

EXHIBIT A
WHITE MESA MILL LICENSE RENEWAL — LICENSE NO. UT1900479
URANIUM WATCH ET AL. COMMENTS

1. The proposed License for the Renewal of UT for the White Mesa Mill, San Juan County, Utah, contains on license Condition that states: “The licensee may not dispose of any material on site that is not “byproduct material,” as that term is defined in 42 U.S.C. Section 2014(e)(2) (Atomic Energy Act of 1954, Section 11e.(2), as amended).”¹

2. Then, the License contains conditions that allow for the processing of feed material other than natural ore, and refers to “alternate feed materials or other ores.”²

3. However, “alternate feed” materials are not “ore,” as that term has been in common use for hundreds of years³ and how that term is used in the Atomic Energy Acts of 1946 and

¹ License Condition 10.1.B. (as corrected).

² License Condition 10.1.C., D., and E.

³ The word, or term, "ore," as defined in several sources:

- Ore—a naturally occurring solid material from which metal or other valuable minerals may be extracted. [*Illustrated Oxford Dictionary*, DK Pub. 1998.]
- Ore—A native mineral containing a precious or useful metal in such quantity and in such chemical combination as to make its extraction profitable. Also applied to minerals mined for their content of non-metals. [*The Compact Oxford English Dictionary*, Second Edition, Oxford University Press, 2000, p. 1224:915-916.]
- Ore—a. A natural mineral compound of the elements of which one at least is a metal. Applied more loosely to all metaliferous rock, though it contains the metal in a free state, and occasionally to the compounds of nonmetallic substances, as sulfur ore. . . . Fay b. A mineral of sufficient value as to quality and quantity that may be mined for profit. Fay. [*A Dictionary of Mining, Mineral, and Related Terms*, compiled and edited by Paul W. Thrush and Staff of the Bureau of Mines, U.S. Dept. of Interior, 1968.]
- *The Oxford English Dictionary* points out that the current usage of the word "ore" goes back several hundred years. *A Dictionary of Mining, Mineral, and Related Terms* lists over 65 compound words using the word "ore," such as ore bin, ore body, ore deposit, ore district, ore geology, ore grader, ore mineral, ore reserve, ore zone.

All of these terms incorporate the word "ore" as it relates to the mining of a native mineral. The term "ore," without explanation, has for many years been used in thousands, if not millions, of instances in thousands of mining, milling, geological, mineralogical, radiochemical, engineering, environmental, and regulatory publications. "Ore" like the word "water," is a word of common and extensive usage with a clear and accepted meaning.

1954, as amended; Atomic Energy Commission, Nuclear Regulatory Commission (NRC), Environmental Protection Agency (EPA) regulations promulgated pursuant to the 1946 and 1954 AEAs; and other EPA regulations.

4. License Condition 10.1.B. relies on, but does not quote from, NRC Regulatory Summary 2000-23 Recent Changes to Uranium Recovery Policy, November 30, 2000. That Regulatory Summary is not a regulation does not have legal force and effect. It cannot be used as a basis for amending the Atomic Energy Act of 1954 (AEA), as amended, nor NRC and EPA regulations promulgated responsive to that Act. The Summary includes a new definition of 11e.(2) byproduct material by creating a new definition of the word “ore”:

*For the tailings and wastes from the proposed processing to qualify as 11e.(2) byproduct material, the feed material must qualify as “ore.” In determining whether the feed material is ore, the following definition of ore will be used: **Ore is a natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.** [Emphasis added.]*

5. The AEA definition of 11e.(2) byproduct material⁴ and the NRC and EPA definitions of 11e.(2) byproduct material do not, and cannot, mean wastes from the processing of any matter from which uranium and/or thorium is recovered at a licensed uranium mill.

6. The AEA, as amended by the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA),⁵ does not sanction the processing of feed materials other than natural ores and the disposal of wastes from such processing at licensed uranium and thorium processing facilities. The AEA does not include a definition, or any indication of such definition, of “ore” that states that “ore” is any “matter from which source material is extracted in a licensed uranium or thorium mill.” The AEA does not give the Utah Department of Environmental Quality (DEQ), or other state or federal entity, the broad authority to authorize the processing of feed materials other than natural ores or the disposal of wastes from such processing at licensed uranium and thorium processing facilities as “11e.(2) byproduct material.” The term “ore” has an accepted and historical definition as that term is used in the AEA and regulations promulgated responsive to that

⁴ 42 U.S.C. Sec. 2014 (e). “The term 'byproduct material' means (1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material, and (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.”

⁵ The Uranium Mill Tailings Radiation Control Act of 1978 (“UMTRCA”) (Public Law 95-604, 92 Stat. 3033 *et seq.*), amending the Atomic Energy Act of 1954 (Public Law 83-703, 68 Stat. 919 *et seq.*).

Act. Neither the NRC, nor the DEQ have the authority to use “guidance” or other means to change the substantive meaning of a word and, thereby, the regulatory program associated with that word and related definitions. The DEQ does not have the authority to amend the AEA.

7. The statutory history of UMTRCA, found in the two Congressional reports, provides information with respect "uranium mill tailings" and "ore." The Congressional Reports clearly state what was contemplated by Congress (i.e., the intent of Congress) when Congress established a program for the control of "uranium mill tailings" from the processing of "uranium ore" at inactive (Title I of UMTRCA) and active (Title II of UMTRCA) uranium and thorium processing facilities. *See* House Report (Interior and Insular Affairs Committee) No. 95-1480 (I), August 11, 1978, and House Report (Interstate and Foreign Commerce Committee) No. 95-1480 (II), September 30, 1978. Under "Background and Need," HR No. 95-1480 (I) states:

Uranium mill tailings are the sandy waste produced by the uranium ore milling process. Because only 1 to 5 pounds of useable uranium is extracted from each 2,000 pounds of ore, tremendous quantities of waste are produced as a result of milling operations. These tailings contain many naturally-occurring hazardous substances, both radioactive and nonradioactive. . . . As a result of being for all practical purposes, a perpetual hazard, uranium mill tailings present the major threat of the nuclear fuel cycle.

In its early years, the uranium milling industry was under the dominant control of the Federal Government. At that time, uranium was being produced under Federal Contracts for the Government's Manhattan Engineering District and Atomic Energy Commission program. . . .

The Atomic Energy Commission and its successor, the Nuclear Regulatory Commission, have retained authority for licensing uranium mills under the Atomic Energy Act since 1954. [HR No. 95-1480 (1) at 11.]

The second House Report, under "Need for a Remedial Action Program" states:

Uranium mills are a part of the nuclear fuel cycle. They extract uranium from ore for eventual use in nuclear weapons and power-plants, leaving radioactive sand-like waste—commonly called uranium mill tailings—in generally unattended piles. [HR No. 95-1480 (2) at 25.]

The statutory history of UMTRCA does not provide any basis for a definition of “ore” as being “any other matter from which source material is extracted in a licensed uranium or thorium mill.”

8. Atomic Energy Commission (AEC) and the AEA of 1946 also demonstrate the intent

of Congress and the agency that preceded the NRC with respect ore and the processing of ore. The domestic uranium mining and milling industry was established at the behest of the Manhattan Engineer District and the AEC. The AEC regulated uranium mines and uranium processing facilities, established ore buying stations, and bought ore. Mining and milling of uranium ore was done under contract to the AEC. AEC purchased uranium ore under the Domestic Uranium Program. Regulations related to the AEC's uranium procurement program were set forth in 10 C.F.R. Part 60. Part 60 was deleted from 10 C.F.R. on March 3, 1975, after the establishment of the NRC.

9. The AEC published a number of circulars related to their Domestic Uranium Program. The Domestic Uranium Program—Circular No. 3—Guaranteed Three Year Minimum Price—Uranium-Bearing Carnotite-Type or Roscoelite-Type Ores of the Colorado Plateau Area" (April 9, 1948), an amendment to 10 C.F.R. Part 60, states:

§ 60.3 Guaranteed three years minimum price for uranium-bearing carnotite-type or roscoelite-type ores of the Colorado Plateau—(a) Guarantee. To stimulate domestic production of uranium-bearing ores of the Colorado Plateau area, commonly known as carnotite-type or roscoelite-type ores, and in the interest of the common defense and security the United States Atomic Energy Commission hereby establishes the guaranteed minimum prices specified in Schedule 1 of this section, for the delivery of such ores to the Commission, at Monticello, Utah, and Durango, Colorado, in accordance with the terms of this section during the three calendar years following its effective date.

Note: In §§ 60.1 and 60.2 (Domestic Uranium Program, Circulars No. 1 and 2), the Commission has established guaranteed prices for other domestic uranium-bearing ores, and mechanical concentrates, and refined uranium products.

Note: The term "domestic" in this section, referring to uranium, uranium-bearing ores and mechanical concentrates, means such uranium, ores, and concentrates produced from deposits within the United States, its territories, possessions and the Canal Zone.

10. 10 C.F.R. Part 60—Domestic Uranium Program at § 60.5(c) states:

Definitions. As used in this section and in § 60.5(a), the term "buyer" refers to the U.S. Atomic Energy Commission, or its authorized purchasing agent. **The term "ore" does not include mill tailings or other mill products.** . . . [Emphasis added.]
[Circular 5, 14 Fed. Reg. 731 (February 18, 1949).]

It is clear that the AEC was the primary mover in the domestic uranium mining and milling program. It is clear that under the AEAs of 1946 and 1954, the AEC regulated

uranium mining and milling and established a uranium ore-buying program. It is clear that from the 1940's to 1975, the regulations in 10 C.F.R. Part 60 clearly stated that "ore" does not include mill tailings or other mill products. It is clear that "ore," under the AEA and AEC regulation did not mean any "matter from which source material is extracted in a licensed uranium or thorium mill." Such a new definition contradicts the AEA.

11. The Statutory Definition of Source Material also is relevant to the use of the term "ore" under that AEA and NRC regulation. The AEA of 1946, under "Control of Materials," Sec. 5 (b), "Source Materials," (1), "Definition," provides the definition of "source material." Section 5(b)(1) states:

Definition. — As used in this Act, the term "source material" means uranium, thorium, or any other material which is determined by the Commission, with the approval of the President, to be peculiarly essential to the production of fissionable materials; but includes ores only if they contain one or more of the foregoing materials in such concentration as the Commission may by regulation determine from time to time.

The AEA of 1954, Chapter 2, Section 11, "Definitions," sets forth the current statutory definition of "source material" at Sec. 11(s):

The term "source material" means (1) uranium, thorium, or any other material which is determined by the Commission pursuant to the provisions of section 61 to be source material; or (2) ores containing one or more of the foregoing materials, in such concentrations as the Commission may by regulation determine from time to time.
[42 U.S.C. Sec. 2014(z).]

Responsive to this statutory definition, in 1961 the AEC established the following regulatory definition at 10 C.F.R. § 40.4:

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. [26 Fed. Reg. 284 (Jan. 14, 1961)]

Therefore, the AEC made a determination, in accordance with the mandate of the AEA of 1954, that ores containing 0.05% thorium and/or uranium would meet the statutory definition of source material. At the same time that they made that determination, the AEC had a regulation that clearly stated that "ore" does not include mill tailings or other mill products. Surely, the AEC, as the administrator of a uranium ore procurement program and the developer of the uranium mining and milling industry knew what they were talking about when they used the term "ore."

12. Additionally, the AEC set forth certain exemptions to the regulations in 10 C.F.R. Part 40. The proposed rule that was later finalized in January 1961 states, in pertinent part:

The following proposed amendment to Part 40 constitutes an over-all revision of 10 CFR Part 40, "Control of Source Material."

With certain specified exceptions, the proposed amendment requires a license for the receipt of title to, and the receipt, possession, use, transfer, import, or export of source material. . . .

Under the proposed amendment, the definition of the term "source material": is revised to bring it into closer conformance with that contained in the Atomic Energy Act of 1954. "Source Material" is defined as (1) uranium or thorium, or any combination thereof, in any physical or chemical form, but does not include special nuclear material, or (2) ores which contain by weight one-twentieth of one percent (0.05 percent) or more of (a) uranium, (b) thorium or (c) any combination thereof. The amendment would exempt from the licensing requirements chemical mixtures, compounds, solutions or alloys containing less than 0.05 percent source material by weight. As a result of this exemption, the change in the definition of source material is not expected to have any effect on the licensing program. . . .

Section 62 of the Act prohibits the conduct of certain activities relating to source material "after removal from its place of deposit in nature" unless such activities are authorized by license issued by the Atomic Energy Commission. The Act does not, however, require a license for the mining of source material, and the proposed regulations, as in the case of the current regulations, do not require a license for the conduct of mining activities. Under the present regulation, miners are required to have a license to transfer the source material after it is mined. Under the proposed regulation below, the possession and transfer of unrefined and unprocessed ores containing source material would be exempted. [47 Fed. Reg. 8619 (September 7, 1960).]

13. Therefore, the AEC established, via a rulemaking, exemptions for source material as defined in Sec. 2014(z)(1) related to mixtures, compounds, solutions, or alloys containing uranium and/or thorium:

(a) Any person is exempt from the regulations in this part and from the requirements for a license set forth in section 62 of the Act to the extent that such person receives, possesses, uses, transfers or delivers source material in any chemical mixture, compound, solution, or alloy in which the source material is by weight less than one-twentieth of 1 percent

(0.05 percent) of the mixture, compound, solution or alloy. The exemption contained in this paragraph does not include byproduct material as defined in this part. [10 C.F.R. § 40.13(a), 26 Fed. Reg. 284 (Jan. 14, 1961).]

14. The AEC also established, via a rulemaking, exemptions for source material as defined in Sec. 2014(z)(2) related to "ore":

b) Any person is exempt from the regulations in this part and from the requirements for a license set forth in section 62 of the act to the extent that such person receives, possesses, uses, or transfers unrefined and unprocessed ore containing source material; provided, that, except as authorized in a specific license, such person shall not refine or process such ore. [10 C.F.R. 40.13(b), 26 Fed. Reg. 284 (Jan. 14, 1961).]

The definition of "source material" and the exemptions that are related to those definitions stand today, over fifty-five years later. These regulatory definitions and exemptions did not change when the NRC was established in 1975 and took on the regulatory responsibility for "source material." These regulatory definitions and exemptions did not change when the AEA was amended by UMTRCA in 1978.

15. Definition of 11e.(2) byproduct material. UMTRCA, among other things, amended the AEA of 1954 by adding a new definition, the definition of 11e.(2) byproduct material:

Sec. 201. Section 11e. of the Atomic Energy Act of 1954, is amended to read as follows:

"e. The term 'byproduct material' means (1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material, and (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." [42 U.S.C. Sec. 2014 (e).]

There is no evidence in the regulatory history of UMTRCA that Congress, in defining "11e.(2) byproduct material" intended to also amend the statutory definition of "source material." There is no evidence in the regulatory history of UMTRCA that the term "any ore" does not mean "any type of uranium ore" (e.g., ore containing less than .05% uranium and/or thorium and the numerous types of natural uranium-bearing minerals that are mined at uranium mines and milled at uranium mills). There is no evidence in the regulatory history of UMTRCA that Congress intended the term "any ore" to mean anything that the NRC, DWRC, or Energy Fuels wants it to mean. There is no evidence in the regulatory history of UMTRCA that "ore" is "any other matter from which source material is extracted in a licensed uranium or thorium mill."

16. In response to UMTRCA, both the EPA and the NRC established a regulatory program for uranium milling and the processing of ores. In establishing those regulations, neither the EPA nor the NRC contemplated the processing of materials that were not "ore" (as that term has been used under the AEA and the common meaning of the term). Neither the EPA nor the NRC considered wastes from other mineral processing operations in their concept of "ore." They did not address in any manner the processing wastes or any matter other than natural ore when promulgating their regulatory regimes for active uranium processing facilities. Further, during the various rulemaking proceedings, the public was never informed that wastes from other mineral processing operations or materials other than natural ore, no matter how they were defined, would be processed at licensed uranium or thorium mills. Therefore, the public was given no reasonable opportunity to comment on such processing activities at uranium mills in the rulemaking processes.

17. NRC Regulatory Program, 10 C.F.R. Part 40. Responsive to UMTRCA, the NRC incorporated the UMTRCA definition of 11e.(2) byproduct material (with clarification) into their regulations at 10 C.F.R. § 40.4:

"Byproduct 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, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by such solution extraction operations do not constitute "byproduct material" within this definition.
[44 Fed. Reg. 50012-50014 (August 24, 1979).]

The NRC also explained the need for the new definition:

Section 40.4 of 10 CFR Part 40 is amended to include a new definition of "byproduct material." This amendment, which included uranium and thorium mill tailings as byproduct material licensable by the Commission, is required by the recently enacted Uranium Mill Tailings Radiation Control Act. [44 Fed. Reg. 50012-50014 (August 24, 1979).]

18. The NRC promulgated further regulations amending Part 40, in 1980, 45 Fed. Reg. 65521-65538 (October 3, 1980). In the summary, the NRC states:

The U.S. Nuclear Regulatory Commission is amending its regulations to specify licensing requirements for uranium and thorium milling activities, including tailings and wastes generated from these activities. The amendments to parts 40 and 150 take into account the conclusions reached in a final generic environmental impact statement on uranium milling and the requirements mandated in the Uranium Mill Tailings Radiation Control Act of 1978, as amended, public comments received on a draft generic environmental impact statement on uranium milling, and public comments

received on proposed rules published in the *Federal Register*. [Footnotes omitted.]

There is no statement in any of the NRC regulations in 10 C.F.R. Part 40 or in any of rulemaking proceedings promulgating those regulations that wastes from other mineral processing operations, 11e.(2) byproduct material, or any matter processed in a licensed uranium mill could be defined as "ore," under any circumstances. The NRC regulations did not contemplate that, under any circumstances, wastes and other materials would be processed at licensed uranium or thorium mills and the tailings, or that the wastes from such processing would be disposed of as 11e.(2) byproduct material in the mill tailings impoundments. The regulations promulgated by the NRC and did not contemplate this kind of activity. The National Environmental Policy Act ("NEPA") document in support of the promulgation of the NRC regulatory program for uranium mills did not contemplate this kind of activity. In the rulemaking proceedings and NEPA proceeding, the public did not have an opportunity to contemplate and comment on this kind of uranium or thorium mill processing activity. The information provided by the Division and the Licensee demonstrate that materials other than natural ore contain radiological and non-radiological constituents that are significantly different than those in natural ore. Therefore the impacts from the processing and disposal of the wastes from those materials would be different from those of "ore."

19. Furthermore, 10 C.F.R. Part 40, Appendix A, Criterion 8, states in part:

Uranium and thorium byproduct materials must be managed so as to conform to the applicable provisions of Title 40 of the Code of Federal Regulations, Part 440, "Ore Mining and Dressing Point Source Category: Effluent Limitations Guidelines and New Source Performance Standards, Subpart C, Uranium, Radium, and Vanadium Ores Subcategory," as codified on January 1, 1983.

There is no indication that this NRC regulation and the regulation in 40 C.F.R. Part 440 (and the enabling statute) have in any manner been amended or altered by subsequent NRC policy guidance. Therefore, any shift in the usage of the word "ore" would conflict with statutory and regulatory authorities with respect 10 C.F.R. Part 40 and 40 C.F.R. Part 440.

20. The Final Generic Environmental Impact Statement on Uranium Milling (GEIS).⁶ The GEIS makes a clear statement regarding the scope of the GEIS and its understanding of what uranium milling entails:

As stated in the NRC Federal Register Notice (42 FR 13874) on the

⁶ Final Generic Environmental Impact Statement on Uranium Milling, Nuclear Regulatory Commission, NUREG-0706, September 1980.

proposed scope and outline for this study, conventional uranium milling operations in both Agreement and Non-Agreement States, are evaluated up to the year 2000. Conventional uranium milling as used herein refers to the milling of ore mined primarily for the recovery of uranium. It involves the processes of crushing, grinding, and leaching of the ore, followed by chemical separation and concentration of uranium. Nonconventional recovery processes include in situ extraction or ore bodies, leaching of uranium-rich tailings piles, and extraction of uranium from mine water and wet-process phosphoric acid. These processes are described to a limited extent, for completeness. [GEIS, Volume I, at 3.]

The GEIS is very clear about what it considers "ore" to be and gives no indication whatsoever that materials other than ore (a natural material after its removal from its place in nature), such as the tailings or waste from mineral processing operations, are considered to be "ore" if the material is processed at a licensed uranium mill.

21. The GEIS includes a discussion of "Past Production Methods." That discussion makes reference to "ore," "ore exploration," "pitchblende ore," "crude ore milling processes," "lower-grade ores," "uranium-bearing gold ores," "high-grade ores," "ore-buying and "ore reserves." GEIS, Volume I, Chapter 2, at 2-1 to 2-2.

In Chapter 6, "Environmental Impacts," there is a discussion of "Exposure to Uranium Ore Dust," which states, in part:

Uranium ore dust in crushing and grinding areas of mills contains natural uranium (U-238, U-235, thorium-230, radium-226, lead-210, and polonium-210) as the important radionuclides. GEIS, Volume I, at 6-41.

There is also a table giving the "Average Occupational Internal Dose due to Inhalation of Ore Dust," (GEIS at 6-41, Table 6.16). Further, the GEIS discusses "Shipment of Ore to the Mill" (GEIS at 7-11); "Sprinkling or Wetting of Ore Stockpile" (GEIS at 8-2); "Ore Storage" and "Ore Crushing and Grinding" (GEIS at 8-6); "Ore Pad and Grinding" (GEIS, Vol. 3, at G-2); "Ore Warehouse" (GEIS, Vol. 3, at K-3); and "Alternatives to Control Dust from Ore Handling, Crushing, and Grinding Operations" (GEIS, Vol. III, at K-3 to K-3). In the NRC responses to comments there are discussions of "Average Ore Grade, Uranium Recovery" (GEIS, Vol. II, at A-12 to A-13).

The GEIS did not consider the processing of wastes from mineral processing operations at uranium or thorium mills. The GEIS gives no indication whatsoever that such wastes are "ore," even if they were processed at a uranium or thorium recovery facility for their "source material content." Clearly, the GEIS did not consider that the wastes from the processing of such wastes (such as material already defined as 11e.(2) byproduct material) would meet the definition of 11e.(2) byproduct material.

Therefore, the GEIS did not evaluate, and the public did not have an opportunity to comment upon, any of the possible health, safety, and environmental impacts of the processing of other mineral processing wastes at uranium or thorium processing facilities. There was no evaluation of the transportation issues related to the transport of such wastes, nor were reasonable alternatives to the transportation, receipt, processing, and disposal of such wastes at uranium or thorium mills ever evaluated.

22. EPA Regulatory Standards. UMTRCA directed the EPA to establish standards for uranium mill tailings and directed the NRC to implement those standards. That statute, as codified in 42 U.S.C. 2022, states in pertinent part:

Sec. 2022. Health and environmental standards for uranium mill tailings

(b) Promulgation and revision of rules for protection from hazards at processing or disposal site.

(1) As soon as practicable, but not later than October 31, 1982, the Administrator shall, by rule, propose, and within 11 months thereafter promulgate in final form, standards of general application for the protection of the public health, safety, and the environment from radiological and nonradiological hazards associated with the processing and with the possession, transfer, and disposal of byproduct material, as defined in section 2014(e)(2) of this title, **at sites at which ores are processed primarily for their source material content** or which are used for the disposal of such byproduct material. . . . [Emphasis added.]

Requirements established by the Commission under this chapter with respect to byproduct material as defined in section 2014(e)(2) of this title shall conform to such standards. Any requirements adopted by the Commission respecting such byproduct material before promulgation by the Commission of such standards shall be amended as the Commission deems necessary to conform to such standards in the same manner as provided in subsection (f)(3) of this section. Nothing in this subsection shall be construed to prohibit or suspend the implementation or enforcement by the Commission of any requirement of the Commission respecting byproduct material as defined in section 2014(e)(2) of this title pending promulgation by the Commission of any such standard of general application. In establishing such standards, the Administrator shall consider the risk to the public health, safety, and the environment, the environmental and economic costs of applying such standards, and such other factors as the Administrator determines to be appropriate.

* * *

(d) Federal and State implementation and enforcement of the standards promulgated pursuant to subsection (b) of this section shall be the responsibility of the Commission in the conduct of its licensing activities under this chapter. States exercising authority pursuant to section 2021(b)(2) of this title shall implement and enforce such standards in accordance

with subsection (o) of such section. [42 U.S.C. 2022(b) and (d).]

Congress directed the EPA only to establish standards for "sites at which ores are processed primarily for their source material." The EPA, as mandated by UMTRCA, finalized the "Environmental Standards for Uranium and Thorium Mill Tailings at Licensed Commercial Processing Sites" in 1983.⁷ 48 Fed. Reg. 45925-45947, October 7, 1983.

23. In the "Summary of Background Information" the EPA provides a discussion of "The Uranium Industry" (i.e., the industry that the regulations apply to):

The major deposits of high-grade uranium ores in the United States are located in the Colorado Plateau, the Wyoming Basins, and the Gulf Coast Plain of Texas. Most ore is mined by either underground or open-pit methods. At the mill the ore is first crushed, blended, and ground to proper size for the leaching process which extracts uranium. . . . After uranium is leached from the ore it is concentrated The depleted ore, in the form of tailings, is pumped to a tailings pile as a slurry mixed with water.

Since the uranium content of ore averages only about 0.15 percent, essentially all the bulk ore mined and processed is contained in the tailings. [48 Fed. Reg. 45925, 45927, October 7, 1983.]

Clearly, when the EPA developed its standards for uranium and thorium mills they stated, with specificity and particularity, what uranium "ore" was, what uranium milling consisted of, and what uranium mill tailings consisted of. EPA clearly stated that the standards applied to the processing of uranium and thorium ores at uranium and thorium mills. There is no reasonable evidence that would indicate that the standards promulgated by the EPA applied to the processing of wastes from other mineral processing operations at uranium and thorium mills or that ore could be defined as "any other matter from which source material is extracted in a licensed uranium or thorium mill."

24. Additionally, the EPA incorporated UMTRCA's definition of 11e.(2) byproduct material, as clarified by the NRC in 10 C.F.R. 40.4, into their standards at 40 C.F.R. Subpart D, § 192.31(b). Since that time the EPA has not amended their definition of 11e.(2) byproduct material in a rulemaking proceeding, nor have they amended their definition via policy guidance. The EPA has not, in any manner, widened the use of the words "any ore" to include "any other matter from which source material is extracted in a

⁷ <https://www.epa.gov/radiation/health-and-environmental-protection-standards-uranium-and-thorium-mill-tailings-40-cfr>

licensed uranium or thorium mill.” EPA did not sanction the NRC's policy guidance with respect new definitions of "ore" and 11e.(2) byproduct material.

Clearly, the EPA, as directed by Congress, has not in any manner contemplated the processing of wastes from other mineral extraction operations at uranium or thorium mills when establishing the "Environmental Standards for Uranium and Thorium Mill Tailings at Licensed Commercial Processing Sites." The EPA did not contemplate, nor was the public informed of the EPA intention to consider, the processing of “any other matter from which source material is extracted in a licensed uranium or thorium mill.”

In the various rulemaking proceedings that have taken place in the establishment of the EPA standards, the public was given no opportunity to consider or comment on the possibility that the EPA standards would also apply to the processing of wastes from other mineral processing operations or “any other matter from which source material is extracted in a licensed uranium or thorium mill.” The processing of materials other than natural ore at uranium and thorium mills was beyond the scope of the regulatory program established by the NRC and the EPA in response to UMTRCA for operating uranium mills.

25. The AEA, as amended in 1978 by UMTRCA, included provisions applicable to Agreement States. One of those provisions requires NRC Agreement States (such as Utah) to “require for each license which has a significant impact on the human environment a written analysis (which shall be available to the public before the commencement of any such proceedings) of the impact of such license, including any activities conducted pursuant thereto, on the environment, which analysis shall include,” among other things, “consideration of the long-term impacts, including decommissioning, decontamination, and reclamation impacts, associated with activities to be conducted pursuant to such license, including the management of any byproduct material, as defined by section 2014 (e)(2) of this title.”⁸

So, again, the AEA imposes requirements associated with the definition of and management of 11e.(2) byproduct material, as that term is defined under the AEA and NRC and EPA regulations promulgated responsive to that Act. The State of Utah has not been given the authority to amend this section of the AEA.

26. Regulatory History of NRC’s Alternate Feed Guidance. The SER relies on NRC Guidance (SECY 95-211, SECY-99- 012, and NRC Regulatory Issue Summary 2000-23). In the late 1980's the NRC was faced with a few requests to process material other than ore. At that time, and today, there are two statutes or regulations (implementing those statutes) that are pertinent. First is the statutory definition of "source material" established in 1954 by the AEA, found at 42 U.S.C. Sec. 2014(z), and in the NRC regulatory definition of "source material" (established in 1961 pursuant Sec. 2014(z)), found at 10

⁸ 42 U.S.C. § 2021(o)(3)(C).

C.F.R. 40.4:

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.

The second is the definition of "byproduct material" in Section 11(e)(2) of the Atomic Energy Act of 1954, as amended, (42 U.S. C Sec. 2014(e)(2)) and the regulatory definition of "byproduct material" found in 10 C.F.R. 40.4:

Byproduct 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, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by such solution extraction operations do not constitute "byproduct material" within this definition.

27. The NRC had several options, including the denial of the amendment requests to process feed material that was not "ore." One option would have been to go to Congress and request that Congress change the definition of 11e.(2) byproduct material to read "the tailings or wastes produced by the extraction or concentration of any ore or any other matter from which source material is extracted in a licensed uranium or thorium mill." NRC Staff made a determination that they would not go to Congress to seek an amendment to the AEA of 1954. If the AEA was amended to include a new definitions, the NRC would have also had to commence a rulemaking to amend 10 C.F.R. Part 40, and the EPA would have had also commence a rulemaking to amend 40 C.F.R. Part 192, 40 C.F.R. Part 61 Subpart W, and other regulations.

What the NRC did was to manipulate the use of the word "ore" as it is used in the definition of 11e.(2) byproduct material. NRC proposed in a notice and comment opportunity, that a policy guidance be established for the purpose of interpreting the term "ore," as it is used in the definition of 11e.(2) byproduct material. 57 Fed. Reg. 20525 (May 13, 1992). The NRC did not institute a rulemaking proceeding to amend 10 C.F.R. Part 40, though they indicated that that was their intent.

28. The NRC Final Position and Guidance gave a new definition of ore:

Ore is a natural or native matter that may be mined and treated for the extraction or any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill. [60 Fed Reg. 49296 (September 22, 1995).]

Based on the new use of the term "ore" as put forth in the NRC Guidance, not only would

the definition of 11e.(2) byproduct material apply to "any ore processed primarily for its source material content" in a licensed uranium or thorium mill, but the definition of 11e.(2) byproduct material would also apply to **any matter** processed primarily for its source material content in a licensed uranium or thorium mill. In other words, NRC altered the accepted meaning of the word "ore," as that word was used in the NRC regulatory definition of 11e.(2) byproduct material.

29. It is plain from the AEA of 1946 and the legislative history of the AEA of 1954 and the Uranium Mill Tailings Radiation Control Act of 1978 and the regulatory history of the AEC, EPA, and NRC rules promulgated responsive to those laws, that the Policy Guidance's new use of the term "ore" goes far beyond the accepted meaning of that term and the clear intent of Congress.

30. The applicability of various environmental regulations to a great degree depends upon definitions. Congress, in their legislative function, often specifically defines words or phrases related to the application of a statute to a particular material or circumstances — when there is a need for explanation. However, when using words or terms with a common and long accepted meaning, such as groundwater, mill, tailings, or "ore," no explanation or definition is necessary.

The NRC and the State of Utah have not authorized to shift these accepted definitions at will as an expression of their "regulatory flexibility." This is especially so when such shifts result in direct conflicts with NRC's own enabling statutes and regulations, as is the case with the use of the newly defined term "ore." Additionally, NRC and State of Utah are not authorized to shift definitions at will when such shifts directly conflict with the statutory authority and regulations of another federal agency; in this case, the EPA.

31. The NRC issued the 1995 Final Position and Guidance and the 2000 Interim Position and Guidance without conducting an assessment of any of the health, safety, or environmental effects of establishing a substantively new and different regulatory program that resulted from the issuance of the Final Position and Guidance.

At the White Mesa Mill, this new recovery program—a program that started with the processing of a few small batches of wastes from other mineral processing operations to supplement the processing of uranium ore—has grown to be a major uranium recovery program and entails the receipt and processing of thousands of tons of wastes from other mineral processing operations from across the country and even Canada.

The adverse environmental effects—including cumulative effects—of this new program have not been adequately identified and evaluated under the statutory framework established by the AEA. Further, no NEPA document has ever considered the reasonable alternatives to the processing of wastes from other mineral processing operations at uranium and thorium recovery facilities.

32. The NRC, after adopting a new definition of 11e.(2) byproduct material outside of the legislative and rulemaking processes, did not change any other guidance documents that apply to uranium milling. Therefore, there is no indication that any of those guidance documents apply to the processing of feed material other than natural ore and the disposal of the wastes at a licensed uranium or thorium mill. For example, Reg. Guide 8.31, Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Recovery Facilities Will be As Low as Reasonably Achievable, and Reg. Guide 8.22, Bioassay at Uranium Mills.

33. UMTRCA, as it amends the AEA, clearly specified what constitutes "any ore." What constitutes "any ore" is "any ore." The plain language of the Act and the history of the implementation of the AEA of 1946, as amended by the AEA of 1954 and UMTRCA, is all that is needed to determine what "ore" or "any ore" is. Clearly the legislative and regulatory history of the AEA and Title 10 of the Code of Federal Regulations make plain the meaning of the term "ore" and the term "any ore."

34. The DWMRC's use of the word "ore" for waste materials from mineral processing operations (in this case materials already defined as 11e.(2) byproduct material) is unreasonable and not permitted under the plain language of the AEA. No state or federal agency can use license conditions, licensing actions, or a policy guidance to expand upon and substantively alter the will of Congress when that will is explicitly set forth in statute.

35. The standards promulgated by the EPA in 40 C.F.R. Part 192 Subpart D and 40 C.F.R. Part 61 Subpart W do not apply to the processing of materials other than natural ore at a licensed uranium mill, the construction of tailings impoundments that will receive wastes from the processing of materials other than natural ore, the emission of radon from wastes from the processing of matter other than natural ore, the disposal of wastes from the processing of materials other than natural ore, or any other operations or health and safety or environmental impacts from the processing of materials other than natural ore at a licensed uranium mill.

The State of Utah has not been given the authority to amend the AEA, NRC regulations, or EPA regulations through use of NRC guidance or individual licensing actions, or by any other means. Therefore, the DWMRC must delete the provisions in the License that authorize the processing of feed materials other than natural ore, referred to as "alternate feed."

Sarah Fields
Uranium Watch
PO Box 344
Moab, Utah 84532
435-260-8384
July 31, 2017