section 19-1-106; 19-3-103.1(1)), but the Board's rulemaking delegation has statutory requirements and limitations. On the one hand, the express intent of the legislature is that the Board's rules be adequate "to meet the requirements of federal law relating to radiation control to ensure the radiation control program under this part is qualified to maintain primacy from the federal government." Utah Code § 19-3-104(4)(b). On the other hand, the Board's authority to enact rules that are more stringent than the NRC's program is limited. Section 19-3-104(7) and (8) provides:

> (7) (a) Except as provided in Subsection (8), and in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, the board may not adopt rules, for the purpose of the state assuming responsibilities from the United States Nuclear Regulatory Commission with respect to regulation of sources of ionizing radiation, that are more stringent than the corresponding federal regulations which address the same circumstances.
> (b) In adopting those rules, the board may incorporate corresponding federal regulations by reference.
> (8) (a) The board may adopt rules more stringent than corresponding federal regulations for the purpose described in Subsection (7) only if it makes a written finding after public comment and hearing and based on evidence in the record that corresponding federal regulations are not adequate to protect public health and the environment of the state.
> (b) Those findings shall be accompanied by an opinion referring to and evaluating the public health and environmental information and studies contained in the record which form the basis for the board's conclusion.

Thus, it is reasonable to read the Utah Code and the State's NRC agreement that the Board and DWMRC are expected to implement the NRC's program—no more and no less—unless the Board's rulemaking adopting a more stringent requirement satisfies the express requirements set forth in the Utah Code, based on findings that a more stringent rule is required to protect public health and the environment. The Board has not adopted a rulemaking setting standards for alternate feed processing that is more stringent than the NRC's approved alternate feed program. In the absence of a valid rule or statute, DWMRC is not in the position to unilaterally curtail alternate feed processing in Utah because some people object to the practice. That question is properly before the legislature and, potentially, the Board, but not DWMRC.

To be sure, the Atomic Energy Act acknowledges that a state program may be *more* stringent than federal law and still be compatible. Under 42 U.S.C. § 2021(o)(2) (emphasis added):

> In the licensing and regulation of byproduct material … a State shall require … compliance with standards which shall be adopted by the State for the protection of the public health, safety, and the environment from hazards associated with such material which are equivalent, to the extent practicable, *or more stringent than*, standards adopted and enforced by the Commission for the same purpose….

Under separation of powers, it is not the role of DWMRC, as an executive branch agency, to set policy on the question of whether Utah's radiation control program should be more stringent than federal law. The decision as to whether the Utah program should be more stringent lies with the legislature and with the Waste Management and Radiation Control Board, not with the Division. For its part, the legislature has expressly acknowledged the validity of the NRC's alternate feed program by providing a statutory definition of alternate feed and providing that a facility that processes alternate feed is not a radioactive waste disposal facility. Moreover, while the legislature has, indeed, provided the Waste Management and Radiation Control Board to enact rules that are more stringent than federal law, subject to conditions, the Board has never done so with respect to alternate feeds.

Some commenters specifically requested that DWMRC reject both alternate feed amendment requests based on the theory that these feeds would result in a situation that would be "inimical to the health and safety of the public" within the meaning of Utah Admin. Code R13-22-33(1)(d). Commenters have also invited the Director to rely on rule-based authority to impose more stringent requirements if deemed in the interest of public health, safety, and welfare, to support reporting, and to prevent loss or theft of licensed material. *See* R313-22-34(2)(a). The Division disagrees with these comments. As described in detail in the Administrative Record, EFRI has provided reasonable assurances that the processing of the Silmet and Moffat Tunnel alternate feeds will not give rise to threats to public health and safety, no more than the processing of ore and similar feeds for the recovery of uranium, thorium, and other values. After reviewing the Administrative Record as a whole, DWMRC finds that EFRI has provided reasonable assurance that the proposed License amendment at issue here is not "inimical to the health and safety of the public" within the meaning of Utah Admin. Code R13-22-33(1)(d).

Finally, the role of the U.S. Department of Energy (DOE) in connection with the NRC's approved alternate feed program should also be considered. By operation of federal law, DOE will have perpetual, long-term ownership of and stewardship over the Mill property and 11(e).2 materials disposed of at the Mill after its decommissioning and reclamation. Thus, the resources of the federal government, through DOE, will be available to protect public health and the environment with respect to the Mill on a perpetual basis. This observation provides appropriate context for the comments expressing concerns about the long-term implications of the present amendment. Moreover, there is no evidence in the Administrative Record that DOE has previously objected to the NRC's alternate feed rulings and program as a general proposition despite having had many opportunities to do so. The NRC's alternate feed program potentially impacts DOE, as the statutory steward of newly generated 11.e(2) material. Perhaps even more important, DOE did not provide comments or objections as to the Silmet and Moffat Tunnel alternate feed requests at issue in Amendment 10. As the ultimate legal owner and steward of

the tailings that will be generated by the two alternate feed applications pending before the Division, DOE's silence is accorded appropriate weight.

Based on the foregoing, DWMRC, acting alone, does not have the legal authority to end the NRC's approved alternate feed program in the State of Utah as many commenters have urged. In the alternative, if and to the extent that DWMRC, acting alone, does have the legal authority and discretion to curtail the NRC-approved alternate feed program in Utah, DWMRC exercises that discretion to decline the invitation to do so. The basis for exercising this discretion is described in this PPS and throughout the Administrative Record.

Collateral Attacks on the Legal Status of Approved Alternate Feed as "Ore" Under Federal Law

Many commenters stated that alternate feed material is not "ore" under federal law. The Division disagrees with these comments for many reasons, the primary reason being that these comments amount to public clamor and a collateral attack on long-established legal precedents. This legal question is a matter of federal law. The Division uses the definition of ore developed by the NRC for the regulation of approved alternate feeds and the alternate feed guidance documents. The present definition of "ore" used by the NRC is in response to a court interpretation (*Kerr-Mcgee vs NRC*) of what ore is in relation to the AEA.

Other commenters have argued that alternate feed materials, specifically those from Silmet and Moffat Tunnel, are "waste." The Division disagrees. See Division Responses #05 and #14.

One commenter questioned whether the Silmet material and Moffat Tunnel material met the definition of "Source Material" (See Glossary). Under federal law, source material includes ores which contain by weight one-twentieth of one percent (0.05%) or more of: (i) Uranium, (ii) thorium or (iii) any combination thereof. (10 CFR 40.4). As documented in Section 1.1.1 in both TEEAs, the Silmet material has a Uranium content of 0.17 to 0.41% uranium; and the Moffat material has a uranium content from 0.45 to 0.49 % uranium. Both are above the 0.05% uranium by weight to meet the definition of source material under the ore element of the definition. In addition, both materials have naturally occurring thorium which would increase the percentage of source material in both. Thus, both materials are source material under federal law.

The same commenter makes several comments about the lack of a federal statutory or regulatory definition of alternate feed. These comments fail to recognize that the Radiation Control Act, Section 19-3-105(1)(a) (incorporating Utah Code § 59-24-102(1)(a)), does provide a legal definition of Alternate Feed in the State of Utah:

(1) (a) "Alternate feed material" means a natural or native material:
(i) mined for the extraction of its constituents or other matter from which source material may be extracted in a licensed uranium or thorium mill; and
(ii) may be reprocessed for its source material content.
(b) "Alternate feed material" does not include:
(i) material containing hazardous waste listed under 40 C.F.R. Part 261, Subpart D;
(ii) natural or unprocessed ore; or

(iii) naturally occurring radioactive materials containing greater than 15 picocuries per gram of radium-226.

Utah Code § 59-24-102(1)(a). At the same time, the Radiation Control Act adopts the federal definition of byproduct material. *See* Utah Code § 19-3-102(3) ("'Byproduct material' means the same as that term is defined in 42 U.S.C. Sec. 2014(e)(2)."). The Division finds that both the Silmet and Moffat Tunnel materials qualify as alternate feeds under the Utah Code's statutory definition and that the existence of a Utah statutory definition for alternate feeds addresses comments regarding potential ambiguity and legal illegitimacy of the alternate feed program at the Mill generally and as applied to the present licensing action specifically.

Before becoming an Agreement State with the NRC for the regulation of uranium mills in Utah, the State of Utah submitted objections to the NRC that an alternate feed request for the Mill then pending before the NRC. More specifically, in the Tonawanda Alternate Feed Case (also known as Ashland 2), the state of Utah objected to the proposed shipment of byproduct material to the Mill (then owned by International Uranium (USA) Corporation and regulated directly by the NRC) based on the theory that the receipt of byproduct material was "sham disposal" of radioactive waste. The Administrative Judge held that the material was byproduct material and rejected the state's "sham disposal" argument. See *In the matter of International Uranium (USA) Corporation (Receipt of Material from Tonawanda, New York)*, Docket No. 40-8681-MLA-4 (February 9, 1999). The Administrative Law Judge's Decision included the following regarding the scope of the definition of 11e.(2) byproduct material: "Congress enacted the 11e.(2) definition, which expressly declared mill tailings to be a form of byproduct material. […] [T]ailings generated during uranium milling operations would 'formally be byproducts rather than waste.'"[6]

The entire five-member Nuclear Regulatory Commission affirmed this decision under the same docket reference, in a decision dated February 10, 2000. The Commission reasoned that so long as more than a minute or negligible recovery of uranium were possible from the material, there was no issue of "sham disposal" of byproduct material at the White Mesa Mill. *Id.* at 21. As part of this decision, the NRC considered the financial terms of the decision to receive and process the alternate feed material, clarifying that financial terms under which the Mill received and processed alternate feeds were not relevant to determining propriety of accepting the material for processing at the Mill: "Our review of UMTRCA and its legislative history confirms the Presiding Officer's conclusion that the requirement that the material be 'processed primarily for its source material content' most logically refers to the actual act of processing [sic] for uranium or thorium within the course of the nuclear fuel cycle, and does not bear upon any other underlying or 'hidden' issues that might be driving the overall transaction. "[7] The Division is legally bound to follow these federal requirements.

A summary of the history for the most significant matters relating to the NRC's approved alternate feed program, and specifically the NRC's interpretation of the term, "ore" under federal law, is provided in the table below. The table is not comprehensive in terms of the analysis

[6] ML14133A521 p. 10
[7] ML14133A521 p. 9

provided in the following administrative matters. These matters are public record and each matter has its own administrative record. References to copies of full decisions, available in a previous administrative record related to the Mill, are provided. The following summary is provided for context to describe the major elements of the NRC's approved alternate feed program. However, as mentioned above, Utah has a specific statutory definition of "alternate feed." As a result, the legal analysis that applies in Utah will potentially be different than under federal law. In other words, the Utah legal analysis does not hinge on whether alternate feed qualifies as ore under federal law. It is a defined category of material that may be reprocessed at a licensed mill for the recovery of uranium, thorium, and other values. Yet, the two programs are compatible.

Summary for the History of the Definition and Interpretation of Alternate Feed under federal law.

Year	Description
1990	In the *Kerr-McGee vs. NRC* court decision, which was argued before the United States Court of Appeals, District of Columbia Circuit in 1989, Kerr-Mcgee challenged the NRC's definition of byproduct material. In the Background section the court describes the regulatory framework of this decision and how the AEA and UMTRCA apply to the decision. In the Factual Background section, the court describes how Kerr-Mcgee owned a Thorium Mill near West Chicago, Illinois. It also discusses that a portion of the material processed for its thorium content was first processed for its rare earth minerals content. At that time, the NRC determined that this material was not considered byproduct material because it had been previously processed before it was reprocessed for its thorium content and it would be classified as source material. The court also discussed that the material that was processed for the rare earth content as well as the thorium content were identical to the material that was processed for its thorium content in physical composition and in potential health hazards. In the Discussion section the court discusses the definition of ore. It states: "The word 'ore' is also subject to more than one meaning. In fact, there is ample basis within the AEA for applying the term to the stockpiled material remaining after the rare earth had been extracted from the feedstock ore and before that material had been processed for its thorium content. For example, section 101 of the UMTRCA states that '[a] license for the production of any uranium product from residual radioactive materials shall not be treated as a license for production from ores ... if such production is in accordance with section 7918(b) of this title.' 42 U.S.C. Sec. 7911(6) (1982) (emphasis added). The clear implication is that if such production is not in accordance with section 7918(b), then production from residual radioactive materials may be treated as production from ores.

	Moreover, the NRC's designation of the offsite tailings as 'source material' implies that they may be properly categorized as "ore" because the NRC defines source material as "ores which contain by weight ... (0.05%) or more of ... thorium.' 10 C.F.R. Sec. 40.4(h) (emphasis added); see also 42 U.S.C. Sec. 2014(z) (statutory definition of source material). The NRC cannot have it both ways. If the offsite tailings may be characterized as ore, so must the stockpiled material from which they were derived. The NRC's construction is not saved by the happenstance that the tailings in this case have a sufficiently high thorium content (0.05% or more by weight) to enable the agency to classify the offsite wastes as "source material" and therefore subject to its licensing authority under another part of the AEA. In the first place, statutory definitions are intended to have general applicability. A construction of section 11(e)(2) is not acceptable if it will orphan mill tailings having a source material content of less than the 0.05% threshold, as is usually the case. Second, the NRC's interpretation would exclude the offsite wastes from coverage by the regulations promulgated pursuant to Title II that are designed to protect the public health against the hazards created by mill tailings produced in the course of the nuclear fuel cycle." In the Conclusion section the court states: "The UMTRCA was intended to bring previously unregulated radioactive end products of the source material extraction process within the scope of NRC regulation and to provide a comprehensive remedial program for the safe stabilization and disposal of uranium and thorium mill tailings. The NRC's interpretation of section 11(e)(2), however, places a portion of the thorium tailings from Kerr-McGee's West Chicago facility outside of the UMTRCA's regulatory regime even though they are in all relevant ways identical to tailings found by the NRC to be byproduct material and thus subject to the UMTRCA's remedial program. The NRC's construction thus frustrates the purposes of the UMTRCA by rendering it inapplicable to waste material that it was clearly intended to reach and recreating a jurisdictional gap it was intended to close. As we find that interpretation impermissible, and as we have considered the other arguments put forth by Illinois and Kerr-McGee and found them without merit, we grant the petitions for review in Nos. 88-1636 and 88-1726, and deny the petition for review in No. 87-1254." See the full court decision in Attachment 5 of License Amendment #8 License Renewal found at https://deq.utah.gov/waste-management-and-radiation-control/attachment-5-public-participation-summary-energy-fuels-resources-usa-inc
1992	In the May 13, 1992 publication of the Federal Register pgs. 20530 -20533 the NRC published its first discussion of alternate feeds being used as "ores" for the extraction of source material such as uranium. This included a discussion the 11e section of the AEA and examples of NRC licensing actions which allowed the

	processing of alternate feed materials. The NRC recognizes that the AEA and UMTRCA do not have a definition of "ore" and refers to the court decision of *Kerr-McGee vs. NRC* and its definition of ore as it applies to the AEA and UMTRCA. The NRC also discusses the definition of 11e.(2) byproduct material and the importance of the word "any" in that definition. The NRC then proposed its own definition as "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." This definition took in account two major consideration: 1. It is broad enough to include a wide variety of feed materials. 2. The definition continues to be tied into the nuclear fuel cycle. The remainder of the discussion revolves around the issues with RCRA, low-level radioactive waste and alternate feeds. See a copy of the 1992 Federal Register in Attachment 5 of License Amendment #8 License Renewal found at https://deq.utah.gov/waste-management-and-radiation-control/attachment-5-public-participation-summary-energy-fuels-resources-usa-inc
1995	On August 15, 1995 the NRC publishes SECY-95-211 titled *FINAL "REVISED GUIDANCE ON DISPOSAL OF NON-ATOMIC ENERGY ACT OF 1954, SECTION 11e.(2) BYPRODUCT MATERIAL IN TAILINGS IMPOUNDMENTS," AND FINAL "POSITION AND GUIDANCE ON THE USE OF URANIUM MILL FEED MATERIALS OTHER THAN NATURAL ORES"*. In the Background section of this document the NRC discusses the history of the development of this guidance document. The document discusses what needs to be reviewed and determined to approve an alternate feed to be used as an "ore" for source material. See a copy of SECY 95-211 in Attachment 5 of License Amendment #8 License Renewal found at https://deq.utah.gov/waste-management-and-radiation-control/attachment-5-public-participation-summary-energy-fuels-resources-usa-inc
1995	In the September 22, 1995 publication of the Federal Register pgs. 49296 and 49297, The NRC finalizes the Uranium Mill guidance document for the use of Uranium Mill Feed Material Other than Natural Ores. In the discussion three criteria are identified to assist Staff for determining if an alternate feed can be processed as an ore. 1. Determination of whether the feed material is ore. To do this the following definition is to 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." 2. Determination of whether the feed material contains hazardous waste. If the material contains listed waste under subpart D of RCRA, then the material would not be accepted to avoid dual regulation of the material by the NRC/EPA.

	3. Determination of whether the ore is being processed primarily for its source material content. This is to be done by the Co-disposal test and the Licensee certification and justification test. See a copy of the 1995 Federal Register in Attachment 5 of License Amendment #8 License Renewal found at https://deq.utah.gov/waste-management-and-radiation-control/attachment-5-public-participation-summary-energy-fuels-resources-usa-inc
1998	The State of Utah filed a Request for Hearing and Petition for Leave to Intervene in the *Ashland 2* alternate feed license amendment request. The State of Utah argued that the NRC staff improperly granted the license amendment because the Mill was not processing the Ashland 2 material "primarily" to recover its relatively minimal uranium content, but rather to obtain the generous handling and disposal fee. The State of Utah also emphasized that Mill's license amendment application failed to adequately substantiate that the material was to be "processed primarily" for its uranium content. The State of Utah insisted upon "some objective documentation" to show that recovery of the uranium, not payment for disposal, was Mill's primary interest behind the license amendment.
2000	The NRC issues its decision on the State of Utah's Petition to Intervene in the *Ashland 2* alternate feed license amendment request. According to this document the issue in this proceeding is the Atomic Energy Act's definition of 11e.(2) material, defined by the statute as "the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." The NRC's Presiding Officer explained, "[i]f ... the material were [sic] processed primarily to remove some other substances (vanadium, titanium, coal, etc.) and the extraction of uranium was incidental, then the processing would not fall within the statutory test and it would not be byproduct material within the meaning of the Atomic Energy Act. That is, the adverb 'primarily,' applies to what is removed from the material by the process and not to the motivation for undertaking the process." The Presiding Officer went on to conclude that the NRC staff appropriately granted the license amendment because IUSA "is milling ore" to extract uranium and therefore is "not involved in a sham." The Presiding Officer also rejected Utah's claim that the Guidance was intended to prevent material from being categorized as 11e .(2) byproduct material if the Licensee's primary economic motive was to receive a fee for waste disposal instead of to recover the uranium. "The Alternate Feed Guidance," the Presiding Officer stated, "is not supportive of the position, taken by the State of Utah, that material is to be considered byproduct only if the primary economic motivation is to remove uranium rather than to dispose of waste." The NRC further described the purposes behind the wording of § 11e.(2)'s definition served: (1) to expand the types of materials that properly could be classified as byproduct material; (2) to make clear that even feedstock containing less than 0.05% source material could qualify as byproduct material; and (3) to

	assure that the NRC's jurisdiction did not cross over into activities unrelated to the nuclear fuel cycle. The Mill's license amendment was consistent with these statutory intentions, regardless of whether Mill's bigger interest was payment for taking the material or payment for the recovered uranium. Indeed, even accepting the State of Utah's claim that the four million dollar payment the Mill contracted to receive for processing and disposing of the Ashland 2 FUSRAP site material was the primary motivator for this transaction, the tailings generated from the processing can still properly be classified as § 11e.(2) byproduct material. See the NRC Decision in Attachment 5 of License Amendment #8 License Renewal found at https://deq.utah.gov/waste-management-and-radiation-control/attachment-5-public-participation-summary-energy-fuels-resources-usa-inc
2004	State of Utah becomes an Agreement State for Uranium Recovery

Note: This table originally appeared in the PPS for License Renewal Amendment #8 and it was included in both TEEAs for Silmet and Moffat.

In this context, one commenter argues that alternate feed is not ore because the EPA has not expressly adopted the NRC's determinations regarding alternate feeds. As a result, the commenter urges, the Division should not approve EFRI's request to receive and process the Silmet material and the Moffat Tunnel material because a facility that processes material other than natural uranium or thorium ore and the tailings impoundments that receive the waste from that processing are not within the scope of EPA regulation at 40 C.F.R. Part 192 and 40 C.F.R. Part 61 Subpart W. The Division disagrees with these comments. The EPA has no jurisdiction to determine what types of materials are appropriate feedstocks for a uranium mill. That issue is the exclusive province of the NRC under the Atomic Energy Act and governing regulations and NRC guidance and administrative decisions. As a result, it stands to reason that the EPA's regulations referred to above would be silent on the specific topic of alternate feed as well as many other issues relating to uranium ores and feedstocks. The EPA regulations are limited to subjects where EPA has jurisdiction, such a radon. Insofar as EPA's jurisdiction is concerned, it makes no difference whether the radon generated at a uranium mill's tailings result from the processing of natural ores or alternate feeds. Radon is radon. EPA's silence on the topic of alternate feed is not relevant. As a result, the Division finds that this comment is not justified.

Division Response #05: Silmet and Moffat Tunnel Alternate Feed Amendment

<u>Radioactive Waste Comments</u>

Many persons commented that the Silmet material is a waste material, some even referring to it as nuclear waste or radioactive waste. Likewise, a few commenters labeled the Moffat Tunnel material as waste. Based on this rationale, commenters argue that the alternate feed amendments are tantamount to approval of perpetual radioactive waste disposal operations at the Mill or sham disposal operations—in essence, *de facto* radioactive waste disposal operations instead of milling operations for the recovery of uranium and thorium. These comments are not supportable.

While it is true that both the Silmet and Moffat Tunnel materials are byproducts of other processes, these materials qualify as alternate feed, and are have been determined to be ore equivalents following Utah law and NRC precedents. These alternate feed materials have recoverable quantities of uranium and pose similar risks as conventional ore. Thus, for the purposes of this licensing action, these materials are appropriate feedstocks and are not waste. As discussed in Division Response #14: NRC Import License for Silmet, the NRC classifies the processing of the Silmet material as a recycling activity that does not require a specific import license from the NRC.

Contrary to some comments, this PPS will not refer to 11e.(2) byproduct material as waste. Such a reference would be inappropriate and potentially create confusion. For example, 40 CFR (EPA regulations) contains specific definitions of various classes of waste (e.g., solid waste, hazardous waste, non-hazardous waste) that differ substantially from this definition, and 11e.(2) byproduct material cannot be disposed as any of these classes of waste. Furthermore, the definition of radioactive waste (reported in the Glossary) specifically excludes 11e.(2) byproduct material. As a result, this licensing action does conflate other "waste" definitions with 11e.(2) byproduct material. To be sure, from the statutory definition under the AEA, byproduct material is a very specific form of "tailings or waste" that is "produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." 42 U.S.C. § 2014(e)(2). But the federal references are careful to distinguish byproduct material from other forms of solid, hazardous, and radioactive wastes. All of that said, DWMRC does recognize that byproduct material is a special category or form of waste, but that the most appropriate term to use for this material is 11e.(2) byproduct material instead of more generic references to waste. One objective of this licensing action is to make technical amendments to use the 11e.(2) reference instead of a general "waste" reference. These changes are appropriate and DWMRC's basis for doing so is reasonable.

This determination is consistent with the Utah Code. As discussed above, the Radiation Control Act governs the disposal of radioactive waste in the state of Utah. A "radioactive waste facility" means "a facility that decays radioactive waste in storage, treats radioactive waste, or disposes of radioactive waste: (A) commercially for profit; or (B) generated at locations other than the radioactive waste facility." The Radiation Control Rules similarly provide detailed and extensive rules regarding the land disposal of radioactive wastes in Utah. *See* Utah Admin. Code R313-25 (License Requirements for Land Disposal of Radioactive Waste - General Provisions). However, none of these provisions apply to the processing of alternate feeds such as presented in the current licensing action. Utah Code Section 59-24-102 (1) defines alternate feed material as:

(a) "Alternate feed material" means a natural or native material:
  (i) mined for the extraction of its constituents or other matter from which source material may be extracted in a licensed uranium or thorium mill; and
  (ii) may be reprocessed for its source material content.
(b) "Alternate feed material" does not include:
  (i) material containing hazardous waste listed under 40 C.F.R. Part 261, Subpart D;
  (ii) natural or unprocessed ore; or

(iii) naturally occurring radioactive materials containing greater than 15 picocuries per gram of radium-226.

This statutory provision is relevant to DWMRC's analysis in this PPS because Utah Code Section 19-3-105 states in part that the definition of a "Radioactive Waste Facility" expressly excludes facilities that receive alternate feed material for reprocessing. *See* Section 19-3-105(1)(d)(ii)(A)). This is so even though processing alternate feed material necessarily results in wastes (tailings) that require disposal. The legislature has expressly determined that this waste is not radioactive waste and facilities disposing of alternate feed-derived wastes are not radioactive waste facilities. By excluding operations that reprocess alternate feed from the definition of radioactive waste facility, the Utah legislature has expressly ratified *Kerr McGee v. NRC* and the NRC's holding in *In the matter of International Uranium (USA) Corporation (Receipt of Material from Tonawanda, New York)*, Docket No. 40-8681-MLA-4 (February 9, 1999), which rejected the state of Utah's previous sham disposal arguments. Thus, the legislature has since answered the question beyond doubt. As a matter of Utah statutory law, sham disposal theories do not apply to operations that reprocess approved alternate feed materials. The resulting waste is not defined as radioactive waste and facilities where alternate feed-derived waste material is disposed of are not radioactive waste facilities.

Based on the foregoing, the legal question presented in this licensing action is whether the Silmet and Moffat Tunnel materials qualify as alternate feed under Utah Code Section 59-24-102 (1). This statutory definition is substantially identical to the NRC's definitions, guidance, and established administrative decisions. In other words, DWMRC interprets this statutory definition of alternate feed material to mean that feeds that qualify as alternate feeds under established NRC precedents would also qualify as alternate feed material under the Utah Code.

The NRC has established protocols to differentiate between materials that qualify as alternate feed materials and those that do not.[8] The application of these protocols involves three steps: 1) determining whether the feed material is ore; 2) determining whether the feed material contains hazardous waste; and 3) determining whether the ore is being processed primarily for its source-material content. The Division provided detailed analysis of the NRC's protocols to the alternate feeds in the present licensing action, as discussed in the TEEA documents provided to stakeholders at the commencement of the public participation process. DWMRC stands by its analysis and conclusions that the Silmet material and Moffat Tunnel material qualify as alternate feed materials under applicable NRC precedents and protocols and under the Utah statutory definition of alternate feed material. To challenge this classification requires more than mislabeling alternate feed as nuclear waste; a reasonable basis for the disagreement must also be provided. None of the comments provide adequate basis for DWMRC to reach any other conclusion.

The Division further concludes that the Utah state definition of alternate feed is different than the NRC's definition because the concept of "primarily for" is omitted. The Utah Code definition is broader. Under Utah Code Section 59-24-102 (1), an alternate feed material is a "natural or

[8] Attachment 2 to RIS 00-023. Available at https://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2000/ri00023.html

native material" that (i) is mined "for the extraction of its constituents or other matter from which source material *may be extracted* in a licensed uranium or thorium mill; and (ii) *may be reprocessed* for its source material content (emphasis added). The use of the permissive verb "may be" is broader than the federal limitation of "primarily for."

In addition to the NRC alternate feed protocol, the Division evaluates the material's compatibility with the liners beneath the Mill's conventional and non-conventional impoundments. Neither of these materials introduced significant changes in the quantities of constituents of concern, and thus will not challenge the liners more than the tailings produced from conventional ores and process solutions.

Some commenters challenged the financial terms of the transaction to acquire and process the Silmet material. Under the NRC's approved alternate feed program, the underlying financial terms are not relevant to determining the suitability of a given material as an alternate feed. In a decision published February 10, 2000 (see CLI-00-01), the NRC clarified that financial terms under which the Mill received and processed alternate feeds were not relevant to determining propriety of accepting the material for processing at the Mill: "Our review of UMTRCA and its legislative history confirms the Presiding Officer's conclusion that the requirement that the material be 'processed primarily for its source material content' most logically refers to the actual act of processing [sic] for uranium or thorium within the course of the nuclear fuel cycle, and *does not bear upon any other underlying or 'hidden' issues that might be driving the overall transaction*. (CLI-00-01, p. 9)." (emphasis added). Thus, under the NRC's approved alternate feed program, which DWMRC follows, the renumeration EFRI may receive for accepting appropriate alternate feeds is not relevant for consideration. This conclusion is further supported by the fact that the Utah Code's definition of alternate feed does not include the "primarily for" limitation. Rather, the definition relies on the broad, permissive wording of "may be." This difference in wording provides further support that Utah law has ratified the NRC's alternate feed program decisions.

Some commenters asked why the Division did not evaluate why materials were not shipped to the Yucca Mountain disposal facility in Nevada or somewhere else. The Division has no role in determining which materials to ship to the as-yet unfinished Yucca Mountain facility, and the proposal the Division was tasked to complete did not include other facilities. This issue goes beyond the scope of the Division's jurisdiction. The Division does not dictate how companies make business decisions unrelated to regulatory compliance. Therefore, it is up to the owner of the material to determine the different long-term disposition options for the Silmet material. As part of the owner's determination, the Division was asked to determine the suitability of the material as an alternate feed for uranium recovery. The Division's responsibility is limited to the application EFRI presented to the Division.

On a related topic, one commenter states that it is the EPA's preference that alternate feeds and by-products thereof from EPA clean-up activities be disposed of in Cells 4A and 4B, "since these are double-lined cells with leak detection systems." (EPA report on CERCLA Offsite Rule Inspection May 2017. Linda Jacobson, EPA Inspector, to David Frydenlund, EFRI, February 15, 2018). While EPA has no jurisdiction over the Mill generally and groundwater in particular, the Division notes that Cell 3 has not received tailings for several years. It is still considered

operational because that is where ISL disposal and Mill waste disposal takes place. As a result, tailings from any ores and alternate feeds would go to tailing impoundment 4A.

The license amendment process for alternate feeds presents stakeholders with an opportunity to provide new data that may bear on the prescribed analysis and to offer an opportunity to check that all required investigations are completed. As explained more fully in this PPS, no new data was presented during the comment process, and no unresolved issues were identified.

Environmental Analysis Comments for the Silmet and Moffat Tunnel Alternate Feeds

Several commenters claim that the Division did not perform sufficient environmental analysis for the Silmet and Moffat Tunnel alternate feed materials. Under the Board's rules, "Environmental Analysis," provide as follows:

> **R313-24-3. Environmental Analysis.**
> (1) Each new license application, renewal, or major amendment shall contain an environmental report describing the proposed action, a statement of its purposes, and the environment affected. The environmental report shall present a discussion of the following:
> (a) An assessment of the radiological and nonradiological impacts to the public health from the activities to be conducted pursuant to the license or amendment;
> (b) An assessment of any impact on waterways and groundwater resulting from the activities conducted pursuant to the license or amendment;
> (c) Consideration of alternatives, including alternative sites and engineering methods, to the activities to be conducted pursuant to the license or amendment; and
> (d) Consideration of the long-term impacts including decommissioning, decontamination, and reclamation impacts, associated with activities to be conducted pursuant to the license or amendment.
> (2) Commencement of construction prior to issuance of the license or amendment shall be grounds for denial of the license or amendment.
> (3) The Director shall provide a written analysis of the environmental report which shall be available for public notice and comment pursuant to R313-17-2

R313-24-3 covers all types of new license applications and amendments. It is worded in a way to provide applicants and the DWMRC with flexibility to define the nature and scope of environmental analysis that is appropriate for any given licensing action. In the case of the two alternate feeds at issue in Amendment 10, the Division has determined that the environmental assessment requirements relating to the specific alternate feed requests at issue in this licensing action were fulfilled it the Technical Evaluation and Environmental Analyses for the Silmet and for the Moffatt Tunnel Alternate Feed Requests. Both reports are organized in the same way. Section 2 of those reports, specifically sub-sections 2.2, 2.3, 2.3.3, 2.3.4, address the requirements in part (1) of the environmental assessment rule.

Part (2) of the rule does not apply to the present licensing action because there are no construction activities associated with this amendment request. Similarly, Part (3) was

accomplished when the Technical Evaluation and Environmental Analysis documents were included with the Public Notice and was placed on the Division webpage.

Many comments state that the scope of the environmental analysis in the TEAA documents was insufficient to support the present licensing action. Commenters urge the Division to require an expansive environmental analysis for most if not all elements of the Mill for the foreseeable future (*e.g.*, environmental impacts from the inception of the Mill over its projected operational life through reclamation). Examples include impacts to public health arising from the indefinite operational life of the Mill; modifications as to background levels in the shallow, perched aquifer at the Mill; consideration of alternate siting locations for the Mill; and impacts on groundwater and waterways. The Division disagrees. The Division finds that the TEAA documents provide adequate supplemental environmental analysis and that the additional topics suggested by commenters are unreasonably outside the scope of the necessary environmental assessment required to support the alternate feed amendments at issue in this licensing action. As to impacts on groundwater and waterways in particular, New Sources of material and evaluations of the materials regarding impacts to groundwater are included in the TEEA. It is unclear what additional "waterways" the commenter means. There are no surface waterways on the Mill's property. All surface drainages are ephemeral. As to all operational areas, Mill surface drainage is maintained within the confines of the facility. To be sure, there are seeps and springs located around the Mill site. However, these seeps and springs are sampled on an annual basis and the results are submitted to the Division for its review. The annual analytical results of surface water show that surface water has not been impacted by Mill operations. In all events, existing environmental assessments of the impacts to surface waterways is already complete and part of the over-arching administrative record relating to the Mill.

In summary, the Division has determined that adequate environmental assessment information exists to support the two alternate feeds at issue in this licensing action. There are no gaps in the environmental analysis relating to these alternate feeds.

Division Response #17, below, addresses comments regarding environmental analysis of ISR material transportation issues.

Division Response #06: 11e.(2) or ISR (ISL) Disposal Volumes

The Statement of Basis proposed to increase certain volume limits for 11e.(2) materials received from different sources:

> [10.5.A] Changed the 5,000 cubic yards of 11e.(2) material from a single source In-Situ Recovery (ISR) (aka ISL) facility to an annual limit of 10,000 cubic yards per year to be placed in the Mill's tailings impoundments. It also allows an unlimited amount of 11e.(2) material from ISR facilities owned by EFRI and uranium recovery facilities within the State of Utah provided there is adequate volume available in the tailings impoundments.

Statement of Basis, page 1. The first volume relates to ISR materials; the second limit applies to 11e.(2) material from within the State of Utah and from facilities owned by EFRI.

There were several comments regarding the disposal of In-situ Recovery (ISR, also known as in-situ leach, or ISL) byproduct material. NRC is updating this terminology to prefer using the ISR label and the Division is following suit for future clarity.[9]

As to the maximum 11e.(2) volume increases, 11e.(2) disposal at White Mesa is in line with 10 CFR 40 Appendix A Criterion 2 (as incorporated by reference in UAC R313-24-4) which states:

> To avoid proliferation of small waste disposal sites and thereby reduce perpetual surveillance obligations, byproduct material from in situ extraction operations, such as residues from solution evaporation or contaminated control processes, and wastes from small remote above ground extraction operations must be disposed of at existing large mill tailings disposal sites; unless, considering the nature of the wastes, such as their volume and specific activity, and the costs and environmental impacts of transporting the wastes to a large disposal site, such offsite disposal is demonstrated to be impracticable or the advantages of onsite burial clearly outweigh the benefits of reducing the perpetual surveillance obligations.

One commenter argues that the Division's approval of the amendment to increase the annual maximum disposal at the Mill to 10,000 cubic yards is inconsistent with Criterion 2 because the approval avoids the analysis regarding the pros and cons of onsite burial of ISR byproduct material. However, Criterion 2 establishes a general rule that ISR byproduct material be disposed of at "existing large mill tailings disposal sites." By definition, the tailings impoundments at the Mill qualify as such a disposal site. The federal policy of avoiding proliferation of small waste disposal sites is consistent with federal statutory law, which makes DOE legally responsible for owning and managing such facilities following decommissioning. Criterion 2 includes an exception, which is the subject of the commenter's reference. On-site disposal of ISR byproduct materials may be appropriate if it is demonstrated that the advantages of on-site disposal "clearly outweigh the benefits" of waste consolidation and the federal policy of avoiding the proliferation of small waste disposal facilities, for which DOE will ultimately be legally responsible. To be sure, the exception to the general rule in Criterion 2 is written in the passive voice. Thus, there is some potential ambiguity as to how and when the weighing of the pros and cons of on-site disposal as opposed to consolidation at a facility like the Mill should occur. However, reading Criterion 2 in context of Appendix A, it is clear and unambiguous that the exception to the general rule set forth in Criterion 2 applies to the licensing action associated with the *applicable ISR facility* that will be generating and transporting such byproduct materials, not to the tailing cells at the Mill.

The decision as to the best way to manage ISR byproduct material planned to be generated from a specific ISR operation is made during the ISR facility licensing process. If an ISR operation is proposing to dispose of ISR byproduct materials on site, the ISR licensee must provide the analysis and satisfy the applicable regulatory agency (the NRC or an agreement state, depending

[9] Decommissioning debris from ISR facilities is considered to be uranium byproduct material as defined by the AEA. By definition in UAC R313-12-3 (10 CFR 40.4), byproduct material is the correct and legal name for this material. To be sure, byproduct material is a form of waste, but the Division is concerned about potential confusion with the statutory definition of radioactive waste. Radioactive waste and byproduct material are not the same and should not be confused.

on where the ISR facility is located) that on-site disposal is appropriate based on the issues raised in Criterion 2. It is the ISR licensing agency that must balance the pros and cons of on-site disposal as compared to disposal at a facility like the Mill. This ensures that each licensed ISR facilities byproduct material disposal site is considered appropriately by those most knowledgeable of the material and associated processes. Therefore, these decisions are not properly before the Division under Appendix A and Criterion 2. EFRI is not seeking to license a new ISR operation. Rather, the Mill falls within the meaning of an "existing large mill tailings disposal site" and therefore is, by definition, designated for disposal of byproduct material generated from ISR operations outside of the Mill.

Criterion 2 exists to support the federal policy of avoiding the proliferation of small waste disposal sites and to reduce the need for perpetual surveillance and monitoring by DOE. The responsibility to weigh the exception to the policy established in Criterion 2 falls to the regulatory agency licensing any given ISR operation, not to the Division as the regulatory agency over the Mill itself. It is not up to the Division to dictate that ISR wastes be retained and disposed of at ISR operations that the Division does not regulate. Licensed ISR facilities that do not have the right to dispose of wastes on-site are allowed, under Criterion 2, to use the Mill if the ISR waste generator and EFRI so agree.

Several commenters contend that the Division did not conduct an appropriate environmental analysis for the change in 11.e(2) disposal as required by R313-24-3 for a Major amendment. The Division disagrees and finds that adequate environmental analysis exists in the administrative record as a whole to support the amendment. However, the Division determined that there was merit to this comment because the Licensee had not specifically pointed out the areas of the larger administrative record supporting its amendment request. The Division determined that compiling an environmental analysis that identifies the portions of the larger administrative record applicable to this amendment would provide value in reviewing this requested license amendment. In turn, the Director, in a letter dated July 7, 2021 (DWMRC, 2021), requested additional information from the Licensee to address the commenters' concerns and provide a more detailed environmental analysis. In response to that request, the Licensee provided a letter, dated July 19, 2021 (EFRI, 2021). Both the Division's request for additional information and EFRI's response can be found in the supporting documents of the licensing action.

EFRI's July 19, 2021 response addresses, in adequate detail, how the existing environmental analysis in the larger administrative record meets the requirements for all proposed changes to License condition 10.5. The EFRI July 19, 2021 response provides a detailed summary of the applicable, existing administrative record for each of the Environmental Analysis requirements (R313-24-3):

> *(1) Each new license application, renewal, or major amendment shall contain an environmental report describing the proposed action, a statement of its purposes, and the environment affected. The environmental report shall present a discussion of the following: (a) An assessment of the radiological and nonradiological impacts to the public health from the activities to be conducted pursuant to the license or amendment;*

(b) An assessment of any impact on waterways and groundwater resulting from the activities conducted pursuant to the license or amendment;
(c) Consideration of alternatives, including alternative sites and engineering methods, to the activities to be conducted pursuant to the license or amendment; and
(d) Consideration of the long-term impacts including decommissioning, decontamination, and reclamation impacts, associated with activities to be conducted pursuant to the license or amendment.

The Division has reviewed EFRI's July 19, 2021 submission and has determined that the summary is sufficient to meet the needs of the environmental analysis requirement for this amendment. While this amendment increases the annual volume limit of 11.e(2) byproduct material that EFRI can receive from ISR facilities and other uranium recovery facilities, the total volume that can be received for disposal is still constrained by the available capacity in the tailings impoundments. Additionally, the material being received under these annual limits is 11e.(2) byproduct material from ISR or other 11e.(2) facilities is radiologically similar to the tailings produced at the Mill so no difference in radiological impacts to public health is expected with the increase in these annual volume limits for material received from facilities other than the Mill. Thus, previous environmental analysis that pertain to the current capacity at the Mill and 11e.(2) byproduct material disposal are still relevant and support this licensing action. For these reasons, the division has determined that no significant increase in environmental or health impacts are expected for this amendment and the previous administrative record supports this decision as summarized in EFRI's response to the Division's request for additional information.

The Division has further determined that reopening public comment to address the matters raised in EFRI's July 19, 2021 submission is not warranted for several reasons. Utah Code Section 19-1-301.5 anticipates that the Director may seek additional information during and after a public comment period. Doing so does not automatically reopen the public comment period unless determined by the Director. The Director also declines to solicit additional reply comments from commenting parties who raised valid concerns about environmental assessment issues because nothing in EFRI's July 19, 2021 submission is new. All the information referenced by EFRI is already part of the larger administrative records regarding the Mill. The EFRI July 19, 2021 submission provided a summary of existing information so as to clarify the administrative record and the basis for EFRI's amendment request. Had EFRI submitted truly novel environmental analysis, soliciting additional public comments on the new submission may have been warranted. But this situation does not involve new information.

One commenter pointed out that, depending on the legal status of a given uranium mill source, mill tailings may or may not qualify as 11e.(2) byproduct material. Some of these tailings may qualify as residual radioactive material, also known as RRM. Yet, the Division notes that 11e.(2) byproduct material is defined generally as "the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." It has no exclusion for residual radioactive material. There is no distinction in the definition of 11e.(2) material between Title I sites and Title II sites. Material from a Title I site may still qualify, by definition, as 11e.(2) byproduct material to the extent that it is derived from the extraction or concentration of uranium or thorium from any ore processed for source material. In other words, the definition of residual radioactive material is a sub-set of the broader

definition for 11e.(2) material. This conclusion finds direct statutory support in 42 U.S.C. § 7918(a)(1):

> Residual radioactive material from a processing site designated under this subchapter *may be disposed of at a facility licensed under title II* under the administrative and technical requirements of such title. Disposal of such [residual radioactive] material at such a site in accordance with such requirements shall be considered to have been done in accordance with the administrative and technical requirements of this subchapter.

(emphasis added). The Mill is licensed under Title II. UMTRCA, Title II applies to facilities in operation in 1978 that are not processing sites as defined in Title I (42 § USC 7911(6)). Hence, the Mill is licensed under Title II – 42 U.S.C. § 2113. Under the plain language of the U.S. Code, residual radioactive material may be disposed of at a facility licensed under Title II (specifically, the Mill) on the same basis as other 11e.(2) material. By operation of law, upon closure and decommissioning of the Title II-licensed facility, DOE will come to have perpetual responsibility and stewardship over any residual radioactive material so disposed. Thus, under this amendment, there is no annual volume limitation as to residual radioactive material or 11e.(2) material that is or was generated within the State of Utah, that may be disposed of in the tailings impoundments at the Mill. This is appropriate and is in the best interest of the State of Utah, considered as a whole, to have options for the appropriate disposal and management of any and all 11e.(2) material in the state. A primary justification for this conclusion is that residual radioactive material (for which funding is limited) can be brought into a Title II facility for which DOE has ultimate legal ownership, stewardship, and responsibility. Thus, the amendment is in the interest of the citizens of the State of Utah. It facilitates the legal and permanent stewardship transfer of residual radioactive material (for which congressional funding is limited) to the perpetual responsibility of DOE through disposal at a facility licensed under Title II.

Finally, this is not a situation, as one commenter claims, that Cell 3 is being licensed to receive ISR materials in perpetuity. ISR byproduct materials are currently being disposed of in the portion of Cell 3 that needs to be brought up to final grade before Cell 3 can be fully closed. Cell 3 has a specific design grade that is forms an important part of the cover and closure plans for Cell 3, specifically to support final covers and drainage plans. This topic was addressed in detail in connection with License and Groundwater Discharge Permit renewal. In that matter, several commenting parties objected to the continuing use of Cell 3. Yet, Cell 3 has unused capacity that needs to be filled to the final design grade prior to installation of the radon barrier and final cover. Increasing the annual volume limit for ISR byproduct material in the present licensing action will, in fact, support timely closure of Cell 3 as per previous comments and the Division's 2018 renewal determination. As previously indicated, the Division is committed to facilitating the closure of Cell 3 as soon as reasonably possible.

Division General Response #07: Surety (Financial Assurance)

A number of comments relate to financial assurance. Whether a licensee has provided adequate financial assurance is a technical determination within the Director's discretion. Under applicable federal and state regulations, EFRI must provide adequate financial assurance (or surety), to complete all decommissioning and remediation efforts required at the Mill should

EFRI prove unable or unwilling to perform those tasks at the time they are required. Several commenters have objected to the proposed licensing action assuming that insufficient moneys have been set aside for the decommissioning and closure of the site. R313-22-35(1)(a) requires this Licensee to submit a decommissioning funding plan as the basis of the surety. The Division has incorporated at R313-22-35(h) a requirement to follow the recommendations of NUREG-1757, Volume 3 to develop the surety estimate, even though NUREG-1620 was intended for uranium recovery facilities. The Division did this, in part, to achieve uniformity so all radioactive material Licensees would be treated alike.

Several commenters presuppose that the Division did not consider the risk that the surety estimate may prove to be inadequate. The Division disagrees. The Division reviews in detail every year the adequacy of the EFRI financial assurance, as required by applicable regulations and the license. Some commenters base their challenges to the surety on comparisons with the cost of cleanup efforts at other mill sites.[10] Based on the Division's many years of experience evaluating the adequacy of financial assurance, each facility's financial assurance determination is site-specific. In general comparison of reclamation costs at various mill sites is often not a useful exercise because of unique, site-specific factors. The following, non-exclusive list of examples is noted as a comparison to the White Mesa Mill:

- Other decommissioned mill sites were constructed when standards for environmental protection were weaker or nonexistent. For example, their tailings impoundments were not lined, so their process fluids readily leached into groundwater. Treating the White Mesa site in this manner sets at naught preventive measures already in place, thus overestimating the costs involved.

- Previous sites had little or no leak detection features or down gradient monitoring networks in place to facilitate early detection and cleanup of releases. At the White Mesa Mill, robust monitoring networks are in place and each impoundment has a leak detection system. The newer impoundments have more robust leak detection capability, but the older systems have been proven to work.

  The down-gradient monitoring networks, in addition to their other functions, provide a backstop should anything evade the leak detection systems. Those networks have detected chloroform and nitrate plumes (which do not relate to the impoundments onsite), which are currently in Director approved cleanup or control phases. Having detected these plumes, one can have confidence that the monitoring network would detect leaks of process fluids or other onsite releases. The monitoring network has also proved successful in confirming the efficacy of liner breach repair efforts at Impoundment 1.

[10] One set of comments, a letter from RRD International Corp dated December 1, 2011 to Celene Hawkins, counsel to the Tribe, included as Exhibit H to the Ute Mountain Ute Tribe's comments, is an earlier version of a letter from the same source dated April 18, 2014 which the Division reviewed. Both letters cover the same subject matter. The Division reviewed the 2014 letter and prepared an internal review memorandum dated May 29, 2014. The Division provided the Tribe a copy of that memorandum at that time. That memorandum is referenced here and made a part of this review. (Document # DRC-2014-003643)

- Previous sites had no ongoing cleanup effort; the entire expense was borne at the decommissioning phase of the project life cycle. That is not true of the White Mesa site in the case of the chloroform plume, which is undergoing cleanup, and surety funds have been set aside for work yet to be done. In the case of the nitrate plume, money has been set aside in the surety to address the release, and money has already been expended to isolate the release from water so it will not be driven into the groundwater.

- Many of the decommissioned mill sites were poorly sited. For an extreme example, Atlas was located on the bank of the Colorado River near Moab, Utah. The White Mesa property underwent a different siting process, leading to fewer potential impacts offsite and more opportunity to address problems at lower cost. Groundwater is deep (excepting the small, perched aquifer under the site). A substantial clay/rock aquiclude prevents rapid migration of water from the surface into the groundwater. This geologic setting provides opportunity to address releases, if they occur, before they impact the groundwater and become much more expensive to handle. Furthermore, with the arid climate and a good cover system, the tailings will not need to be moved, sparing the expense that sites like Atlas experienced.

- The Division has been aggressive in its efforts to make the surety complete and conservative. Again, using the Atlas site as an example, the Atlas Licensee successfully avoided securing even 1% of the required surety because of a weak regulatory regime. Such is not the case at the White Mesa Mill.

- The Director approved contingency value of 25% is in line with industry standard and is higher than that recommended in NUREG-1620 which is the guidance for uranium mill sites. Rule R313-22-35(3)(h) incorporated NUREG-1757 Volume 3 by reference. That volume specifies a contingency value of no less than 25% in several locations.[11] Having noted that in NUREG-1757 the lowest recommended contingency value is 25%, the Division has sought additional evidence to suggest whether to increase the contingency beyond that value. Since the Division feels that the site is well characterized, and the risks are well managed, evidence is lacking to justify a higher value at this time. The Division remains open to credible data to consider in this matter.

Moreover, comments about surety related to Amendment 10 are premature. The Division's approval of Amendment 10 is conditioned on adequate surety funding being in place prior to the actual receipt of the alternate feed. The surety funding must be sufficient to dispose of the feed material in the impoundments during decommissioning should the material not be processed at the time the State exercises the surety. The Division did not require this funding to be in place to pursue this licensing action, so a review of the surety adequacy has not yet been undertaken specifically for this action but will be accomplished in the future. After Amendment 10 is approved, EFRI will be required to amend its surety with sufficient funding to reflect the quantity of feed materials EFRI expects to receive during the year and will not be allowed to possess more than that quantity of unprocessed feed onsite. The surety is reviewed annually at a

[11] NUREG-1757, vol. 3, p. 4-11, p. A-25, p. A-38.

minimum, and any time operational changes occur, to keep cost allocations up to date and the funding sufficient.

As a general proposition, surety adequacy was addressed in great detail during the 2017 license renewal. The surety is site-specific. As already discussed, conditions at the other mills cited were different, and the standards to which the facilities were built were different. The total cost of decommissioning is also affected by the design features employed in the decommissioning. The surety estimate for the White Mesa Mill reflects what is built, what is approved for construction, and the approved reclamation plan. In this context, one example of the differences involved will suffice to show that the commenter's request to use other sites to drive the White Mesa surety estimate is misplaced. The Atlas site in Moab is being decommissioned in a different manner than the White Mesa Mill reclamation plan specifies. Tailings are being loaded on rail cars and transported to Crescent Junction, at significant additional cost when compared to the capping in place specified for White Mesa. Furthermore, the Atlas tailings piles were unlined, allowing unfettered migration of contaminants into the ground water and, ultimately, to the Colorado River. The resulting cleanup involves costs not appropriate to assign to a facility with lined impoundments and from which the monitoring network has detected no releases.

The Division reviews the surety for the facility annually and does so to meet the requirements of the approved reclamation plan. The Mill site is *not* a radioactive waste disposal facility, as defined by statute, but is limited to disposal of 11e.(2) byproduct material. This distinction is critical when determining the standards which govern the reclamation plan. The reclamation plan is appropriate for 11e.(2) byproduct disposal site closure and decommissioning. The surety is adjusted annually to reflect the quantity of feed material and byproduct that the licensee is allowed to possess onsite. The Division will not speculate on the quantity of tailings the Mill will produce from the proposed feed material over the lifetime of the introduction of that feed so as to artificially inflate the surety on the assumption that the entire assumed quantity of material will be processed.

Finally, the financial assurance-related comments do not appear to appreciate or provide adequate weight to the fact that the DOE will become the owner of and have statutory responsibility for the Mill site after its decommissioning and license termination. The commenters seem to assume that the Mill will somehow become an orphan facility. The AEA provides otherwise and the resources of the federal government will be available to manage the Mill site in perpetuity following its closure and decommissioning.

Division Response #08: Conventional and Non-Conventional Impoundments

Uranium milling operations require two types of impoundments to facilitate operation of the Mill. The first type of impoundment becomes the final repository for the solids remaining after extraction of the uranium and is known as a conventional impoundment or tailings cell. The second type of impoundment non-conventional cell for fluid management. The two types of impoundments and their purposes are discussed in further detail below.

Several commenters noted the differing ages, construction standards and uses of the impoundments on the Mill property. The Division appreciates these comments but does not

agree that this fact means there is any technical or legal problem with the continuing use of the impoundments. There is no technical or legal basis in this record to support a finding requiring remedial or retrofit efforts with respect to the tailings disposal cells in use at the Mill. All applicable technical and legal requirements are being met with the current facilities. These conclusions are based on the following considerations, among others, that are based on information in this administrative record.

All impoundments were constructed to the required standard for conventional impoundments at the time of construction. From the monitoring data, the impoundments all operate within mandated parameters, and are not manifesting formation of contaminant plumes.

Since the State accepted delegation of authority from the NRC for the uranium recovery program, Cell 4A was relined and Cell 4B was constructed. The Division completed plan reviews prior to commencement of those activities, and had inspectors and engineers involved onsite during construction. The final installations either conformed to the approved plans or had changes approved, as documented in the Division's construction inspection files.

Furthermore, the following discussion relies on definitions promulgated in the EPA's Radon standards found in 40 CFR Part 61 Subpart W and in Appendix A to 10 CFR Part 40.

Conventional impoundments or tailings cells receive tailings. Discharge to a conventional impoundment includes a slurry of tailings and process fluid. Tailings consist of the solid residue from the milling process and are typically discarded. Process fluid contains chemical constituents that may have value to EFRI and are often recycled through the Mill. The conventional impoundment provides opportunity to settle the solids from the slurry. Clarified fluid is decanted to a non-conventional impoundment for evaporation or recycled through the Mill to reuse chemical values that may be present. Under Subpart W, the Licensee can only have two active conventional impoundments operational at any one time. The Licensee currently has only two active conventional impoundments, Cells 3 and 4A. One other conventional impoundment, Cell 2, is in closure and has a full radon barrier installed on its surface.

In addition to tailings from the processing of ore through the Mill, regulations allow the Licensee to receive and dispose material defined as byproduct material under Section 11e.(2) of the Atomic Energy Act in active conventional impoundments. For various reasons, including economic, operational, and practical, the general practice is to fill an impoundment to design capacity with tailings prior to disposing other forms of byproduct material, then to emplace other byproduct material in the first layer of the cover over the tailings. This is precisely the type of operation EFRI is pursuing with respect to Cell 3 and the Division deems that this operation is technically and legally justified and appropriate. License conditions 10.4 and 10.5 set additional bounds to EFRI's operation of conventional impoundments.

Non-conventional impoundments or fluid management impoundments/evaporation ponds receive process fluids and may also receive storm water runoff from the site. Process fluids may enter the impoundments either following decanting from a conventional impoundment or directly from process vessels in the plant. Tailings solids may not enter a non-conventional impoundment. A Licensee may construct a non-conventional impoundment with anticipation of one day

converting the use of the impoundment to receipt of tailings, but conversion to a conventional impoundment requires prior regulatory authorization.

The Licensee currently has two active non-conventional impoundments, Cells 1 and 4B. This detail was argued before the United States District Court for the District of Utah. The court affirmed the understanding that the Mill, as operated by EFRI, has only two active conventional impoundments, Cells 3 and 4A, with Cells 1 and 4B currently operated as non-conventional impoundments, and Cell 2 in closure.[12] One other impoundment, Roberts Pond, has been fully remediated and backfilled. The Division concurs with and adopts the court's ruling on these issues.

Several of the comments erroneously attributed four or five active tailings cells to EFRI. Reiterating the relevant point discussed above, EFRI has only two active conventional impoundments or tailings cells, Cells 3 and 4A.

Several commenters cited EPA's Subpart W radon regulations as applicable to Cells 1 and 4B. The Division finds, based on the evidence in this record, that Cells 1 and 4B are non-conventional impoundments. The Subpart W radon regulations govern conventional impoundments only. Based on the foregoing, the Division concludes that the Subpart W regulations do not apply to Cells 1 and 4B as a matter of law for radon flux sampling. The Division's finding is directly supported by the U.S. District Court for the District of Utah in *Grand Canyon Trust v. Energy Fuels Resources (U.S.A.) Inc.*, 269 F.Supp.3d 1173 (D. Utah 2017). In addition to rejecting the Grand Canyon Trust's alleged Clean Air Act violations relating to radon and radon flux sampling, the court addressed the topic of conventional and non-conventional impoundments at the Mill. The court expressly rejected the Grand Canyon Trust's contentions that EFRI was operating too many ponds:

> As such, the new rule defines conventional impoundments — those receiving tailings or uranium byproduct material that will be left in place upon facility closure — and nonconventional impoundments — those that are used for managing liquids and "contain[] uranium byproduct material or tailings suspended in and/or covered by liquids." Id. at 5,179. It then amends the phased disposal work practice to clarify that it only applies to conventional impoundments. Id. In other words, the new rule codifies the distinction between tailings impoundments and evaporation ponds that the Mill argues for on summary judgment and that is reflected in the DAQ's conclusion that Cell 4B did not cause the Mill to violate Subpart W. Given the consensus among the agencies, the court defers to DAQ's expertise.

269 F.Supp.3d at 1198. The Division adopts and relies on this district court decision in this PPS.

Many commenters refer to the conventional and non-conventional impoundments at the White Mesa Mill as waste pits or other imprecise terms. Commenters have even suggested that the division insists on using the terms it does as a way of cleaning up the image of the operation. This assertion is not correct and, in fact, is misleading.

[12] Case 2:14-cv-00243-CW Document 93 Filed 09/15/17

The Division is aware that several groups of people read its documents. These include industry professionals and other specialists with knowledge of the applicable standards. The Division is making clear to all who read the documents which laws, standards and industry operating procedures apply. In addition to clarity, this has the added benefit of easing the burden on the legal system during challenges made to licensing actions, as the applicable standards are identified, and the appropriate language is used to describe the physical features of the Mill and its appurtenances.

One example will suffice. The term *waste pits* can mean anything from a farmer's compost pit to the municipal landfill, from a RCRA-governed hazardous waste disposal cell to a spent nuclear fuel holding structure. Because of the limitations placed on conventional and non-conventional impoundments, none of the materials acceptable in the other facilities listed earlier in this paragraph are eligible for disposal in a conventional impoundment. The only materials that can be placed there are 11e.(2) byproduct material (uranium mill tailings, process fluid from uranium recovery operations, debris from decommissioning a uranium recovery facility, and uranium mill feedstock.)

The engineering standards applied to conventional and non-conventional impoundments differ from those for other uses. The requirements specifically address the materials likely to be placed in the impoundments. Many of the elements may be similar to those used in constructing other types of disposal facilities, but the similarity ends there.

Of particular note, the impoundments at the White Mesa Mill are all engineered to serve as conventional impoundments, i.e., to receive tailings. Authorization to use an impoundment for tailings disposal, i.e., as a conventional impoundment, requires approval from the Director. Until the approval is extended, the only use to which the impoundment can be put is fluid management.

All impoundments at the White Mesa Mill include two synthetic bottom liners with leak detection equipment installed between. The newer impoundments also have a geosynthetic clay layer as an additional deterrent against fluid release. The impoundments also have dewatering implements installed during construction to facilitate fluid withdrawal at decommissioning. Once decommissioned, the impoundments are designed to have a cover system to prevent water from percolating into the tailings/debris. This is meant to keep the contents dry once dewatering is complete, preventing release of the contents to the environment. The cover system includes a radon barrier to prevent release of radon to the atmosphere above the impoundments. These features are supplemented by a network of monitoring wells and atmospheric monitoring facilities to detect (and, if a release occurs, quantify) any contaminant releases from the facilities. In all events, the U.S. District Court for the District of Utah found that the Mill was being operated in full compliance with applicable laws, rules, and regulations relating to radon issues.

Division General Response #09: Environmental Monitoring for Release Detection
Commenters frequently alleged harm arising from the release of contaminants from the Mill site, either airborne, or waterborne. These comments are directly contrary to a significant body of evidence involving direct measurements of groundwater and airborne pathways for radiation at the Mill, as discussed in detail in the PPS for Amendment 8. Since Amendment 8 was published,

the Division has continued to receive and evaluate environmental monitoring data showing no radioactivity impacts beyond the applicable legal public dose limits. In approving Amendment 10, the Director relies, in part, upon the PPS in Amendment 8 regarding public dose concerns as well as the Mill's extensive environmental monitoring program. To date, the monitoring data contradicts the claims of harm alleged by the commenters, and no contrary data has been provided. See Division Response #10: Dose to the Public.

For more information on the Mill's environmental monitoring results see the Effluent Monitoring Reports at https://deq.utah.gov/waste-management-and-radiation-control/semi-annual-effluent-monitoring-reports-white-mesa-uranium-mill-energy-fuels-resources-usa-inc

Additionally, no commenter provided technical evidence to support a finding that any such harm has occurred in the past or is occurring at this time. Commenting parties have a responsibility to provide evidence of "a pathway or mechanism from the tailings piles" to the point of alleged contamination.[13] Commenters should present similar arguments for alleged airborne contaminant transport, which can then be appropriately considered by the Division.

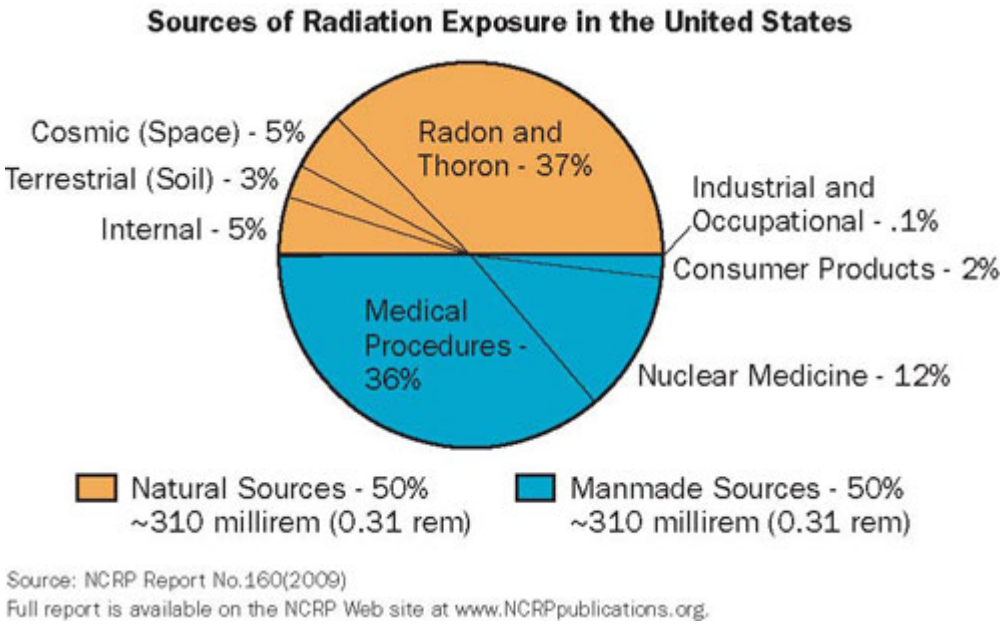
Additional information relevant to this response is provided below in Division Response #10: Dose to the Public.

Division Response #10: Dose to the Public

Many commenters are concerned about the potential health impacts including the health of the Native Americans arising from exposure to radiation associated with Mill operations and feel that the Mill is detrimental to Public Health and Safety. These comments are understandable, and the Division is sensitive to its role in protecting public health and welfare. The NRC and the State have established very conservative public exposure limits that the Licensee must meet at its property boundary in order to protect the general public. Under UAC R313-15-301(a), each holder of an RML in the State of Utah may not emit more than the total effective dose equivalent (TEDE) to any member of the public of 100 mrem (0.1 rem) above background radiation levels per year. UAC R313-15-101(d) also specifies that not more than 10 mrem (0.01 rem) of the 100 mrem TEDE limit can come from air emissions, radon excluded.

To put these public exposure limits into perspective, the 100 mrem TEDE limit is conservative. The average human living in the United States receives far more than 100 mrem per year from background and manmade radiation sources. According to NRC.gov in the Sources of Radiation section (https://www.nrc.gov/about-nrc/radiation/around-us/sources.html), the average person receives 620 mrem per year. Approximately half of that annual dose comes from background radiation and half comes from manmade sources of radiation.

[13] CLI-01-21, published in NUREG 0750, Vol. 54, p. 251. ADAMS Accession #ML 030420224. CLI-01-21 discusses challenges made by Tribal and State of Utah petitioners to the proposal to allow disposal of 11e.(2) byproduct material from Molycorp at the Mill. The question at issue here is the requirement for a petitioner claiming injury to provide evidence of actual injury rather than merely making the claim. The NRC denied standing to the petitioner for failure to provide the demonstration of actual harm to buttress the injury claim. The evidentiary standard is set forth in 10 C.F.R. § 2.1205(h).



A list of some of the more common manmade sources that the public are exposed to is as follows:

- Medical Sources (by far, the most significant man-made source)
  - Diagnostic x-rays
  - Nuclear medicine procedures (iodine-131, cesium-137, and others)
- Consumer Products
  - Building and road construction materials
  - Combustible fuels, including gas and coal
  - X-ray security systems
  - Televisions
  - Fluorescent lamp starters
  - Smoke detectors (americium)
  - Luminous watches (tritium)
  - Lantern mantles (thorium)
  - Tobacco (polonium-210)
  - Ophthalmic glass used in eyeglasses
  - Some ceramics

Source: https://www.nrc.gov/about-nrc/radiation/around-us/sources/man-made-sources.html#indiv

The dose limit EFRI is required to meet at the While Mesa Mill is the 100 mrem TEDE public dose limit. There is a network of eight radiation monitoring stations around the White Mesa Mill. The monitoring equipment measures radiation dose on a continuous basis. The total dose is calculated annually because the TEDE standard of 100 mrem is a public dose annual limit. Actual monitoring data from the White Mesa Mill shows that the potential TEDE at the property boundary is far below the NRC's 100 mrem limit. The ten-year average of the monitoring stations at the Mill property boundary is 9.1 mrem. Moreover, there generally exists an

expanded buffer around the boundary of the White Mesa Mill property. The closest resident is about 1 mile to the north from the Mill property boundary. There are no residents to the west. To the south, the Ute Mountain Ute tribal property boundary is approximately 2.5 miles away from the southern Mill property boundary. This means that the actual TEDE public dose from the White Mesa Mill is likely even lower than the dose measured at the property boundary.

Compliance to this requirement is measured using the Mill's effluent monitoring program. EFRI submits the results from effluent monitoring twice a year and the Division staff reviews the results. In addition, computer modeling is occasionally used to confirm the Division staff reviews. For uranium milling the computer model that is used is call MILDOS-AREA.

The following monitoring data points are based on actual dose readings at points of compliance at specified locations at the White Mesa Mill property boundary. There are no residents contiguous to the mill property. The closest residents are to the northwest so the actual buffer between the Mill property boundary and human receptors is more remote. Monitoring Station BHV6 is the closest station to the Ute Mountain Ute Tribe property, which is approximately 2.5 miles from the location of BHV6.

Environmental TLD Dosimeter Measurement (Gamma) for 2007						
Monitoring Station	1st Qtr, 2007 Result (mrem)	2nd Qtr, 2007 Result (mrem)	3rd Qtr, 2007 Result (mrem)	4th Qtr, 2007 Result (mrem)	2007 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	0.0	2.0	2.0	3.0	7.0	100
BHV2	0.0	1.0	4.0	0.0	5.0	100
BHV3	0.0	0.0	0.0	0.0	0.0	100
BHV4	0.0	1.0	2.0	1.0	4.0	100
BHV5	0.0	4.0	3.0	4.0	11.0	100
Average (not including BHV3)					6.75	

Environmental TLD Dosimeter Measurement (Gamma) for 2008						
Monitoring Station	1st Qtr, 2008 Result (mrem)	2nd Qtr, 2008 Result (mrem)	3rd Qtr, 2008 Result (mrem)	4th Qtr, 2008 Result (mrem)	2008 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	2.73	1.17	1.36	0.40	5.66	100
BHV2	0.0	0.91	0.00	0.00	0.91	100
BHV3	0.0	0.00	0.00	0.00	0.00	100
BHV4	0.0	0.65	0.00	0.00	0.65	100
BHV5	0.0	0.91	0.00	0.00	0.91	100
BHV6	0.0	0.00	0.00	0.00	0.00	100
Average (not including BHV3)					1.63	

Environmental TLD Dosimeter Measurement (Gamma) for 2009						
Monitoring Station	1st Qtr, 2009 Result (mrem)	2nd Qtr, 2009 Result (mrem)	3rd Qtr, 2009 Result (mrem)	4th Qtr, 2009 Result (mrem)	2009 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	9.1	4.9	6.9	8.8	29.7	100
BHV2	2.0	4.5	5.2	4.7	16.4	100
BHV3	0.0	0.0	0.0	0.0	0.0	100
BHV4	0.0	0.1	1.3	0.0	1.4	100
BHV5	1.7	2.9	5.3	1.4	11.3	100
BHV6	21.3	1.4	2.4	0.1	25.2	100
Average (not including BHV3)					16.8	

Environmental TLD Dosimeter Measurement (Gamma) for 2010						
Monitoring Station	1st Qtr, 2010 Result (mrem)	2nd Qtr, 2010 Result (mrem)	3rd Qtr, 2010 Result (mrem)	4th Qtr, 2010 Result (mrem)	2010 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	1.9	3.7	7.4	4.4	17.4	100
BHV2	0.0	0.3	3.2	5.6	9.1	100
BHV3	0.0	0.0	0.0	0.0	0.0	100
BHV4	0.0	0.4	0.0	3.6	4.0	100
BHV5	0.7	2.7	6.5	5.9	15.8	100
BHV6	0.0	0.0	0.0	0.6	0.6	100
				Average (not including BHV3)	9.38	
Environmental OSL Dosimeter Measurement (Gamma) for 2011						
Monitoring Station	1st Qtr, 2011 Result (mrem)	2nd Qtr, 2011 Result (mrem)	3rd Qtr, 2011 Result (mrem)	4th Qtr, 2011 Result (mrem)	2011 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	7.7	3.6	7.7	4.1	23.1	100
BHV2	0.3	1.8	1.8	0.0	3.9	100
BHV3	0.0	0.0	0.0	0.0	0.0	100
BHV4	4.2	0.0	2.0	0.3	6.5	100
BHV5	8.2	3.2	8.7	2.5	22.6	100
BHV6	0.0	2.4	2.8	2.5	7.7	100
				Average (not including BHV3)	12.76	
Environmental OSL Dosimeter Measurement (Gamma) for 2012						
Monitoring Station	1st Qtr, 2012 Result (mrem)	2nd Qtr, 2012 Result (mrem)	3rd Qtr, 2012 Result (mrem)	4th Qtr, 2012 Result (mrem)	2012 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	4.0	7.5	1.7	5.3	18.5	100
BHV2	-0.3	0.5	0.4	2.6	3.2	100
BHV3	0.0	0.0	0.0	0.0	0.0	100
BHV4	1.4	4.0	0.5	3.8	9.7	100
BHV5	4.2	6.4	3.6	3.9	18.1	100
BHV6	1.1	1.5	1.1	0.7	4.4	100
				Average (not including BHV3)	10.78	

Environmental OSL Dosimeter Measurement (Gamma) for 2013						
Monitoring Station	1st Qtr, 2013 Result (mrem)	2nd Qtr, 2013 Result (mrem)	3rd Qtr, 2013 Result (mrem)	4th Qtr, 2013 Result (mrem)	2013 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	4.8	5.0	3.9	7.5	21.2	100
BHV2	0.6	1.2	1.9	1.9	5.6	100
BHV3	0.0	0.0	0.0	0.0	0.0	100
BHV4	0.3	3.1	4.9	0.7	9.0	100
BHV5	2.8	3.2	5.0	6.6	17.6	100
BHV6	-1.5	30.3	0.8	2.3	31.9	100
				Average (not including BHV3)	17.06	
Environmental OSL Dosimeter Measurement (Gamma) for 2014						
Monitoring Station	1st Qtr, 2014 Result (mrem)	2nd Qtr, 2014 Result (mrem)	3rd Qtr, 2014 Result (mrem)	4th Qtr, 2014 Result (mrem)	2014 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	3.9	4.1	3.5	6.1	17.6	100
BHV2	0.8	0.0	0.0	4.0	4.8	100
BHV3	0.0	0.0	0.0	0.0	0.0	100
BHV4	3.4	0.0	0.0	1.6	5.0	100
BHV5	4.5	3.6	5.4	7.2	20.7	100
BHV6	5.1	0.0	0.0	0.8	5.9	100
BHV7	NS	NS	0.0	0.8	0.8	100
BHV8	NS	NS	0.0	1.0	1.0	100
				Average (not including BHV3, BHV7, & BHV8)	10.8	
Environmental OSL Dosimeter Measurement (Gamma) for 2015						
Monitoring Station	1st Qtr, 2015 Result (mrem)	2nd Qtr, 2015 Result (mrem)	3rd Qtr, 2015 Result (mrem)	4th Qtr, 2015 Result (mrem)	2015 Total (mrem)	R313-15-301(a) Total Body Limit(mrem)
BHV1	2.3	0.4	12.3	11.4	26.4	100
BHV2	2.9	2.0	2.3	4.3	11.5	100
BHV3	0.0	0.0	0.0	0.0	0.0	100
BHV4	0.2	0.0	6.1	3.6	9.9	100
BHV5	3.2	3.1	10.1	13.1	29.5	100
BHV6	0.0	4.9	6.1	0.6	11.6	100
BHV7	0.6	0	7.2	3.3	11.1	100
BHV8	0.0	0	9.5	3.4	12.9	100

				Average (not including BHV3)	16.3	
Environmental OSL Dosimeter Measurement (Gamma) for 2016						
Monitoring Station	1st Qtr, 2016 Result (mrem)	2nd Qtr, 2016 Result (mrem)	3rd Qtr, 2016 Result (mrem)	4th Qtr, 2016 Result (mrem)	2016 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	5.7	3.3	5.0	4.0	18.0	100
BHV2	0.0	1.9	1.8	4.8	8.5	100
BHV3	0.0	0.0	0.0	0.0	0.0	100
BHV4	0.0	0.0	0.0	1.2	1.2	100
BHV5	3.9	2.4	0.0	2.1	8.4	100
BHV6	1.0	0.0	0.0	0.4	1.4	100
BHV7	0.0	0	0	4.3	4.3	100
BHV8	0.0	1	0.8	1.8	3.6	100
				Average (not including BHV3,)	6.49	

Environmental TLD Dosimeter Measurement (Gamma) for 2017						
Monitoring Station	1st Qtr, 2017 Result (mrem)	2nd Qtr, 2017 Result (mrem)	3rd Qtr, 2017 Result (mrem)	4th Qtr, 2017 Result (mrem)	2017 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	4.4	5.3	1.3	7.9	18.9	100
BHV2	1.1	1.4	1.4	2.9	6.8	100
BHV3	0	0	0	0	0	100
BHV4	0	0.5	0	0.4	0.9	100
BHV5	1.2	2.0	0	4	3.6	100
BHV6	0	0	0	2.8	2.8	100
BHV7	0	0	0.7	0	0.7	100
BHV8	0.2	0	0	2.5	2.7	100
Average (not including BHV3)					5.2	

Environmental TLD Dosimeter Measurement (Gamma) for 2018						
Monitoring Station	1st Qtr, 20018 Result (mrem)	2nd Qtr, 2018 Result (mrem)	3rd Qtr, 2018 Result (mrem)	4th Qtr, 2018 Result (mrem)	2018 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	1.0	0	3.6	2.6	7.2	100
BHV2	0.1	2.2	0	1.2	3.5	100
BHV3	0	0	0	0	0	100
BHV4	0	0.7	5.4	0.9	7.0	100
BHV5	2.0	1.2	5.3	0	8.5	100

BHV6	0	0	1.2	0	1.2	100
BHV7	0	0	0	1.5	1.5	100
BHV8	0	0	0	0	0	100
Average (not including BHV3)					4.1	
Environmental TLD Dosimeter Measurement (Gamma) for 2019						
Monitoring Station	1st Qtr, 2019 Result (mrem)	2nd Qtr, 2019 Result (mrem)	3rd Qtr, 2019 Result (mrem)	4th Qtr, 2019 Result (mrem)	2019 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	5.2	5.0	5.1	9.9	25.2	100
BHV2	0.2	0.3	2.6	2.5	5.6	100
BHV3	0	0	0	0	0	100
BHV4	2.9	0.3	0	0	3.2	100
BHV5	4.0	2.2	3.7	1.5	11.4	100
BHV6	1.1	0	1.1	1.7	3.9	100
BHV7	1.1	0.5	1.1	0.9	3.6	100
BHV8	0	0	0.2	0	0.2	100
Average (not including BHV3)					7.6	
Environmental TLD Dosimeter Measurement (Gamma) for 2020						
Monitoring Station	1st Qtr, 2020 Result (mrem)	2nd Qtr, 2020Result (mrem)	3rd Qtr, 2020 Result (mrem)	4th Qtr, 2020 Result (mrem)	2020 Total (mrem)	R313-15-301(a) Total Body Limit (mrem)
BHV1	0	4.5	2.3	5.3	12.1	100
BHV2	0	0	0	2.4	2.4	100
BHV3	0	0	0	0	0	100
BHV4	0	0	0	0	0	100
BHV5	0.1	2.5	3.6	4.8	11.0	100
BHV6	0	0	0	1	1	100
BHV7	0	0	0	1	1	100
BHV8	0	0	0	1.8	1.8	100
Average (not including BHV3)					4.2	

The 100 mrem public dose limit mentioned above is also different from the occupational dose limit of 5,000 mrem (5 rem) in R313-15-201(1)(a)(i). The 10-year average occupation dose at the Mill is 108.4 mrem. Below is the occupational dose (TEDE) over the last 10 years.

Year	Average Dose (mrem)	Maximum Dose (mrem)
2007	106	500
2008	101	370
2009	80	270
2010	75	490
2011	111	440
2012	106	350
2013	84	260
2014	90	360
2015	143	330
2016	110	310
2017	130	290
2018	150	490
2019	60	130
2020	100	330

Note: The occupational dose is calculated by using data from air sampling (both particulate and radon) and the individual workers OSL badges.

While workers are allowed to receive an occupational exposure dose of 5,000 mrem per year (a level considered safe for workers), the workers at the White Mesa Mill are receiving actual doses far below that standard. The average dose for workers is, coincidentally, close to the 100 mrem annual dose limit the NRC has set for the general public.

For more information on the Mill's environmental monitoring results see the Effluent Monitoring Reports at https://deq.utah.gov/waste-management-and-radiation-control/semi-annual-effluent-monitoring-reports-white-mesa-uranium-mill-energy-fuels-resources-usa-inc

Division General Response #11: Radon

There were many comments on the potential health effects of Radon coming from the Mill. The Division has carefully reviewed and considered these comments. Based on this review and evaluation of all the evidence in this administrative record, the Division finds that the Licensee's

operations are in full compliance with all applicable legal, technical, and industrial standards relating to radon emissions and that, as a result, there is no basis upon which to deny the application, nor is there any factual basis in the record to support a finding that radon emissions from the Mill pose a public health risk above an actionable level of concern, based on standards established by the NRC and the EPA. These conclusions are generally based on the following factors as well as other matters in the administrative record.

Radon is a naturally occurring radionuclide and a decay product of Uranium. [1-10] Radon is found nearly everywhere in the United States [1,5-7] and is the major source for background radiation.[1,5,8] It is true that radon is known to cause lung cancer [1-3,6-9] however, health effects come from chronic exposure (long term) to Radon [1-2,10] and are stochastic (random) in nature.[2] Based on the technical data, a person must be exposed to Radon for a long period of time before potential health effects arise, and not everyone will develop health problems from Radon exposure. Radon exposure is considered an indoor air quality issue because radon enters buildings through cracks in the floors, construction joints, cracks in walls, gaps in suspended floors, gaps around service pipes, cavities inside walls, and gas appliances [1-2,9] and becomes trapped allowing the concentration to increase. The potential for harmful exposure to outdoor Radon is low, according to a National Council on Radiation Protection and Measurements (NCRP) report, as concentrations range from 5.92 Bq/m^3 (0.16 pCi/L) to 21.1Bq/m^3 (0.57 pCi/L) with a mean of 15.1 Bq/m^3 (0.41 pCi/L). [4] (note 1pCi/L=37 Bq/m^3)

By comparison, presented below are the 2020 Radon monitoring results at the Mill property boundary, the first three quarters were reported in the *White Mesa Uranium Mill, Radioactive Materials License UT1900479, Semi-Annual Effluent Monitoring Report (January 1 through June 30, 2020)* and the last quarter was provided by EFRI.

White Mesa Mill Quarterly Effluent Rn-222 Monitoring Results (pCi/L)					
Monitoring Station	1/7/2020 4th Quarter 2020	4/1/2020 1st Quarter 2020	7/1/2020 2nd Quarter 2020	10/6/2020 3rd Quarter 2020	2020 Quarterly Average
BHV1	0.08	0	0.13	0.03	0.06
BHV2	0	0	0	0	0
BHV3*	0.3	0.57	0.22	0.24	0.33
BHV4	0.16	0	0.21	0.11	0.12
BHV5	0.32	0	0.37	0.17	0.22
BHV6	0.21	0	0.08	0.17	0.1
BHV7	0.13	0	0.08	0.11	0.08
BHV8	0.16	0	0	0.06	0.06
*BHV3 = background location					

These results are from continuous monitoring equipment. As shown, the average quarterly radon concentration at each of the Mill's monitoring stations is within the range of radon concentration found throughout the United States for ambient outdoor air concentrations. There is no basis to conclude that Mill operations are impacting radon levels as measured at the Mill property boundary. Moreover, the Colorado Plateau area is known for higher levels of naturally-

occurring radiation, including radon. The levels measured at the Mill property boundary are well within the levels that would be expected at the naturally-occurring background state.

The EPA action level (not an enforceable regulatory limit) for indoor Radon in air is 4 pCi/L. [1;6;9;10] Some commenters compared the EPA action level of 4 pCi/L to the EPA NESHAP limit of 20 pCi/m^2-sec. One problem with comparing the EPA action level to the NESHAP limit is the units associated with the number. Units (i.e. pCi/L and pCi/m^2-sec) give the numeric value context. The unit pCi/L is a unit of volume. The unit pCi/m^2- sec is a unit of rate. Because of the different context of the units the numbers are not directly comparable. This is so, in part, because the two different units are measuring different things. The first sets an action level for indoor air, such as one might encounter in a residential or commercial building, a passive environment where radon may accumulate. The NESHAP limit relates to air emissions from a dynamic industrial operation that involves different kinds of risks and exposures. The technology to measure and calculate the limits in the two different contexts is also different. The Division's focus at the Mill is the NESHAP limit.

One commenter suggested that the model used to evaluate Mill emissions, MILDOS-AREA, is not appropriate as it doesn't incorporate complex terrain as described in the 2019 NRC document, DIVISION OF DECOMMISSION/NG, URANIUM RECOVERY, AND WASTE PROGRAMS INTERIM STAFF GUIDANCE DUWP-ISG-01 EVALUATIONS OF URANIUM RECOVERY FACILITY SURVEYS OF RADON AND RADON ROGENY IN AIR AND DEMONSTRATIONS OF COMPLIANCE WITH 10 CFR 20.130.1, and that the White Mesa community members can sense the impacts through the smell of "surrogate" organic fumes from the Mill.

The Division concludes that adequate technical evidence supports the conclusions reached in this licensing action. While MILDOS-AREA does not include complex terrain, the commenter does not indicate that further in the same 2019 NRC document, the NRC also states that no model has been approved for this sort of endeavor. The NRC also states that the need to evaluate the impact of these low-speed drainage winds should be evaluated on a case-by-case basis. The Division's technical analysis of concerns relating to low-speed drainage winds concludes that these concerns are not reasonably above a reasonable level of concern. Based on the known relationship of the natural topography in the area of the Mill and the locations where people live, it is not necessary to include complex terrain in the model to estimate the radon doses to the communities of White Mesa or Blanding from the White Mesa Mill. The potentially impacted communities are on the same wide plateau as the Mill. There is no drainage feature that radon would direct concentrated radon gas toward these communities by low-speed winds from the Mill along the plateau. The plateau generally slopes from the north to south. Blanding is the most northerly location at approximately 6000 ft above mean sea level (amsl), the mill is south of Blanding at 5,600 ft amsl, and the White Mesa is the furthest south at 5,300 ft amsl. The southern location of the end of the plateau is further south of the White Mesa Community. The drainage features that might exist to direct concentrated radon gas are on the east and west side of the plateau or the Mill. The are no known residents in these drainage features. Further, winds are generally not from the east or the West, which would direct the radon to these features.

The Division's technical analysis of potential impacts from low-speed drainage winds is supported by direct measurements. The radon concentrations measured extensively on the Mill's property show that harmful radon concentrations do not extend beyond the Mill's property. Based on the foregoing, the technical basis used in the modeling effort and the modeling results are still valid. It is unlikely that radon resulting from Mill activities would exist at concentrations that would be harmful to a resident of either the Blanding or White Mesa communities. If that were to occur, the existing monitoring system is adequate to detect such events. There is simply no evidence to support the comments.

Responding specifically to the commenter's reference to "surrogate organic fumes," it is unclear what organic fumes the commenter is describing. The Mill does not have a source of organic fumes. In any event, the two alternate feeds at issue will not be generating any organic fumes. As a result, the Division concludes that comments regarding organic fumes are not relevant to the present licensing action.

The commenter also suggests that the location used to estimate the background concentration at the Mill is not appropriate, based on a document referenced as *Nielson, K. K., Walter, P., Rogers and Associates Engineering Corporation Preliminary Risk Assessment for the White Mesa Community. P17, 1997*. It seems that the commenter is suggesting that the background radon concentrations are elevated during active periods compared to time periods when the Mill is inactive. The commenter reasons that because background radon levels are deducted from the detected levels, the calculated radon impacts from the Mill are skewed. The Division does not agree with this comment.

Beyond this referenced document, the commenter suggests that the location used to measure the background concentration is too close to the Mill and that a location further from the Mill is more appropriate. The commenter believes that the radon concentration measured at the background location is influenced by the Mill, resulting in higher than actual background radon concentrations. The commenter did not provide the Division with a copy of the 1997 Nielson, *et al*. document. Therefore, it is not possible to respond to one specific reference in the Nielson document.

The Division concludes that in relation to radon emissions from the Mill, the Division would not correlate radon emissions with the production. While production operations at the Mill are variable, the tailing cells and the emissions from the cells would be relatively consistent. These cells are the main source of radon and are the closest to the White Mesa community. Therefore, it is not expected that background concentrations of radon increase during time periods that the Mill is producing yellowcake.

Beyond the absence of the referenced document, there is no evidence that the background radon concentrations measured at BHV-3 have increased because of Mill operations. Naturally occurring background concentrations have been measured from 2013 to 2020. The measured radon data from BHV-3 indicate seasonal fluctuations, but no increasing trends. This is expected as the emission of naturally occurring background radon is not expected to be constant. For instance, radon is emitted at lower rates when the ground is frozen than during a period when the ground is not frozen. The radon gas cannot pass through the frozen material.

Radon is emitted by natural rock materials and some natural rock materials emit more than others. A background location should be selected to ensure that it has a comparable background to that at the Mill. The location should also be closer to the Mill rather than farther from the Mill, so that the same forces (such as weather) are acting on the Mill and the background location. Even though it is difficult to determine a location that may be considered an appropriate background location, the Division concludes that the current background location at BHV-3 remains a suitable location. BVH-3 is approximately three miles West of the Mill on Black Mesa. It has similar geology, elevation, and weather conditions as compared to the Mill. With the predominate wind directions that have been recorded at the Mill, this location is generally upwind from the Mill. Therefore, radon that is emitted from the Mill should not impact the measured radon results at BHV-3 to sufficient extent to invalidate the location.

The Mill is subject to *40 C.F.R. Part 192 and 40 C.F.R. Part 61 Subpart W.* As discussed, the tailings from processing alternate feed material is considered 11e.(2) byproduct material because uranium is recovered from alternate feed material. Quarterly sampling results are submitted and reviewed by the Utah Division of Air Quality. See General Division Response #04: Alternate Feed. Therefore, any radon emissions relating to the tailings from the two alternate feeds at issue in this licensing action will be addressed under existing regulations and monitoring in the same way that radon emissions from other feedstocks are addressed. Current radon monitoring and enforcement measures are adequate to meet applicable federal standards. In 2017, the U.S. District Court for the District of Utah recently granted summary judgment in favor of EFRI on a Clean Air Act citizen suit alleging various violations of the Clean Air Act relating to radon emissions. *See Grand Canyon Trust v. Energy Fuels Resources (U.S.A.) Inc.*, 269 F.Supp.3d 1173 (D. Utah 2017).

For more information on the Mill's environmental monitoring results including Radon results at the environmental monitoring stations see the Effluent Monitoring Reports at https://deq.utah.gov/waste-management-and-radiation-control/semi-annual-effluent-monitoring-reports-white-mesa-uranium-mill-energy-fuels-resources-usa-inc

Radon References:
(1) Agency for Toxic Substances and Disease Registry (ATSDR) (2010), *Case Studies in Environmental Medicine Radon Toxicity*, Course: CB/WB1585, U.S. Department of Health and Human Services, Washington, D.C.
(2) International Commission on Radiation Protection (ICRP) (1993), *Protection Against Radon-222 at Home and Work*, ICRP Publication 65,Volume 23, ISSN 0146-6453, Pergamon, Tarrytown, New York.
(3) ICRP (2010), *Lung Cancer Risk from Radon and Progeny and Statement on Radon*, ICRP Publication 115,Volume 40, ISSN 0146-6453, Pergamon, Tarrytown, New York.
(4) National Council on Radiation Protection and Measurements (NCRP) (1988), *Measurement of Radon and Radon Daughters in Air*, NCRP Report No. 97, Bethesda, Maryland.
(5) NCRP (2009), *Ionizing Radiation Exposure of the Population of the United States*, NCRP Report No. 160, Bethesda, Maryland.
(6) United States Environmental Protection Agency (EPA) (2009), *Home Buyer's and Seller's Guide to Radon*, Indoor Environments Division, Washington D.C.

(7) United States Geological Survey (1992), *The Geology of Radon*, U.S. Government Printing Office, Washington D.C.
(8) World Health Organization (WHO) (2009), *WHO Handbook on Indoor Radon: A Public Health Perspective*, WHO Press, Geneva, Switzerland.
(9) EPA (2010), *Consumer's Guide to Radon Reduction: How to Fix Your Home*, Indoor Environments Division, Washington D.C.
(10) ATSDR (2012), *Toxicological Profile for Radon*, U.S. Department of Health and Human Services, Washington, D.C.

Division Response #12: Drinking Water Quality

Several commenters raised concerns regarding drinking water quality. Some expressed concern over potential contamination of down gradient drinking water resources, while others alleged that contamination had already occurred. The Division disagrees with these comments because they have no basis in fact. To date, data available to the Division has not implicated the Mill facilities in contamination of drinking water resources. The extensive groundwater monitoring network has produced data that leads to a fair conclusion that no contaminant plumes have developed from the tailings and fluid management impoundments themselves. This conclusion is not an "outdated hypotheses" as one commenter claims but is directly supported by substantial direct evidence and monitoring, including the University of Utah isotopic study that is addressed extensively in connection with Amendment 8. By way of summary, at the request of the former Division of Radiation Control, T. Grant Hurst and D. Kip Solomon of the Department of Geology and Geophysics of the University of Utah performed a comprehensive groundwater study at the Mill in July 2007 to characterize groundwater flow, chemical composition, noble gas composition, and age (Hurst and Solomon, 2008). The objective of the study was to determine whether or not the increasing and elevated trace metal concentrations in monitoring wells at the Mill that had been reported to date may be evidence of potential leakage from Mill tailings cells. Far from being an "outdated hypothesis," Hurst and Solomon (2008) concluded that:

> [i]n general, the data collected in this study do not provide evidence that tailings cell leakage is leading to contamination of groundwater in the area around the White Mesa Mill. Evidence of old water in the majority of wells, and significantly different isotopic fingerprints between wells with the highest concentrations of trace metals and surface water sites, supports this conclusion. The only evidence linking surface waters to recharging groundwater is seen in MW-27 and MW-19. Measurable tritium and CFC concentrations indicate relatively young water, with low concentrations of selenium, manganese, and uranium. Furthermore, stable isotope fingerprints of δD and $\delta^{18}O$ suggest mixing between wildlife pond recharge and older groundwater in MW-19 and MW-27. $\delta^{34}S$-$S0_4$ and $\delta^{18}O$-$S0_4$ fingerprints closely relate MW-27 to wildlife pond water, while the exceptionally low concentration of sulfate in MW-27, the only groundwater site to exhibit sulfate levels below 100 mg/L, suggest no leachate from the tailings cells has reached the well.

Pre-existing background concentrations were supported by the University of Utah Study. Background Reports also identified pre-existing data trends. Moreover, groundwater quality data collected since this report refutes the claims that groundwater contamination exists or is

being caused by any potential leakage from the tailings cells. The Division's conclusion, made in this and other licensing actions, that the tailings cells at the Mill are not leaking is supported by more than adequate evidence in the Administrative Record taken as a whole. Ongoing groundwater monitoring data received and evaluated by the Division to date supports the conclusion that the tailing cells are not leaking.

Many commenters have provided comments about the two groundwater plumes, the Nitrate/Chloride Plume and the Chloroform Plume, located within the operational footprint of the Mill. These comments contend that these two plumes are evidence of leaking tailings impoundments. The Division disagrees with these comments. The larger Administrative Record demonstrates the following facts. Contamination of the perched Dakota/Burro Canyon Aquifer by the Mill is limited to the Nitrate/Chloride and Chloroform Plumes, located many miles away from—and cross-gradient from the White Mesa community. These two plumes are located within the direct operational footprint of the Mill. Also, as studied and documented in the November 7, 2012 EFR "Southwest Investigation," the contamination is not affecting any seeps or springs along the margins of the mesa and would not be expected to impact any of the seeps or springs based on extremely low hydraulic permeability of the perched aquifer and potential groundwater contaminant travel time on the order of thousands of years. Additionally, this contamination does not include radionuclides above action limits and has been and is rigorously defined and monitored to ensure that the area of contamination is well defined, and that progress is made to remove the contamination from the perched aquifer. EFRI has posted adequate bond funds to fully remediate these plumes. Moreover, the Division has concluded that there are no active contamination sources for these plumes that should be remediated at this time. Therefore, the Nitrate/Chloride Plume and the Chloroform Plume are contained and under appropriate corrective action. Based on the Administrative Record, these sources of contaminants do not affect use of the perched groundwater by any parties, including the Ute Mountain Ute Community.

Some commenters continue to assert that the groundwater at the White Mesa community is "downgradient" from the Mill. The Division disagrees with this comment. It is not supported by technical evidence in the Administrative Record. The gradient of the perched Dakota/Burro Canyon aquifer was addressed in detail during the 2017 renewal process. See 2017 Permit Renewal PPS. Additional data received since the 2017 renewal, including groundwater gradient information from three new monitoring wells (MW-38, 39, and 40), corroborates the Division's longstanding findings that the gradient in the perched Dakota/Burro Canyon aquifer is cross-gradient from the Ute Mountain Ute White Mesa Community. There is no known "preferential" groundwater gradient or pathway from the Mill operational area to the Ute Mountain Ute Community, as the UMUT contends. In addition to the gradient, these contaminants are hydraulically isolated according to the corrective action plans (groundwater pumping) and are contained within the boundary of land owned and operated by the Mill. The perched Dakota/Burro Canyon aquifer is hydraulically isolated from the deeper Navajo Aquifer. Any potential discharges from the Mill to groundwater would be isolated in a perched aquifer system defined as the Burro Canyon Aquifer. The perched Dakota/Burro Canyon aquifer is classified as "perched" due to the presence of significant, naturally low-permeability formation materials underneath it. The perched Burro Canyon Aquifer is separated from the deep Navajo Aquifer (which is locally used as a primary drinking water source), by approximately 1,100 feet of

Morrison and Summerville Formation materials. These formations have unusually low average vertical permeability. For example, the underlying formation includes more than 200 feet of Brushy Basin Member bentonitic clay, a material with extremely low vertical permeability. Located directly below the Burro Canyon Aquifer, the Brushy Basin Member bentonitic clay perches the Burrow Canyon groundwater so well that it forces lateral flow from the perched aquifer to the margins of the mesa. This stratigraphy effectively isolates the perched Burro Canyon Aquifer from the Navajo Aquifer, prohibiting the discharge of potential contaminants from the perched aquifer to the deep aquifer. These natural conditions were a significant consideration in the siting of the White Mesa Mill in the 1970s. This topic is addressed in more detail in the 2017 Permit Renewal PPS.

The Division has concern for maintenance of clean drinking water resources. When commenters allege contamination reaching a particular site, such as a drinking water supply well, the commenters have a responsibility to provide "a pathway or mechanism from the tailings piles" (CLI-01-21, p. 5). Absent any evidence, the Director will continue to rely on the ongoing environmental monitoring program to address such concerns. Commenters have not provided data for the Division to consider in evaluating claims of impacted drinking water supply. They have offered their speculative opinions without providing factual support. To the contrary, known information regarding the hydrogeology and groundwater conditions at the Mill property, especially in light of extensive monitoring data, does not support the claims of harm alleged by the commenters. The Division searched the EPA's SDWIS (State Drinking Water Information System) database for data to support the commenters' position, and found no data supporting the idea that pollution originating at the Mill had reached the White Mesa Community. It should be noted that in a similar case brought before the NRC, when the Mill owners proposed disposing of 11e.(2) material from Molycorp in the impoundment caps, the petitioner was denied standing to challenge the decision of the NRC to approve the proposal based on a lack of supporting data.[14] The current licensing action is limited to the existing administrative record. No contrary fact-based information has been submitted during the public comment period and the record is now closed.

Division Response #13: Comments Regarding the Proposed Modified Groundwater Discharge Permit UGW370004

The public notice in this matter involved both Amendment 10 and a modification to the Mill Groundwater Quality Discharge Permit UGW37004. Following the close of the public comment period, the Division determined that specific comments regarding modification to the Mill Groundwater Quality Discharge Permit UGW370004 would be better addressed in a separate PPS relating to the groundwater permit modification action. This was deemed appropriate since the Groundwater Permit is a standalone document and contains specific requirements for groundwater compliance. Therefore, comments specific to changes made for the Permit modification were included in a separate PPS dated March 2020 and posted on the Division Website at https://documents.deq.utah.gov/waste-management-and-radiation-control/facilities/energy-fuels-white-mesa/DRC-2021-002082.pdf. The Permit modification was

[14] CLI-01-21, published in NUREG 0750, Vol. 54, p. 251. This issue was discussed in a footnote to Division Response #10, above.

finalized and signed by the Director on March 8, 2021. The modified Permit is also posted on the Division Website at https://documents.deq.utah.gov/waste-management-and-radiation-control/facilities/energy-fuels-white-mesa/DRC-2021-002102.pdf.

That being said, the Division understands that many of the groundwater comments received could be read to relate to the issues raised in Amendment 10. In this context, the Division relies, in part, on the extensive administrative records created in these previous groundwater-related matters, as well as Amendment 8, to reach its current conclusions regarding Amendment 10. Stated differently, the Division acknowledges that some commenters referred generally to groundwater quality at the Mill without specific comments or questions and in association with other comments related to the License. In order to address these comments from the general public, the Division refers such commenters to Division Responses in the 2017 License and Groundwater Permit Renewal PPS, which comprehensively addresses general comments related to groundwater quality in the vicinity of the Mill. The 2017 PPS is available on the Division Website at https://documents.deq.utah.gov/waste-management-and-radiation-control/facilities/energy-fuels-white-mesa/DRC-2018-000762.pdf.

Division Response #14: NRC Import License for Silmet

Several commenters objected to the Silmet Alternate Feed on the basis that an Import License would be required from the NRC. The Division does not issue Import licenses. The NRC is the only regulatory agency who have this authority. The Division only reviews the request to process the material and can only approve processing. The Licensee is responsible to apply for an import license from the NRC. Whether or not the NRC grants an import license is not part of the Division's review.

The Division initiated contact with the NRC to address comments with respect to the Silmet Alternate Feed matter. In an email to the Division dated May 28, 2020 the NRC stated the following:

> *Good Morning*
>
> *I just wanted to close the loop on the discussions on the White Mesa article and consultation with a senior colleague, I learned the prevailing regulatory citation for the proposed Estonia import is Section 110.27(a) General License for Import, which states in part, except as provided in paragraphs (b) and (c) of this section, a general license is issued to any person to import byproduct, source, or special nuclear material if the U.S. consignee is authorized to receive and possess the material under the relevant NRC or Agreement State regulations.*
>
> *(b) The general license in paragraph (a) of this section does not authorize the import of more than 100 kilograms per shipment of source and/or special nuclear material in the form of irradiated fuel.*
>
> *(c) Paragraph (a) of this section does not authorize the import under a general license of radioactive waste.*

I spoke to both Phillip and David, and the NRC has determined that the proposed shipment can be imported under the general license and a specific import license is not required. In addition, the alternative feed is not radioactive waste, as defined in Part 110. My apologies for any confusion, but I wanted to resolve the issue as quickly as possible.

In another email to Ms. Sarah Fields of Uranium Watch dated May 28, 2020, the NRC stated the following:

Hello Ms. Fields,

Your email was forwarded to me. I have read the article and have been in consultation with the State of Utah and Energy Fuels Resources. Based on the information presented to the Export Controls and Nonproliferation Branch, the proposed Estonia import satisfies the general license provisions in Section 10 CFR Part 110.27, which states in part, except as provided in paragraphs (b) and (c) of this section, a general license is issued to any person to import byproduct, source, or special nuclear material if the U.S. consignee is authorized to receive and possess the material under the relevant NRC or Agreement State regulations. The U.S. consignee does possess the relevant possession license.

Furthermore, paragraph (a) of this section does not authorize the import under a general license of radioactive waste.

Again, based on the information presented, the NRC has determined that the proposed shipment can be imported under a general license - a specific import license is not required. The alternate feed meets paragraph 6, under 10 CFR 110.2, Radioactive waste. Paragraph 6 states that radioactive waste does not include radioactive material that is imported solely for the purposes of recycling and not for waste management or disposal where there is a market for the recycled material and evidence of a contract or business agreement can be produced upon request by the NRC. The NRC was informed that the licensee will process the Silmet Alternate Feed Material for uranium. The end product the [sic] *will be 99% U3O8 or "yellowcake". The yellowcake will then be sold on the open market or by contract and is sent for enrichment. The enriched uranium is transported to a fuel fabrication plant and gets converted into fuel. It is the NRC's view that this meets the exclusion for general license, is not classified as radioactive waste, and a specific import license is not required.*

Hope this helps.

As documented in these emails the NRC has determined that a specific import license is not required for the Silmet material because it does not fit the definition of radioactive waste as per 10 CFR 110.2 paragraph 6. The NRC also determined that the Silmet material is being recycled for its uranium content to create uranium yellowcake. The NRC then determined since the Silmet material is not radioactive waste, that it can be imported into the country for the purpose of recycling under the general import license under 10 CFR 110.27.

On October 23, 2020, the Grand Canyon Trust and the Ute Mountain Ute Tribe filed a 162-page letter (including exhibits) to the NRC (Margaret Doane, Executive Director for Operations, U.S. Nuclear Regulatory Commission) entitled: Request to Institute a Proceeding under 10 C.F.R. § 2.202 to Prohibit Energy Fuels from Importing Radioactive Waste without a Specific Import License (the "Import License Request"). The Import License Request, on page 1, made the following specific request: "We're writing on behalf of the Ute Mountain Ute Tribe and the Grand Canyon
Trust to request1 that the Nuclear Regulatory Commission use its authority under 10 C.F.R. § 2.202 to order Energy Fuels Resources (USA), Inc., not to import radioactive materials from Estonia without a specific import license."

On December 11, 2020, the NRC provided the following response:

> *Request to Institute a Proceeding under 10 C.F.R. § 2.202 to Prohibit Energy Fuels from Importing Radioactive Waste without a Specific Import License*
> *Jones, Andrea <Andrea.Jones2@nrc.gov>*
> *Fri 12/11/2020 12:55 PM*
> *To: apaul@grandcanyontrust.org <apaul@grandcanyontrust.org>; portego@utemountain.org <portego@utemountain.org>*
> *Cc: H. Michael Keller <mkeller@fabianvancott.com>; tyhoward@utah.gov <tyhoward@utah.gov>; pgoble@utah.gov <pgoble@utah.gov>; Bret Randall <bfrandall@agutah.gov>; David Frydenlund <DFrydenlund@energyfuels.com>; Habighorst, Peter <Peter.Habighorst@nrc.gov>; Poy, Stephen <Stephen.Poy@nrc.gov>; Rakovan, Lance <Lance.Rakovan@nrc.gov>*
>
> *Messrs. Paul and Orego,*
>
> *The Nuclear Regulatory Commission (NRC) received your letter dated October 23, 2020, on behalf of Grand Canyon Trust and Ute Mountain Ute Tribe, wherein you requested the NRC to use its authority under 10 C.F.R. § 2.202 to order Energy Fuels Resources (USA), Inc., to prevent the import of radioactive materials from Estonia without a specific import license. Staff reviewed your 10 CFR 2.206 petition request and initiated the screening process in accordance with Section II.A.2(d) of NRC Management Directive (MD) 8.11 "Review Process for 10 CFR 2.206 Petitions" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20309A691).*
>
> *Consistent with MD 8.11 Section II.A.2(d)(v), "Requests That Would Not Reasonably Lead to an Enforcement Action," the NRC staff has "screened" your request out of the 2.206 Petition Process. Specifically, the NRC staff concluded that the concerns expressed do not warrant enforcement. This conclusion is based, in part, on information received during a telephone call on November 16, 2020, during which the NRC confirmed with Mr. Phil Goble, Uranium Mills and Radiative Materials Section Manager, Utah Division of Waste Management and Radiation Control (State of Utah), that Energy Fuels has not initiated or completed an import of radioactive material into the United States, from Estonia. Furthermore, the State of Utah has not issued a nuclear*

materials license to Energy Fuels Resources to possess, store, or process the source material in question. Insofar as no material has been imported and no possession license has been issued, together with information received from the State of Utah, NRC staff has determined no supporting facts were presented to support the occurrence of an NRC enforcement action.

Thank you for bringing these issues to the attention of the NRC. The 2.206 Petition Process exists to identify safety issues at NRC licensed facilities and your efforts are appreciated.

For more information on the petition process please see https://www.nrc.gov/about-nrc/regulatory/enforcement/petition.html.

Andrea R. Jones
Sr. Licensing Officer/Office of International Programs
Location: US NRC/Region II/Office 1469
404-997-4443

Based on the foregoing, the Division concludes that the comments relating to an import license not only fall outside the scope of the present licensing action but have been fully resolved by the NRC, as the agency with jurisdiction over the issues presented.

Public Response #15: Access to Public Records and Confusion over the Word "Renewal"

Several commenters mentioned that they felt that the documents associated with the White Mesa Uranium Mill License Amendment #10 were not readily available for public review. One commenter specifically mentioned a document associated with changes to License Condition 10.5. As a public courtesy, the Division makes reasonable efforts to post all documents associated with License Amendments with the Public Notice on the Division's webpage. However, if a document is not posted, the information a person seeks can be requested through the Utah Government Records Access and Management Act (GRAMA) or looked up through the Utah Department of Environmental Quality (DEQ) the "EZ Records Search" link on the DEQs webpage. EZ Records Search allows people to search for documents in DEQ's electronic filing program. One commenter complained the EZ Records Search is slow and cumbersome. The Division cannot always guarantee access to all documents via DEQ's EZ search program. Internet service outages, the speed of an individual's internet service, power outages and other natural and man-made incidents that could limit access are outside the control of the Division.

In addition, other documents associated with the White Mesa Mill are available to the public on the Division's webpage, including compliance history, construction projects, groundwater sampling reports, and other required reports. NRC guidance documents are found on the NRC webpage. The Division believes the information posted on the webpage allows a person to understand the activities that are going on at the Mill.

According to the Division's GRAMA request records, only one request for additional records was made for Amendment #10 during the public comment period and was regarding additional

records regarding the Attorney General's assessment on whether the Silmet material needed an import license. This request was dated June 12, 2020 and responded to by the Division on June 19, 2020. There were no requests involving records with changes to License Condition 10.5.

One commenter was confused why the Division used the word "Renewal" in the Public notice. The subject line in the Division's public announcements is to help the Division internal process to sort through all the comments being received so that incoming comments are directed to appropriate staff. In the body of the Notice there was one instance of the word "Renewal." This was not intentional and was a typographical error. The Division apologizes for any confusion this may have caused. The subject line still served its purpose of directing the comments to the Division Staff working on Amendment #10 for the White Mesa Mill.

The Tribe commented that DWMRC had provided formatted data for use in "specific modeling software" used by each party but has "not been provided with any such data in more than two years." The Division is unsure what the Tribe is referring to in regards to "specific modeling software." The comment refers to groundwater data being used but the State is not aware of groundwater modeling software having been used and shared between the State and the Tribe. The Division provides all of the groundwater monitoring results (groundwater sampling field data sheets and laboratory results) for the Mill to the Tribe, and to the general public, by uploading the Mill Quarterly Groundwater Reports to the Division Website. This is per agreements with the Tribe and the State. The Groundwater Reports include all laboratory data sheets and laboratory quality control data (QA/QC samples) and potential data error flags. The State uses the quality checked data submitted in these Groundwater Reports for Groundwater Permit Modifications. It is noted that the State did provide the Tribe with Comma Separated Value Reports for use in their contracted Geo-Logic Associates Groundwater Data Study Report, however, this is the same data submitted in the Groundwater Reports but does not include information regarding data QA/QC or laboratory data quality checks. Therefore, no groundwater data is being restricted from the Tribe for use in their modeling software.

Division General Response #16: Cultural Resources

Several commenters expressed concerns over protection of cultural and historical site on and adjacent to the Mill's property, including an apparent residual obligation undertaken by the BLM as relating to residual cultural resource issues on lands that were previously owned by the BLM but traded to the Licensee's predecessor in interest. Apparently, this BLM "easement" relates to lands that are now owned by the Licensee in T. 38 S., R.22 E, SLBM, Sections 4, 5, 6, 8 and 9, as well as T. 37 S., R.22 E., SLBM, Sections 29 and 33. This topic was addressed, in part, in connection with the amendment of License Condition 9.7, which is now final. Please refer to the PPS for License Amendment #9 for the Division's role on protection of cultural and historic sites at: https://documents.deq.utah.gov/waste-management-and-radiation-control/facilities/energy-fuels-white-mesa/DRC-2020-006850.pdf

The Division is sensitive to cultural resource issues and the State of Utah's responsibility for protection of cultural and historical site protection. However, in this instance, the state of Utah is not the correct governmental entity to enforce residual federal requirements that the BLM may, or may not, have agreed to address in connection with operations on the above-referenced lands.

The BLM has exclusive jurisdiction as to the meaning, scope, rights, remedies, and enforceability of the BLM easement as relating to cultural resources. As described in the administrative record for License Amendment #9, the Division will manage cultural resources for the Mill pursuant to State law. If there exists a separate obligation for the BLM to evaluate cultural resources under federal law, that issue is not properly before the Division in the present licensing action or any other action relating to the Mill.

In all events, Amendment 10 does not involve the disturbance of new areas of the Mill, outside of the current operational areas which have already been cleared for cultural resources. None of this land implicates the specific lands covered by the BLM easement. Because the present amendment does not involve the disturbance of new lands, cultural resource issues, while important, fall outside the scope. If and to the extent that future amendment requests implicate the disturbance of new areas at the Mill, the Division is obligated to follow the procedures outlined in Condition 9.7, adopted in Amendment #9.

Division Response #17: Transportation

Several commenters raised concerns about vehicles hauling alternate feed and in-situ leach recovery (ISL/ISR) decommissioning debris to the Mill and vehicles taking yellowcake shipments from the Mill. All radioactive material shipments coming to and leaving from the Mill must meet the transportation requirements specified in UAC R313-19-100, which incorporates many of the U.S. Department of Transportation (U.S. DOT) requirements for the transportation of radioactive materials. The transportation requirements that are not incorporated into the Utah Radiation Control Rules are enforced by the U.S. DOT. Shipments to and from the Mill must follow the applicable requirements for shipments of radioactive materials as LSA-1 shipments, regardless if the enforcement jurisdiction is the Division's, the NRC's, or the U.S. DOT's. These regulations are protective of public health.

Several commenters expressed concern that the Division did not adequately evaluate the environmental impacts relating to the transportation of the alternate feed material. These comments are not accurate. In Section 4.2 of both applications for Silmet and Moffat Tunnel materials, EFRI provided information regarding the transportation impacts for each alternate feed. EFRI's applications discuss the type of container that the alternate feed materials will be shipped in, potential routes that the shipments will take, and what emergency response will be required in the event of a transportation incident. Both documents were made available to the Public on the Division's webpage while the applications were reviewed by the Division. The Division, in the TEEA analysis, concurs with EFRI's evaluation, and reiterates that all shipments to and from the Mill must follow U.S. Department of Transportation regulations. Similar transportation-related analyses have been conducted with respect to other alternate feeds in the past. These evaluations are also indirectly relevant to the present licensing action. The Division finds that sufficient information exists in the administrative record to satisfy R313-24-3 and to support the licensing action. This is not to say that the transportation of ISR material presents no risks, only that the risks and environmental issues have been adequately analyzed, evaluated, and addressed.

Division Response #18: Licensing the White Mesa Uranium Mill

Many commenters were under the impression that the Mill was supposed to operate for only 15 years. This is incorrect. It is true that the 1978 *Environmental Report for the White Mesa Uranium Project* was based on an assumed, projected life span of 15 years for the project. However, the NRC did not include any condition in its license limiting the operational life of the Mill and no such condition has been imposed since that time. It is a common practice in environmental and engineering designs and modeling to make assumptions about the operational life of a given facility. This is done to create a baseline scenario to use as a starting point in evaluations. An operational life assumption for purposes of a model does not equate to a hard limitation on the operational life of a facility. Had that been the NRC's intent, it would have included an operational life termination date in its original or renewal licenses. This did not occur.

To be sure, the NRC's original license for the Mill was for the period of five (5) years. Similarly, the Division's licenses and permits relating to the Mill have limited terms established by law. However, the duration of a permit or license does not equate to operational lifespan of a facility. Rather, permits and licenses have limited terms and are subject to renewal procedures, at which time license conditions are subject to re-evaluation based on the state of laws and regulations at the time of renewal. More specifically, Radioactive Materials Licenses are not issued based on projected life spans of a project but on license schedules set by law. Currently, in Utah Administrative Code R313-22-34(1)(b) the length of time for a license to be active is 10 years. However, this is a recent change. Prior to that change, the active time for a license was 5 years. At the end of each time period, the Licensee has the right to submit a renewal application to continue licensure. A renewal application must include similar and updated information as was required in the original application (R313-22-37), and for a uranium mill this includes an environmental analysis (R313-24-3). The Licensee may continue to renew their license as many times as they desire, provided they demonstrate compliance with applicable regulations.

Other commenters were under the impression that there have been times when the Mill has operated with an expired license. This assumption is incorrect. While a renewal application is being reviewed, the license is in "timely renewal" status and the Licensee may continue operation under the old license until the renewal process is completed as per R313-22-36(1) (See also 10 CFR 40.42(a)).

Some commenters have objected that the Mill has been there for years and has not operated as originally anticipated. The operation these commenters anticipated is usually defined in the original siting document. The design parameters presented in the siting present a scenario where the plant is operated at capacity continuously until the available area for tailings disposal is exhausted, at which time the operations cease, the plant closes, and decommissioning is undertaken. Continuous operation at capacity is a useful simplifying assumption during design, but is never seen as an operational constraint, as discussed below.

Design life and limited purpose do not equate to operational life. Design life is a concept used to guide design so as to control costs. Actual wear on the plant components will differ from assumptions made in the design. Normally, the plant components will wear more slowly than assumed during design, resulting in longer operational life than initially projected. Design

assumptions also include uniform wear to components of the plant, and components free from defects. Factors of safety applied during design result in a strategic overdesign to compensate for the potential for defects or uneven wear. Repairs and upgrades made during the operational life can extend operational life as well. The design life does not affect the Division's regulation of the Mill. The operation is regulated by measuring against performance metrics contained in Rule and by best science and engineering practices.

Although a business can intend to operate in a given fashion and for a set time, businesses deviate from original intents in response to changing market conditions encountered during operation. In this case, the licensee does not control the business climate, and the Division does not regulate based upon the business environment or the licensee's response thereto. Those issues are outside the Division's scope of authority.

The Division does not regulate business decisions made by the licensees it regulates. The Division's role and authority is limited to issues called out in the Radiation Control Rules (UAC R313) and aspects of the water quality regulatory framework pertinent to the Mill (portions of UAC R317). It is not within the Division's scope of authority to govern how a licensee responds to market forces unless that action impacts performance as measured against the cited Rules. The business climate and market may provide licensees opportunity or challenges that licensees choose to address through changes in operational strategy. Dictating the licensees' response is outside the Division's role.

While the Mill was designed with certain ores in mind, legal precedent has been established to accept source material from sources other than the Colorado Plateau and Arizona Strip. The precedents were set prior to Utah assuming the lead role in regulating the Mill. The State of Utah committed to honor legal precedents set by the NRC and the courts as a condition of becoming an Agreement State and assuming the lead in regulation. In legal parlance, suggesting that the State re-litigate the precedent-setting decisions to accept alternate and equivalent feeds constitutes a collateral attack, and is inappropriate. The Division will take no action in violation of these precedents.

Some commenters voiced an objection to the size of the tailings management system at the Mill. The Division does not regulate uranium mills by size of facility or any of its components, but by rule-specific performance measures, including, but not limited to releases of contaminants to the environment.

See Division Response #19: History of the White Mesa Uranium Mill below for dates on when the White Mesa Uranium Mill's RML was renewed.

Division Response #19: History of the White Mesa Uranium Mill

One commenter provided its version of the history of the White Mesa Uranium Mill. For its part, EFRI provided specific comments related to the history of the Mill. *See* Response to Comments (dated September 25, 2020) at pgs. 94 through 101. Viewing the Administrative Record as a whole, the Division's summary of the history of important events as they relate to Amendment 10 is provided below.

February 6, 1978	Energy Fuels Nuclear, Inc. applied to the NRC for a source and byproduct material license to construct and operate the White Mesa Uranium Mill
August 7, 1979	The NRC issued a Source Material License for the White Mesa Mill with an expiration date of August 31, 1984.
December 5, 1984	License was amended to show transfer of control to UMETCO.
January 30, 1985	UMETCO submitted a renewal application for the White Mesa Uranium Mill.
September 26, 1985	The NRC renewed the White Mesa Uranium Mill's Source Material License with an expiration date of September 23, 1991.
April 27, 1990	In the Kerr-McGee vs. NRC court decision, which was argued before the United States Court of Appeals, District of Columbia Circuit in 1989, Kerr-Mcgee challenged the NRC's definition of byproduct material. In the Background section, the court describes the regulatory framework of this decision and how the AEA and UMTRCA apply to the decision. This court decision also explains that "ore" can be a native material or a previously processed material that contains source material and the tailing from processing both types of ores is 11e.(2) by product material under the AEA and UMTRCA. See more detail of this decision in Division Response #04: Alternate Feed
August 23, 1991	UMETCO submitted a renewal application for the White Mesa Uranium Mill and in a letter dated November 7, 1991 the NRC notified UMETCO that the license was in timely renewal
May 13, 1992	Federal Register Vol. 57 No.93- In response to the Kerr-McGee vs the NRC court decision, the NRC publishes its *Position and Guidance on the Use of Uranium Mill feed Material Other Than Natural Ores*. See more detail of this in Division Response #04: Alternate Feed
June 15, 1993	NRC amends License to receive and process source material from Allied Signal Corporation's Metropolis, Illinois facility. This was the first alternate feed.
August 2, 1993	License was amended by the NRC to allow direct disposal of 10,000 cu yds/yr 11e.(2) byproduct material from in-situ leach uranium recovery facilities.
May 25, 1994	License was amended to show transfer of control to Energy Fuels Nuclear, Inc. Important Note: Energy Fuels Nuclear, Inc. and Energy Fuels Resources, Inc. are two different companies.
December 14, 1994	The *NRC Issuance of Director's Decision*- In response to a petition from the State of Utah regarding direct disposal of ISR material at the White Mesa Mill, the NRC reduced the amount of ISR material from 10,000 cubic yards/year to 5,000 cubic yards/source. This decision was based off the original request was for 5,000 cubic yards from a single source. The License was amended to reflect this change.

August 15, 1995	The NRC issues SECY-95-211, which has the *Final Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores*.
September 22, 1995	Federal Register Vol. 60 No. 184- The NRC publishes its *Final Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores*
March 4, 1997	The NRC issued the renewal license to Energy Fuels Nuclear, Inc. for the White Mesa Uranium Mill with an expiration date of March 31, 2007. (Renewal application submitted August 23, 1991)
1997	License was amended to transfer control to International Uranium (USA) Corporation (IUC)
November 30, 2000	The NRC issues NRC Regulatory Issue Summary (RIS) 2000-23. The State of Utah in its final application for Agreement State status for uranium recovery facilities committed to follow this document to review alternate feed requests. Specifically Attachment 2- *Interim Position and Guidance on the use of Uranium Mill Feed Material Other Than Natural Ores*.
July 18, 2003	The State of Utah submits its final version of the application to become an Agreement State for uranium recovery facilities.
2004	The State of Utah becomes an Agreement State for Uranium Recovery facilities.
2007	License was amended to transfer of control to Denison Mines (USA) Corp.
February 28, 2007	Denison Mines (USA) Corp. submits a renewal application.
August 24, 2012	License was amended to transfer control from Denison Mines to Energy Fuels Resources, Inc. Important Note: Energy Fuels Nuclear, Inc. and Energy Fuels Resources, Inc. are two different companies.
February 16, 2018	The Division renewed the Radioactive Materials License for the White Mesa Mill with the expiration date of February 26, 2028. (Renewal application submitted February 28, 2007)
April 18 2019	Energy Fuels submits an application to receive the Silmet uranium bearing material as an alternate feed.
October 9, 2019	Energy Fuels submits request for changes to License Condition 10.5.
December 23, 2019	Energy Fuels submits an application to receive the Moffat Tunnel uranium bearing material as an alternate feed.
April 20, 2020	The Division begins the Public Comment Period for License Amendment #10. The Notice was posted on the Division's webpage on April 15, 2020 with supporting documents.

Division Response #20: The Division and Alleged Mining Approval

Several commenters expressed concern over uranium mining. These comments are mis-directed. The Division does not have anything to do with mining in the state of Utah. The legal authority to regulate uranium mining in the state of Utah is vested in the Utah Division of Oil, Gas, and Mining and the Board of Oil, Gas and Mining. No Utah agency has jurisdiction over uranium mining outside of the state of Utah. In all events, uranium mining is outside the scope of the

issues relating to Amendment 10.

Division Response #21: Social Injustice Towards the Native American Communities

Many commenters contend that the Mill creates social injustice towards the Native American communities near the Mill. The Division is sympathetic to these comments. Environmental justice is a subject that is garnering increasing attention. Many of the comment responses in this PPS relate to issues that involve Native American communities, such as cultural resources, radon emissions, groundwater quality, drinking water and surface water resources (such as seeps and springs), and so forth. The Division incorporates its responses to these issues here.

Many of the comments relating to social and environmental justice are seeking to have the Mill shut down or otherwise relocated. As an initial observation, these comments fall outside the scope of the issues raised in Amendment 10. Most of the critical decisions about the White Mesa Mill were made by the NRC, many years ago, in connection with the initial siting, design, and licensing of the facility. The NRC made the decision to approve siting of the White Mesa Mill in its location near the White Mesa community and Blanding. *See* Division Response #03: Why is the White Mesa Uranium Mill Located where it is? Those decisions have been final for decades and the comments requesting that the Mill be shut down or relocated amount to collateral attacks of final administrative actions made by other governmental agencies than the Division. The state of Utah had no regulatory approval role the NRC process and did not obtain Agreement State status until August 2004. At that time, the Division succeeded to the *status quo* of the NRC's previous decisions and agreed to use its best efforts to remain compatible with NRC's rules, regulations, and guidance. In this context, the Division also notes that the NRC and U.S. DOE make many other decisions that are binding on the Division, including the legal status of "alternate feed" and 11(e).2 materials. The Division's jurisdiction over these decisions is limited. More information on this topic is available in the Division's General Response #04 and #05. The Division also notes that at the time that the White Mesa Mill was originally sited and permitted by the NRC, both the Ute Mountain Ute Tribe and the Navajo Nation wrote letters to the NRC urging that the White Mesa Mill facility be sited and licensed as proposed. The Division references both letters from the Ute Mountain Ute Tribe and the Navajo Tribe in Attachment 5 of License Amendment #8 License Renewal found at https://deq.utah.gov/waste-management-and-radiation-control/attachment-5-public-participation-summary-energy-fuels-resources-usa-inc.

Moreover, the Administrative Record demonstrates that the comments submitted by the Ute Mountain Ute Tribe and the Navajo Nation in this matter do not represent the views of all persons of Native American ancestry, many of whom are current or former Mill employees and many of whom provided comments supporting the Mill generally and Amendment 10 specifically. The Division has also taken these comments into account.

In response to the many comments to the effect that the White Mesa Mill is not well-regulated and is harming local communities, the Division disagrees. The Division provides rigorous and appropriate regulation of the Mill. The Division employs five full-time Division staff members who are physically on site more than 40 days per year. The scope of environmental monitoring for wind and surface transport, soils and plants, shallow and deep groundwater, and so forth, at

and around the Mill facility has increased significantly since 2004 and continues to expand. The Division's efforts have detected, defined, and required rigorous corrective action, backed by a third-party bond, as to two plumes unrelated to tailings cell leakages. Since assuming regulatory responsibility for the Mill, the Division has issued 38 notices of violation and has imposed $176,000 in civil penalties. By comparison, during the time that the NRC was regulating the mill, the NRC issued two notices of violation and no monetary penalties. All available evidence continues to support the same conclusions: that the White Mesa Mill is being operated responsibly in conformance with all applicable laws, rules, and regulations. Workers are being protected. Over the past 10 years, the average radiation worker dose is 108.4 mrem per year. The NRC standard is 5,000 mrem per year for radiation workers. The public dose (at the property boundary points of compliance) is likewise well below the NRC's standard of 100 mrem per year, based on continuous monitoring. The average dose over the past 10 years at the points of compliance is 9.1 mrem per year, based on continuous monitoring. The point of compliance in the direction of the White Mesa community, BHV6, shows a 10-year average dose of 7.14 mrem per year. That monitoring station is 2.5 miles away from the nearest White Mesa community resident, and even farther away from most White Mesa residents, therefore the expected actual public dose from Mill operations is far below the dose measured at BHV6. The average human being receives 630 mrem per year dose from normal activities and background sources. The NRC sets the standards. According to federal law, the public dose limit is 100 mrem per year. The points of compliance for the White Mesa Mill are well within this limit. Finally, because of the prevailing wind direction, the residents living to the northeast of the Mill are more at risk than those living in and near the White Mesa community. The notion that the Mill was sited upwind of the White Mesa community is not supported by the evidence of record.

Many commenters allege that groundwater contamination from the Mill has impacted local drinking water supplies and impacting Native American communities. These comments are speculative and not supported by evidence. *See* Division Response #12. Under the Groundwater Discharge Permit (Permit), the Mill is required to conduct and report on environmental monitoring at the Mill, including groundwater monitoring, tailings wastewater sampling, spring and seeps sampling, groundwater elevation data, chloroform monitoring, and nitrate monitoring. The groundwater monitoring network at the Mill includes 74 monitoring wells for compliance purposes. Wells installed to monitor the tailings cells (MW Wells) are required to be sampled and analyzed for 38 different contaminants. For each such contaminant, the Permit establishes a compliance standard. Two non-radioactive groundwater contaminant plumes have been identified and characterized in the vicinity of the primary Mill facilities. One plume is chloroform, likely from legacy lab wastes, and a second plume is nitrate/chloride, likely originating from Ammonium Sulfate Crystal tanks at the processing site. Based on all available evidence, neither plume relates to uranium process water or the process water ponds. Both plumes are contained within a perched aquifer and are physically separated from the drinking water aquifer by a large aquitard (non-water bearing zone) and both plumes are contained within the property boundaries of the Mill. In addition, groundwater data shows that groundwater in the perched aquifer is flowing to the south-southwest, away from any community and is traveling less than a foot per year across the mesa. Therefore, the contaminated water is not affecting local community water supplies.

Links to the Mills environmental monitoring reports are in Division responses 9 through 13.

Division Response #22: Protection of Public Lands

Several commenters raised concerns about the protection of public lands. These comments are mis-directed. The Mill is located on private property that is owned by the Licensee, including significant private property holdings that are being used as buffer land to provide physical distance between Mill operations and other landowners and residents. This private buffer property was a factor in the original siting of the Mill. Issues related to the protection of cultural resources on the private lands owned by the Licensee are addressed in other areas of this PPS. Amendment 10 does not involve disturbance of new lands. Finally, as a general proposition, the protection of public lands would fall outside the scope of the Mill and the License, and, in all events, outside the scope of Amendment 10.

CONCLUSION

For the reasons outlined above and after considering the entire Administrative Record as a whole, the Director has concluded to approve license amendment #10 without revisions.

NOTICE OF RIGHT TO APPEAL

Notice is hereby given that persons who submitted comments on License Amendment #10 have the right to appeal this licensing action by filing and serving a petition for review and, as applicable, a petition to intervene, within 30 days from the date that the amended License is signed, as provided under Utah Code Section 19-1-301.5(6) and the applicable provisions of Utah Admin. Code R305-7.

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DWMRC (2020) Public Notice Amendment #10 of the 11e.(2) Byproduct License No. UT1900479 and Modification to Groundwater Quality Discharge Permit No. UGW370004, Energy Fuels Resources Inc., White Mesa Uranium Mill, San Juan County, Utah

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Energy Fuels Resources Inc. (EFRI) (2018) Reclamation Plan, White Mesa Mill, Blanding, Utah, Radioactive Materials License No. UT1900479, Rev. 5.1B (DRC-2018-001449) EFRI (2018) "White Mesa Uranium Mill, Blanding, Utah, Radioactive Materials License No. UT1900479, Groundwater Discharge Permit No. UGW370004, Cells 5A and 5B License and GWDP Amendment Request." (DRC-2018-006864)

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EFRI (2018) Reclamation Plan, White Mesa Mill Blanding, Utah Radioactive Materials License No. UT1900479, Revision 5.1B, (DRC-2018-001449) 40

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EFRI (2019), Application by Energy Fuels Resources (USA) Inc. ("EFRI") for an amendment to State of Utah Radioactive Materials License No. 1900479 for the White Mesa Uranium Mill (the "Mill") to authorize processing of NPM Silmet OU ("Silmet") alternate feed material (the "Uranium Material")

EFRI (2019), Volume and Procedural Modification Request for lle.(2) Byproduct Material Disposal, Radioactive Materials License UT1900479, White Mesa Uranium Mill, Blanding Utah

EFRI (2019) Application by Energy Fuels Resources (USA) Inc. ("EFRI") for an amendment to State of Utah Radioactive Materials License No. 1900479 for the White Mesa Uranium Mill

(the "Mill") to authorize processing of Union Pacific Railroad ("UPRR"), Moffat Tunnel alternate feed material (the "Uranium Material")

EFRI (2020) Sur-Reply- Response to Public Comments on the White Mesa Mill Groundwater Discharge Permit and Radioactive Materials License

EFRI (2021) Response to Request for Information ("RFI") regarding Energy Fuels Resources (USA) Inc. ("EFRI") White Mesa Mill Radioactive Material License 1900479 Amendment 10

Federal Register (1992) Vol. 57, No. 93, Wednesday, May 13,1992: Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores

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Grand Canyon Trust et. al. (2020) Comments on Proposed Amendment No. 10 to the Radioactive Materials License for the White Mesa Uranium Mill

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Navajo Tribe (1979) Support of the White Mesa Uranium Mill Letter

Navajo Utah Commission (2020) RESOLUTION OF THE NAVAJO UTAH COMMISSION OF THE NAVAJO NATION COUNCIL OPPOSING IMPORTATION OF RADIOACTIVE WASTE FROM THE COUNTRY OF ESTONIAN IN EASTERN EUROPE INTO THE WHITE MESA MILL NEAR BLANDING, UTAH.

U.S. Nuclear Regulatory Commission (NRC) (1979) Final Environmental Statement related to operation of White Mesa Uranium Project San Juan County, Utah, Office of Nuclear Material Safety and Safeguards, NUREG-0556

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NRC (1997) Environmental Assessment for Renewal of Source Material License No. SUA-1358, Energy Fuels Nuclear, Inc. White Mesa Uranium Mill, San Juan County, Utah

NRC (1998) State of Utah's Motion to Hear Related License Amendment Request for Hearing and Petition for Leave to Intervene, Ashland 1 in Tonawanda, New York

NRC (2000) NRC REGULATORY ISSUE SUMMARY 2000-23 RECENT CHANGES TO URANIUM RECOVERY POLICY, UNITED STATES NUCLEAR REGULATORY COMMISSION OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS WASHINGTON, D.C. 20555-0001

NRC (2000) Memorandum and Order: International Uranium (USA) Corporation, Regarding Alternate Feed Material from Tonawanda, New York, Docket No. 40-8681-MLA-4, February 10, 2000

NRC (2001) Nuclear Regulatory Commission Issuances, Opinions and Decision of the Nuclear Regulatory Commission with Selected Orders, July 1, 2001- December 31, 2001, Volume 54 pages 1-539, NUREG 0750

NRC (2002) U.S. Nuclear Regulatory Commission Regulatory Guide 8.30: Health Physics Surveys in Uranium Recovery Facilities, Rev. 1, Office of Nuclear Regulatory Research.

NRC (2019) DIVISION OF DECOMMISSIONING, URANIUM RECOVERY, AND WASTE PROGRAMS INTERIM STAFF GUIDANCE DUWP-ISG-01 EVALUATIONS OF URANIUM RECOVERY FACILITY SURVEYS OF RADON AND RADON PROGENY IN AIR AND DEMONSTRATIONS OF COMPLIANCE WITH 10 CFR 20.130.1

NRC (2020) Emails between Ms. Sarah Fields of Uranium Watch and Ms. Andrea Jones of the NRC Regarding Importing of Radioactive Processing Waste from Estonia.

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Uranium Watch (2020) Public Comments on White Mesa Mill Radioactive Materials License No. UT1900470, License Amendment #10

Uranium Watch (2020) Public Comments on White Mesa Mill Radioactive Materials License No. UT1900470, License Amendment #10 Exhibit A, Federal Register Volume 48, No 196, Friday October 7, 1983 Environmental Standards for Uranium and Thorium Mill Tailings at Licensed Commercial Processing Sites

Uranium Watch (2020) Sur-Reply Comments — License Amendment to Radioactive Materials License No. UT 1900479; Amendment of the Groundwater Quality Discharge Permit No. UGW370004; Energy Fuels Resources (USA), Inc., White Mesa Uranium Mill, San Juan County, Utah.

Ute Mountain Ute Tribe (UMUT) (2020) Comments regarding Radioactive Materials License UT1900479, Amendment 10, and proposed modifications to Groundwater Quality Discharge Permit No. UGW37004

UMUT (2020) Sur-Reply Comments- Ute Mountain Ute Tribe Response to EFRI Sur Reply Comments

White Mesa Ute Tribe (1979) Support of the White Mesa Uranium Mill Letter

Attachment 1

Hearing Transcript for the Public Meeting regarding
Amendment #10 – Energy Fuels Resources Inc.
White Mesa Uranium Mill Facility
Blanding, Utah

May 20, 2020

Meeting Participants

Aaron Paul (AP) – Grand Canyon Trust
Bret Randal (BR) - State of Utah's Attorney General's Office
Craig Anderson (CA) – State of Utah's Attorney General's Office
David Frydlund (DF) - Energy Fuels Resources Inc.
Mike Zody (MZ) – Energy Fuels Resources Inc.
Phil Goble (PRG) – Utah Division of Waste Management and Radiation Control
Russ Topham (RT) – Utah Division of Waste Management and Radiation Control
Ryan Johnson (RMJ)- Utah Division of Waste Management and Radiation Control
Sarah Fields (SF) – Uranium Watch
Scott Clow (SC) – Ute Mountain Ute Tribe
Tom Rushing (TR) – Utah Division of Waste Management and Radiation Control
Ty Howard (TH) – Utah Division of Waste Management and Radiation Control

Others in Attendance

Colin Larkin (CL) – Ute Mountain Ute Tribe
Harrold Roberts (HR) - Energy Fuels Resources Inc.
Jennifer Ekstrom (JE) – Ute Mountain Ute Tribe
Jo Ann Tishler (JAT) – Energy Fuels Resources Inc.
Julia Hoffmeier (JH) - Energy Fuels Resources Inc.
Kate Groetzinger (KG) - KUER Radio
Kathy Vandamme (KV)
Logan Shumway (LS) - Energy Fuels Resources Inc.
Scott Bakken (SB) - Energy Fuels Resources Inc.
Zach Podmore (ZP) -

MEETING TIME BEGINS

PRG: Okay, the time right now is one o'clock. That was our starting time to allow people to join Google Meet. Why don't we wait until 1:05 to get additional people to sign in? To let everyone know, when they call in they will be put on mute to start with, and then when it's your opportunity to talk we will have you unmute yourself and then you can talk. It looks like Mike Keller just joined us. Hi Mike. And it looks like Colin just joined us. Hi Colin.

Colin Larrick (CL): Hey there.

PRG: Alright, and then for those who are just joining us, we are going to get started at 1:05. Waiting for other people to come in. For those who are just joining us, we are going to start at 1:05, as to allow additional people to join us. That's in one minute.

PRG: Okay, before I get started, I just want to verify, Sarah, are you still on the line? I'm not seeing you on the list anymore. Are you there Sarah? Okay. We're going to go ahead and get started, and hopefully Sarah rejoins us. I thank everyone for joining us. I appreciate your interest in this issue. We are here to discuss the public's thoughts and answer questions regarding the proposed licensing and permitting action for the White Mesa Uranium Mill. This public comment period began on April 20th, and it ends on June 5th. The notice was originally posted on April 15th. We actually put the call-in details for this because we didn't know how we were going to handle this until we started using Google Meet, and that was done on Monday of this week, but the original notice for this was actually posted on April 15th. We're also conducting this meeting in accordance with the State of Utah Governor's executive order regarding public meetings. To try to prevent the spread of the coronavirus the governor has asked that we limit our public meetings and getting together, and that's why we're doing this through Google Meet. We appreciate your understanding as we go through this, because I'm sure we'll run into some hiccups as this is all new for all of us. I do hope all of you are safe, and I will go ahead and explain who is here to answer questions for those individuals who provided their questions by May 5th. From the State of Utah, we have myself, Phil Goble. I'm a Uranium Mills section manager. We have Ryan Johnson, he's a health physicist. We have Russ Topham, he's an engineer. We have Tom Rushing, he's a hydrogeologist. We have Brett Randall, from the Attorney General's office. We have Craig Anderson, he is from the Attorney General's office. He will be actually moderating in this meeting. And we also have representatives from Energy Fuels Resources. I will go ahead and turn the time over to Craig Anderson for the individuals who have been assigned to answer certain questions from Sarah Fields. Please unmute yourselves so that you can answer the question, and then when you're done please mute yourself again. For those who would like to make public comment, after we have completed the question and answer period you can either email Ryan Johnson at rmjohnson@utah.gov and let him know, and when we're done doing the question and answer we will then turn it over to the individuals. You can also make yourself known that you want to provide comment. In Google Meet, you will see on the top right of your screen, there will be a chat box. You click in that and then type in "I would like to make a comment." When we get to you, we will turn it over to you and you can unmute yourself. Right now, I will go ahead and turn it over to Craig Anderson.

CA: Good afternoon. I'm Craig Anderson and, as Phil said, I'm an attorney with the Utah Attorney General's office, and I will be the moderator for the hearing this afternoon. Just a few more details, I may duplicate some of the material that Phil has already covered, but just to make sure that it gets on the record: This hearing is convened following public notice pursuant to Rule R313-17 of the Utah Radiation Control Rules. This rule was implemented to satisfy the requirements of the federal Atomic Energy Act to provide an opportunity for cross-examination for major permitting actions. The purpose for this hearing today is to respond to written questions which have previously been submitted on the proposed changes to the Energy Fuels 11e.(2) Radioactive Materials License and the Groundwater Quality Discharge Permit for the White Mesa Mill, or White Mesa Uranium Mill site, near Blanding in San Juan County, Utah. The scope of the questions and answers will be limited to matters relevant to the proposed licensing action. Staff from the Division and representatives of Energy Fuels are present and will be answering the questions that will be asked this afternoon. This hearing is being recorded, and the recording will be transcribed and made a part of the administrative record. The proposed changes to the Radioactive Materials license and the Groundwater Quality Discharge permit renewal are as follows. Amendment 10 of the White Mesa Uranium Mills Radioactive Materials License include the following proposed major changes to the license amendment: Number 1) Modified license condition 10.5 changes the limit of the 5,000 cubic yards of 11e.(2) material from a single source institute recovery facility to an annual limit of 10,000 cubic yards per year. It also allows an unlimited amount of 11e.(2) material from ISR facilities owned by the licensee and uranium recovery facilities in the State of Utah, provided there is adequate volume available in the tailings impound; Number 2) New license condition 10.10 which will authorize the licensee to accept alternate feed material from Silmet, Estonia; Number 3) New license condition 10.12, which will authorize the licensee to accept alternate feed material from the Union Pacific Railroad Moffat Tunnel, located in Colorado. The Groundwater Permit modification proposes to modify groundwater compliance limits for a specific constituent in monitoring wells MW-11, MW-25, and MW-30. A forty-five day public comment period started on Monday, April 20th, 2020, when the public notice was posted on the Division's webpage. The public comment period will end at 5:00 pm on Friday, June 5th, 2020. Written comments or statements dealing with the proposed licensing actions must be postmarked no later than June 5th, 2020. Comments should be submitted to the Division of Waste Management and Radiation Control at Post Office Box 144880, Salt Lake City, Utah 84114-4850 or by email to dwmrcpublic@utah.gov on or before June 5th, 2020. At the conclusion of the question and answer period, if anyone desires to submit a comment for the record please email your comment to Ryan Johnson at rmjohnson@utah.gov or make a note in the Google Meet chat box. As Phil noted, it's in the upper right-hand corner of your screen. This hearing is being recorded and the proceedings will be made available as part of the public participation document prepared for this licensing action. All written and verbal comments received will be considered in the final determination regarding the proposed permit and licensing action. As previously noted, the permit of this hearing is to answer questions previously submitted to the Division. Questions were required to be submitted in writing to the Division on or before May 5th, 2020, for consideration at this meeting. No further questions will be received or addressed in this meeting. Questions were only received from Uranium Watch, therefore Miss Sarah Fields will be allowed to ask the questions she submitted to the Division on

May 5th, 2020. The Division will then respond to those questions and a representative of Energy Fuels will then be given an opportunity to comment. After that portion of the hearing is completed, the meeting will be open to the public for comments relevant to the proposed licensing action. It should be noted that this is not a forum for general statements regarding the facility. The Division will not be providing responses to the public comments received in this meeting; however, the comments will be included in the record. Please confine your remarks to the matter at hand. When your name is called, you will be unmuted. Please state your name for the record and provide your comment. Since we are using Google Meet to conduct this meeting, everyone will begin the meeting on mute. You will be unmuted when it is your turn to talk. If you are joining the hearing by phone, please put your phone on mute. Please only talk when it is your turn to talk and allow others to get their comment on the record. Individuals who interrupt others or use offensive language may be removed from the meeting. We will now proceed to the question and answer portion of the meeting and I will invite the parties to state their appearances for the record, and then move on to the question and answer portion of the hearing. Please note that since the questions have been submitted in advance and are already in the record, it will not be necessary to make any kind of introductory statement before asking a question. Having said all of that, I will now move on to the statement of appearances for the record and I will begin. My name is Craig Anderson, I'm with the Utah Attorney General's office. Others?

BR: This is Brett Randall. I'm also with the Utah Attorney General's office.

Mike Zody (MZ): This is Mike Zody. I'm legal counsel for Energy Fuels.

PRG: This is Phil Goble. I already introduced myself earlier.

RMJ: This is Ryan Johnson. I'm with the Utah Division of Waste Management and Radiation Control.

RT: This is Russ Topham. I am also with the Division of Waste Management and Radiation Control.

David Frydenlund (DF): This is Dave Frydenlund, of the General Council with Energy Fuels.

SC: Hi, this is Scott Clow. I'm the Environmental Programs Director for the Ute Mountain Ute Tribe. Good afternoon.

Michael Keller (MK): I'm Mike Keller, Utah Council for the Ute Mountain Ute Tribe.

CA: Others on the call?

Aaron Paul (AP): This is Aaron Paul. I'm a staff attorney for the Granite Canyon Trust. As part of clarification, are you asking every participant on the call to announce themselves?

CA: Yeah, just for the record so we know who is on the call.

Ty Howard (TH): Craig, this is Ty Howard, with the Division of Waste Management and Radiation Control via cell phone.

CA: Thanks Ty.

Kate Gretzinger (KG) (spelling unknown): This is Kate Gretzinger. I'm with KUER, the NPR station.

JAT: This is Jo Ann Tischler, consulting chemical engineer.

CA: Okay. Do we have any others on the call?

RMJ: Yeah. We've had two people on the chat. Kathy Vandamme and Zach Podmore (spellings unknown) are also listening in. They do not have microphones on their cameras, so they are just listening.

CA: Okay, anyone else? Phil, do you know if Miss Fields was able to rejoin the call?

PRG: Yeah, I saw her sign back in.

CA: Okay.

PRG: She's waiting on the line.

CA: Great. Okay, well with the statement of appearances done we can move on to the question and answer portion of the hearing. Miss Fields, do you want to begin with the questions you submitted?

SF: Can you hear me?

CA: Everyone else can go on mute now.

SF: This is Sarah, can you hear me?

CA: I can hear you.

PRG: Yeah, we can hear you just fine Sarah. Go ahead and get started.

CA: Sarah, can you go ahead and start with your questions?

SF: Okay. (static issues)

CA: Sarah, I'm not hearing anything. Are you on mute?

PRG: We got a message saying she just left. Maybe she's having issues on her end. These are the hiccups I told everyone we might run into. Let's wait a couple minutes and see if Sarah is able to join us again, and I guess if she's not on for a while, Craig, we could move into the public comment period. Then we could always come back to her when she gets back on the line, but let's give her a couple minutes I guess.

CA: That's fine.

SF: Can you hear me?

PRG: Yes, we can hear you Sarah.

SF: I keep getting bumped off my computer. If you would open up the phone line, I can just talk through the phone.

PRG: Have you called in as well?

SF: Yes, I have been on the phone. I can hear you.

PRG: If your phone is muted, and it's not muted on your direct phone, you need to push *6 and that should unmute you calling in from the phone. Try that. Okay it looks like one just went unmuted; can you hear us? Does your phone end in last digit 84, Sarah?

SF: Yes.

PRG: Okay. We can hear you, I can see that you are talking through your phone now.

SF: Okay. My first question is regarding the Division, whether—

PRG: Sarah, why don't you close the Google Meet, because we're hearing an echo?

SF: Okay.

PRG: Close the Google Meet and stay on your phone. Now try it.

SF: Okay, thanks. Did the Division of Waste Management and Radiation Control or Energy Fuels Resources request an official opinion from the NRC regarding whether an NRC import license was needed to import the Silmet material?

BR: This is Brett Randall, from the Utah Attorney General's Office. The staff has asked me to answer this question. The short answer, Sarah, is no. We did not request an official opinion from the NRC regarding the import license issue. The basis for that decision is set forth in the statement of basis, and to the extent there are comments about that we will address that in the public correction of basis summary. But in short, the material will be processed for its uranium content and not sent for disposal, no import license is required, and there's a basis for that from the NRC's previous determination in similar matters. So the short answer is no.

SF: You made a determination that under 10 CFR part 110 that this material is not radioactive waste, it doesn't meet the NRC definition of radioactive waste for this part?

BR: Right. I believe that the answer is correct. The basis for the decision—well, the actual question was whether the Division asked the NRC for a formal opinion. The answer to that question is no. There is a statement of basis that was circulated with the proposal and there's analysis in there about the basis for the determination for the import license question, so I would just rely on the written basis that we've already published.

SF: Okay, thank you. My next question, I was wondering what the Division's regulatory definition of the Silmet material would be prior to its shipment to the United States, upon arrival to the US, and during transport, and upon arrival at the White Mesa Mill, and during storage. Prior to processing, how does the Division define that material?

RMJ: Hello Sarah, this is Ryan from the Utah Division of Waste Management and Radiation Control. This material is a radioactive material that contains source material in the form of uranium and so in transportation to the United States and upon arrival, it will be treated as a radioactive material.

SF: You mean source material? It would be a material that contains source material.

RMJ: That is correct.

SF: Thank you. If for some reason the mill would be unable to process any of the Silmet material after arrival at the mill, how would it be disposed of? Would you be able to dispose of it directly? What would happen to the material?

PRG: Sarah, this is Phil Goble. For example, let's say that the site went to closure, and the Silmet material was still sitting on the ore storage pad. That material would be placed into the tailings source for disposal, and that's detailed in the reclamation plan.

SF: So any leftover material that had not been processed would be directly disposed of?

PRG: Yes.

SF: Thank you. In the environmental analysis for the Silmet material, there's a quote from a September 22, 1995 NRC federal register notice which defines ore as "a natural native matter, that may be mined and treated for extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill." Is this a license amendment or an addition to an existing NRC registration?

RMJ: Hello Sarah, this is Ryan again. This definition from the 1995 national register is a definition that is used in an NRC guidance document that we use to evaluate alternate feed requests. It is the same definition that we use, it is not a regulation or an amendment.

SF: Did the Department of Environmental Quality incorporate this NRC guidance definition into your regulations?

RMJ: When we applied for 11e.(2) agreement state status, we made the commitment in our application to use the guidance document that has this definition and so we are abiding by that application and what we committed to.

SF: But it never went out for public comment as a regulation that would be incorporated into the Utah code, administrative code?

RMJ: It is not part of the Utah administrative code. It did have public comment when the State of Utah applied for agreement state status, and that was the only public comment that was received about this.

SF: Has the Environmental Protection Agency adopted this definition of ore in its regulations?

RMJ: Again, this is Ryan, Sarah. As far as I know, I'm not aware of any regulations of the EPA as far as this definition goes.

SF: Do they have any guidance that incorporates that definition?

RMJ: We don't use EPA guidance, because the EPA does not have jurisdiction over this type of facility.

SF: The EPA has—well, later on I'll discuss that, but the EPA does have some regulations and authority over uranium mills, except the standards. They do have regulatory authority over the mills. In the TER from the Silmet material, this is the Division's technical evaluation environmental analysis, it discusses the definition of ore and says that because the material "will be" processed at the White Mesa Mill for the recovery of uranium, the Division staff has concluded that the Silmet material meets the definition of ore. But the NRC definition states that ore is a material from which source material "is" extracted, not that it "will be" extracted. I've always read that to mean that the material, Silmet material, any other alternate material, doesn't really become ore until the uranium is extracted from the material. So for it to meet the NRC guidance definition of ore, it has to be run through the Mill. And I wanted a little of clarification on that, is it ore because it's going to be processed for its uranium, or does it have to be processed before it becomes ore?

RMJ: In the Technical Evaluation document, we use that as a future for a proposed amendment, so that is the reason why we use the word "will" instead of "is." It's just basically a tense issue of the same verb. We don't consider it to be inconsistent with what the NRC has put in their guidance document. It's just that we used a different tense that what the NRC did because it is a proposed action, versus something that has been approved. And as far as whether it is ore or not is, by definition ore, if it has source material and is or will be processed for ore. Does that answer your question, Sarah? Are you still on the line, Sarah?

CA: Ms. Fields, are you still on the line?

SC: Somebody needs to unmute her.

PRG: Say that again, what was that?

SF: Can you hear me now?

PRG: Yes, yes.

SF: Hey, I don't know what happened. Okay. There are EPA standards that apply to uranium mills and they are part 192 and part 61 subpart W. And in both these regulations, they have a definition of uranium by-product material, and those definitions are the same definition as 11e.(2) by-product material. I wanted to know if the Division is aware of any statement by the EPA that the term ore, as it appears in EPA regulations applicable to uranium mills, considers ore to be any matter from which source material is extracted from a licensed uranium or thorium mill. Is there indication anywhere that these regulations apply to an impoundment that receives the waste from the processing of any uranium bearing material?

RMJ: Hello, Sarah, this is Ryan again. As you are aware, in the Atomic Energy Act, the congress gave the EPA the authority to do limits, things like that, rule-making, but they don't have the jurisdiction authority to enforce those rules. We are aware of these rules. The 192 is for the decommissioning of uranium mills. The part 61 is for NESHAP compliance, and NESHAP compliance is currently done at the mill and is submitted to the Division and Department. And so, yes, these do apply now as they always have. And that alternate feeds, once they are processed for their source material, they become 11e.(2) material, and they do apply.

SF: Even though there's no indication in these rules and regulations whatsoever that they would, in fact, apply to the processing of materials other than natural ore?

RMJ: Like you have them quoted here, and it does say "any ore process." It does not specify that it has to be just native ore, that also means it could be alternate feeds.

SF: In what regulation or statute does it say that "any ore" means anything that you want to be ore?

RMJ: That's what has been discussed in other proceedings, that's what "any" means. That's what's discussed in the Kerr-McGee vs. the NRC ruling back in the 1980s. It's also been discussed in other times when alternate feeds have been challenged by you and others, by the NRC.

SF: Okay, and that probably also answers my next question, regarding whether there was any EPA regulation or statement that would lead one to believe that EPA regulations and standards of part 192 and part 61 applied to the disposal of tailings and waste from the processing of any matter, such as the Silmet material, with uranium content? I guess I just wonder if, when these standards and regulations were promulgated, were they ever promulgated contemplating the processing of this type of material?

PRG: This is Phil Goble. Regarding the Silmet material, nothing would actually—nothing changes at the Mill, regarding the Silmet material, regarding subpart W. The license would still be subject to the requirements of subpart W. When the alternate feed guidance document was established, the EPA had the opportunity to provide public comment or respond, or whatnot, when the NRC put that out. They have not shown any kind of conflict or disagreed with anything the NRC has done regarding alternate feed. So if the EPA had a problem with that in '95, that's something they could have brought up then.

SF: They actually have had some issues with that over the years, and it didn't start in '95, it started a little bit earlier than that. But I know the EPA has had issues, particularly there are some issues about the definition of source material. I think later on in my questions we'll get to some of that, because it does create some conflicts in the regulations having to do with source material and the NRC guidance did not change the definition of ore within the definition of source material. You probably have answered my next question, which was whether NRC guidance documents have legal force and effect? Would you agree that NRC guidance documents do not have legal force and effect, or do you believe they have a legal force and effect?

MZ: This is Mike Zody, on behalf of Energy Fuels. I just want to interpose a comment and an objection. Technically, the regulations applicable to the cross-examination proceeding do not contemplate legal debate or dialogue back and forth. We're definitely venturing into legal argument, essentially, so I would raise and preserve that objection to when we're having a legal argument about what other agencies mean or intended. I don't think that's technically appropriate for the proceeding. Thank you.

SF: That's not me laughing. This is Sarah. I'm not laughing at you.

RMJ: No, that's understandable. So Sarah, we use guidance documents as a basis, the rules and regulations are separate, so they do not comply. I mean they are not legally binding, but they do tell us what the NRC expects to meet regulations. And like I said previously, we made a commitment to use these guidance documents in evaluating alternate feed materials.

SF: Okay, thank you. I'll go on to my last question in regard to the Silmet material, and you perhaps partially answered some of these questions. I wanted to know, particularly, if you feel the NRC and EPA regulations applicable to uranium mills and the disposal and long-term care of 11e.(2) material were promulgated contemplating the processing and disposal of materials other than natural uranium and thorium ore at licensed mills? Were they promulgated contemplating the disposal of materials with a non-radiological characteristic of the Silmet and other alternate feed materials?

RMJ: This is Ryan again, Sarah. When you go back to the history of the alternate feeds, I do believe that the NRC did take that into regard, that the applicable regulations would apply to the processing of alternate feeds.

SF: Okay. Thank you. Going to the Moffat Tunnel alternate feed request: I assume that you would have the same response regarding the Silmet, that the material when it arrived at the—before it was shipped to the Mill and upon arrival, I say upon arrive in the U.S. meaning upon arrival…I copied that from the Silmet so it's not applicable…but, upon arrival at White Mesa, during storage, that you would most likely define that as source material? Because that apparently is how it's being defined by the State of Colorado.

RMJ: Yeah. It's source material, but it's also naturally occurring radioactive material. This comes from the treatment of water coming from that tunnel, it's processed through a centrifuge. It's not altered in any way, so we actually consider this a naturally occurring radioactive material and a source material because it does contain uranium.

SF: So if the material could not be processed at the arrival at the White Mesa Mill—because apparently it's going to be shipped to the Mill indefinitely, because the Moffat tunnel has to be de-watered as long as you have the Moffat tunnel; and this material, if it's accepted at the mill and there's a license amendment, it would continually be transported, periodically, to the mill—so would it just be disposed of as source material or other type of material if it could not be processed?

RMJ: If the Mill—like Phil explained with the Silmet material—if for whatever reason the Mill were to close and we needed to decommission the Mill, whatever material that's on the ore pad, including the Moffat material, would be placed into the tailing impoundment.

SF: Okay. Thank you. Now I'm getting into one of the legal issues or questions about how different material is dealt with when it comes to RCRA. In the TER from the Silmet material and from the Moffat tunnel material, the Division says that Energy Fuels claim that it has a RCRA exemption, then provided quotes from the EPA and Utah regulations, but the Division is not entirely clear why the material would be exempt from RCRA because it is not a solid waste. EPA regulations for solid waste have various exclusions and it says that materials are not solid waste

and therefore are not hazardous waste if they are source, special or nuclear by-product material. But source material is uranium and thorium or any combination thereof, in any physical or chemical form, and it's also ores that contain by weight 1/20th of 1% or 0.05% or more uranium. So the Division did not make clear whether the Moffat tunnel material is source material under the first definition, which would be just uranium and thorium because it does contain a certain percentage of uranium, or it is source material under the second definition, because it's an ore. Because if the material contains just thorium or uranium, if it had a hazardous waste it would be considered a mixed waste, but if the material just meets the definition of ore under B), the second definition, then all the material would be exempt. It's unclear to me whether it would be exempt because a certain part of it contains uranium or thorium, or if it's exempt because it is ore, and therefore all the material would be exempt from RCRA. Is that clear?

RMJ: Let me try to answer it and hopefully we can clear this up for you, Sarah. We did look at the exemption, and this material is a naturally occurring material that has uranium. It does have uranium above that 0.05%. But we also looked at the analytical data that was provided and verified that there was no RCRA material in this material. So we looked at it both ways. I'm sorry that it wasn't clear enough in the TEA, but we did review it for its RCRA components and did not find any RCRA material in it that would exempt it from becoming processed. So we looked at it both ways. Does that help you?

SF: But supposing it did have a RCRA hazardous waste, could it be exempted, could all of this be exempted because you considered all of the materials to be ore, therefore source material? Or would it not be exempt because only the uranium content would be exempt?

RMJ: We look at the analytical data and make sure that there's no RCRA material. The exemption part of it, that wasn't the basis of our decision, it was just one of those things we also looked at as another reason why this material could be allowed to be processed. As far as your question goes, if we had an alternate feed request that had RCRA material, we would have to make that decision at that time. But since this one did not have RCRA material in it, we didn't use that as a basis for our decision.

SF: Okay, thank you.

BR: This is Brett Randall, could I just add onto that? Because I think it's a decent question to ask, it's a fair question. But in this context, it's a hypothetical question because, as Ryan explained, these facts were not presented. If we had an alternate feed that had a RCRA waste that was subject to a land disposal restriction or something, that would probably be a different analysis. I just think we're reluctant to delve too much into a hypothetical question that is not applicable to the facts of this matter.

SF: Okay, I brought it up because there was some discussion, but it wasn't really clear in the Technical Evaluation and in Energy Fuels' application. But thank you very much. I did have one other question that had to do with changes in some of the license conditions and in changing license condition 10.5 A3, you included a provision that allowed for the disposal of 11e.(2) by-product material originating in Utah in the White Mesa impoundment, and I just noticed that this morning when I was going over this material. I kind of wonder why that was included as a

license amendment, in part because I really don't know of other 11e.(2) by-product material that might be floating around somewhere in Utah needing a home, so I wonder why the Division felt this very small amendment was necessary?

RMJ: Would you like me to answer that Phil?

PRG: Well, actually that's technically outside of the questions she asked before, so you can provide that as a verbal comment now, Sarah, or you can provide that as a written comment. We would be happy to answer that, and if you had provided that in your original request, we would be happy to respond to that now, but we want to maintain the rules of the public hearing, because I don't want to on-the-fly answer this and then people who are going to follow-up in the public meeting portion are going to expect to have their questions answered as well.

SF: Okay.

PRG: If you want to put that as an oral comment, we will respond to it then, or you can put it into your formal written comment.

SF: Okay. I guess there are a number of people who want to make oral comments, and I'll just include it in my written comments. Thank you.

PRG: Alright. Thank you, Sarah.

CA: Okay.

RMJ: Aaron Paul has requested to provide a comment.

PRG: Okay. Craig, is there anything you want to do to close out your portion, and then we can move on to the public meeting portion?

CA: In terms of the process that we were anticipating, after the conclusion of the question and answer for Uranium Watch, we were going to request any comments from Energy Fuels in response to the question and answer period. I would suggest that if Energy Fuels has some comments regarding the Q&A, now would be a great time to put that up to the public.

PRG: Right. Thank you, Craig. Dave, et. al., do you guys have anything that you would like to add?

DF: Yes. Dave Frydenlund, I don't have anything to add. Mike Zody, anything from you?

MZ: Nothing to add on my end, thank you.

PRG: Okay. I guess we can then—well I want to say thank you, Sarah, for your comments and your questions. We always appreciate your input and participation. We will now move on to the public meeting portion. Ryan, is Aaron the only one who so far has asked to comment?

RMJ: Yes, that is the only person who has sent me an email so far.

PRG: Okay, so just to reiterate: for those who would like to make public comment at this time, you can do it one of two ways. You can either send an email to Ryan Johnson, and again his

email is rmjohnson@utah.gov; or, you can go into the top right chat area, the chat box, and say "I would like to make a comment," and we will go from there. Why don't we go ahead and turn it over to Aaron, and then after Aaron we'll see if anyone else is interested? Aaron, why don't you take it over?

AP: Thank you, Phil. This is Aaron Paul, I'm the staff attorney with the Grand Canyon Trust. I appreciate the opportunity to make a handful of comments today during this hearing. The Trust intends to also submit written comments on the proposed licensing actions. I thought I would just address a couple of points today that have more to do with some policy and process considerations that I wanted to point out, separate and apart from some of the points I think we'll make in our written submission. The first of this just has to do with the public notice surrounding the hearing. As everyone on this call knows, of course it's a difficult period for all of us and that recognized, that the Division of Waste Management and Radiation Control in proceeding with this hearing and the licensing action is just trying to do its job. But I have some concerns about how this particular hearing was ultimately announced, and in particular the fact that though notice of the hearing and the date was indeed given in April, it wasn't until a few days ago, so far as I could tell, that the website reflected this hearing would in fact occur. I don't believe that was posted until May 15th. Given the unusual circumstances of trying to conduct a hearing like this online and particularly the challenges that I think are especially severe for the rural communities near the White Mesa Mill, in particular the White Mesa community where joining a public hearing by video conference is especially difficult, it's frustrating to me that it wasn't clear—at least from the website—that the hearing would occur until just a few days ago. It's hard to say, obviously, whether a greater public turnout would have occurred had more notice been given. I don't know. All that I'm trying to suggest is that I think five days notice on the website about the hearing having been officially scheduled isn't wholly consistent with the principle of trying to maximize public participation. I also want to be clear in saying that I'm not at all accusing the Division of purposefully making it hard to make comments here today. It's simply an observation that what happened, I think, is at a minimum unfortunate under the circumstances, and I wanted the record to reflect that. The second point that I'd like to make has to do with discussion in the licensing materials about the meaning of 11e.(2) by-product material under the Atomic Energy Act. As obviously, the Division knows, as I think most folks in this hearing know, there's a fair bit of discussion in a number of documents accompanying the licensing proposals about replacing the term waste in various places with the term 11e.(2) by-product material. I would say that it's entirely understandable, from my perspective, in the license itself to be using the statutory term "11e.(2) by-product material" in order to be clear about what it is the Division is talking about. That makes sense. I don't have any objection to that, and I know that's part of what the Division is trying to accomplish here. But when I read the materials describing that change, it seems to me the Division is, in its rhetoric, making an argument that 11e.(2) by-product material is not waste. That statement appears a number of times in various forms or something to that effect, and I think obviously there's no dispute that that's not correct in terms of the statutory definition. Just for the record, I'd like to state what that definition is under the Atomic Energy Act. I'm quoting: "the term by-product material means the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." That's 42 UFC 2014 subsection E,

otherwise known as section 11e.(2) of the act. My point is that there's no disputing that under that definition, by-product material is waste. I'm left somewhat baffled by the Division's efforts to imply that it's not waste in the licensing action. It seems to me that part of what's going on is substituting sort of a euphemism—this complex regulatory term—for the word waste, which the public in its common meaning would understand. It's the sort of thing I see industry do on a routine basis when an industrial operation wants to sanitize what it does in talking about its business. So coal plant waste becomes coal combustion by-products, and in-situ leaching becomes in-situ recovery, because recovery doesn't sound as bad as leaching. Now it seems to me the Division is making an effort to talk about what Energy Fuels is doing at White Mesa not as waste disposal—granted, making yellowcake and nuclear fuel, but then also disposing of the waste. The Division seems to want to talk about that in terms of 11e.(2) by-product material as not being waste, and I don't think that reflects the facts as anyone understands. It's obvious that over two hundred and seventy-five acres of the area at the Mill is now permanent repository for radioactive materials. It's not going to be dug up and moved somewhere else. It's clearly waste, and I don't understand why the Division is attempting to frame the argument in terms other than that. It seems to me to be a semantic distinction that makes it harder for the public to understand what's going on, when I would think the goal would be, in this really complex regulatory environment and when you're dealing with a really complex operation at the White Mesa Mill, I would think the goal would be to make it simpler. Make it more understandable to the public. I make that observation only to urge the Division when examining, in response to the public comment period that's going to close here in a couple weeks, urge the Division to examine the language that it's using surrounding the discussion of this proposal and what effect it has on the public's perception of what's happening at White Mesa and what it is we're really talking about here. Because it's indisputable, ultimately, on this particular point, that 11e.(2) by-product material is waste. That's the very definition of the term. The last point I want to make has to do with alternate feed. I think on this subject all I really want to say is that, as a general proposition—this is no surprise to anyone—the Grand Canyon Trust opposes the business of allowing the Mill to process alternate feeds, and that's especially true when Energy Fuels is being paid to do it. Right? When the company is getting a fee to process alternate feeds, which I think is almost certainly true of the two feeds at issue in this proceeding. Though I don't know the answer to that question because it hasn't been made clear. That fee is an obvious signal that what the company is really doing is being paid to operate a waste disposal business. It's not worth it for the company to buy that feed and turn it into yellowcake. This is a position, of course, that the State of Utah used to take, and I think it would be evident to anybody that the receipt of that fee for processing demonstrates that the real business is waste disposal. I think that's a problem, first and foremost because of what the public debate and what analysis occurred back in 1979 when the Mill was first licensed to be built and operated. The documents surrounding that decision are crystal clear that the plan was to build a uranium mill to process natural uranium ore from around the region for fifteen years, and then to close the Mill and clean it up. So if you lived in White Mesa or nearby in Blanding, in Bluff, or elsewhere in the region in 1979, you would have thought that by 1994 the trucks going to and from the mill would be gone; that the mill wouldn't be running; that it wouldn't be putting out smoke when it's operating, or there wouldn't be smells. You would have expected it to be finished by 1994. And yet, here we

are in 2020—it has been 41 years since the Mill was built and it's continuing to operate. I think a significant reason, it's not the only reason, but a significant reason that has happened is this regulatory change or regulatory blessing for this alternate feed business. It has allowed Energy Fuels and its predecessors to alter its business model, since the early 1990s, to include the disposal of radioactive waste. I know there are disputes about that term, I just mean in the conventional sense that it's waste that is radioactive and it's being discarded at White Mesa, and that's the business for alternate feed. At least for those where the company is getting paid to do it. And that of course was not at all under consideration in the late 70's. When White Mesa was chosen as the place to put this uranium mill, that wasn't the debate. No one was talking about using the Mill indefinitely as an operating radioactive waste disposal business. Even if you accept the idea that the wastes are pretty much the same as tailings from milling, that doesn't change the fact that allowing this to happen is prolonging a business that would otherwise be shut down and cleaned up, and that was the idea when the Mill was put there in the 70's. Part of the point I wanted to make was that if you set aside the Atomic Energy Act and UMTRCA, federal and state law for a moment, and just think of this subject in terms of what most people would regard as fair when deciding where this country is going to get rid of its radioactive waste, what's happening at White Mesa is deeply inequitable. Right? We did not have that discussion about whether this was the proper way to get rid of the wastes from a rare metals processing facility in Estonia. That's not a discussion that occurred before this process got regulatory blessing. Now I know that the State of Utah believes that its hands are tied when it comes to the law at this point. I think that's a complex discussion for another day, one that the Trust would very much like to have with the State. I simply want to say that the State of Utah used to agree with the points that I just made. In the 1990s, as folks on this call know, the State of Utah fought this practice aggressively for exactly the reasons that I just gave. At least, again, when Energy Fuels is getting paid a fee to process alternate feeds, the State of Utah disagreed that that was appropriate. And I think it's a shame as a policy matter, at the very least, that the State has stopped fighting that practice and has accepted, I think, as its view that it's simply bound to license these feeds. And instead of having a critical discussion of what else can be done to reinvigorate the public debate that should have accompanied the decision to allow--

CA: Thank you, Mr. Paul, we have some other public comments that we need to get to. Thank you.

AP: Can I please finish? This hearing is scheduled until four o'clock, I believe one other person has asked to comment, and I'm within thirty seconds of being done with my comment.

CA: Keep it to the matters relevant to the licensing action, that's what this hearing is for.

AP: I believe that two of the licensing actions concern the licensing of alternate feed, and that's what I was trying to address. Look, all I wanted to say in conclusion was my goal in making the remarks I just made isn't to criticize the Division's work. I'm certainly not trying to criticize any individual staff member at the Division. I've said it before and I'll say it again now for the record, it's obvious to me that the State of Utah has done a better job than the Nuclear Regulatory Commission in regulating White Mesa. I'm not trying to point fingers and be ludicrously critical of the Division's action here. But with that said, I think there is space to do

more, to do better, and to have productive conversations I've just raised, and that's ultimately what the Trust would ask for. That's all I have. I appreciate the time, especially the extra time Mr. Anderson, and thank you for listening to my comments.

CA: Thank you very much, Mr. Paul. Any other comments? Phil or Ryan, do we have any other comments?

RMJ: Yes, Scott Clow has just requested to make a comment.

CA: Mr. Clow?

SC: Yes, good afternoon, can you hear me?

CA: I can hear you.

SC: Okay, great. I have three comments. The first is regarding the license amendment for the Silmet alternative feed material. The White Mesa community and many other local residents have been opposed to the receipt of alternate feed materials for many good reasons that Mr. Paul just brough up, and we are looking at this and seeing that the facility has gone from being the North American continent dry low-level radioactive waste disposal facility of choice for these materials to now being the world's radioactive waste dump. That is something the Tribe opposes, the Tribe does not want these materials to continue to be delivered to their neighborhood, to their traditional lands, and stored there forever. The second question—excuse me—the second comment I have is regarding to the part of the license amendment regarding the restrictions of quantities of in-situ leach waste, and I will reflect somewhat back to our comments to the 2018 licensing action and the ten years of preparations and implementation of that process. The Tribe opposes the continued disposal of in-situ leachate material in cell 3. That cell is 40 years old, it is a single liner, lacks leak detection, and the concurrent groundwater permit modification includes a relaxation of standards—compliance limits—on monitoring wells that are meant to be the leak detection system for cell 3 because it didn't have a leak detection system, and monitoring wells 11 and 25 are right on the edge of cell 3. In the license, the State is proposing to allow the continued disposal of unlimited quantities of ISR waste in the 40 year old cell, while relaxing the standards in the groundwater permit on the wells adjacent to it that are being polluted. The third question—excuse me, comment that I have is also something that the Tribe has repeatedly asked for over the years when decisions are made regarding the license and the groundwater permit, and that is somewhat reflected in Mr. Paul's comment. We have requested that a new environmental impact statement be undertaken to put these decisions that the State is making in the proper context, because they were not contemplated in the original environmental report in 1979. And the Nuclear Regulatory Commission did a few cursory environmental assessments on license amendment decisions, and the State of Utah has taken the position that the NTHA process is irrelevant here, and the Tribe feels very strongly that this needs to be reevaluated in the context of an environmental impact statement that contemplates things like unlimited continued disposal of in-situ leachate material in a 40 year old single lined cell with increasing pollutants in adjacent monitoring wells. We're looking at it holistically and not separating these issues into "That's a groundwater issue," or "That's a licensing amendment issue." You're talking about putting materials into that old cell that should be closed by now and it is potentially

polluting the wells that are directly adjacent to it. And the state is proposing to relax the standards that are supposed to protecting the groundwater that those wells are drilled into. Thank you.

PRG: Do we have anything else, Ryan? Has anyone else made a request?

RMJ: Yeah, Miss Sarah Fields has requested to make another comment.

PRG: Okay, go ahead Sarah.

SF: I'd like to follow up a little bit on statements that Aaron and Scott have made. From the very beginning when this alternate feed guidance was developed, I don't think the NRC contemplated what this program has become and I don't believe that the State did contemplate all the types of materials that would be processed at the White Mesa Mill and disposed of. I don't think they contemplated that large amounts of asphalt would be washed down with water as the process, and then that asphalt and other pieces of demolition—basically demolition—waste was brought to the Mill. Initially, neither the NRC regulations nor the EPA regulations contemplated alternate feed, and the radiological content of the feed that is not going to be removed, and the various chemical constituents of this alternate feed were not taken into consideration when the EPA and the NRC promulgated their regulations. There has been a consistent reliance on this NRC guidance, which basically was a federal agency using a guidance to amend the Atomic Energy Act and the NRC's regulations. There's nothing in the history of the Atomic Energy Commission and the history of the NRC and the developments of its regulations where anyone considered an ore to be any material that the uranium industry wanted it to be. The whole history of the Atomic Energy Act and the AEC regulation of uranium mines, of uranium mills, demonstrates that they really did know what ore was, and they didn't think that ore was any material that could be processed for source material content. In the generic environmental impact statement that went along with development of NRC regulations gave no consideration whatsoever to the processing and disposal of this kind of material. Now we're in a situation where Energy Fuels would really like the federal government to develop a program to compensate them in some way by developing a uranium stockpile, and which would divert tax payer monies to Energy Fuels and to other uranium producers in the U.S. to maintain the Mill and to assure that investors get a fair return on their investment. So we're in a situation where the uranium industry is really hurting, there's a crisis in the uranium industry. In the late 90's and through 2000, the owner of the White Mesa Mill solved that crisis by processing this alternate feed material and being paid to process that material. There's not that much around these days, and they're in a crisis and there's a reluctance, I think, on the part of the Division and on the part of the general community to address the continuing problems at the Mill and to solve those issues: to solve the issues of contamination of the groundwater, and the odors that come from the mill that are really troubling to the local community, and to the fears that the local community have over the indefinite operation of this mill, and then eventually the perpetual waste disposal site that will remain in its midst. I think that the Division should not rely on a guidance that is not a state regulation, that is not an EPA regulation, and is not in any statute, and is not an NRC regulation. Any commitments that were made were not made with the informed consent of the people at White Mesa, with the informed consent of the people in Southeastern Utah, with the informed consent of the Ute

Mountain Ute Tribe. I was around when the State was going through the process to become an agreement state for 11e.(2) by-product material and when there were hearings. There was no mention in that hearing in Moab of any adoption of an NRC guidance to, in effect, amend federal statute. Thank you.

CA: Thanks Miss Fields. Any other comments?

PRG: I don't see any in the chat. Do you have any other ones Ryan?

RMJ: No, I don't have anything in my email.

CA: Well, with the conclusion of the question and answer period and the public comment period, anything else we need to cover, Phil, before we conclude the meeting?

PRG: I don't think so. I just want to reiterate that we appreciate everyone's interest in this, and your participation in this meeting, and being patient with us as we're using this new technology. The public comment period, again, will close on June 5th, and we can receive comments until end of business on June 5th. As Ryan stated before, if you're going to submit something by mail, it needs to be postmarked by June 5th. Other than that, I don't have any more to add. Again, I want to thank you for all joining us today and we wish all of you the best in this current crisis that we're dealing with. And we ask all of you to take care of yourselves and be safe. Thanks again for joining us.

CA: And that will conclude the meeting. Thank you Phil.

PRG: Yep, thank you Craig. Thanks all.

AP: Thank you Phil.

PRG: Alright, bye.