



U.S. Department of Transportation  
**Pipeline and Hazardous Material  
Safety Administration**

1200 New Jersey Ave. S.E.  
Washington, D.C. 20590

**MAR 26 2010**

Mr. Dane Finerfrock  
Director  
State of Utah  
Department of Environmental Quality  
168 North 1950 West  
Salt Lake City, Utah 84114-4850

Ref. No.: 09-0206

Dear Mr. Finerfrock:

This responds to your letter dated August 31, 2009, regarding the requirements for radioactive contamination control in §173.443(c) and (d) under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180), as they apply to the definition of “exclusive use” found in §173.403.

According to the information you provided, Energy Solutions, Inc., operates a low-level radioactive waste (LLRW) disposal facility at Clive, Utah, and has a radioactive materials license issued by the State of Utah. You indicate that Energy Solutions, Inc., receives LLRW from many States. You state that in most instances, Utah Radiation Control Rules mirror regulations of the Nuclear Regulatory Commission and in cases involving transportation, you have adopted by reference, the HMR. Your questions are paraphrased and answered as follows:

- Q1. Are the provisions of § 173.443(d) of the HMR applicable to a lidded railcar (a closed transport vehicle) that does not transport a Class 7 (radioactive) material?
- A1. The answer is no. The provisions of § 173.443(d) of the HMR are applicable when the railcar is “used solely for” the transportation of Class 7 (radioactive) material packages. The phrase “used solely for” the transportation of radioactive material packages does not mean such packages always must be present on the railcar.
- Q2. Are the provisions of § 173.443(d) of the HMR applicable to an empty railcar when a company designates the railcars as “sole use” to return them to the generator, either anticipating reuse for Class 7 (radioactive) or non-Class 7 (radioactive) material?
- A2. The provisions of § 173.443(d) of the HMR are applicable as long as the railcar is to be “used solely for” the transportation of Class 7 (radioactive) material packages, even if occasionally no packages are on the conveyance. However, if it is known that the railcar will no longer be “used solely for” the transportation of Class 7 (radioactive) material packages, then the provisions of § 173.443(d) are not applicable.

- Q3. Can a railcar be designated as “sole use” during initial transport to a LLRW generator?
- A3. The provisions of § 173.443(d) of the HMR including the “For Radioactive Material Use Only” marking are applicable as long as the railcar is to be “used solely for” the transportation of Class 7 (radioactive) material packages, even during initial transport to a LLRW generator.
- Q4. If the railcar is marked in accordance with § 173.443(d)(2), where, when, and by whom can and/or must the marking be removed?
- A4. When the railcar is no longer “used solely for” the transportation of Class 7 (radioactive) material packages or does not meet the requirements of § 173.443(d), the marking must either be removed or covered prior to being offered for transportation. Removing or covering the marking is the responsibility of the offeror. Class 7 (radioactive) material packages must be in conformance with all other applicable requirements of the HMR.
- Q5. Should the dose rate conversion for the survey required by §173.443(c) take into account the contribution from any beta component?
- A5. The answer is yes. The contribution from all types of ionizing radiation must be included in the radiation dose rate determination.
- Q6. Should the appropriate detection instrument selection be based on gamma emitters (deep dose) and the beta emitters (shallow dose) or the gamma emitters only?
- A6. See the answer to Question 5 above. Appropriate instrumentation must be selected so as to include the contribution for both gamma and beta radiation.

I hope this satisfies your inquiry. If we can be of further assistance, please contact us.

Sincerely,



Charles E. Betts  
Chief, Standards Development  
Office of Hazardous Materials Standards



State of Utah

GARY R. HERBERT  
Governor

Department of  
Environmental Quality

Amanda Smith  
Acting Executive Director

DIVISION OF RADIATION CONTROL  
Dane L. Finerfrock  
Director

Engram  
§173.443 (c) & (d)  
§173.403  
Definitions  
09-0206

August 31, 2009

Office of Hazardous Materials Standards  
Pipeline and Hazardous Materials Safety Administration  
Attn: PHH-10  
U.S. Department of Transportation, E Building  
1200 New Jersey Ave., SE.  
Washington, D.C. 20590-00-1

Dear Sir or Madam:

The State of Utah, Division of Radiation Control, in accordance with 49 CFR 105.20(a)(2), requests two interpretations regarding the application of 49 CFR 173.443(c) & (d), as they pertain to the definition of "exclusive use" found in 49 CFR 173.403.

**Background Information:**

EnergySolutions, Inc. operates a low-level radioactive waste (llrw) disposal facility at Clive, Utah. The Company has a radioactive materials license issued by the State of Utah. In most instances, Utah Radiation Control Rules mirror regulations from the Nuclear Regulatory Commission and in cases involving transportation issues, we have adopted, by reference, federal Department of Transportation regulations. EnergySolutions receives shipments of low-level radioactive wastes from most of the States.

**First Request for Interpretation**

Lidded gondola railcar shipments arriving at the facility are emptied of their contents and sometimes returned to the generator as a "sole use" (marked For Radioactive Materials Use Only) conveyance.

Specifically:

1a) Is it permissible to apply 49 CFR 173.443(d) to a lidded railcar (a closed transport vehicle) that does not carry Class 7 radioactive material. EnergySolutions currently designates the railcars as "sole use" to return them to the generator, anticipating reuse for Class 7 radioactive material or non-Class 7 radioactive material.

1b) Likewise, could a railcar be designated as "sole use" by EnergySolutions in order to send it to a llrw generator for first time use hauling radioactive waste for disposal.

1c) Can the railcar be marked "For Radioactive Material Use Only"? If so marked;

1d) Where, when, and by whom can and/or must the "For Radioactive Material Use Only" marking be removed?

### **Second Request for Interpretation**

49 CFR 173.443 (c), states in part, that after each use, a transport vehicle must be surveyed "with an appropriate radiation detection instrument." Further, the regulation requires that a vehicle may not be returned to service until the dose rate at each accessible surface is "**0.5 mrem**" per hour or less..." For gamma emitters, selection of an instrument, calibration, detection and dose rate conversion is fairly straight forward. However, that is not the case for beta emitters where there may be great variation in beta particle energy. Also, converting the dose rate, measured in the field as **mrad** per hour, to **mrem** per hour, is practically challenging.


Specifically:

2a) Should the dose rate conversion take into account the contribution from any beta component?

2b) When selecting an appropriate detection instrument should the surveyor select based on gamma emitters (deep dose) and the beta emitters (shallow dose) or the gamma emitters only?

We appreciate your assistance. If you need clarification or additional information, please contact me at 801-536-4250.

Sincerely,

  
Dane L. Finerfrock  
Director