



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV  
612 EAST LAMAR BLVD, SUITE 400  
ARLINGTON, TEXAS 76011-4125

June 17, 2011

John McCarthy, Assistant Manager  
Safety, Health and Environment  
Power Resources, Inc.  
P.O. Box 1210  
Glenrock, Wyoming 82637

SUBJECT: SECOND RESPONSE TO NRC INSPECTION REPORT 040-08964/10-002  
NOTICE OF VIOATION

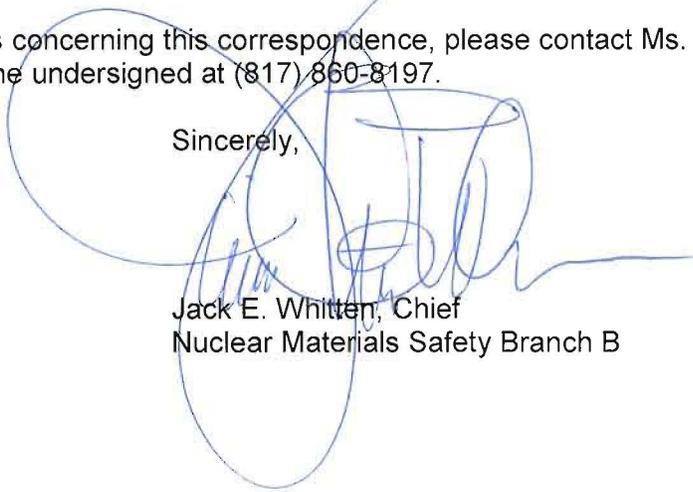
Dear Mr. McCarthy:

We have received and reviewed your letter of May 5, 2011, in response to our April 15, 2011 request for additional information for response to the December 17, 2010, Inspection Report and Notice of Violation concerning your failure to comply with appropriate Department of Transportation (DOT) regulations while transporting licensed material over public highways. We have reviewed your reply and find it responsive to the concerns raised in our Notice. We will review the implementation of your corrective actions during a future inspection to determine that full compliance has been achieved and will be maintained.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, any response you provide should not include personal, privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Should you have any questions concerning this correspondence, please contact Ms. Linda Gersey at (817) 860-8299, or the undersigned at (817) 860-8197.

Sincerely,



Jack E. Whitten, Chief  
Nuclear Materials Safety Branch B

Docket No.: 040-08964  
License No.: SUA-1548

cc w/Licensee Response Dated May 5, 2011

Ms. Carol Bilbrough  
Program Manager  
Wyoming Department of Environmental Quality  
Land Quality Division  
122 West 25th  
Cheyenne, Wyoming 82002

Mr. Lowell Spackman  
District I Supervisor  
Land Quality Division  
Herschler Building - Third Floor West  
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Cheyenne, Wyoming 82002

Wyoming Radiation Control Program Director

Electronic distribution:

CCain

JWhitten

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DTMandeville, FSME/DWMEP/DURLD

RWVonTill, FSME/DWMEP/DURLD

FEE Coordinator

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Publicly Avail	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sensitive Value:		
RIV:DNMS:NMSB-B		C:NMSB-B		
LMGersey		JEWhitten		
<i>LMG</i>				
06/17/2011		06/17/2011		

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May 5, 2011

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington DC, 20555-1001

RE: Reply to Notice of Violation  
NRC Inspection Report 040-08964/10-002  
Source Material License SUA-1548, Docket Number 40-8964

Please find below Power Resources, Inc. d/b/a/ Cameco Resources revised reply to the Notice of Violation issued by the Nuclear Regulatory Commission (NRC) to Power Resources, Inc. on December 17, 2010. A response was sent to the NRC on February 23, 2011. A request for additional information pertaining to compliance with DOT standards was received on April 15, 2011 and is being supplied in this correspondence in accordance with 10 CFR 2.201.

If you have questions, please contact me at (307) 316-7588.

Sincerely,

A handwritten signature in black ink that reads 'John McCarthy'.

John McCarthy  
Radiation Safety Officer  
Smith Ranch-Highland Uranium Operation

cc: T. Cannon  
B. Kluchewski  
D. Mandeville, USNRC (2 copies)  
US NRC  
Attn : Mr. Jack Whitten  
Arlington, TX 76011-4125

File SR 4.6.4.1

## **Summary of Violation**

During an NRC inspection conducted on August 24-26, 2010, one violation of NRC regulations was identified. The violation was identified as a Severity Level IV and is listed below:

10 CFR 71.5(a) requires that a licensee who transports license material outside of 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, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation in CFR 49 Parts 170 through 189.

49 CFR 173.441(a) requires, in part, that each package of radioactive material offered for transport must meet certain radiation levels on the external surfaces of the package.

49 CFR 173.433(a) requires, in part, that the level of non-fixed (removable) radioactive contamination on external surfaces of each package offered for transport may not exceed the limits set forth in Table 9 of this part.

Contrary to the above, on July 3, 2010, the licensee failed to demonstrate that packages used for shipment of radioactive material met applicable regulatory requirements.

Specifically, The licensee transported over public highway water filters and trash classified as 11e.(2) by product material from Satellites SR-2 and SR-1 to the Central Processing Plant without conducting contamination or radiation surveys on the packages.

In addition, on August 6, 2010, the licensee failed to demonstrate that a package used for shipment of radioactive material met applicable regulatory requirements. Specifically, the licensee transported over public highways radium-226 contaminated filters, which are classified as 11e.(2) by product material, to an analytical laboratory without conducting contamination or radiation surveys on the packages.

## **Cameco Resources Response**

### **Reason for the Violation**

As stated above, on July 3, 2010, the packaged filters and contaminated materials were transported to the Central Processing Plant (CPP) 11e.(2) byproduct bin for approved off site disposal. Furthermore, air filter samples were released for outside analysis on August 6, 2010. Both were released without conducting contamination or radiation surveys.

## Corrective Actions

The Health Physics Manual (Vol. 4 of the SHEQ Management System) was revised on March 3, 2011 and final approval by the RSO and the General Manager on March 8, 2011.

### Equipment and Material Release

“USNRC regulations require that all materials, equipment and samples used or obtained in restricted areas or potentially contaminated with radioactive material be surveyed before release from the premises to ensure that radioactive contamination release levels are not exceeded. The alpha survey is the primary survey method used to determine surface contamination from uranium and uranium daughter products. The beta-gamma survey is also used to identify contaminated material. The beta-gamma survey is especially important when the equipment or material requiring release is irregular in shape(s) and does not readily allow scanning with an alpha detector, or the potential contamination could be covered by an alpha absorbing material such as dust, dirt or paint.”

### Allowable Limits for Removable to Unrestricted Areas

Release of equipment, materials, or packages from the restricted area shall be in accordance with the NRC guidance document, *Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material*, (Annex B) dated May 1987. Annex B requires that reasonable decontamination efforts be made to eliminate residual contamination. Contamination on interior surfaces (e.g., piping or ductwork) may be determined by making measurements at access points if these locations are representative of the contamination levels on all surfaces. Surfaces of premises, equipment, or scrap that cannot be surveyed due to size, shape, or accessibility shall be considered contaminated in excess of the limits.

Annex B specifies contamination limits for specific radionuclides. The pertinent limits for use at uranium facilities are summarized in Table 5-1. The limits are specified for average, maximum and removable contamination levels. Average contamination levels should not be averaged over an area greater than one square meter. The maximum contamination levels apply to areas that are less than 100 cm<sup>2</sup>. Compliance with the removable contamination limits is determined by performing smear surveys.

**Table 5-1**

### **Acceptable Surface Contamination Levels on equipment to be released for unrestricted use, clothing and non-operating areas**

Nuclide <sup>a</sup>	Average <sup>b,c</sup>	Maximum <sup>c,e</sup>	Removable <sup>d</sup>
U-nat, U-235, U-238 and	5,000 dpm/100 cm <sup>2</sup>	15,000 dpm/100 cm <sup>2</sup>	1,000 dpm/100 cm <sup>2</sup>

associated decay products			
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm <sup>2</sup>	300 dpm/100 cm <sup>2</sup>	20 dpm/100 cm <sup>2</sup>
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1,000 dpm/100 cm <sup>2</sup>	3,000 dpm/100 cm <sup>2</sup>	200 dpm/100 cm <sup>2</sup>
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above	5,000 dpm/100 cm <sup>2</sup>	15,000 dpm/100 cm <sup>2</sup>	1,000 dpm/100 cm <sup>2</sup>

Notes:

- Where surface contamination is from alpha and beta-gamma emitting nuclides, the limits for alpha and beta-gamma nuclides should apply independently.
- Averaged over no more than 1 m<sup>2</sup>.
- Applies to an area of not more than 100 cm<sup>2</sup>.
- Determined by wiping with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe.
- Beta-Gamma Radiation  
Average: 0.2 mR/hr at 1 cm, above background  
Maximum: 1.0 mR/hr at 1 cm, above background, measured through not more than 7 mg/cm<sup>2</sup> of total absorber

The surface contamination levels contained in Table 5-1 for natural uranium and associated daughter products are used when surveying any materials potentially contaminated with yellowcake, production fluid, or injection fluid.

Laboratory samples transported for analysis will comply with 49 CFR 173.421 and 173.422 and will require the following:

- Packages will not exceed the radiation limit of 0.5 mRem/hr (0.005 mSv/hr).
- The non-fixed (removable) limit will not exceed 22 dpm/cm<sup>2</sup>
- The package will have a UN-2910 sticker on the side and a "Radioactive" sticker conspicuously posted on the inside of the package.

A Standard operating Procedure SRH-QMP-10-199 has been written for Hauling Contaminated materials on the licensed site. The procedure lists the following requirements for the transport of 11e(2) materials for disposal.

Transportation of 11e.(2) on site from a Restricted Area to an 11e.(2) container will comply with 49 CFR 173.427 and will require the following:

- 11e.(2) materials will be transported in a lined strong tight container.
- The container will be braced to prevent shifting during transportation.
- Packages will not exceed the surface radiation limit of 200 mR/hr
- Packages will not exceed the radiation limit of 10mR/hr at 2 meters
- Packages will not exceed the non-fixed (removable) limits of 22 dpm/cm<sup>2</sup>
- The transport vehicle will not exceed 2 mR/hr in the cab.
- The package will be marked as RADIOACTIVE-LSA
- The package (drum) will be shipped as exclusive use
- Shipping papers, Radioactive 7 placards and UN2912 will be required.

### **Date Full Compliance will be Achieved**

Full compliance for transporting laboratory samples was achieved by March 31, 2011. Full compliance for the transporting 11e.(2) byproduct procedure has been updates and is pending final approval by the RSO and General Manager. Full compliance will be achieved by 5/31/2011.