U.S. Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

JUN 27 2001

Mr. Phani Raj
President
Technology and Management Systems, Inc.
Suite 210
99 South Bedford Street
Burlington, Massachusetts 01803

Ref. No. 01-0065

Dear Mr. Raj:

This responds to your letter, dated February 26, 2001, concerning provisions in the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the rail transportation of hazardous materials. Please accept my apology for our delay in responding to your letter. Your specific questions concerning rail tank car marking requirements are paraphrased and answered below.

Q1. What is the regulatory purpose of requiring all tank cars to be stenciled? How are the specific stenciling requirements enforced by DOT?

A1. The requirement to stencil, or mark, a tank car provides a readily visible, uniform means to communicate to shippers and carriers and to emergency response and enforcement personnel that a tank car and its appurtenances conform to Federal and industry requirements. We enforce the marking requirements in the same way that we enforce all of the HMR requirements. When an inspector identifies a discrepancy, he or she may issue a warning or recommend a civil penalty assessment, depending on the severity of the violation and other factors.

Q2. Please clarify the HMR requirements applicable to weight or volume limitations stenciled on rail tank cars.

A2. The weight or volume amounts required to be marked on a rail tank car specify the gross weight and capacity limits to which the tank car was designed, not the maximum amount to which the tank car may be loaded. Shippers utilize the load limit, light weight, and water capacity amounts marked on the tank car in combination with the outage requirements in §§ 173.24b and 173.314 to calculate the total amount of a specific product, by volume, that may safely be transported in the tank car.

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The maximum allowable gross weight for a tank car depends on the carrying capacity of the tank car underframe and on axle and bearing size. Underframe, axle, and bearing requirements are regulated under authority of Federal railroad safety laws. There is no current Federal regulation that specifies a maximum allowable gross weight for a rail car. However, the Association of American Railroads (AAR) does have rules that limit the gross weight by rail. (See AAR Field Manual Rule 91.)

Q3. Do the provisions of § 173.24b(d)(2) of the HMR apply to a tank car?

A3. Generally, tank cars do not have specification plates like highway cargo tanks or intermodal portable tanks. Instead, tank cars have a head "stamping" that provides essentially the same information. Because the hazardous materials regulations govern only the tank and its service equipment (and not the underframe or axle or bearing sizes), there is no requirement to mark, stamp, or stencil the maximum allowable gross weight on the tank. At the request of the Federal Railroad Administration, the AAR has initiated a docket to require specification plates on tank cars in lieu of the head stamp marking.

Q4. Should the words "specification plate" be interpreted as the word "stencil" for purposes of applicability of § 173.24b(d)(2)?

A4. No. As stated earlier, tank cars do not require marking, stamping, or stenciling the maximum allowable gross weight on the tank. The maximum allowable gross weight is a function of the axle, bearing, and underframe design – designs outside of the scope of the HMR.

Q5. What are the "outside heads" of a tank car?

A5. Outside heads are the heads of the actual containment vessel. The outside head of a tank car does not include an insulation jacket. The HMR require a tank car to be marked on its outside head. As you positively observed, an insulation jacket serves to inhibit viewing of the outside head stamping. For this reason, the AAR Tank Car Committee has initiated a docket to align tank car marking requirements with those for cargo tanks and intermodal portable tanks.

I hope this information is helpful. If you have further questions, please do not hesitate to contact this office.

Sincerely,

John Gale
Senior Transportation Regulations Specialist
Office of Hazardous Materials Standards

Gorsky
§179.22
Rail
31-0065

February 26, 2001

Office of Hazardous Materials Standards (DHM-10)
Research & Special Programs Administration
Attn: Ms. Susan Gorsky
U.S. Department of Transportation
400 Seventh Street, S.W.
WASHINGTON, DC 20590-0001

REFERENCE: No. 00-0278, Your letter dated 2 February, 2001.

SUBJECT: Request for additional clarifications

Dear Ms. Gorsky:

This letter is a follow-up to my telephone discussions this morning with you on the responses provided by RSPA in the above referenced letter. I had requested formal clarifications and interpretations on some of the sections in the Hazardous Material Regulations (HMR), specifically related to the transportation of hazardous materials in rail tank cars. My letter was sent on 27 September, 2000.

The purpose of this letter is to request further clarifications on some of the answers provided. They are not clear. I discussed with you these and pointed out discrepancies; you suggested that I write another formal request. You also indicated that some of the responses were developed by Mr. James Rader of the Federal Railroad Administration; hence, I am sending a copy of this letter to him.

The RSPA letter did not answer my specific questions related to stenciling and specification plateon a rail tank car. I elaborate these below.

1 My question on stenciling was:

- *"What is the regulatory purpose of requiring that all tank cars be "Stenciled?" (49CFR §179.22 in the October 1, 1998 version and §179-100.21 in versions earlier than 1996). How are the specification on a stencil enforced by US DOT? There does not seem to be any requirement prohibiting the carrying of a hazardous material in a tank car in excess of the amount (weight or volume) specified on the stencil so long as the provisions of 49CFR §173.24b (a) "outage and filling limits" are complied with. Please clarify the HM regulations regarding the enforcement of stenciled amounts."*

The response A3., in RSPA's letter, is unsatisfactory. It did not address the issues raised nor did it provide an answer to the question. The response merely stated the requirements for stenciling indicated in 49CFR§179.22. My question related to the purpose of stenciling information and not

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the uniformity of location of the stencil markings on a tank car. Also, I asked whether the non compliance or violation of the information indicated on the stencil, (either by the car gross weight being larger than the sum of load limit and the tare weight, or by the lading weight in a tank car being larger than the stenciled load limit) constituted a violation of the HMR. In addition, my question related to how the government enforces the compliance of stenciled amounts in the transportation of hazardous materials.

2 My question on the "specification plate" was:

- *"49CFR §173.24b (d) (2) states "A bulk packaging may not be loaded with a hazardous material that exceeds the maximum weight of the lading marked on the specification plate." In the case of the tank car since there is no "specification plate" and stencil is the medium that "specifies" the lading weight, do the provisions of this subsection apply to a tank car? Should the words "specification plate" be interpreted as the word "stencil" when the applicability of this subsection to a tank car is being evaluated? Please note that §173.24b (a) clearly applies to a tank car."*

The RSPA response was emphatic in it assertion that the term "specification plate" in a tank car means the stamping located on each tank car head. In addition, the RSPA response indicated that the items "stamped" on each end of the tank car were those items required by Appendix C (section C4.01) of the AAR Manual of Standards and Recommended Practices: Specifications for Tank Cars.

If this is the case there are problems in the HMR. I wish to point out the following discrepancies.

a) Stamping of Tanks (Section C4.01 of AAR Tank Car Specifications Manual) does not require stamping of any lading weight. The only thing that even remotely resembles a weight stamping is the water capacity (gallons or liters for non-pressure cars; pounds or kilograms for pressure cars and 111A100W4). Water capacity does not constitute the lading weight.

b) 49CFR §173.24b (d) (2) states "A bulk packaging may not be loaded with a hazardous material that exceeds the maximum weight of the lading (emphasis added) marked on the specification plate."

It seems to me that the HMR is requiring a shipper to comply with the requirements of 49CFR §173.24b (d) (2) for the maximum weight of lading per the specification plate whereas the specification plate does not contain any information on lading weight limit. So, what does the requirement of 49CFR §173.24b (d) (2) mean? Please note that in many instances the same tank car can be used t transport different ladings. Therefore, my interpretation is that 49CFR §173.24b (d) (2) is indeed referring to the lading weight (as the words indicate) and not to the weight of the water capacity referred to in AAR Manual, section C4.01. On the other hand, the stencil information is very specific on the lading weight limit ("Load limit").

Finally, the wordings in both the HMR and the AAR Manual for Tank Car Specifications are very unclear as to what constitutes the "outside heads" of a tank car for stamping the specifications. Does this mean that if the tank car is insulated and provided with a jacket, the specification plate is now

the jacket on which the stamping have to be made or does it mean that the stamping has to be only on the shell heads. If the interpretation of the term "outside heads" means the latter then the very purpose of stamping will be defeated in that a jacket will mask the stamping information and the shipper has no way knowing what the specification plate is specifying; how is he to comply with the requirements of 49CFR §173.24b (d) (2)?

I feel that a significant clarification must be issued by the government, including perhaps a Federal Register notification, on what markings on a tank car come under the purview of 49CFR §173.24b (d) (2) for the purpose of defining the maximum weight of lading. It is my opinion that all markings on a tank car, including the stenciled data constitute the "markings" within the purview of 49CFR §173.24b (d) (2).

I look forward to receiving your formal interpretation and response to the above questions at the earliest possible time. If you need any clarifications, please do not hesitate to call me at the telephone number indicated on this letter head.

Yours truly,

Phani Raj

Phani Raj
President

cc: Mr. James Rader, Staff Director, Office of Safety Assurance and Compliance
Federal Railroad Administration.

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