U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

April 18, 2019

Mr. Scott T. Anderson
Director
Division of Waste Management and Radiation Control
State of Utah
Department of Environmental Quality
195 N 1950 W
Salt Lake City, UT 84116

Reference No. 18-0126

Dear Mr. Anderson:

This letter is in response to your October 5, 2018, letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the shipment of radioactive materials. You ask if a rigid box inside the camper/darkroom would be considered an overpack when transporting a package containing a radioactive material, and provide the following facts:

- Industrial radiography companies use a transport vehicle that consists of a camper/darkroom that is temporarily mounted to the bed of a pickup truck.
- The camper/darkroom contains packages of radioactive materials, which are transported in an approved Type B(U) package and placed inside a rigid box. The box is secured to the camper/darkroom by chains, locks, bolts, or other means, whether permanent or temporary. The box is not secured to the vehicle itself.
- The rigid box inside the camper/darkroom prevents the movement of, protects, and secures the package. Additionally, it lowers the labeling category of a Type B(U) package that is labeled with a radioactive "YELLOW-III" label so that placarding of the transport vehicle is not required.
- Previously, PHMSA issued a letter of interpretation (Reference No. 00-0248) stating that hazard warning labels and package markings are used to communicate the hazards of the hazardous material contained within the package to carrier personnel and emergency responders.

We have paraphrased and answered your questions as follows:

Q1: You describe a scenario in which a company uses the rigid box in the camper/darkroom to prevent movement of, protect, and secure the package. You ask if the rigid box is considered an overpack or just a box containing a package.

A1: It is the opinion of this Office that the rigid box would not be considered an overpack if it is permanently affixed to or is an integral part of the camper/darkroom, regardless of its intended functions. An overpack, as defined in § 171.8, means an enclosure used by a single consignor to provide protection or convenience in handling of a package or to consolidate two or more packages. Alternatively, if the rigid box can be removed from the camper/darkroom along with the Type B package, it may then be considered an overpack. Further the camper/darkroom itself, when mounted to the bed of the pickup truck, whether permanently or temporarily, becomes part of the transport vehicle and would not be considered an overpack.

Q2: You describe a scenario in which a company uses the rigid box in the camper/darkroom to prevent movement of the package; protect and secure the package; and lower the labeling category of a Type B(U) package that is labeled with a Radioactive "Yellow-III" label so that placarding of the transport vehicle is not required. You ask if the rigid box is considered an overpack or just a box containing a package.

A2: See A1.

Q3: You ask if the transport vehicle must be placarded if the rigid box is not considered an "overpack" and contains a package that is required to be labeled as a Radioactive YELLOW-III.

A3: See A1. When the rigid box is not considered an "overpack" and contains a package that is required to be labeled as a Radioactive YELLOW-III, the transport vehicle must be placarded. If the box or its radioactive contents are removed from the transport vehicle any required placards must be removed during transportation.

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,

T. Glenn Foster

T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

Andrews
18-0126

January, Ikeya CTR (PHMSA)

From: INFOCNTR (PHMSA)
Sent: Tuesday, October 09, 2018 4:05 PM
To: Hazmat Interps
Subject: FW: Request Regarding §171.8 (Overpack & Transport Vehicle), §173.25 & use of § 172.403(h)(5)
Attachments: Transportation Interpretation Request.pdf

Hello Alice and Ikeya,

Attached is a request for a letter of interpretation. Below is the mailing address.

Thanks,
Jonathon, HMIC

From: Gwyn Galloway [mailto:ggalloway@utah.gov]
Sent: Friday, October 05, 2018 3:43 PM
To: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>
Subject: Request Regarding §171.8 (Overpack & Transport Vehicle), §173.25 & use of §172.403(h)(5)

Please address the response to

PO BOX:
Scott Anderson, Director
Division of Waste Management and Radiation Control
Department of Environmental Quality
P.O. Box 144880
Salt Lake City, Utah 84114-4880

OR

Physical Address:
Scott Anderson, Director
Division of Waste Management and Radiation Control
Department of Environmental Quality
195 N 1950 W
Salt Lake City, Utah 84116

Gwyn Galloway, Health Physicist
Utah Division of Waste Management and Radiation Control

Disclaimer: *Statements made in this e-mail do not constitute the official position of the Director of the Division of Waste Management and Radiation Control. If you desire a statement of the Director's position, please submit a written request to this office, on paper, including documents relevant to your request.*

Completed by Breanna Jones on 10/09/2018 at 1011

Johnathon,

I didn't find any letters to offer the requestor. If you find anything, you may want to give them a call. And you can erase my entry in FM.

-Breanna

Please See Attached Letter.

Gwyn Galloway, Health Physicist
Utah Division of Waste Management and Radiation Control

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL
Scott T. Anderson
Director

October 5, 2018

Information Center
Pipeline and Hazardous Materials Safety Administration
Email: Infocntr@dot.gov

RE: Request for Interpretation of Hazardous Material Requirements for the Transportation of Radioactive Materials

Dear Radiation Transportation Specialist:

Periodically, the question as to whether or not a "box" used by industrial radiography companies qualifies as an overpack and must be labeled. When an interpretation is requested from your agency, we do not believe the situation is explained in its entirety. We are hoping that by providing all of the information related to the situation, an interpretation can be provided that will end the questions.

Background

Industrial radiography companies may transport radioactive materials when they do business. The transport vehicle is typically a pick-up truck. There is a camper/darkroom temporarily mounted in the bed of the truck. The camper/darkroom is not permanently mounted to the vehicle so that the camper/darkroom can be removed from one vehicle and transferred to another vehicle when necessary. Also, there are no holes made in the vehicle so it is not damaged. The camper/darkroom may be separated from the vehicle if a transportation incident occurs as observed by the State of Utah during a couple of transportation incidents. If the vehicle rolls, the camper/darkroom may separate from the vehicle as it did during each of the transportation incidents that occurred in Utah. The camper/darkroom may roll over once separated from the vehicle and may be destroyed as was observed by the State of Utah. Depending on the construction of the camper/darkroom, it may splinter into small pieces as one did in an incident in Utah.

When transporting radioactive materials, the materials are transported in an approved Type B(U) package. During transportation, the Type B(U) package is placed inside of a rigid box that is secured to the camper/darkroom by chains and locks, secured by bolting the box to the camper or secured to the camper/darkroom by some other means whether permanent or temporary. The box is not secured to the bed or frame of the transport vehicle. As with the camper/darkroom, the box is not permanently affixed to the vehicle (pick-up truck), but is affixed to the camper/darkroom so that it is transferable from vehicle to vehicle.

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144880 • Salt Lake City, UT 84114-4880
Telephone (801) 536-0200 • Fax (801) 536-0222 • T.D.D. (801) 536-4284
www.deq.utah.gov

The box is used by the company for a number of purposes. The most common reasons for using a box are:

1. Prevent movement of the package;
2. Protect and secure the package; and
3. Lower the labeling category of a Type B(U) package that is labeled with a Radioactive "YELLOW-III" label to ensure that the transport vehicle is not required to be placarded.

In an interpretation dated September 26, 2000 (Ref No. 00-0248), previously provided by your agency regarding labeling and marking of overpacks, it was stated that "[h]azard warning labels and package markings are used to communicate the hazards of the hazardous material contained within the package not only to carrier personnel but also to enforcement and emergency responders when hazardous materials are involved in transportation incidents."

If the box as described is not considered to be an overpack and is not required to be labeled, enforcement and emergency personnel would not know that a hazard was present when they entered the camper/darkroom. If the shipping papers indicated that the vehicle was transporting materials, the personnel in the vehicle involved in the incident were not able to provide information to the enforcement or emergency personnel. Without labels on the box, there would be no way to verify that the materials were intact and secured until the location of the materials could be determined.

Evaluation

In accordance with 49 CFR 171.8, a "transport vehicle" is defined as:

> *a cargo-carrying vehicle such as an automobile, van, tractor, truck, semitrailer, tank car or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, rail car, etc.) is a separate transport vehicle.*

In looking further into the matter, according to the Merriam-Webster's dictionary, the first definition for a vehicle is:

> *1. A means of carrying or transporting something planes, trains, and other vehicles: such as*
> *a. a motor vehicle*, or*
> *b. a piece of mechanized equipment.*
>
> ** A motor vehicle is separately defined as an automotive vehicle not operated on rails especially one with rubber tires for use on highways.*

Since a camper/darkroom does not meet the definition of a vehicle, the camper/darkroom cannot be considered to be a "cargo-carrying vehicle" and would not meet the definition of a transport vehicle. Since the camper/darkroom is not a transport vehicle on its own merit, the box affixed to the camper/darkroom could be considered to be an "overpack" which is defined as:

> *An enclosure that is used by a single consignor to provide protection or convenience in handling of a package or to consolidate two or more packages. Overpack does not include a transport*

vehicle, freight container, or aircraft unit load device. Examples of overpacks are one or more packages:

(1) Placed or stacked onto a load board such as a pallet and secured by strapping, shrink wrapping, stretch wrapping, or other suitable means; or

(2) Placed in a protective outer packaging such as a box or crate.

Since the box that is affixed to the camper/darkroom provides protection and convenience in handling the Type B(U) package, it appears that the box may meet the definition of an overpack. There is also an interpretation of the above requirements that states that the box would not be an overpack because of the following statement in the definition of an overpack:

Overpack does not include a transport vehicle, freight container, or aircraft unit load device.

When considering the relationship of the box to the transport vehicle, some companies state that since the box is affixed to the camper/darkroom, either permanently or temporarily, it is part of the transport vehicle and therefore does not meet the definition of an overpack. This conclusion was reached by assuming that, although the camper/darkroom is not a transport vehicle, the camper/darkroom is affixed, (temporarily or permanently) to the transport vehicle so the camper/darkroom is part of the transport vehicle. Carry this assumption forward; the box is attached, either temporarily or permanently, to the camper/darkroom so it is also part of the transport vehicle. Using this argument, since an overpack does not include a transport vehicle and the box is attached to the camper/darkroom, which is attached to the transport vehicle, the box is considered to be part of the transport vehicle and cannot be considered to be an overpack according to the definition of "overpack." Since the box is not an overpack using these assumptions, the requirements of 49 CFR 173.25 would not apply and the box would not be required to be marked or labeled.

Applying the requirements in this manner appears to defeat the purpose stated in the response dated September 26, 2000 (Ref No. 00-0248), previously provided by your agency regarding labeling and marking of overpacks. The letter stated that "[h]azard warning labels and package markings are used to communicate the hazards of the hazardous material contained within the package not only to carrier personnel but also to enforcement and emergency responders when hazardous materials are involved in transportation incidents." If the requirements are applied as stated, when enforcement personnel or emergency response personnel are exposed to the box during a transportation incident, the enforcement or emergency personnel would not be aware that there was any hazard associated with the box or the contents of the box. This interpretation may also cause an issue with the desire of the companies to use the box to ensure that the vehicle is not required to be placarded.

In 49 CFR 172.403(c), there is a table that describes the labeling category that would need to be placed on a package transporting Class 7 (radioactive) materials. In accordance with HMR requirements, if the package is to be labeled with a Radioactive – YELLOW-III label, the transport vehicle must be placarded [49 CFR 504(e)]. However, in accordance with 49 CFR 172.403(h)(4) and (h)(5), if a package is placed in an overpack, the TI and maximum exposure rate at the surface of the overpack must be used to determine the labeling category and whether or not the transport vehicle is to be placarded. If the box is not an overpack, then the option to use the TI and surface exposure rate of the overpack to lower the labeling category and therefore, avoid placarding the transport vehicle would not be an option. The labeling category would have to be determined from the package with no overpack.

After contacting the manufacturers of the Type B(U) packages in use, it was determined that when a new source is place in the majority of the Type B(U) packages in use, the packages will be required to be labeled as Radioactive YELLOW-III. There are a few individual packages that may qualify for a Radioactive YELLOW-II label when containing a new source, but that depends on the shielding poured into each separate package. Since the Type B(U) package with a new source is typically required to be labeled as Radioactive YELLOW-III when it is shipped, the transport vehicle would need to be placarded until the source decayed to a level where the package could meet the requirements for a Radioactive YELLOW-II label.

As an alternative, if the company treats the box as an "overpack" and labels it in accordance with 49 CFR 173.25, the company could then use the labeling category of the overpack to determine the placarding requirements for the transport vehicle [49 CFR 172.403(h)(5)]. Labeling and marking the box in accordance with 49 CFR 173.25 would meet the intent of the requirement which is to communicate the hazards of the hazardous material contained within the package not only to carrier personnel but also to enforcement and emergency responders when hazardous materials are involved in transportation incidents.

As a last concern, it was stated that if the overpack is labeled in accordance with 49 CFR 173.25, then the licensee would not be in compliance with the HMR requirements, in particular 49 CFR 172.401(a) which states:

49 CFR 172.401(a)

(a) Except as otherwise provided in this section, no person may offer for transportation and no carrier may transport a package bearing a label specified in this subpart unless:
(1) The package contains a material that is a hazardous material, and
(2) The label represents a hazard of the hazardous material in the package.

Given the above, the companies believe that they will be out of compliance with the requirements if the labels are not removed from the overpack each and every time the package is removed from the overpack. However, there are some exceptions listed for these requirements stated in 49 CFR 172.401(d) which appear to indicate that the provisions of 49 CFR 172.401(a) would not apply to the way that the companies transport radioactive materials. The requirements of 49 CFR 172.401(d) state that:

49 CFR 172.401(d)

(d) The provisions of paragraph (a) of this section do not apply to a packaging bearing a label if that packaging is:
(1) Unused or cleaned and purged of all residue;
(2) Transported in a transport vehicle or freight container in such a manner that the packaging is not visible during transportation; and
(3) Loaded by the shipper and unloaded by the shipper or consignee.

Since the sources in the Type B(U) packages are sealed sources, once the package is removed from the overpack, the overpack would be clean and contain no residual radioactive materials. Also, as stated throughout this document, the box (or overpack) is enclosed in a camper/darkroom. A door to the

camper/darkroom would have to be opened for anyone to view the labels on the box or overpack. Lastly, the companies are the shippers of the radioactive materials and only their employees have access to the radioactive materials to load and unload the transport vehicle. Therefore, it appears that the companies would meet the exception and the requirements of 49 CFR 172.401(a) would not apply to these specific shipments.

Questions

Using the information provided in the above sections of this letter, please provide an interpretation regarding the following:

1. The companies use the box in the camper/darkroom to:
   a. prevent movement of the package, and
   b. protect and secure the package.

   Is the box an overpack or is it just a box containing a package?

2. The companies use the box in the camper/darkroom to:
   a. prevent movement of the package;
   b. protect and secure the package; and
   c. lower the labeling category of a Type B(U) package that is labeled with a Radioactive "YELLOW-III" label to ensure that the transport vehicle is not required to be placarded.

   Is the box an overpack or is it just a box containing a package?

3. If the box is not determined to be an "overpack" and the box contains a package that is required to be labeled as a Radioactive YELLOW-III, is the transport vehicle required to be placarded?

We believe that by addressing the above, the majority of the questions that keep arising regarding the transport of these particular materials will be addressed. A prompt response to this request would greatly be appreciated. If you need clarification or have questions regarding this matter, please contact Gwyn Galloway at (801) 536-4258 or by electronic mail at ggalloway@utah.gov. Thank you in advance for your help.

Sincerely,

Scott T. Anderson, Director
Division of Waste Management and Radiation Control

STA/GEG/ka

c: Jordan Mathis, Health Officer, Tri-County Health Department
Darrin Brown, LEHS, Environmental Health Director, Tri-County Health Department
Nathan Hall, DEQ District Engineer