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49 CFR Part 171, et al.

Tank Cars: Crashworthiness Protection Requirements; Corrections and Response to Petitions for Reconsideration; Final Rule

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 171, 173, 179, and 180

[Docket Nos. HM–175A and HM–201; Amdt. Nos. 171–137, 173–245, 179–50, and 180–8]

RIN 2137–AC85

Crashworthiness Protection Requirements for Tank Cars; Detection and Repair of Cracks, Pits, Corrosion, Lining Flaws, Thermal Protection Flaws and Other Defects of Tank Car Tanks; Corrections and Response to Petitions for Reconsideration

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Final rule; corrections and response to petitions for reconsideration.

SUMMARY: This final rule revises certain requirements in the Hazardous Materials Regulations to improve the crashworthiness of tank cars and to increase the probability of detecting critical tank car defects. In response to two petitions for reconsideration and other comments, RSPA is allowing an analysis using independent mathematical or computer modeling procedures to verify compliance with the thermal protection standard for certain tank cars. In addition, RSPA is clarifying the head-puncture resistance requirements and thermal protection requirements, and is making other minor editorial and technical changes for clarity. The changes made in this document are intended to ease certain regulatory requirements where there will be no adverse effect on safety.

DATES: *Effective date:* The effective date of this final rule is July 1, 1996.

Compliance date: Compliance with the regulations, as amended herein, is authorized as of June 26, 1996.

FOR FURTHER INFORMATION CONTACT: James H. Rader (telephone 202-366-0510), Office of Safety Assurance and Compliance; or Thomas A. Phemister (telephone 202-366-0635), Office of Chief Counsel, Federal Railroad Administration, 400 Seventh Street S.W., Washington, D.C., 20590-0001.

SUPPLEMENTARY INFORMATION:

I. Background

On September 21, 1995, RSPA, with the assistance of the Federal Railroad Administration (FRA), published a final rule under Docket Nos. HM–175A and HM–201 (60 FR 49048) that addressed the safe performance of tank cars used to transport hazardous materials. The final rule amended the Hazardous Materials Regulations (HMR) to, among other changes, expand the use of thermal protection and head protection systems on tank cars.

FRA gave presentations providing an overview of the final rule at numerous outreach meetings that were attended by over 750 representatives from trade associations, rail carriers, shippers, and manufacturers and repairers of tank cars. In addition, RSPA received two petitions for reconsideration of certain aspects of the final rule. One petition was filed by The Sulphur Institute (TSI) and the other was filed jointly by The Fertilizer Institute (TFI) and CF Industries, Incorporated (CF). The Railway Progress Institute (RPI) wrote to RSPA requesting an editorial correction in § 173.31(b)(6)(ii) to eliminate the need for listing each tank car's reporting mark and number to FRA for each car modified, reassigned, retired, or removed from service. Finally, the Chemical Manufacturers Association (CMA), joined later by TFI, petitioned the United States Court of Appeals to review the provision in § 173.31(d)(2) that the discovery of a loose closure on a tank car would give rise to a ''rebuttable presumption'' that a proper inspection had not been performed. Based on the merits of the comments, questions and suggestions received and the petitions, RSPA is revising the final rule as discussed below. Editorial corrections and minor revisions based on suggestions from commenters or RSPA's own initiative are discussed in the summary of regulatory changes by section.

Because the amendments adopted herein clarify and relax certain provisions of the September 21, 1995 final rule, and impose no new regulatory burden on any person, notice and public procedure are unnecessary. For these same reasons, these amendments are being made effective on the same effective date of the September 21, 1995 final rule, without the usual 30-day delay following publication.

II. Discussion

Head protection: In § 173.31(b)(3)(ii) of the final rule, RSPA required full-head protection for tank cars carrying a Class 2 material and tank cars constructed from aluminum or nickel plate when they are used to transport hazardous material. Section 173.31(b)(3)(iii) requires full compliance with this requirement by July 1, 2006. TSI stated that the preamble discussion in the final rule indicated that the head protection applied only to tank cars used to transport Class 2 materials and to aluminum and nickel plate tank cars used to transport any hazardous material. However, the wording in paragraph (b)(3)(iii) could imply that *all* tank cars must have head protection by the July 1, 2006 compliance date. TSI petitioned RSPA to revise the provision.

RSPA agrees with TSI that the wording in § 173.31(b)(3)(iii) could be misunderstood. RSPA notes that similar wording is used in § 173.31(b)(4)(ii), (e)(2), and (f), which specify the compliance period for other requirements adopted in the final rule relating to thermal protection, tank cars used to transport certain poisonous-by-inhalation (PIH) materials, and hazardous substances. Therefore, in this document, RSPA is revising paragraphs (b)(3)(iii), (b)(4)(ii), (e)(2), and (f)(1) to clarify that these requirements apply to only certain tank cars.

One commenter asked RSPA to clarify the requirements for the head protection system required in the September 21 final rule. The commenter asked whether the head on the tank car could be considered a ''head protection system'' if it had adequate thickness. The commenter requested that § 173.31 be modified to ''clearly state that the head itself may serve as the tank head protection system.'' The commenter also asked if ''cars with a configuration essentially equal to the cars tested by DOT (DOT/FRA/ORD–92/11) be deemed * * * acceptable without further testing''? RSPA and FRA agree that the heads on a tank car can be considered a head protection system provided it met the appropriate performance criteria; however, RSPA believes placing this revision in the testing requirements in Appendix A would be more appropriate. Therefore, RSPA is clarifying in Appendix A to Part 179, paragraph 1, that a tank-head puncture-resistance system is a function of head thickness, jacket thickness, insulation thickness, or the material of construction, or a combination of any of these factors. Further, RSPA and FRA will accept testing of a specific head protection design to qualify like designs.

Progress reporting: In a letter dated October 19, 1995, RPI asked RSPA to revise § 173.31(b)(6)(ii); RPI asserted that reporting the mark of each modified car would be an administrative burden and stated that what was important was providing information on the number and percent of in-service tank cars modified, reassigned, retired, or removed to meet the requirement in § 173.31(b)(6). RSPA agrees with RPI and has amended paragraph (b)(6)(ii). The provision that each owner modify, reassign, retire, or remove at least 50%

of its in-service tank car fleet used to transport these specified hazardous materials within the first half of the compliance period (i.e., by July 1, 2001) is retained.

Thermal protection: In the final rule, the thermal protection requirements formerly found in § 179.105-4(a), (b), and (c) were moved to new § 179.18. In § 179.18, paragraph (a) specifies that thermal protection, when required, must be sufficient to prevent a release of the lading, except through the pressure relief device, when the tank car is subjected to (1) a pool fire for 100 minutes, and (2) a torch fire for 30 minutes. The overall thermal performance of the tank and its cargo is influenced by the heat capacity and volatility of the cargo, the flow capacity of the pressure relief device, the heat transfer characteristics of the tank, and the type of thermal protection material used. Paragraph (b)(1) requires verification of compliance with this standard by modeling the fire effects on the entire surface of the tank car according to the procedures outlined in a FRA contract report entitled ''Temperatures, Pressures and Liquid Levels of Tank Cars Engulfed in Fires,'' DOT/FRA/OR&D–84/08.11 (1984) (hereinafter referred to as ''1984 thermal model''). Prior to adoption of the final rule, the regulations did not specify any particular method to conduct such an analysis. The final rule also broadened the thermal protection requirements to apply to all tank cars used to transport Class 2 materials, with certain limited exceptions.

TFI and CF petitioned RSPA to delay the use of implementation of the thermal protection standard and asserted that adoption of the 1984 thermal model violated the Administrative Procedure Act, 5 U.S.C. 553.

In the preamble to the final rule, RSPA and FRA discussed in detail the objections of TFI and others to extending thermal protection to tank cars transporting anhydrous ammonia (and other Division 2.2 materials), and indicated their agreement with the views of one commenter who stated that ''there can be little basis for exempting anhydrous ammonia from the thermal protection requirements because it is not likely to catch fire once released. Its material poisonous by inhalation (PIH) characteristic remains, and the potential for rupturing in a non-insulated tank car is high.'' (60 FR 49053) RSPA and FRA believe that the NPRM provided adequate notice that they might adopt the 1984 thermal model if, as it occurred, that model had not been updated by the time the final rule was issued.

RSPA and FRA are aware of industry support for the 1984 thermal model and ongoing research by the FRA will address specific concerns about the *use* of the model. RSPA and FRA believe the 1984 thermal model produces supportable results at reasonable cost, but also understand that certain persons may wish to continue to perform an analysis using independent mathematical or computer modeling procedures to verify compliance with the thermal protection standard. Accordingly, in this final rule, § 179.18(b)(1) is revised to allow any method of verifying compliance with the thermal protection standard; however, RSPA and FRA reserve the right to require evidence of a model's effectiveness. In addition, RSPA and FRA will accept, without the need to ''prove'' the method, the procedures outlined in the 1984 thermal model.

III. Summary of Regulatory Changes by Section

The following review-by-section summarizes the revisions resulting from the petitions and comments received in response to the September 21 final rule.

Part 171

Section 171.6. In the table in paragraph (b)(2), column 3, under the entry for OMB Control Number 2137–0559, the sections identified in the collection of information are updated to reflect recent changes.

Part 173

Section 173.31. Paragraph (b)(2)(ii) is amended by revising the phrase ''in class DOT 115 tank cars, tank cars'' to read ''in class DOT 115 tank cars, single-unit tank cars'' to correct a typographical error.

Based on the TSI petition for reconsideration, paragraph (b)(3)(iii) is revised to clarify that existing tank cars being used to transport a Class 2 material and tank cars manufactured from aluminum or nickel plate that currently have no head protection must have full-head protection installed by July 1, 2006.

Paragraph (b)(4)(i) is revised to clarify that tank cars having a thermal protection system and tank cars that have an insulation system that has a heat flux of no more than 0.613 kilojoules per hour, per square meter, per degree Celsius temperature differential (0.03 B.t.u. per square foot, per hour, per degree Fahrenheit temperature differential) are considered to meet the thermal protection standard. For example, tank cars currently marked ''J'' or ''T,'' tank cars currently marked ''A'' but having a thermal protection material applied (e.g., 2-inches of ceramic fiber and 2-inches of glass fiber found on chlorine tank cars), and tank cars that have superior thermal resistance, such as tank cars used for carbon dioxide (refrigerated liquid) and nitrous oxide (refrigerated liquid), are considered to conform to the thermal protection standard. Paragraph (b)(4)(ii) is revised to clarify that only tank cars transporting Class 2 materials require thermal protection.

Paragraph (b)(6)(ii) is revised to remove the requirement to include the reporting mark of each tank car and to clarify the reporting period and due date of the progress report.

Paragraph (d)(1)(viii) is revised to clarify that ''other safety systems'' means ''bottom discontinuity protection.'' Paragraph (d)(2) of the final rule contained a rebuttable presumption standard aimed specifically at loose closures on tank cars. The ''secure and leakproof'' standard presently contained in 49 CFR 173.24(f), coupled with the requirement that closures be ''tool tight'' (formerly at 49 CFR 173.31(b)(3)), are not new requirements, and (d)(2) made clear the standard that had always applied. The reasoning behind the new language was amply discussed in the preamble to the final rule (60 FR at 49064–49066). Simply stated, if a hazardous materials package is discovered with loose closures, the closures were not designed properly, or they were not tightened properly, or they were loosened in transit. Neither RSPA nor FRA are aware of hazardous material packaging designs that allow closures to loosen in transit by themselves, even when subjected to overspeed impacts, as noted in the preamble to the final rule, and no commenter offered evidence to disprove this. This does not mean that every time closures are discovered loose, the offeror is at fault. The preamble in the September 21 final rule listed a number of examples where the presumption has been rebutted, taken from FRA's actual enforcement of the HMR against railroads and their shippers. (60 FR 49065)

CMA, joined later by TFI, petitioned the United States Court of Appeals to review the ''rebuttable presumption'' created in relation to the discovery of loose closures on tank cars. CMA's primary contention, as set forth in its Statement of Issues to be Raised filed with the court, is that the presumption as stated shifts the burden of proof in civil penalty cases from the government to the respondents and, accordingly, is contrary to Rule 301 of the Federal

Rules of Evidence. Neither RSPA nor FRA agree that the presumption shifts the burden of proof to respondents. Rather, consistent with Rule 301, the presumption simply imposes on respondents the burden of going forward with evidence to rebut or meet the presumption. It is not intended to shift to respondents the burden of proof in the sense of the risk of nonpersuasion, which remains with FRA. However, for the sake of clarity and consistency with the original preamble, RSPA and FRA have revised the rule. Section 173.31(d)(2) is amended to read:

> Closures on tank cars are required, in accordance with this subchapter, to be designed and closed so that under conditions normally incident to transportation, including the effects of temperature and vibration, there will be no identifiable release of a hazardous material to the environment. In any action brought to enforce this section, the lack of securement of any closure to a tool-tight condition, detected at any point, will establish a rebuttable presumption that a proper inspection was not performed by the offeror of the car. This presumption may be rebutted by any evidence indicating that the lack of securement resulted from a specific cause not within the control of the offeror.

Neither the original rebuttable presumption nor this amendment is in any way intended to abrogate the protections or the burdens of Rule 301. FRA accepts, and always has, the burden of proof inherent in the taking of an action for a civil penalty. The revised language makes FRA's position clear by removing any suggestion that the rule limits the types of evidence that respondents may offer and that the fact finder may consider in a rebuttal case. This clarification harmonizes the language of § 173.31(d)(2) with the description of the provision in the original preamble, which noted that examples of rebuttal evidence stated in the rule were not meant to be exclusive. What is sought in § 173.31(d)(2) is a recognition of the obligation placed on those who offer hazardous materials for transportation—closures on tank cars must be tool tight when the car is offered and they must be designed and closed so that they remain tool tight ''under conditions normally incident to transportation.'' When FRA initiates a civil penalty action for a violation of this section of the HMR, and presents evidence of a loose closure, it expects the respondent to come forward with rebuttal evidence, which may include evidence indicating that the loose closures resulted from a specific cause not within the control of the offeror. After all the evidence is presented, however, FRA still bears the burden of proof.

Paragraph (e)(2) is revised to specify the tank test pressure and other safety provisions required for tank cars transporting a PIH material in place of the list of authorized tank car specifications. Lastly, paragraph (f)(1) is revised to specify the tank test pressure and component requirements for tank cars transporting a hazardous substance, listed in § 173.31(f)(2), in place of the list of authorized tank car specifications.

Section 173.314. In response to suggestions made by commenters, Note 1 in paragraph (c) is clarified by placing the English and metric units in a separate sentence from the definition. In paragraph (n), the paragraph heading is amended by removing the word ''chloride'' because the paragraph applies only to ''hydrogen'' and not ''hydrogen chloride.''

Part 179

Section 179.2. In paragraph (a)(10), the definition for ''tank car facility'' is revised to include an entity that ''qualifies'' or ''maintains'' tank cars to clarify the definition and its relationship to the qualification requirements in Part 180.

Section 179.7. The introductory text in paragraph (a)(2) is revised to clarify that this provision also applies to qualification and maintenance programs.

Paragraph (b)(5) is revised to ensure that the tank car owner's qualification and maintenance program is included in the quality assurance program that tank car facilities will use to identify the characteristics of and elements on each tank car design to be inspected and tested. This change will make clear the relationship between the written procedures, prescribed in paragraph (d) of this section, and the manufacturing, inspection, testing, and maintenance programs.

Paragraph (b)(7) is amended by replacing the word ''imperfections'' with ''nonconformities'' for consistency with the wording used in paragraph (a)(3). A ''nonconformity'' means that the area under observation does not conform to the acceptance criteria; whereas an ''imperfection'' implies there is a defect, regardless of whether the defect conforms to the pass/fail acceptance criteria.

Paragraph (b)(9) is amended by removing the list of specific non-destructive inspection and test methods because authorized methods for non-destructive testing (NDT) are now listed in § 180.509(e). Paragraph (b)(10) is removed because it is no longer necessary to list the qualification requirements for examiners performing specific types of visual inspections based on the changes made to paragraph (b)(9). Paragraph (b)(11) is renumbered as paragraph (b)(10) and is revised by adding the word ''reliability'' to ensure the adequacy and repeatability of the non-destructive inspection test technique. Paragraphs (b) (12) and (13) are renumbered as paragraphs (b) (11) and (12), respectively.

In paragraph (d), the word ''establish'' is corrected to read ''provide'' because the owner of the tank car generally will provide the written procedures for inspecting the tank to the tank car facility. In the September 21 final rule, RSPA stated that these procedures belong in the tank car owner's written maintenance plan or Association of American Railroads (AAR) Specifications for Tank Cars. Further, the approach adopted by RSPA and FRA allows each tank car owner the flexibility to develop inspection and test procedures appropriate for each unique tank car or series of tank cars based on operating and maintenance experience (see 60 FR 49063).

In paragraph (f), the words ''inspect, or test'' are revised to read ''inspect, test, qualify or maintain'' for consistency with § 179.2.

Section 179.16. Paragraph (b) is revised to clarify that two methods may be used to achieve compliance with the performance standard prescribed for the tank-head puncture-resistance system. The method prescribing that the tank-head resistance system must be verified by testing in accordance with Appendix A to Part 179 is retained in paragraph (b). The method allowing the installation of full-head protection (shields) or full tank head jackets, as an alternative to verification by testing, is moved to new paragraph (c). In addition, in new paragraphs (c)(1) and (c)(2), the phrase ''tank-head puncture-resistance system'' is corrected to read ''full tank-head protection (shields) or full tank-head jackets.''

Section 179.18. In paragraph (a), the phrase ''safety relief valve'' is revised to read ''pressure relief device'' for consistency with existing regulations. Paragraph (b)(1) is amended to specify that FRA's 1984 thermal model is an optional pre-approved procedure for verifying compliance with the thermal protection standard in paragraph (a). In paragraph (b)(2), the words ''an unlisted'' are revised to read ''a new or untried'', for consistency with language used in the opening paragraphs of Appendix B to Part 179.

Section 179.22. In paragraphs (b), (c), and (d), the phrase ''is equipped with'' is revised to read ''requires''. This

change will allow the optional marking of a tank car ''S,'' ''J,'' or ''T'' when such car has, but does not require, head or thermal protection. Tank cars requiring such protection must be marked to show the appropriate tank specification.

Appendix A to Part 179. In Appendix A to Part 179, a second sentence is added to paragraph 1, based on comments received, to clarify that tank-head puncture-resistance is a function of one or more of the following: head thickness, jacket thickness, insulation thickness, and the material of construction.

Part 180

Section 180.501. Paragraph (a) is amended by removing the phrase ''that the tank cars are in proper condition for transportation'' and by inserting in its place ''continuing qualification''. This change will help clarify that the tank cars must continue to conform to the qualification requirements of subpart F of Part 180.

Section 180.509. Paragraph (b)(1) is revised to replace the requirement to inspect all ''tank cars showing any evidence of a condition....that would make them unsafe for transportation'' with a requirement to perform a leakage pressure test after reassembly of the tank car or service equipment. This revision will clarify that repairs or maintenance will not subject the tank to the full inspection and test program because repairs and maintenance must be done in accordance with Appendix R of the AAR's Specifications for Tank Cars (see also 60 FR 49060). It also clarifies that a leakage pressure test, as prescribed in paragraph (j), must be performed after reassembly of the tank car. Paragraph (b)(2) is amended to clarify that leaking tank cars or tank cars showing evidence of structural damage are required to be inspected and tested without regard to any other periodic inspection or test requirement. This change will clarify that the entire tank structure is subject to an inspection and test only when the structural integrity of the tank may have been compromised.

RSPA is removing the 10-year limit in paragraph (c)(3)(iii) for requalification of inner linings and coatings of tank cars. Paragraph (c)(3)(iii)(A) is revised to require that supporting documentation used to make inspection and test interval determinations for linings or coatings for materials corrosive to the tank be made available to FRA personnel upon request. This requirement was in paragraph (c)(3)(iii)(B). In addition, in paragraph (c)(3)(iii)(A), the phrase '', and acceptance criteria'' is added to the first and second sentence to clarify that an owner must determine not only the inspection interval and test technique, but also the *acceptance criteria* for linings and coatings. Paragraph (c)(3)(iii)(B) is revised to require the owner of a lining or coating to provide the periodic inspection interval, test technique, and acceptance criteria to the person requalifying the lining or coating. This provision was added in response to a National Transportation Safety Board (NTSB) recommendation (NTSB R–95–10/R–95–11) that inspectors have sufficient access to an owner's acceptance criteria. Section 180.511(e) of the final rule defines the lining and coating acceptance criteria as ''no evidence of holes or degraded areas.'' Several commenters stated all linings and coatings have holes or degraded areas and, therefore, all linings and coatings will fail the test. They suggested that the owner of the lining or coating should determine the acceptance criteria (i.e., the allowable number of discontinuities [e.g., a film defect characterized by small pore-like or pin-hole type flaws]), because the number of discontinuities will depend on the film-coating or rubber-lining material, thickness, design, and surface conditions. RSPA and FRA agree that the owner's knowledge of the lining or coating will assist in determining with greater accuracy safe acceptance criteria for linings and coatings.

The table in paragraph (g)(1)(ii) is revised to convert the fractions in column two (''DOT 103 * * *, Top shell'') to their decimal equivalent and the second and fourth column headings are revised from ''Top shell'' to read ''Top shell and head'' to allow limited reductions in the tank head thickness.

In paragraph (i), requirements for inspecting and testing the lining and coating based on the owner's acceptance criteria are added as discussed earlier in this preamble.

Paragraph (j) is revised to clarify that the tank must have a leakage test after reassembly of a tank car or its service equipment. One commenter supplied information on leak testing that shows acceptable results at much lower pressures. Another commenter provided information showing that, for bubble film testing, the rate of bubble formation, the size of bubbles formed, and the rate that individual bubbles increase in size are means for estimating the size of a leak (the rate of gas flow through a leak). At lower pressures, such as 10–15 psi, a leak can be detected with acceptable test techniques. Based on the comments, the leak test requirement is amended by removing the pressure references and by allowing any accepted NDT practices, such as bubble emission testing (solution film tests) and ultrasonic leak detection. This revision provides additional relief from the requirement without compromising safety by authorizing lower test pressures and reducing the potential danger of a pneumatic high-pressure test on an empty tank car.

In paragraph (l), the paragraph heading is amended by removing the phrase ''with metal jackets or thermal protection systems.'' This change will clarify that requirements in the paragraph also apply to non-jacketed tank cars.

Section 180.511. Paragraph (e) is amended by replacing the phrase ''shows no evidence of holes or degraded areas'' with ''conforms to the owner's acceptance criteria.'' This change will clarify that the acceptance criteria are based on the owner's determinations.

Section 180.515. Paragraph (a) is amended by replacing the phrase ''paragraph (b) of this section'' with ''Appendix C of the AAR Specifications for Tank Cars.'' This change removes the cross-reference to paragraph (b) and simplifies the regulation.

Paragraph (b) is removed based on the change above. Paragraphs (c) and (d) are renumbered (b) and (c) respectively.

Section 180.519. The first sentence in paragraph (b)(6) is amended by replacing the reference ''paragraph (d)(8)'' with ''paragraph (c)'' to correct a typographical error, and by replacing the phrase ''1–60 for January 1960'' with ''01–90 for January 1990'' to update the reference date in the example. In paragraph (b)(5), in Retest Table 1, the last entry ''BE–275'' is revised to read ''BE–27'' to correct a typographical error.

In paragraph (c), the phrase ''DOT 110A–Z'' is revised to read ''DOT 110A–W'' to correct a typographical error.

IV. Regulatory Analyses and Notices

A. Executive Order 12866 and DOT Regulatory Policies and Procedures

This final rule is considered a non-significant regulatory action under section 3(f) of Executive Order 12866 and was not reviewed by the Office of Management and Budget (OMB). Although the underlying rule was considered significant under the Regulatory policies and Procedures of the Department of Transportation (44 FR 11034), because it affects a significant segment of the tank car industry, this document is considered ''non-significant'' because it clarifies and corrects provisions of the final rule and provides consistency. This final rule

does not impose additional requirements and, in fact, provides relief in some areas. The net result is that costs imposed under the final rule published in the Federal Register on September 21, 1995 are reduced, but without a reduction in safety. The original regulatory evaluation of the final rule was reexamined but not modified because changes made under this rule provide limited relief and thus will result in minimal economic impact on the industry.

B. Executive Order 12612

This final rule has been analyzed in accordance with the principles and criteria contained in Executive Order 12612 (''Federalism''). Federal law expressly preempts State, local, and Indian tribe requirements applicable to the transportation of hazardous material that cover certain subjects and are not ''substantively the same'' as the Federal requirements, 49 U.S.C. 5125(b)(1). These covered subjects are:

(A) The designation, description, and classification of hazardous material;

(B) The packing, repacking, handling, labeling, marking, and placarding of hazardous material;

(C) The preparation, execution, and use of shipping documents related to hazardous material and requirements respecting the number, contents, and placement of those documents;

(D) The written notification, recording, and reporting of the unintentional release in transportation of hazardous material; or

(E) The design, manufacturing, fabricating, marking, maintenance, reconditioning, repairing, or testing of a packaging or a container which is represented, marked, certified, or sold as qualified for use in transporting hazardous material.

This final rule addresses the design, manufacture, repair, and other requirements for packages represented as qualified for the use in the transportation of hazardous material. Therefore, this final rule preempts State, local, or Indian tribe requirements that are not ''substantively the same'' as Federal requirements on these subjects. Section 5125(b)(2) of Title 49 U.S.C. provides that when DOT issues a regulation concerning any of the covered subjects after November 16, 1990, DOT must determine and publish in the Federal Register the effective date of Federal preemption. The effective date may not be earlier than the 90th day following the date of issuance of the final rule and no later than two years after the date of issuance. RSPA has determined that the effective date of Federal preemption of this final rule will be September 24, 1996.

Because RSPA lacks discretion in this area, preparation of a federalism assessment is not warranted.

C. Regulatory Flexibility Act

I certify that this final rule will not have a significant economic impact on a substantial number of small entities. The entities affected by the rule are involved in tank car leasing, maintenance, repair and use. There are no direct or indirect adverse economic impacts for small units of government, businesses, or other organizations.

D. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number. Information collection requirements in 49 CFR 173.31, 179.7, and 180.517 are currently approved under OMB control number 2137-0559. A provision adopted in this final rule, to eliminate a requirement to show the reporting mark of each tank car in an annual progress report, will result in a minor reduction in the amount of burden imposed by this collection. RSPA believes that this change in burden is not sufficient to warrant revision of the currently approved information collection.

E. Regulation Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN numbers contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

List of Subjects

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements.

49 CFR Part 173

Hazardous materials transportation, Packaging and containers, Radioactive materials, Reporting and record keeping requirements, Uranium.

49 CFR Part 179

Hazardous materials transportation, Railroad safety, Reporting and record keeping requirements.

49 CFR Part 180

Hazardous materials transportation, Motor carriers, Motor vehicle safety, Packaging and containers, Railroad safety, Reporting and record keeping requirements.

In consideration of the foregoing, 49 CFR Chapter I is amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITION

1. The authority citation for part 171 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

§ 171.6 [Amended]

2. In § 171.6, in paragraph (b)(2), column 3 of the table, for the entry ''2137–0559'' the references ''173.31 (a)(4), (c)(8), (d)(8), Table Footnote (i)'' are removed and the references ''173.31(b)(6)(ii),'' and ''179.7 (b)(2), (5), (d), 180.517 (a), (b)'' are added in numerical order.

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS

3. The authority citation of Part 173 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

§ 173.31 [Amended]

4. In § 173.31, the following changes are made:

a. In paragraph (b)(2)(ii), the phrase ''in class DOT 115 tank cars, tank cars used'' is revised to read ''in class DOT 115 tank cars, single-unit tank cars used''.

5. In § 173.31, paragraphs (b)(3)(iii), (b)(4)(i), (b)(4)(ii), (b)(6)(ii), (d)(1)(viii), (d)(2), (e)(2) and (f)(1) are revised to read as follows:

§ 173.31 Use of tank cars.

* * * * *

(b) * * *

(3) * * *

(iii) Except as provided in paragraph (b)(3)(iv) of this section, those tank cars specified in paragraphs (b)(3)(i) and (ii) of this section not requiring a tank-head puncture resistance system prior to July 1, 1996, must have a tank-head puncture resistance system installed no later than July 1, 2006.

* * * * *

(4) * * *

(i) Tank cars transporting a Class 2 material, except for a class 106, 107A, 110, and 113 tank car. A tank car equipped with a thermal protection system conforming to § 179.18 of this subchapter, or that has an insulation system having an overall thermal

conductance of no more than 0.613 kilojoules per hour, per square meter, per degree Celsius temperature differential (0.03 B.t.u. per square foot, per hour, per degree Fahrenheit temperature differential), conforms to this requirement.

(ii) A tank car transporting a Class 2 material that was not required to have thermal protection prior to July 1, 1996, must be equipped with thermal protection no later than July 1, 2006.

* * * * *

(6) * * *

(ii) By October 1 of each year, each owner of a tank car subject to this paragraph (b)(6) shall submit to the Hazardous Materials Division (RRS–12), Office of Safety Assurance and Compliance, Federal Railroad Administration, 400 7th Street, SW., Washington, DC 20590–0001, a progress report that shows the total number of in-service tank cars that need head protection, thermal protection, or bottom-discontinuity protection; the number of new or different tank cars acquired to replace those tank cars required to be upgraded to a higher service pressure; and the total number of tank cars modified, reassigned, acquired, retired, or removed from service the previous year.

* * * * *

(d) * * *

(1) * * *

(viii) The external thermal protection system, tank-head puncture resistance system, coupler vertical restraint system, and bottom discontinuity protection for conditions that make the tank car unsafe for transportation.

* * * * *

(2) Closures on tank cars are required, in accordance with this subchapter, to be designed and closed so that under conditions normally incident to transportation, including the effects of temperature and vibration, there will be no identifiable release of a hazardous material to the environment. In any action brought to enforce this section, the lack of securement of any closure to a tool-tight condition, detected at any point, will establish a rebuttable presumption that a proper inspection was not performed by the offeror of the car. That presumption may be rebutted by any evidence indicating that the lack of securement resulted from a specific cause not within the control of the offeror.

(e) * * *

(2) Tank car specifications. A tank car used for a material poisonous by inhalation must have a tank test pressure of 20.7 Bar (300 psi) or greater, head protection, and a metal jacket (e.g., DOT 105S300W), except that—

(i) A higher test pressure is required if otherwise specified in this subchapter; and

(ii) Other than as provided in paragraph (b)(6) of this section, a tank car which does not conform to the requirements of this paragraph (e)(2), and was authorized for the material poisonous by inhalation under the regulations in effect on June 30, 1996, may continue in use until July 1, 2006.

(f) * * *

(1) A tank car used for a hazardous substance listed in paragraph (f)(2) of this section must have a tank test pressure of at least 13.8 Bar (200 psi), head protection and a metal jacket, except that—

(i) No metal jacket is required if—

(A) The tank test pressure is 23.4 Bar (340 psi) or higher; or

(B) The tank shell and heads are manufactured from AAR steel specification TC–128, normalized;

(ii) A higher test pressure is required if otherwise specified in this subchapter; and

(iii) Other than as provided in paragraph (b)(6) of this section, a tank car which does not conform to the requirements of this paragraph (f)(1), and was authorized for a hazardous substance under the regulations in effect on June 30, 1996, may continue in use until July 1, 2006.

* * * * *

6. In § 173.314, Note 1 following paragraph (c) table and the heading of paragraph (n) are revised to read as follows:

§ 173.314 Compressed gases in tank cars and multi-unit tank cars.

* * * * *

(c) * * *

NOTES:

1. The percent filling density for liquefied gases is hereby defined as the percent ratio of the mass of gas in the tank to the mass of water that the tank will hold. For determining the water capacity of the tank in kilograms, the mass of one liter of water at 15.5°C in air is 1 kg. (the mass of one gallon of water at 60°F in air is 8.32828 pounds).

* * * * *

(n) *Special requirements for hydrogen.*

* * *

* * * * *

PART 179—SPECIFICATIONS FOR TANK CARS

7. The authority citation for Part 179 continues to read as follows:

Authority: 49 App. U.S.C. 5101–5127; 49 CFR 1.53.

§ 179.2 [Amended]

8. In § 179.2, in paragraph (a)(10), the words ''inspects, or tests'' are revised to read ''inspects, tests, qualifies, or maintains''.

9. In § 179.7, paragraph (b)(10) is removed, and paragraphs (b)(11), (b)(12), and (b)(13) are redesignated as paragraphs (b)(10), (b)(11), and (b)(12), respectively, and paragraphs (a)(2), (b)(5), (b)(9), and (d) are revised to read as follows:

§ 179.7 Quality assurance program.

(a) * * *

(2) Has the means to detect any nonconformity in the manufacturing, repair, inspection, testing, and qualification or maintenance program of the tank car; and

* * * * *

(b) * * *

(5) A description of the manufacturing, repair, inspection, testing, and qualification or maintenance program, including the acceptance criteria, so that an inspector can identify the characteristics of the tank car and the elements to inspect, examine, and test at each point.

* * * * *

(9) Qualification requirements of personnel performing non-destructive inspections and tests.

* * * * *

(d) Each tank car facility shall provide written procedures to its employees to ensure that the work on the tank car conforms to the specification, AAR approval, and owner's acceptance criteria.

* * * * *

§ 179. 7 [Amended]

10. In addition, in § 179.7, the following changes are made:

a. In paragraph (b)(7) the word ''imperfections'' is revised to read ''nonconformities''.

b. In newly designated paragraph (b)(10), the phrase ''and reliability'' is added after the word ''sensitivity''.

c. In paragraph (f), the words ''inspect, or test'' are revised to read ''inspect, test, qualify or maintain''.

11. In § 179.16, paragraph (b) is revised and a new paragraph (c) is added, to read as follows:

§ 179.16 Tank-head puncture-resistance systems.

* * * * *

(b) *Verification by testing.* Compliance with the requirements of paragraph (a) of this section shall be verified by full-scale testing according to Appendix A of this part.

(c) *Alternative compliance by other than testing.* As an alternative to

requirements prescribed in paragraph (b) of this section, compliance with the requirements of paragraph (a) of this section may be met by installing full-head protection (shields) or full tank-head jackets on each end of the tank car conforming to the following:

(1) The full-head protection (shields) or full tank-head jackets must be at least 1.27 cm (0.5 inch) thick, shaped to the contour of the tank head and made from steel having a tensile strength greater than 379.21 N/mm^2 (55,000 psi).

(2) The design and test requirements of the full-head protection (shields) or full tank-head jackets must meet the impact test requirements of Section 5.3 of the AAR Specifications for Tank Cars.

(3) The workmanship must meet the requirements of Section C, Part II, Chapter 5 of the AAR Specifications for Design, Fabrication, and Construction of Freight Cars.

12. In § 179.18, paragraph (b)(1) is revised to read as follows:

§ 179.18 Thermal protection systems.

* * * * *

(b) * * * (1) Compliance with the requirements of paragraph (a) of this section shall be verified by analyzing the fire effects on the entire surface of the tank car. The analysis must consider the fire effects on and heat flux through tank discontinuities, protective housings, underframes, metal jackets, insulation, and thermal protection. A complete record of each analysis shall be made, retained, and upon request, made available for inspection and copying by an authorized representative of the Department. The procedures outlined in ''Temperatures, Pressures, and Liquid Levels of Tank Cars Engulfed in Fires,'' DOT/FRA/OR&D–84/08.11, (1984), Federal Railroad Administration, Washington, DC (available from the National Technical Information Service, Springfield, VA) shall be deemed acceptable for analyzing the fire effects on the entire surface of the tank car.

* * * * *

§ 179.18 [Amended]

13. In addition, in § 179.18, in paragraph (a) introductory text, the phrase ''safety relief valve'' is revised to read ''pressure relief device'' and in paragraph (b)(2) the phrase ''an unlisted'' is revised to read ''a new or untried''.

§ 179.22 [Amended]

14. In § 179.22, in paragraphs (b), (c) and (d), the wording ''is equipped with'' is revised to read ''requires'' each place it appears.

15. In appendix A to part 179, paragraph 1 is amended by adding a sentence at the end of the paragraph to read as follows:

Appendix A to Part 179—Procedures for Tank-Head Puncture-Resistance Test

1. * * * Tank-head puncture-resistance is a function of one or more of the following: Head thickness, jacket thickness, insulation thickness, and material of construction.

* * * * *

PART 180—CONTINUING QUALIFICATION AND MAINTENANCE OF PACKAGINGS

16. The authority citation for Part 180 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

§ 180.501 [Amended]

17. In § 180.501, paragraph (a) is amended by removing the phrase ''that the tank cars are in proper condition for transportation'' and adding in its place, the phrase,''continuing qualification''.

18. In § 180.509, a sentence is added at the end of paragraph (b)(1); the introductory text of paragraph (b), and paragraphs (c)(3)(iii) (A) and (B), (j), and the heading of paragraph (l) are revised to read as follows:

§ 180.509 Requirements for inspection and test of specification tank cars.

* * * * *

(b) * * *. Without regard to any other periodic inspection and test requirements, a tank car must have an appropriate inspection and test according to the type of defect and the type of maintenance or repair performed if:

(1) * * *. An example is if maintenance is performed to replace a fitting, then only a leakage pressure test needs to be performed.

* * * * *

(c) * * *

(3) * * *

(iii) * * *

(A) When a lining or coating is applied to protect the tank shell from the lading, the owner of the lining or coating shall determine the periodic inspection interval, test technique, and acceptance criteria for the lining or coating. The owner must maintain at its principal place of business all supporting documentation used to make such a determination, such as the lining or coating manufacturer's recommended inspection interval, test technique, and acceptance criteria. The supporting documentation must be made available to FRA upon request.

(B) The owner of the lining or coating shall provide the periodic inspection interval, test technique, and acceptance criteria for the lining or coating to the person responsible for qualifying the lining and coating.

* * * * *

(j) *Leakage pressure test.* After reassembly of a tank car or service equipment, a tank car facility must perform a leak test on the tank or service equipment to detect leakage, if any, between manway covers, cover plates, and service equipment. The test may be conducted with the hazardous material in the tank. When the test pressure exceeds the start-to-discharge or burst pressure of a pressure relief device, the device must be rendered inoperative. The written procedures and test method for leak testing must ensure for the sensitivity and reliability of the test method and for the serviceability of components to prevent premature failure.

* * * * *

(l) *Inspection and test compliance date for tank cars.* * * *

* * * * *

§ 180.509 [Amended]

19. In addition, in § 180.509, the following changes are made:

a. Paragraph (c)(3)(iii) introductory text is amended by removing the phrase '', and when a lining or coating is applied to protect the tank shell from the lading, an interval based on the owner's determination for the lining or coating, but not greater than every 10 years''.

b. In paragraph (g)(1)(ii) introductory text, the phrase ''reduction in thickness'' is revised to read ''reduction in the required minimum thickness''.

c. In the paragraph (g)(1)(ii) table, in the second column, for the third and fifth entries, the parenthetical ''(3⁄16 inch)'' is revised to read ''(0.188 inch)'' each place it appears; and in the second and fourth columns, the column heading ''Top shell'' is revised to read ''Top shell and tank head'' for each column.

d. In paragraph (i), the phrase ''and test technique'' is revised to read '', test technique, and acceptance criteria''.

§ 180.511 [Amended]

20. ln § 180.511, in paragraph (e), the phrase ''shows no evidence of holes or degraded areas'' is revised to read ''conforms to the owner's acceptance criteria''.

§ 180.515 [Amended]

21. ln § 180.515, the following changes are made:

a. In the first sentence in paragraph (a), the phrase ''paragraph (b) of this section'' is revised to read ''Appendix C of the AAR Specifications for Tank Cars''.

b. Paragraph (b) is removed and paragraphs (c) and (d) are redesignated as paragraphs (b) and (c) respectively.

§ 180.519 [Amended]

22. In § 180.519, the following changes are made:

a. In paragraph (b)(5), in the first column of Retest Table 1, the last entry ''BE–275'' is revised to read ''BE–27''.

b. The first sentence of paragraph (b)(6) is amended by revising the reference paragraph ''(d)(8)'' to read ''(c)'', and revising the phrase ''1–60 for January 1960'' to read ''01–90 for January 1990''.

c. In paragraph (c), the phrase ''DOT 110A–Z'' is revised to read ''DOT 110A–W''.

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Kelley S. Coyner,

Deputy Administrator.

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