



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

June 29, 2017

EA-16-262

Mr. Brett Berg, President
Cameco Resources
Power Resources, Inc.
550 North Poplar Street
Casper, WY 82601

SUBJECT: NOTICE OF VIOLATION AND NRC INSPECTION REPORT 040-08964/2016-003

Dear Mr. Berg:

This letter refers to the U.S. Nuclear Regulatory Commission's (NRC's) inspection conducted from November 15-17, 2016, at the Smith Ranch Uranium Recovery Facility in Converse County, Wyoming. The purpose of the inspection was to review your transportation program and your response to a transportation incident associated with an exclusive use shipment involving a leaking intermodal container of barium sulfate sludge shipped to the Energy Fuel Resources' White Mesa Mill in Blanding, Utah, on March 28, 2016. Energy Fuel Resources reported the leaking container to the State of Utah on March 29, 2016, and the State subsequently contacted the NRC.

On April 3, 2017, the NRC issued a letter forwarding the inspection report (Agencywide Documents Access and Management System (ADAMS) Accession ML17079A564), which described nine apparent violations. In the letter, the NRC offered your organization the opportunity to provide a written response to the apparent violations or participate in a predecisional enforcement conference (PEC).

On May 4, 2017, a PEC was conducted in the NRC Region IV office with you and other members of your staff to discuss the apparent violations, their significance, root causes, and your corrective actions. The PEC summary (ADAMS Accession ML17129A098), includes the information you presented during the conference.

Based on the information developed during the inspection and the information you provided at the PEC, the NRC has determined that the nine violations of regulatory requirements occurred. These violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in the subject inspection report. The significance of the first five violations (A, B(i), B(ii), B(iii), B(iv)) has been characterized collectively in accordance with the NRC Enforcement Policy as a Severity Level III problem because they resulted from the same root cause (i.e., failure to provide specific direction to ensure that the analytical laboratory used the appropriate method to detect and quantify Ra-226 in the sludge samples). This resulted in the incorrect classification and use of inappropriate shipping containers for the pond settlement and barium sulfate sludge waste.

The significance of each of the remaining four violations (C, D, E, and F) has been categorized in accordance with the NRC Enforcement Policy at Severity Level IV. These violations involved failures to: (1) ensure by examination or appropriate tests that packages were proper for the contents being shipped and closure devices were properly secured, (2) perform evaluations or tests that ensured the transportation package would be capable of withstanding the effects of any acceleration or vibration normally incident to transportation, (3) provide the name of each radionuclide listed and an accurate chemical description of contents, and (4) provide function-specific training to a hazmat employee concerning the requirements that were specifically applicable to the functions the employee performed.

In accordance with the NRC Enforcement Policy, a base civil penalty in the amount of \$35,000 is considered for a Severity Level III problem.

Because your facility has not been the subject of escalated enforcement actions within the last two inspections, the NRC considered whether credit was warranted for *Corrective Action* in accordance with the civil penalty assessment process in Section 2.3.4 of the Enforcement Policy. Based on commitments documented in the letter dated October 24, 2016 (ADAMS Accession ML16357A774), and the information provided during the PEC (ADAMS Accession ML17129A098), the NRC has concluded that *Corrective Action* credit is warranted. These commitments included, but were not limited to, the use of Environmental Protection Agency (EPA) 901.1M methodology or equivalent gamma spectroscopy analysis for Ra-226 and the use of a Type IP-2 industrial package for barium sulfate sludge and pond sediments.

Therefore, to encourage prompt identification and comprehensive correction of violations, and in recognition of the absence of previous escalated enforcement action, I have been authorized after consultation with the Director, Office of Enforcement, not to propose a civil penalty in this case. However, significant violations in the future could result in a civil penalty. In addition, issuance of this Severity Level III problem constitutes escalated enforcement action that may subject your facility to increased inspection effort.

The NRC has concluded that information regarding: (1) the reason for the violations, (2) the corrective actions that have been taken and the results achieved, and (3) the date when full compliance was achieved or is planned to be achieved is already adequately addressed on the docket in the letter from you dated October 24, 2016, and in the information you provided during the PEC. Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

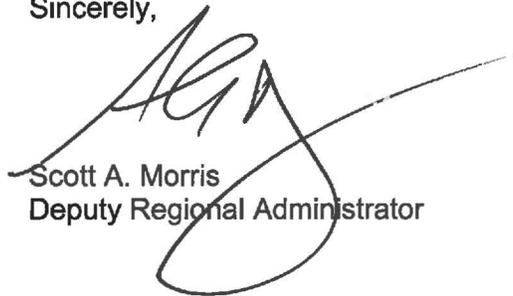
Additionally, the NRC inspectors have been observing your staff's progress in developing and implementing the corrective actions described in your letter dated October 24, 2016, which referenced actions associated with the Confirmatory Action Letter dated August 30, 2016 (ADAMS Accession ML16238A359). The corrective actions are being developed to eliminate the potential for leaks from transportation packages during shipment. Based on our reviews to date, your organization has partially completed implementation of the corrective actions. Once you have completed your planned actions, notify the Regional Administrator, Region IV, in writing as committed to in the Confirmatory Action Letter.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room and in the NRC's ADAMS, accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

To the extent possible, your response should not include any personal privacy or proprietary information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such information, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). The NRC also includes significant enforcement actions on its Web site at <http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions>.

If you have any questions concerning this matter, please contact Mr. Ray Kellar of my staff at 817-200-1191.

Sincerely,

A handwritten signature in black ink, appearing to read "SAM", with a long horizontal stroke extending to the right.

Scott A. Morris
Deputy Regional Administrator

Docket: 040-08964
License: SUA-1548

Enclosure:
Notice of Violation

cc w/enclosure:
D. Pavlick, Cameco Resources,
Power Resources, Inc.

S. Ramsay, Wyoming Office of
Homeland Security

R. Schierman, Wyoming Department of
Environmental Quality

NOTICE OF VIOLATION

Power Resources, Inc.
Glenrock, Wyoming

Docket: 040-08964
License: SUA-1548
EA-16-262

During an NRC inspection conducted November 15-17, 2016, nine violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

- A. Materials License SUA-1548, Amendment 21, Administrative Condition 9.3, requires, in part, that the licensee shall conduct operations in accordance with commitments and statements contained in the license application and amendments. The amendment dated March 20, 2008, Chapter 9, Section 9.4.4, requires, in part, that licensee workers adhere to all operating procedures. The licensee's operating Procedure WYO-RPP-008, "Health Physics Manual - Transportation of Radioactive Materials," Revision 23, Section 1.7.2.4, requires, in part, that the licensee is responsible for having waste samples analyzed for radionuclides, hazardous Resource Conservation and Recovery Act contaminants, and other characteristics.

Contrary to the above, from June 20, 2013, to March 28, 2016, the licensee failed to appropriately analyze waste samples for radionuclides, hazardous Resource Conservation and Recovery Act contaminants, and other characteristics. Specifically, the licensee relied on "alpha counting" and did not ensure the analytical laboratory used an adequate method, such as gamma spectroscopy, to conduct a radium-226 analysis when the analysis result was greater than 5 picocuries per liter (pCi/l), which is the upper limit of sensitivity for the alpha counting method. Consequently, the licensee under-reported the activity present for 42 pond water and 10 barium sulfate sludge shipments.

- B. 10 CFR 71.5(a) requires, in part, that each licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall comply with the applicable requirements of the Department of Transportation regulations in 49 CFR Parts 171 through 180, appropriate to the mode of transport.
- (i) 49 CFR 172.202(a)(5) requires, in part, the total quantity of hazardous materials covered by the description on the shipping paper must be indicated by activity for Class 7 materials and must include an indication of the applicable unit of measurement.

Contrary to the above, from May 2013 through April 2016, the licensee failed to indicate the activity for Class 7 materials in the description of hazardous materials on the shipping papers, as evidenced by the examples below.

- (1) A significantly lower activity was recorded in the description of hazardous materials on the shipping papers for 42 pond sediment and 10 barium sulfate sludge shipments than what was actually present in the shipment, as a result of using an inappropriate analytical method.

Enclosure

(2) An activity that was twice as high than what was physically present was recorded in the description of hazardous materials on the shipping papers for 308 resin shipments made from the North Butte facility to the Smith Ranch Central Processing Plant, as a result of reducing the shipping container volume by half (from 1000 cubic yards to 500 cubic yards) and failing to reduce the activity per shipment by half.

- (ii) 49 CFR 172.403(a) and (g)(1-3) requires, in part, that unless excepted from labeling by 49 CFR 173.421 through 49 CFR 173.427, each package of radioactive material must be labeled as provided in this section. The following applicable items of information must be entered into the blank spaces on the radioactive label: contents, activity, and transport index.

Contrary to the above, from June 20, 2013, to March 28, 2016, the licensee failed to enter the contents, activity and transport index on the label of each package of radioactive material. Specifically, due to the use of the inappropriate analytical method, the licensee did not correctly label the contents, activity, and transport index for 42 pond sediment and 10 barium sulfate sludge shipments.

- (iii) 49 CFR 173.403 states, in part, that *Low Specific Activity (LSA) material* means a Class 7 (radioactive) material with limited specific activity which is not fissile material or is excepted under 49 CFR 173.453, and which satisfies the descriptions and limits set forth in this section. The LSA material must be in one of three groups (LSA-I, LSA-II, or LSA-III.) The definition for LSA-I includes radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the values for activity concentration specified in 49 CFR 173.436.

Contrary to the above, from June 20, 2013, to March 28, 2016, the licensee failed to categorize 42 pond sediment and 10 barium sulfate sludge shipments as LSA-II material when the estimated average specific activity exceeded 30 times the values for activity concentration as specified in 49 CFR 173.436. Specifically, the licensee used an inappropriate analytical method that resulted in the miscalculation of total activity.

- (iv) 49 CFR 173.427(b) requires, in part, that LSA material must be packaged in an industrial package (Type IP-1, Type IP-2, or Type IP-3) subject to the limitations of Table 6. Table 6 requires the use of an IP-1 package for an exclusive use shipment of LSA-I solid or liquid contents and the use of an IP-2 package for the exclusive use shipment of LSA-II solid or liquid contents.

Contrary to the above, from June 20, 2013, to March 28, 2016, the licensee failed to package LSA-II material in an IP-2 container. Specifically, the licensee transported 42 pond sediments and 10 barium sulfate sludge packages in IP-1 containers, when the radioactive contents exceeded LSA-I requirements for exclusive use shipment, as a result of using an incorrect analytical method to determine the activity concentration.

This is a Severity Level III problem (NRC Enforcement Policy Section 6.8.c.3(a)).

- C. 10 CFR 71.5(a) requires, in part, that each licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall comply with the applicable requirements of the Department of Transportation regulations in 49 CFR Parts 171 through 180, appropriate to the mode of transport.

49 CFR 173.475 requires, in part, that before each shipment of any Class 7 (radioactive) materials package, the offeror must ensure, by examination or appropriate tests, that:

- (a) The package is proper for the contents to be shipped;
- (c) Each closure device of the packaging, including any required gasket, is properly installed, secured, and free of defects; and
- (f) Each closure, valve, or other opening of the containment system through which the radioactive content might escape is properly closed and sealed.

Contrary to the above, on August 20, 2015, and March 28, 2016, the licensee [offeror] failed to ensure, by examination or appropriate tests, that: the packages were proper for the contents to be shipped, each closure device's required gasket was properly secured and free of defects, and each closure opening through which the radioactive content might escape was properly closed and sealed. Specifically, the licensee failed to identify that the container type was not appropriate for transportation of material saturated with liquid.

This is a Severity Level IV violation (NRC Enforcement Policy Section 6.8.d.4).

- D. 10 CFR 71.5(a) requires, in part, that each licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall comply with the applicable requirements of the Department of Transportation regulations in 49 CFR Parts 171 through 180, appropriate to the mode of transport.

49 CFR 173.410(f) requires, in part, that the package will be capable of withstanding the effects of any acceleration, vibration or vibration resonance that may arise under normal conditions of transport without any deterioration in the effectiveness of the closing devices on the various receptacles or in the integrity of the package as a whole.

Contrary to the above, on August 20, 2015, and March 28, 2016, the licensee failed to ensure that the package would be capable of withstanding the effects of any acceleration, vibration or vibration resonance that may arise under normal conditions of transport without any deterioration in the effectiveness of the closing devices on the various receptacles or in the integrity of the package as a whole. Specifically, on two occasions, the vibration and acceleration experienced by the package during transportation allowed for separation of water from the sludge and caused a loss of radioactive contents from the package during transport of barium sulfate sludge from Cameco-Smith Ranch in Wyoming to White Mesa facility in Utah.

This is a Severity Level IV violation (NRC Enforcement Policy Section 6.8.d.4).

- E. 10 CFR 71.5(a) requires, in part, that each licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall comply with the applicable requirements of the Department of Transportation regulations in 49 CFR Parts 171 through 180, appropriate to the mode of transport.

49 CFR 172.203(d)(1-2) requires, in part, that the description for a shipment of Class 7 (radioactive) material must include the name of each radionuclide that is listed in 49 CFR 173.435 and a description of the physical and chemical form of the material.

Contrary to the above, from June 20, 2013, to March 28, 2016, the licensee failed to ensure that the description for a shipment of Class 7 (radioactive) material included the name of each radionuclide that is listed in 49 CFR 173.435 and a description of the physical and chemical form of the material. Specifically, the licensee identified the barium sulfate sludge shipments as natural uranium oxide or yellowcake rather than barium sulfate containing natural uranium, thorium-230, and radium-226.

This is a Severity Level IV violation (NRC Enforcement Policy Section 6.8.d).

- F. 10 CFR 71.5(a) requires, in part, that each licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall comply with the applicable requirements of the Department of Transportation regulations in 49 CFR Parts 171 through 180, appropriate to the mode of transport.

49 CFR 172.704(a)(2) requires, in part, that each hazmat employee must be provided function-specific training concerning the requirements of 49 CFR Parts 171-180, which are specifically applicable to the functions the employee performs.

Contrary to the above, from June 23 to September 29, 2016, the licensee failed to provide function-specific training for its hazmat employee that was specifically applicable to the functions the employee performed. Specifically, an employee performed surveys and generated shipping papers associated with 12 shipments of resins from the North Butte facility to the Central Processing Plant without completing task-specific hazardous material training associated with the performance of surveys or shipping paperwork.

This is a Severity Level IV violation (NRC Enforcement Policy Section 6.3.d.4).

The NRC has concluded that information regarding the reason for the violations, the corrective actions taken and planned to correct the violations and prevent recurrence, and the date when full compliance was achieved, are already adequately addressed on the docket in a letter from you dated October 24, 2016, and the information provided during the PEC. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation, (EA-16-262)," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region IV, 1600 E. Lamar Blvd., Arlington, TX 76011-4511, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or in the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

In accordance with 10 CFR 19.11, you may be required to post this Notice within 2 working days of receipt.

Dated this 29th day of June 2017.