



ENERGY FUELS RESOURCES CORPORATION

July 8, 2010

Mr. Steve Tarlton, Program Manager
Radiation Management Program
Hazardous Materials & Waste Management Division
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South HMWMD-B2
Denver, CO 80246-1530

Re: Response No. 1 to Request for Additional Information No. 2
Piñon Ridge Mill License Application, Montrose County, Colorado

Dear Steve:

This letter, the attached revised Radioactive Material License Application, and replacement pages for selected exhibits (4 copies each) address issues and concerns raised by the Radiation Control Program in your letter of May 25, 2010. Our response does not address the tailings cover design; Kleinfelder West Inc. is currently re-evaluating the cover design and has indicated that it will require an additional 45 days to complete its engineering analysis.

Energy Fuels Resources Corporation (Energy Fuels) is issuing replacement pages at this time, but will resubmit revised exhibits in their entirety, where appropriate, after the Request for Information (RFI) process is complete and the Radiation Control Program determines that our responses are adequate.

The Radiation Control Program's comments are indented and listed in italics below. Energy Fuels' responses are provided at full page width in regular font.

Radioactive Materials Application Vol. 1

A revised Radioactive Materials License Application (Application) that addresses the Radiation Control Program's questions is included as Exhibit I to this response. A clean version and redline version of the Application are provided to facilitate CDPHE's review. Individual responses are provided below.

1. *Item 8.B. EF is asking for an authorization to possess yellowcake with a limit of 110,000 lbs. (equivalent to about 120, 55-gallon drums). Please be aware that any increase in this authorization will require a license amendment and associated reviews.*

Energy Fuels would like to increase the limit to 330,000 lbs of yellowcake (approximately 85 Curies of U- natural). Most yellowcake shipments to utilities are a minimum of 100,000 lbs and some utilities, after purchase, will elect to defer shipment to a later date. The higher limit will allow us more flexibility in storing and transporting these materials.

2. *Item 8.B, footnote B. Please clarify the units.*

See the attached revised Application with redlines. The revised value is based on U-nat specific activity of 565 pCi/mg in yellowcake of 98.2 percent purity and a maximum storage of 330,000 pounds.

3. *Item 6.C. Please provide your best estimate of concentrations of U-nat, Th-230 and Pb-210 in the tailings in addition to the radium value provided. It is stated elsewhere in the application (e.g., public dose calculations) that the process will yield an average recovery of 96% for uranium. Please provide a justification for that value, as it is important for calculating public dose. It is our prior experience with conventional acid milling (i.e., Cotter) that uranium recoveries average about 90%.*

See the attached Application with redlines. The U-nat value is based on 4 percent (not recovered in yellowcake) of the activity of U-nat in ore (0.23% average grade) and a maximum storage per tailings cell of 2.4 million tons. The Ra-226, Th-230 and Pb-210 values are based on secular equilibrium with U-nat in ore (0.23% average grade) and a maximum storage per tailings cell of 2.4 million tons.

The 96% estimated recovery for uranium is based on recoveries achieved by the White Mesa Mill in Blanding, Utah and information provided by our mineral processing consultants. Energy Fuels utilized the services of two consultants, both spending careers operating and maintaining Uranium Processing Mills in Jefferson City, Wyoming, Uravan, Colorado and Blanding, Utah during the implementation and licensing process for the Piñon Ridge Project. One of those consultants, Mr. Don Sparling of Blanding, Utah, functioned as the White Mesa Mill Manager for 16 years, from 1979 to 1995. Don was instrumental in the process design, commissioning and fine tuning of the White Mesa Mill. Both Arizona strip and Colorado Plateau ores were processed during Mr. Sparling's tenure as Mill Manager. Don recalls that the White Mesa Mill operated at a high efficiency when processing Salt Wash ores from the Colorado Plateau and routinely recovered 95 to 96% of the uranium values. Don also provided us with a copy of a memorandum documenting leach test studies that were performed for various Salt Wash ores in 1988 when Umetco Minerals was operating the mill. This memorandum, which shows uranium recoveries from 94.5% to 98.8% is included as Exhibit II to this response.

Energy Fuels verified Don's information regarding uranium and vanadium recoveries with a laboratory bench scale testing program, performed by J.E. Litz & Associates, L.L.C. (Litz) located in Golden, Colorado. This program also included acid consumption tests and settling tests for thickener sizing. Five Salt Wash formation ore samples were tested. Litz tested the samples obtained from the West Sunday, Pandora, Packrat, JD-8 and Energy Queen Mines during the 3rd and 4th quarters of 2008.

The results, extracted from the Litz report are listed below:

Sample Source	Head Analysis (Percent U ₃ O ₈)	Soluble (Percent U ₃ O ₈ Recovered)
West Sunday	0.252	98.7
Pandora	0.266	98.4
Packrat	0.527	98.5
JD-8	0.186	98.8
Energy Queen	1.03	99.3

Energy Fuels has made a number of improvements in the design of the Piñon Ridge Mill that we anticipate will allow us to obtain higher uranium recoveries than the White Mesa Mill. These include:

- Recycling of raffinate (via the tailings cell pumpback system) to the mill's Counter Current Decantation (CCD) circuit is expected to allow for recovery of some of the residual uranium in the raffinate.
- Better filters and a raffinate buffer system have been added to the solvent extraction circuits to improve recoveries and minimize the potential for upset conditions.

We believe that with these improvements that the 96% uranium recovery stated in the Application is readily achievable for Salt Wash formation ores. We also contacted John Hamrick, Vice President of Cotter Corporation. John told us that the Cañon City Mill had lower recoveries because the mill was old, both in terms of age and the type of processing equipment used in the mill. John noted that the CCD circuits were particularly problematic. He stated that based on his previous experience with Umetco Minerals, that a 96% recovery for a new mill was realistic.

4. *Item 8.D. Where in the plant will the Cs-137 gauges be located? Please provide a figure showing the location as well as methods for securing the sources from unauthorized access.*

The nuclear density gauges will be secured with a padlock and either chains or stainless steel cable from the instrument lifting eye to the associated piping or building structure. Figure 1, Cesium-137 Density Gauge Locations, has been added to the attached Application.

5. *Item 13. Please provide proof of adequate radiation training for Mr. Zach Rogers to be listed as assistant/alternate RSO. Certificates of training and class syllabus should be provided.*

The Assistant RSO and Quality Assurance Officer will receive RSO Training prior to the start of mill construction. The training records for each authorized user will be provided when the training has been conducted. The remaining authorized users will receive Authorized User Training prior to their work at the mill. RSO Training will be performed by Nevada Technical Associates or an equivalent 3rd-party training center as approved by the RSO who will also provide supplemental on the job training in radiation safety and health physics specific to uranium recovery facilities. Authorized User Training may be performed by a 3rd-party training center or by the Mill RSO. The Authorized User Training will include the following topics at a minimum in addition to the radiation safety training given to every employee at the Mill:

- Principles and practices of radiation protection
- Radioactivity measurement standardization and monitoring techniques and instruments
- Mathematics and calculations basic to the use and measurement of radioactivity
- Biological effects of radiation

Typical outlines for the RSO and Authorized User Training courses are included as Attachment 4 to the Application.

6. *Item 13. You are listing five authorized users, but at least 2 of them (Brown and Filas) are not located at the mill. Please provide an adequate list of authorized users that will be able to oversee use of radioactive material at the mill, not just those responsible from a corporate level. You must have enough authorized users on the license to cover all the times that uranium processing is occurring.*

See attached Application with redlines for position changes and additions. Thirteen authorized users have been added to the application (4 Radiation/Safety Technicians, 4 Mill Foremen, Quality Assurance Officer, GIS/AutoCAD Technician, Chief Lab Chemist, Plant Metallurgist, and Maintenance Foreman), all of which will be positioned at the Mill. Resumes for added authorized users are attached with the revised Application, where they have been determined. Jess Fulbright, Energy Fuels Health and Safety Director, will act as the Assistant RSO and Zach Rogers will move over to the Quality Assurance Officer position. Mike Rutter has been added as the Maintenance Foreman. Both Jess and Mike are based at Energy Fuels' Nucla office.

It is Energy Fuels' intent to hire an experienced on-site RSO during the final design stages of the mill so that he or she will be at the site during the construction period and be in position to fully implement our health and safety program from the start of construction through mill startup and ultimate full production. The radiation technicians and most of the other personnel listed above will not be hired and trained until mill construction is nearing completion.

Any employee filling the RSO position will have technical qualifications consistent with Section 2.4.1, "Technical Qualifications of Health Physics Staff, Radiation Safety Officer," of NRC Regulatory Guide 8.31. Employees occupying the positions of Assistant RSO, Quality Assurance Officer, or Radiation/Security Technician will have qualifications consistent with Section 2.4.2, "Technical Qualifications of Health Physics Staff, Health Physics Technicians."

7. *Item 14. The list of instrumentation is logical and acceptable, however since the mill is going to have an automation system why aren't networked radiation monitors planned?*

The radiation detection instruments referenced in the Application are all portable devices. The stationary air monitors referenced in the Facility Operating Plan and Environmental Report are not direct radiation measurement devices. They will be in-line, fixed location filter cartridges connected to a central vacuum system and will collect airborne material on a filter that is replaced and analyzed for radioactivity on a periodic basis (per shift to weekly, depending on the location and historical results). As such they are not continuous reading meters and therefore cannot be networked. However, fixed location area TLD/OSD dosimeters may be used to document average long term external exposure rates in "strategic" areas of the mill.

Radiation measurements will be performed and doses estimated using high volume air sampling results, bioassays, exposure rate surveys, breathing zone monitoring, and personnel external exposure dosimetry. At this time, direct radiation area monitors are considered unnecessary given the expected potential radiation levels at the mill.

8. *Attachment 2. Mill Health and Safety Organization Chart. The chart only shows 4 rad/security technicians. If the mill is going to operate 3 shifts, this may not be an adequate number of techs to cover the shifts, days off, etc.*

Four rotating crews will be employed to allow the mill to run 24 hours per day and 7 days per week. Each crew will have one Radiation/Security Technician. In general, the day shift will be much busier than the second and third shifts. If a Radiation/Security Technician is absent on day shift, the Assistant RSO and/or the RSO will typically be responsible for the Radiation/Safety Technician's duties. If a Radiation/Security Technician is absent on second or third shift, a Radiation/Security from another shift or the Assistant RSO will typically fill in for that person.

Ore Stockpile Pad Design Report Vol 2 A5

1. *The Operations plan describes in general terms a dust suppression/sprayer system for the ore dump. How will this system operate in the winter? Please provide a description of how this sprayer system, and others that use water (e.g., safety showers) will be able to operate in cold conditions?*

Selected process and utility piping located above ground or outside of buildings are insulated or heat traced and insulated depending on the conditions of service. Buried

pipelines will be designed and installed per the Montrose County Building Code for frost depth protection. The ore dump platform dust suppression/sprayer system will be designed with low point drains and piped to allow high pressure compressed air to blow out any residual moisture prior to an extended shutdown.

Emergency Shower-Emergency Eyewash Combo Freeze Proof Safety Showers are specified for all areas outside of buildings where freezing conditions are expected. Information on the proposed showers is provided in Exhibit III.

Tailings Cell Design Vol 2 A6

- 1. App. I, page I-2. This paragraph states that tailings solution will only be reclaimed from the tailings cell pool and returned to the mill when water pool depth is 5 ft or greater. While tailings need to be kept moist to prevent dusting and for radon flux mitigation, keeping the tailings column saturated until cell closure may not facilitate dewatering of the cell in a timely manner such that the random fill and radon layers can be added in a reasonable time frame. Please provide a discussion of operational parameters that minimize the time needed for dewatering and settlement and yet provide adequate radon protection and dust minimization.*

It was Energy Fuels' original intent to operate the tailings cells with a relatively small water pool. However, MILDOS AREA and radon flux modeling results indicate that it will be necessary to maintain the near-surface tailings in a saturated state during operations to limit radon emissions and the resulting radiation dose received by mill workers and the general public. This will be done by the use of a water pool over a portion of the tailings and discharge of the slurried tailings over exposed beach sands. On average, approximately 50% of the tailings surface is expected to be covered with water, but this will fluctuate during the year based on evaporation rates.

Once a tailings cell begins to reach its full capacity, the recycle pump and floating barge will be removed and tailings deposition will be concentrated in the central area of the cell using a series of internal berms. The water pool will be minimized through the use of a skid-mounted pump. Typically, the excess water will be used for dust suppression purposes on the coarser, perimeter tailings; however, water could also be pumped back to the mill or to a second tailings cell. Once the tailings cell reaches full capacity, coarser-grained tailings will be graded over the finer-grained tailings to achieve a stable configuration for placement of the interim soil cover. Additional information regarding pre-closure procedures is presented in the Tailings Facility Operating Procedures Addendum to the Facility Operating Plan that is included as Exhibit IV.

The Tailings Cell Design Report by Golder Associates incorporates a drain system immediately above the primary liner of each tailings cell. This "underdrain" will allow for the removal of water that would otherwise be trapped in the tailings by the liner system. With the underdrain system in place, it is estimated that 90 percent of tailings consolidation would be achieved within one year after placement of the interim cover

(reference Golder's Tailings Cell Settlement Analyses Addendum in Response No. 1 to Request for Additional Information No. 1). This would allow for starting construction of the final cover during the second year after placement of the interim cover.

Evaporation Pond Design Vol 2 A7

- 1. Please clarify that the netting will meet FWS specifications, as noted by others.*

Energy Fuels has requested input from the Colorado Division of Wildlife regarding the appropriate bird netting for the evaporation pond. If they prefer the smaller 1.5-inch netting, we will decrease the spacing on the polyclip fasteners that tie the netting to the support cables. The 1.5-inch netting is heavier than the 2-inch netting and, accordingly, will need to be fastened at more locations. These fasteners are designed to release under ice or wind strains so that the supporting structures and cables are not damaged.

Given the greater weight of the 1.5-inch netting, Energy Fuels may also modify the support structure during final design to incorporate a pulley system that would facilitate repair and/or replacement of netting panels. Each support cable would be connected to a pulley that would allow the cables and attached netting to be pulled to the adjacent ground surface for inspection, reattachment of polyclips, repairs, or replacement of damaged netting.

Estimates of Radiation Dose to Members of the Public Vol 11 J2

- 1. Text on pages 1 and 5 says point and area sources were evaluated, yet Figure 2 only shows point sources. Please fix the figure or the text.*

A revised Figure 2 for the above-referenced report has been included as Exhibit V. The revised figure includes identification of the ore pad area source. The tailings cell area sources involve several scenarios and the area source locations are depicted in Figure 6 (of the same report) for the various scenarios.

- 2. Text on page 1 states that uranium removal is estimated at 96% efficient. As discussed above, either justify using that value, or substitute a more defensible value.*

Please reference our response above. Energy Fuels believes that 96% uranium recovery is realistic for this mill facility.

Emergency Response Plan Vol. 12, J5

- 1. According to the Montrose County Master Plan 2010, Appendix F(4), the proposed mill site is located in an area designated as a "moderate" to "substantial" wildfire hazard area. The Emergency Response Plan does not include any provisions or procedures to address wildfire hazards. What measures does Energy Fuels propose to mitigate the impact of a wildfire on the mill, including transportation and access? What measures does Energy Fuels propose to mitigate the possibility of a fire on the site from becoming a wildfire?*

The Emergency Response Plan has been revised to address potential wildfire hazards. A redline copy of the revised text and a revised Figure 1 have been included as Exhibit VI.

Please contact me or Zach Rogers should you have any questions or need additional information regarding our responses.

Sincerely,

A handwritten signature in black ink, appearing to read "Frank Filas", followed by the letters "FOR" in a simple, blocky font.

Frank Filas, P.E.
Environmental Manager

Enclosures

Cc: Steve White (Montrose County Planning and Development) – 2 Copies
Nucla Library – 1 Copy