

## INSPECTION REPORT

Inspection Module: RADMOD-RWP: Radiation Work Permits

Inspection Location: Energy Fuels - White Mesa Uranium Mill, Blanding Utah.

Inspection Items: Radiation Work Permits and Supporting Documentation

Inspection Dates: June 7, 2022

Inspectors: Ryan Johnson, Utah Division Waste Management and Radiation Control (DWMRC)

Personnel Contacted: Garrin Palmer, Radiation Safety Officer (RSO)

Governing Documents:

- UAC R313-15
- Radioactive Materials License (RML) UT1900479
- Applicable Mill procedures and manuals

### **Opening Meeting**

**Energy Fuels Resources:**

Garrin Palmer (RSO)

### **Utah DWMRC:**

Ryan Johnson (Health Physics Inspector)

During the opening meeting, the inspector discussed the inspection items and documentation to be reviewed during the inspection. The Mill was not recovering uranium at the time. The Mill staff reminded the inspectors of the safety requirements for the Mill.

<b>DRC Meters Used</b>	<b>Model</b>	<b>Serial Number</b>	<b>Calibration Due Date</b>
Dose Rate	Ludlum 19	101673	4/11/2023

## **Inspection Summary**

The inspection consisted of reviewing documentation, a mill tour and interviewing Mill staff. The following discussion provides more detail of the specific items reviewed.

**Item 1. Documentation Review:** The inspector reviewed radiation work permits (RWPs) from the beginning of 2021 to present.

**Observations:** The DWMRC inspector observed:

- The Mill's RWPs were appropriately filled out and contained the following information:
  - A unique identification number;
  - The date the RWP was issued;
  - A description of the work to be done;
  - The location where the work is to be done;
  - Identified the personnel working on the job being done and how much time they were working on the specific job assignment;
  - The estimated time that it would take to do the job;
  - The personal protective equipment (PPE) requirements for the job;
  - The radiological and other occupational monitoring requirements for the job;
  - The radiation technician observations and surveillance of the job (when applicable); and
  - The RSO's signature indicated that he reviewed everything associated with the work that was done under the RWP.
- Other documents attached to the RWPs included:
  - The Mill's Safe Work permits (SWPs), which document occupational safety concerns;
  - The Mill's Confined Space Work permits (when applicable);
  - Lock out/tag out information (when applicable);
  - Breathing Zone air sample results (when applicable); and
  - Bioassay results of personnel working on the RWP (when applicable).
- The Mill's dosimetry documentation for the calendar year of 2021 included:
  - The dosimetry logbook that is used to document what happened to the missing OSL badges (i.e. The employee took the OSL badge home, left the OSL badge in their office or locker, or lost their OSL badge).
- Other documentation associated with dosimetry included:
  - The computer spreadsheet that is used to calculate the annual TEDE for each employee.
- All forms that were observed were legible and complete.

**Deficiencies:** None

**Item 2. RSO Interview:**

**Discussion Points:** The DWMRC inspector discussed with the Mill RST:

- The Mill has spare (aka "blank") OSL badges and they assign Mill personnel who lose their OSL badges a new badge; and/or

- Depending on the situation, to account for the lost badge, the Radiation Safety Staff will assign the Mill personnel who lost their OSL badge the highest dose received by a coworker of the same work crew that they work with.

In addition, the Inspector also discussed with the RST how an RWP request is reviewed:

- Each RWP request is different but it could take up to 2 hours to review and RWP;
- The RWP process begins when a supervisor requests an RWP;
- The Radiation Safety Staff goes out to the job location and determines:
  - If an RWP is required;
  - What type of PPE will be needed;
  - What type of radiological monitoring is needed; and
  - What other safety issues are present.
- The Radiation and Occupational Safety Staff will then fill out the necessary paperwork:
  - The RWP;
  - The SWP; and when applicable
  - Confined Entry Permits; and
  - Lockout/Tag out forms.
- After the RWP is completed the RSO reviews the RWPs for completeness.

**Deficiencies:** None

**Item 3. Mill Tour:** The Inspectors walked through the restricted area on a general site tour. The tour included the ore pad, the mill, the tailing impoundments, the cover test pads, solvent the extraction building and the alternate feed circuit.

**Observations:** The DWMRC inspector also observed:

- The product yard containing full yellowcake (uranium) and black-flake (vanadium) drums;
- Rare Earth Element (REE) shipments be prepped for shipment inside the Mill;
- Alternate feed and ore being stockpiled on the ore pad;
- OSL badges were appropriately being worn and used by all observed employees at the Mill;
- OSL badges are properly being stored; and
- Mill personnel were wearing appropriate PPE.

Radiological readings observed during Mill tour

Location	Dose Rate ( $\mu$ R/hr)
Ore Pad	100-500
Mill	50-450
Tank #7	<5,000
Product Yard (at fence line)	60
Solvent Extraction Building	50-70
Alternate Feed Circuit	100

**Deficiencies:** None

**Item 3. Other:**

**Observations:**

- Silmet Alternate feed material is starting to arrive onsite;
- Tailing impoundment 4B is being filled by the licensee with water from onsite deep water supply wells;
- Contractor for the cover test cell onsite; and
- U.S. Department of Energy employees from Los Alamos National Laboratory onsite for a Mill tour.

**Closeout Meeting**

**Energy Fuels:**

Terry Slade (RST)

Garrin Palmer (RSO)

**Utah DWMRC:**

Ryan Johnson (Health Physics Inspector)

**Findings**

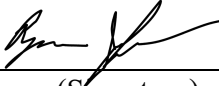
Licensee operations observed and records reviewed as part of the inspection module showed the licensee was found to be in compliance with their license and applicable rules and regulations.

**Recommendations**

None

**Recommendation for Next Inspection**

None

Prepared By:	<u>Ryan Johnson</u> (Print Name)	<u></u> (Signature)	<u>6/13/2022</u> (Date)
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