

# Uranium Watch

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July 10, 2020

via electronic mail

Ty Howard  
Director  
Division of Waste Management and Radiation Control  
Utah Department of Environmental Quality  
P.O. Box 144880  
Salt Lake City, Utah 84114-4850  
dwmrcpublic@utah.gov

Re: Public Comments on White Mesa Mill Radioactive Materials License No. UT1900470, License Amendment #10

Dear Mr. Howard:

Below please find Public Comments on Radioactive Materials License No. UT1900470, Amendment #10, and Modification to Groundwater Quality Discharge Permit No. UGW370004; Energy Fuels Resources (USA) Inc.; White Mesa Uranium Mill, San Juan County, Utah.

These comments are submitted by Uranium Watch and on behalf of Yolanda Badback, White Mesa Concerned Community; John Weisheit, Conservation Director, Living Rivers Scott Williams, Director, HEAL Utah; and Bradley Angel, Executive Director, Greenaction for Health and Environmental Justice. Uranium Watch is a public interest non-profit located in Monticello, San Juan County, Utah. White Mesa Concerned Community is a public interest non-profit located White Mesa, San Juan County, Utah. Living Rivers is a public interest non-profit located in Moab, Utah.<sup>1</sup> HEAL Utah is a public interest non-profit located in Salt Lake City, Utah.<sup>2</sup> Greenaction for Health and the

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<sup>1</sup> <http://www.livingrivers.org/index.cfm>

<sup>2</sup> <https://www.healutah.org/>

Environment is a public interest non-profit located in San Francisco, California.<sup>3</sup>

## 1. General Comments

1.1. Commenters request, for the reasons set forth below, that the Division of Waste Management and Radiation Control (DWMRC, or Division) deny the Energy Fuels Resources (USA) Inc. (Energy Fuels, or Licensee) request to receive and process and Silmet Material,<sup>4</sup> receive and process the Moffat Tunnel Material,<sup>5</sup> and expand the use of the mill to receive in situ leach (ISL) wastes.<sup>6</sup>

1.2. During more than two decades, the White Mesa Uranium Mill has turned into a disposal site for radioactive wastes from other mineral processing operations, due to the use guidance documents developed by the Nuclear Regulatory Commission (NRC) and adopted by the NRC and the State of Utah, Department of Environmental Quality (DEQ). Guidance documents are not statutes or regulations. They have no legal force and effect. The Division is not legally bound by the NRC Guidance<sup>7</sup> that Energy Fuels and the Division state is the governing document for the processing of wastes from other mineral processing operations (also known as “alternate feed material”).

What Energy Fuels and the Division are bound by are the Atomic Energy Act (AEA) and the applicable NRC and Environmental Protection Agency (EPA) regulations. There is nothing in the Atomic Energy Act of 1954, as amended by the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA)<sup>8</sup>; the NRC and EPA regulations promulgated

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<sup>3</sup> <https://greenaction.org/>

<sup>4</sup> Application by Application by Energy Fuels Resources (USA) Inc. for an amendment to State of Utah Radioactive Materials License No. 1900479 for the White Mesa Uranium Mill to authorize processing of NPM Silmet OU alternate feed material; April 18, 2019 (DRC-2019-003761).

<sup>5</sup> Application by Energy Fuels Resources (USA) Inc. for an amendment to State of Utah Radioactive Materials License No. 1900479 for the White Mesa Uranium Mill to authorize processing of Union Pacific Railroad, Moffat Tunnel alternate feed material, December 23, 2019 (DRC-2019-017284).

<sup>6</sup> Energy Fuels Resources (USA) Inc., Volume and Procedural Modification Request for 11e.(2) Byproduct Material Disposal, Radioactive Materials License UT1900479, White Mesa Uranium Mill, Blanding, Utah; October 9, 2019 (DRC-2019-012708).

<sup>7</sup> NRC Interim Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores; November 30, 2000. <https://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2000/ri00023.html>

<sup>8</sup> *Uranium Mill Tailings Radiation Control Act*; Public Law 95-604, 95th Congress; November 8, 1978. 92 STAT. 3021. <https://www.govinfo.gov/content/pkg/STATUTE-92/pdf/STATUTE-92-Pg3021.pdf>

in response to UMTRCA, and EPA regulations that regulate radon emissions and the construction of tailings impoundments at licensed uranium mills at 40 C.F.R Part 61 Subpart W. There is nothing in the Atomic Energy Act, NRC and EPA regulations, and the history of the AEA and the promulgation of EPA and EPA regulations that supports the use of NRC Guidance to process feed materials other than natural ore and dispose of the resulting wastes in tailings impoundments. The Division does not have the authority to use an NRC Guidance, or any guidance, to amend or make fundamental changes to NRC and EPA regulations.

There is no evidence that the regulations adopted by the NRC governing uranium mills in any manner considered the processing of materials other than natural ores and disposing of the wastes in a uranium mill tailings impoundment when they promulgated the regulations at 10 C.F.R. Part 40,<sup>9</sup> specifically Appendix A,<sup>10</sup> in response to UMTRCA. The NRC did not evaluate the environmental impacts of the processing of such wastes in the 1980 Final Generic Environmental Impact on Uranium Milling<sup>11</sup> accompanying the promulgation of 10 C.F.R. Part 40 regulations applicable to uranium mills and the disposal and perpetual care of 11e.(2) byproduct material.

There is no evidence that the EPA regulations that apply to uranium mills, radon emissions, and the disposal and perpetual care of 11e.(2) byproduct material at 40 C.F.R. Part 192<sup>12</sup> and 40 C.F.R. Part 61 Subpart W<sup>13</sup> ever considered the processing of materials other than natural ores and disposing of the wastes in a uranium mill tailings impoundment when the EPA promulgated these regulations.

These statutes and regulations use plain language and specific, unambiguous regulatory definitions. It was not the intent of Congress and the NRC and EPA to create additional

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<sup>9</sup> 10 C.F.R. Part 40 — Domestic Licensing of Source Material.  
<https://www.nrc.gov/reading-rm/doc-collections/cfr/part040/>

<sup>10</sup> Appendix A to Part 40 — Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material From Ores Processed Primarily for Their Source Material Content.  
<https://www.nrc.gov/reading-rm/doc-collections/cfr/part040/part040-appa.html>

<sup>11</sup> *Final Generic Environmental Impact on Uranium Milling*; Project M-25; NUREG-0706; Volumes I - III; October 1980. U.S. Nuclear Regulatory Commission. <https://www.nrc.gov/docs/ML0327/ML032751661.html>

<sup>12</sup> 40 C.F.R. Part 192 — Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings. <https://www.epa.gov/radiation/health-and-environmental-protection-standards-uranium-and-thorium-mill-tailings-40-cfr>

<sup>13</sup> 40 C.F.R. Part 61 Subpart W — National Emission Standards for Radon Emissions From Operating Mill Tailings Source. <https://ecfr.io/Title-40/Part-61/Subpart-W>

environmental health, safety, and environment risks, hazards, and impacts—with no analyses of those risks, hazards, and impacts—by using a guidance document to manipulate regulatory definitions and create a new regulatory program never anticipated by Congress or the NRC and EPA when they adopted UMTRCA and Clean Water Act implementing regulations.

1.3. The Division, in reviewing the Energy Fuels’ request to receive and process “alternate feed,” provides a lot of information on the history of the NRC Guidance. However, there is scant information regarding the history of UMTRCA, applicable NRC and EPA regulations, the regulation and historical definitions of “ore” and “source material,” or any other relevant information that does not support the Division’s view. The Division carefully, and improperly, picks and chooses from a wide range of relevant information related to the history and regulation of uranium mills and uranium mill tailings to support its positions.

1.4. The DEQ never provided a specific opportunity for the public to comment on the Utah’s use of an NRC Guidance when Utah was in the process of becoming an NRC Agreement State. The DEQ never provided a specific opportunity for tribal entities and the public to comment on a program that would turn the White Mesa Mill into a disposal site for mineral processing wastes from domestic and foreign mineral processing operations when the DEQ decided to use NRC Guidance to, in effect, amend the Atomic Energy Act and NRC and EPA regulation, without the proper statutory authority. This was a back-handed change to a major federal program developed to safely contain and provide for perpetual care the tailings and wastes from the processing of natural ores for their uranium and thorium content. Prior to 1978, there was no federal program to manage and contain those tailings and wastes in a manner protective of public health and safety and the environment.

1.5. The Division must take a hard look at fact that the White Mesa Mill is now becoming a waste disposal site for international radioactive wastes,<sup>14</sup> in addition to the domestic waste materials that have been processed at the White Mesa Mill. The State of Utah must explain why Utah should now become the go-to place for the disposal of such international radioactive wastes. The State of Utah must provide a legal, technical, and environmental justification, not just for the disposal of materials from Estonia, but from any international source.

The State of Utah cannot justify this to the Ute Mountain Ute Tribe, the tribal members who live a short distance away from the White Mesa Mill and are impacted by radiological and non-radiological emissions from the Mill. The State of Utah cannot continue to ignore the consistent and continuing opposition of the Utah Mountain Ute

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<sup>14</sup> NRC regulations at 10 C.F.R. Part 110.4 define the materials to be imported to the White Mesa Mill from Estonia as “radioactive waste.”

Tribe and the White Mesa community to turning the White Mesa Mill into a repository for domestic and international wastes from other mineral operations and waste cleanup projects. The State of Utah has a legal obligation to abide by the Atomic Energy Act and NRC and EPA regulations and legally promulgated regulatory programs, none of which support the processing of radioactive wastes such as the Silmet and Moffat Tunnel materials at White Mesa and turning the Mill into a perpetual repository for wastes from the cleanup of domestic and international radioactive materials.

## **2. Modification of License Condition 10.5.**

The Division proposes to modify License Condition 10.5 (LC 10.5) to increase the amount of in situ leach (ISL)<sup>15</sup> uranium recovery decommissioning debris (defined as 11e.(2) byproduct material) to be placed in the the Mill's tailings impoundments from 5,000 cubic yards (cy) to 10,000 cy from any one ISL facility and allow unlimited amounts of waste from any ISL facility that is owned by Energy Fuels, or an Energy Fuels' subsidiary, to be disposed of at White Mesa. This is provided that there is adequate tailings impoundment volume. Currently, the ISL wastes transported to the White Mesa Mill can only be disposed of in tailings Impoundment 3.

## **COMMENTS**

2.1. The Division did not include the Energy Fuels' "Volume and Procedural Modification Request" (DRC-2019-012708), dated October 9, 2019, in the list of White Mesa Mill License Amendment Requests posted on the DWMRC website.<sup>16</sup> Rather, that request was only available on the e-Docs system,<sup>17</sup> which is slow and rather difficult to navigate. The Division erred in not making this amendment request readily available during the public comment period by posting on the DWMRC website associated with License Amendment #10.

2.2. The Division failed to develop a Technical Evaluation and Environmental Analysis for this amendment. No such document was provided in the 2020 DWMRC Public Notice.<sup>18</sup> The Amendment # 10 Statement of Basis, Summary of License Changes, page 1, indicates that this is a Major Change in the License. The Division failed to comply

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<sup>15</sup> The change in the term "in situ leach (ISL)" to "in situ recovery (ISR)" was done at the behest of the uranium recovery industry. The industry changed the term "in situ leach" to "in situ recovery" as a public relations gimmick.

<sup>16</sup> <https://deq.utah.gov/waste-management-and-radiation-control/energy-fuels-resources-usa-inc>

<sup>17</sup> <http://eqedocs.utah.gov/>

<sup>18</sup> <https://deq.utah.gov/waste-management-and-radiation-control/public-notice-energy-fuels-resources-usa-inc>

with the Atomic Energy Act<sup>19</sup> and Utah regulatory requirements<sup>20</sup> to develop an Environmental Analysis for major license amendments. Such an analysis must be made available to the public **before** the comment period and public hearing. The Division failed to comply with these statutory and regulatory requirements.

2.3. The Summary of License Changes regarding License Condition 10.5, page 2, states, “Upon examination staff learned that the current license limits were not set in response to demonstrated health effects concerns or other scientific analysis.”

Here, the Division does not identify the documents reviewed. According to the June 17, 2010, White Mesa Mill License, Amendment # 4, LC 10.5, was based on the Licensee’s submittal to the NRC, dated May 20, 1993. That document is not posted on the DEQ e-Docs system for the White Mesa Mill. Nor have the NRC documents associated with that Amendment, such as the License Amendment or technical or environmental evaluation, been made available. The Division claims that the LC 10.5 limits were not set in response to “demonstrated health effects concerns or other scientific analysis.” The Division does not state whether the NRC developed any technical evaluation or environmental or health analyses in connection to this amendment request. The Division should not rely on an inadequate NRC license amendment review in 1993 to support a Division license amendment review in 2020.

2.4. From 1981 to 1994, the regulation of the White Mesa and other uranium mills in Utah was the responsibility of the NRC Uranium Recovery Field Office (URFO) in Colorado.

Many URFO-approved uranium mill license amendments lacked an Environmental Assessment or Environmental Impact Statement, under the National Environmental Policy Act. Rather, URFO, and later NRC headquarter staff, relied categorical exclusions —thereby avoiding any environmental analysis and any assessment of the cumulative impacts of disposing of ISL waste and other materials that were not assessed in the original 1978 White Mesa Mill environmental analysis. Unless the Division can show otherwise, it is unlikely that URFO staff did any analysis of the health effects or other concerns related to the disposal of ISL waste at White Mesa.

2.5. URFO had a troubled history, including the withholding from the public over twenty thousand (20,000) Uranium Mill Tailings Radiation Control Act Title I and Title II documents, in violation of the Atomic Energy Act and NRC regulation. It took the NRC Public Document Room four (4) years to accession the documents URFO withheld to

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<sup>19</sup> 42 U.S. § 2021(o)(3).

<sup>20</sup> Utah Administrative Code; Uranium Mills and Source Material Mill Tailings Disposal Facility Requirements; R313-24-3. Environmental Analysis.  
<https://rules.utah.gov/publicat/code/r313/r313-024.htm#T3>

make them publicly available. It was URFO that decided to allow the Moab Mill tailings to remain on the flood plain of the Colorado River, a determination that the State of Utah adamantly opposed. That URFO decision and the Finding of No Significant Impact regarding the Moab Mill reclamation led to the closure of URFO in 1994. Given that history, it is surprising that the Division would in any manner rely on URFO's determinations and analyses, or lack thereof.

2.6. Even if there had been a health and safety or environmental analysis in 1993, it would be way out of date. It would not have considered cumulated impacts over the past 27 years, nor the impacts from transportation accidents and spills. The 2016 spill of ISL barium sulfate sludge from the Cameco Resources Inc. Smith Ranch ISL operation in Wyoming, is an example of the serious risks associated with the transport of ISL waste. The spill of the Smith Ranch waste, which had been radiologically mis-characterized and mis-packaged at the point of origin, could have been a real radiological, health, safety, and environmental disaster. If the spill, or possibly a much larger spill, had occurred on Hwy. 191 or other highway, as those routes go through towns and population centers such as White Mesa, Blanding, Monticello and Moab, the radioactive sludge could have been spread widely throughout the region and been very difficult to track down and clean up. The more decommissioning debris and sludges that are shipped to the Mill, the greater the likelihood of transportation accidents that would expose people on the transportation routes to radiological hazards.

2.7. The Division failed to provide an analysis of the current capacity of Impoundment 3, the age and condition of the Impoundment 3 liner, potential of leakage and contamination of the groundwater over time, potential spills of ISL sludges and other wastes during transport and at the mill, or an overall analysis of the cumulative impacts associated with the disposal of ISL 11e.(2) byproduct material at the White Mesa Mill. Therefore, there is no basis for the approval the proposed changes to LC 10.5.

2.8. The Division should not approve an increase in the amount of ISL waste at the White Mesa Mill, due to the age of Impoundment 3 and the need to close and reclaim Impoundment 3 as soon as possible. Additionally, the Division failed to provide the required Environmental Analysis, failed to properly notice the proposed license condition changes, and has not complied with the AEA and Utah regulation regarding a major license amendment.

2.9. In sum, the Division must reject the proposed changes to License Condition 10.5 to authorize the disposal of additional amounts of ISL waste at the White Mesa Mill.

2.10. License Condition 10.5.A.(3). The Division proposes an amendment to authorize the disposal of 11e.(2) byproduct material in unlimited quantities from any source within the State of Utah. The Summary for LC 10.5 indicates that this condition would be for the purpose of disposing of small quantities of uranium mill tailings that have been

historically used as backfill for construction sites or found in other unexpected places in Utah. The Division defines these materials as “11e.(2) byproduct material.” However, only materials that originally came from an UMTRCA Title II commercial uranium recovery operation can be defined as “11e.(2) byproduct material.” Materials that come from a site that is an UMTRCA Title I site would be defined as “residual radioactive materials.” There are four (4) Title I mill sites, three (3) Title II mill sites,<sup>21</sup> and one Department of Energy Superfund site<sup>22</sup> in Utah. Since most off-site tailings came from Title I sites and the Monticello Superfund site, those tailings would not be defined as 11.(2) byproduct material. The Division should properly characterize the tailings that it intends to authorize for disposal in the White Mesa Mill tailings impoundments.

### **3. Receipt of the Silmet Material from Estonia. License Condition 10.10.**

The Divisions proposes to authorize the Licensee “to receive source material (the Silmet uranium bearing material) from the NPM Silmet OÜ Facility located near Sillamae, Estonia, in accordance with statements, representations, and commitments contained in the License Amendment Request submitted to the Director dated April 18, 2019.” The Silmet Material would be processed at the White Mesa Mill for its uranium content, and the resulting wastes disposed of in a tailings impoundment. The Division developed a Technical Evaluation and Environmental Analysis Simlet Alternate Feed Request; Energy Fuels Resources (USA) Inc.; White Mesa Uranium Mill; April 2020.

#### **3.1. Import License.**

#### **COMMENTS**

3.1.1. The Silmet Material would be imported to the United States from the European country of Estonia. The Division’s Silmet Technical Evaluation and Environmental Analysis (TEEA) (page 20) states that the State of Utah Assistant Attorney General concluded that “there is adequate legal basis to support the requested licensing action as to an NRC import license not being required under 10 C.F.R 110.27(a).” The TEEA (page 21) also states that the Division staff evaluation included “A legal analysis from the Utah Attorney General’s office to determine if the uranium bearing material can be legally imported to the United States.”

The Assistant Attorney General’s written legal opinion, or analysis, was not included in the Simlet TEEA and no specific, separate written legal opinion was available in response to a Utah Government Records Access and Management Act (GRAMA) request.

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<sup>21</sup> <https://www.energy.gov/sites/prod/files/2018/12/f58/UMTRCAFactSheet.pdf>

<sup>22</sup> <https://cumulis.epa.gov/supercpad/cursites/csinfo.cfm?id=0800867>



The Assistant Attorney General does not have the authority to make a legal determination regarding the import of nuclear materials from a foreign country to the U.S. These are not legal determinations that can be made by the State of Utah. They are under the sole authority of the federal government. The NRC, a federal agency, has sole authority for the import and export nuclear materials, including the import of the material from Estonia. Any conclusions or analyses by the Assistant Attorney General regarding the legality of the import or whether an NRC specific import license is required under NRC regulation at 10 C.F.R 110.27(a) have no legal force and effect. This point was made to Uranium Watch staff by an NRC staff person during a phone conference on June 26, 2020.

The Assistant Attorney General should not have issued an opinion on a matter over which the State of Utah has no authority. Division should not make any determinations regarding Energy Fuels' conformance with NRC import license requirements in the context of an amendment to the White Mesa Mill License.

3.1.2. The TEEA appears to rely on a November 1998 NRC license amendment related to the import of uranium bearing materials from Canada. Since 1998, 10 C.F.R § 110.27(a) has been amended 5 times.<sup>23</sup> The TEEA does not state how NRC regulations regarding general and specific import license requirements may have changed since 1998. The Division and the Office of the Attorney General should not have relied on a 22-year old NRC licensing decision to interpret current NRC regulation.

3.1.3. The Division makes no mention of a State of Utah request to the NRC for a determination of whether the import of the Silmet Material would require a specific import license, pursuant to 10 C.F.R § 110.27(c), or the applicability of other import regulations. The Division could have sought an opinion by the NRC Office of General Counsel or other NRC office regarding NRC regulatory requirements regarding import licenses, but did not.

3.1.4. Since the Division and the State of Utah have no authority over the import of the Silmet Material from Estonia, any Division determinations with respect to compliance with NRC import regulations and requirements are invalid.

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<sup>23</sup> Amendments to 10 C.F.R. § 110.27: 65 Fed. Reg. 70291, November 22, 2000; 68 Fed. Reg. 31589, May 28, 2003; 70 Fed. Reg. 37991, July 1, 2005; 75 Fed. Reg. 44089, July 28, 2010; and 77 Fed. Reg. 27114, May 9, 2012.

### 3.2. Terminology Confusion

#### COMMENTS

3.2.1. The proposed License Amendment #10, at License Condition 10.10, states:

The Licensee is authorized to receive source material (the Silmet uranium bearing material) from the NPM Silmet OÜ Facility located near Sillamae, Estonia, in accordance with statements, representations, and commitments contained in the License Amendment Request submitted to the Director dated April 18, 2019.

NRC regulation, at 10 C.F.R. § 40.4, defines source material:

*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. Source material does not include special nuclear material.

During the public hearing on the White Mesa Mill License Amendment #10, held on May 20, 2020, Division staff was unwilling to state whether the “source material” to be imported from Silmet facility in Estonia and received at the Mill, is “source material” under the first definition (that is, uranium or thorium, or any combination thereof), or is source material under the second definition (that is, ores which contain by weight one-twentieth of one percent (0.05%) or more of: (i) uranium, (ii) thorium or (iii) any combination thereof).

If the Silmet Material is “source material” under the first definition, then only the uranium and thorium content of the Silmet Material meets the definition of “source material.” In that case, it would be incorrect to characterize the Silmet Material as “source material.” It would be much more accurate to characterize the Silmet Material as material “containing source material,” because only a very small portion of the Silmet material meets the first NRC statutory and regulatory definition of “source material.

If the Silmet Material Material to be imported to the White Mesa Mill from Estonia meets the second definition of “source material” as an ore, then all of the Silmet material would be considered to be “source material.”

The Division needs to clarify what type of “source material” is being referred to in the proposed amended License Condition: “The Licensee is authorized to receive source material (the Silmet uranium bearing material) from the NPM Silmet OÜ Facility located

near Sillamae, Estonia.” If only the uranium and thorium in the Silmet Material is “source material” under the first definition, then the Division should provide figures on the amount and weight of the “source material” and the amount and weight of the non-source material in the Silmet Material.

3.2.2. If the Silmet material is “ore,” as that term is used in the NRC statutory and regulatory definition of 11e.(2) byproduct material, then the Division must explain why it would not also be considered to be “ore,” as that term is used in the statutory and regulatory definition of “source material.” It does not make sense that the Atomic Energy Act and NRC regulation implementing the AEA intended the term “ore” to mean one thing in the definition of “source material” and another thing in the definition of “11e.(2) byproduct material.”

3.2.3. Uranium Watch would contend that the Atomic Energy Act and the NRC regulations’ use of the term “ore” in the definition of “source material” and the definition of “11e.(2) byproduct material” are the same. The term “ore” was used as a well understood term in common usage. “Ore,” like the term “water,” did not require a specific regulatory definition. Any change in the definition of one use of the term “ore,” impacts the definition of the other. However, there have been no changes to the Atomic Energy Act or NRC regulation that would affect the use of those terms in the NRC or NRC Agreement State regulatory programs. Therefore, the use of those terms must be the same in both definitions.

3.2.4. An NRC guidance does not have legal force and effect. Therefore it is reasonable to assume that the use of the term of “ore” in the definitions of “source material” and “11e.(2) byproduct material” are the same and have not been amended. There is no evidence that the Atomic Energy Act meant ore to mean anything other than a natural or native material from which uranium or thorium is extracted.

3.2.5. If the Division believes that the material exported from Estonia and received at the White Mesa Mill is “source material” under the first definition, then the Division needs to explain how and when that material becomes an “ore,” within the definition of “11e.(2) byproduct material,” so that the wastes from the processing of that material will meet the statutory and regulatory definition of “11e.(2) byproduct material.”

3.2.6. The Division also refers to the Silmet Material as “Alternate Feed Material.” To the best of commenters’ knowledge, under the Atomic Energy Act and NRC regulation, there are no statutory or regulatory definitions of “Alternate Feed Material.” There are no NRC regulations that refer to, and specifically apply to, “Alternate Feed Material.”

3.2.7. The Division also characterizes the Silmet Material is a “uranium bearing material.” The Division “Technical Evaluation and Environmental Analysis - Silmet Alternate Feed Material” states (page 13) that Energy Fuels submitted an application to

receive and process the Silmet uranium bearing material as an “alternate feed.” Neither terms are contained in AEA and NRC statutory or regulatory definitions.

The Division also refers to the Silmet Material as an “ore.” However, in describing the Material as “source material,” the Division is unable or unwilling to state whether the Silmet Material meets the NRC 10 C.F.R § 40.4 definition of “source material” under the second definition.

3.2.8. The Division should define or describe the Silmet Material based on specific statutory and regulatory definitions and terms. The Division should not rely on various terminologies that lack clear statutory and regulatory bases.

3.2.9. The Silmet TEEA (page 15) states: “DWMRC Staff has concluded that the Silmet uranium bearing material meets the NRC definition of ‘ore.’” The Division does not state whether the Silmet Material, therefore, is “source material” under the second NRC statutory and regulatory definition; that is, “(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.”

Since the Division has determined that the Silmet Material is “ore,” and it contains by weight over 0.05% uranium and thorium, why is the Division reluctant to state whether the Silmet Material meets the second regulatory definition of “source material”?

### **3.3. Technical Evaluation and Environmental Analysis - Silmet Alternate Feed Material**

3.3.1. The Silmet Material TEEA, Section 1.1.2 (page 15), (quoting *NRC Interim Position and Guidance on the Use of Uranium Mill Feed Material other than Natural Ores*) states that “if the proposed feed material contains hazardous waste, listed under subpart D Sections 261.30-33 of 40 CFR (or comparable Resource Conservation and Recovery Act (RCRA) authorized State regulations), it would be subject to the U.S. Environmental Protection Agency (EPA) or State Regulations under RCRA.”

This is very confusing. The Division has stated that the Silmet Material is “ore.” If the material were uranium “ore,” it would not be subject to RCRA provisions, because “ore” is not considered to be a “solid waste” under 40 C.F.R. § 261.4 and, therefore, is not a “hazardous waste.” If the Silmet Material were considered to be “ore,” as that term is used in both the definition of 11e.(2) byproduct material and the second definition of “source material,” it would not be considered to be a solid waste, and the issue of any hazardous waste constituents would be irrelevant.

Since the presence of hazardous waste in the Silmet Material is, obviously, relevant, then the Silmet Material is not “ore,” as that term is used in the second definition of “source material.” *See* Section 3.2, above.

That means, for the purposes of the Atomic Energy Act and NRC regulation, the term “ore”—as it is used in 2 very important and long-standing regulatory definitions—has 2 different meanings. In one definition (11e.(2) byproduct material), “ore” can include any uranium-bearing wastes from other mineral processing operations, such as the Silmet Material, if—and only if—the material has been processed for its uranium and/or thorium content. In the other definition (the second definition of source material), “ore” does not include uranium-bearing wastes from other mineral processing operations. It does not include material that becomes “ore” retroactively when the material has been processed in a uranium mill to remove the uranium and/or thorium.

The NRC and the Division have not claimed, or cannot claim, that the uranium-bearing wastes from other mineral processing operations, such as the Silmet Material, meet the second definition of “source material,” that is, ores which contain by weight one-twentieth of one percent (0.05%) or more of: (i) Uranium, (ii) thorium or (iii) any combination thereof. This creates confusion, if NRC Guidance can be used to amend the Atomic Energy Act and NRC regulations such that the term “ore” means one thing in one regulatory definition and another thing in second, closely related regulatory definition. However, there is nothing in the Atomic Energy Act or NRC regulation that authorizes the NRC or the State of Utah to amend statutory and regulatory definitions with a non-binding Guidance, creating a dissonance in regulatory definitions and programs.

Uranium Watch does not believe that the Atomic Energy Act and NRC regulations intended that 2 important definitions that used the term “ore” meant those terms to have 2 very different meanings. The NRC and the State of Utah do not have the authority to amend regulations outside of the Rulemaking process. The NRC and the State of Utah do not have the authority to create a whole new uranium milling regulatory program outside of the federal Rulemaking process. Therefore, there is no legal authority that authorizes the processing and disposal of the Silmet Material at the White Mesa Mill.

### **3.4. EPA Regulations**

The Environmental Protection Agency (EPA) promulgated regulations that apply to uranium mills and uranium mill tailings impoundments. These relevant standards and regulations are found in 40 C.F.R. Part 192 and 40 C.F.R. Part 61 Subpart W.

## **COMMENTS**

3.4.1. The Uranium Mill Tailings Radiation Control Act of 1978, an amendment to the Atomic Energy Act of 1954, directed the EPA to establish standards that apply the uranium mills and the handling of 11e.(2) byproduct material. Those EPA standards are

found at 40 C.F.R. Part 192 — Health and Environmental Standards or Uranium and Thorium Mill Tailings. EPA regulation at 40 CFR Part 192 Subpart D<sup>24</sup> — Standards for Management of Uranium Byproduct Materials Pursuant to Section 84 of the Atomic Energy Act of 1954, as Amended, states regarding Applicability, “This subpart applies to the management of uranium byproduct materials under section 84 of the Atomic Energy Act of 1954 (henceforth designated “the Act”), as amended, during and following processing of uranium ores, and to restoration of disposal sites following any use of such sites under section 83(b)(1)(B) of the Act.”

Part 192 Subpart D defines uranium byproduct material:

(b) Uranium byproduct material means the tailings or wastes produced by the extraction or concentration of uranium from any ore processed primarily for its source material content. Ore bodies depleted by uranium solution extraction operations and which remain underground do not constitute “byproduct material” for the purpose of this subpart.

Section 192.01 defines “tailings”:

Tailings means the remaining portion of a metal-bearing ore after some or all of such metal, such as uranium, has been extracted.

There is nothing in the Part 192 definitions of “uranium byproduct material” or “tailings” that demonstrates or implies that these terms apply to the tailings or wastes from the processing of materials other than natural ore. There is nothing in these regulatory definitions that demonstrate or imply that these terms apply to the tailings or wastes from “any other matter from which uranium or thorium is extracted in a licensed uranium or thorium mill.” There is no evidence that the EPA Standards for Management of Uranium Byproduct Materials were meant to apply to tailings or wastes produced by the extraction or concentration of uranium from any **matter** processed primarily for its source material content.

3.4.2. The EPA “Environmental Standards for Uranium and Thorium Mill Tailings at Licensed Commercial Processing Sites,” Final Rule, were promulgated on October 7, 1983, by publication in the *Federal Register* at 48 Fed. Reg. 45926, 45926-45927. See Exhibit A. Public input on the establishment of these standards was extensive and included private citizens, public interest groups, members of the scientific community, representatives of industry, and State and Federal agencies.<sup>25</sup> The Final Rule provides information on background information on The Uranium Industry, Hazards Associated With Uranium By-product Materials, Control of Hazards from Tailings, and

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<sup>24</sup> <https://www.law.cornell.edu/cfr/text/40/part-192/subpart-D>

<sup>25</sup> 48 Fed. Reg. 45926, 45927 (col. 1).

Environmental Standards and Guidance Now Applicable to Uranium Tailings. There is no mention in this background information that the EPA is considering anything other than the processing of natural ores and the disposal of the resulting tailings at licensed uranium recovery sites. There is no consideration given to the radiological and non-radiological constituents found in the Silmet Material and other feed materials other than natural ore that have been processed at the White Mesa Mill. The standards, as developed by the EPA did not contemplate the processing of materials other than natural ore or the radiological and non-radiological impacts and hazards associated with such receipt, storage, processing, tailings disposal, and long term care of these materials. Congress, the EPA, and the public did not contemplate the use of uranium mills as permanent repositories for the wastes from the processing of a wide range of waste materials (including cement, asphalt and other debris) at uranium mills.

3.4.3. In 2010, the EPA undertook a review of Standards for Uranium and Thorium milling facilities, with a focus on in-situ leach uranium recovery operations. As part of that review the EPA held meetings in Casper, Wyoming, and Denver, Colorado. EPA *Uranium and Thorium Standards, Fact Sheet #2, Background on Uranium Mining and Milling*, provided information to the public at these meetings. The information addressed: What is uranium?, How is uranium mined?, What happens once the uranium is mined?, What is milling, and What are the environmental impacts of uranium mining and how are they regulated? The Fact Sheet contains the following relevant statements:

Uranium ore is mined, then milled to separate the uranium from the ore.

Uranium ore typically contains low concentrations of uranium, making uranium mining volume-intensive.

Milling is a process that removes the uranium from the ore. After the ore is ground up, it is treated with chemical solutions to dissolve the uranium from the ore. This process produces a waste byproduct called mill tailings.

There is no mention in the *Background on Uranium Mining and Milling* Fact Sheet that states or implies that ore is any uranium-bearing material, other than natural ore, that a uranium mill owner wishes to process.

3.4.4. In sum, the EPA “Standards for Management of Uranium Byproduct Materials” do not apply to the processing of materials other than natural ore at licensed uranium mills. The tailings or wastes from the processing of any matter for its uranium content, such as the Silmet Material, do not fall under the EPA definition of 11e.(2) byproduct material. Under EPA standards and regulations applicable to the White Mesa Mill, the wastes from the processing of the Silmet Material are not 11e.(2) byproduct material.

3.4.5. Therefore, the Division must not authorize the processing of the Silmet material at the White Mesa Mill, because EPA standards do not apply to the processing of materials other than natural ore and to the disposal of tailings or wastes from the processing of materials other than natural ore. Under EPA regulations, the tailings and wastes from the processing of the Silmet material do not meet the statutory and regulatory definition of 11e.(2) byproduct material.

3.4.6. The Statement of Basis, Summary of License Changes, March 2020, which is part of the Radioactive Material License No. UT 1900479, Amendment #10, licensing package, provides information about changes in the White Mesa Mill License Conditions. Changes to the License include changes to terminology. The Summary states that changes to License Condition 9.5 “reflect terminology in 40 CFR Part 61 Subpart W, which governs radon emission (conventional or nonconventional impoundment).”

Therefore, the Division recognizes the applicability of 40 C.F.R. Part 61 Subpart W — National Emission Standards for Radon Emissions From Operating Mill Tailings to the White Mesa Mill License provisions. Subpart W (40 C.F.R. §§ 61.250 to 61.256) states, with respect the designation of facilities:

§ 61.250 Designation of facilities.

The provisions of this subpart apply to owners or operators of facilities licensed to manage uranium byproduct materials during and following the processing of uranium ores, commonly referred to as uranium mills and their associated tailings. This subpart does not apply to the disposal of tailings.

Subpart W defines “uranium byproduct material or tailings”:

(g) Uranium byproduct material or tailings means the waste produced by the extraction or concentration of uranium from any ore processed primarily for its source material content. Ore bodies depleted by uranium solution extraction and which remain underground do not constitute byproduct material for the purposes of this subpart.

Subpart W defines “conventional impoundment”:

(h) Conventional impoundment. A conventional impoundment is a permanent structure located at any uranium recovery facility uranium recovery facility which contains mostly solid uranium byproduct material or tailings from the extraction of uranium from uranium ore. These impoundments are left in place at facility closure.

Subpart W defines “uranium recovery facility”:



Uranium recovery facility. A uranium recovery facility means a facility licensed by the NRC or an NRC Agreement State to manage uranium byproduct material or tailings during and following the processing of uranium ores. Common names for these facilities are a conventional uranium mill, an in-situ leach (or recovery) facility and a heap leach facility or pile.

Subpart W defines “non-conventional impoundment”:

- (i) Non-conventional impoundment. A non-conventional impoundment is used for managing liquids from uranium recovery operations and contains uranium byproduct material or tailings. . . .

There is nothing in Subpart W or in the history of the promulgation of Subpart W that supports the conclusion that Subpart W applies to the facilities that process materials other than natural ore or to the tailings and wastes from the processing of materials other than natural uranium ore. Subpart W does not apply to a facility that processes materials other than natural ore for its uranium content or to the tailings or wastes from the processing of any matter other than natural ore that may contain uranium.

3.4.7. The EPA undertook a complete review of Subpart W, which took several years. The EPA published proposed changes in rule on May 2, 2014.<sup>26</sup> The final rule was published on January 17, 2017.<sup>27</sup> In that Rulemaking, the EPA did not alter its 1986 definitions of uranium byproduct material. The Final Rule states:

The definition of uranium byproduct material or tailings in Subpart W, as it was promulgated in 1989 and not modified by this rule, establishes that Subpart W broadly addresses radon emissions from operating structures used to manage wastes produced during and following the concentration or extraction of uranium from ore processed primarily for its source material content.<sup>28</sup>

The EPA did not change its regulations to apply to the tailings and wastes produced during and following the concentration or extraction of uranium from **any matter**

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<sup>26</sup> EPA *Revisions to National Emission Standards for Radon Emissions From Operating Uranium Mills*. 79 Fed. Reg. 25388, May 2, 2014. Docket ID EPA–HQ– OAR–2008–0218.

<sup>27</sup> EPA *Revisions to National Emission Standards for Radon Emissions From Operating Uranium Mills*. 82 Fed. Reg. 5142, 5142-5180; January 17, 2017.  
<https://www.govinfo.gov/content/pkg/FR-2017-01-17/pdf/2016-31425.pdf#>

<sup>28</sup> 82 Fed. Reg. 5142, 51474, column 3.

processed for its source material content.

3.4.8. Under Subpart W, the tailings or wastes from the processing a material other than natural ore, such as the Silmet material, are not “uranium byproduct material.” 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 Subpart W. Therefore, the Division cannot authorize the processing of materials at a facility that does not fall under the provisions Subpart W.

3.4.9. In sum, the Division cannot approve the Energy Fuels request to receive and process the Silmet 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.

#### **4. Receipt of the Moffat Tunnel Material from Colorado. License Condition 10.12.**

The “Application by Energy Fuels Resources (USA) Inc. for an amendment to State of Utah Radioactive Materials License No. 1900479 for the White Mesa Uranium Mill to authorize processing of Union Pacific Railroad, Moffat Tunnel alternate feed material,” dated December 23, 2019, was submitted to the Division by Energy Fuels. In response to that application, The Division “proposes to authorize the Licensee “to receive source material (the Moffat Tunnel uranium bearing material) from the Union Pacific Railroad’s Water Treatment Plant in Winter Park Colorado, in accordance with statements, representations, and commitments contained in the License Amendment Request submitted to the Director dated December, 2019.”

The Moffat Tunnel materials would be processed at the White Mesa Mill for its uranium content, and the resulting tailings or wastes disposed of in a Mill tailings impoundment. The Division developed a report, *Technical Evaluation and Environmental Analysis Moffat Tunnel Alternate Feed Request; Energy Fuels Resources (USA) Inc.; White Mesa Uranium Mill; April 2020.*

#### **COMMENTS**

4.1. The comments in the above Sections 3.2, 3.3, and 3.4, as those comments apply to the Energy Fuels’ Moffat Tunnel License Amendment Request, are referenced herein.

4.2. The TEEA (pages 18-27) for the Moffat Tunnel Material contains a discussion of whether the Moffat Tunnel Material can be processed as “Equivalent Feed.” As with the Division’s use of a completely new definition of “ore,” there is no definition of “equivalent feed” in the Atomic Energy Act, NRC and EPA regulations promulgated responsive to that Act, or EPA radon emission standards. The Atomic Energy Act and

NRC and EPA regulations applicable to uranium mills and mill tailings never contemplated or considered the impacts of the processing of what the Division refers to as “Equivalent Feed.” Therefore, NRC regulations and EPA regulations and standards at 40 C.F.R. Part 192 and 40 C.F.R. Part 61 Subpart W do not apply to facilities that process “Equivalent Feed,” or feed materials with any new definition never found in applicable statutes or regulations.

4.3. In sum, the Division cannot continue to support the disposal of materials at the White Mesa Mill, such as the Silmet and Moffat Tunnel materials, after the removal of uranium, that do not meet the EPA definition of 11e.(2) byproduct material, pursuant to the standards and regulations applicable to uranium mills, mill tailings, and radon emissions. Therefore, the Division cannot approve the two license amendment requests to process feed materials other than natural ore.

Thank you for providing this opportunity to comment.

Sincerely,

/s/

Sarah M. Fields  
Program Director  
[sarah@uraniumwatch.org](mailto:sarah@uraniumwatch.org)

Attachment: Exhibit A