

## DEPARTMENT OF TRANSPORTATION

Research and Special Programs  
Administration

## 49 CFR Parts 171 and 173

RIN 2137-AB39

**Shippers; Use of Tank Car Tanks With  
Localized Thin Spots; Response to  
Petitions for Reconsideration**AGENCY: Research and Special Programs  
Administration (RSPA), DOT.

ACTION: Final rule, corrections.

**SUMMARY:** In response to petitions for reconsideration, RSPA is amending the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) to (1) permit the use of railroad tank car tanks with tank shell thicknesses in localized areas less than the minimum specified in the HMR and (2) require the measurement of tank car tank thicknesses under certain conditions. This action is necessary to permit continued use of certain cars with reduced shell thicknesses and verify that tank repairs do not result in significant decreases in shell thicknesses. The intended effect of this action is to assure that tank repairs do not result in a reduction in the level of safety and to facilitate commerce by allowing the use of tank car tanks, with localized thin spots, which have been determined to be safe for the transportation of hazardous materials. The petitions for reconsideration are granted in part as described herein. To the extent the petitions are not granted, the issues raised in them will be considered under Docket HM-201.

**EFFECTIVE DATE:** These amendments are effective on January 1, 1990.

**FOR FURTHER INFORMATION CONTACT:** Philip Olekszyk, Deputy Associate Administrator for Safety, Federal Railroad Administration, RRS-2, Washington, DC 20590, Telephone (202) 366-0897.

**SUPPLEMENTARY INFORMATION:****Amendment No. 173-208**

On February 28, 1989, RSPA published a final rule in the Federal Register, under Docket HM-201B, Amendment No. 173-208 (54 FR 8336). Amendment 173-208 permitted the use of railroad tank car tanks where tank repairs had caused the tank shell thickness in localized areas to fall below the dimensions stated in part 179 of the HMR; it also required the measurement of tank car tank thicknesses under certain conditions. This action was

based on (1) the belief that small localized reductions of shell thickness due to tank repairs would not significantly reduce the safety of tank car tanks, and (2) the observation that some repair facilities were removing tank metal in the course of repairs without measuring the reduction in tank thickness. In developing Amendment No. 173-208, RSPA and FRA relied on a study ("DOT 105/111/112/114 Tank Cars Shell Cracking and Structural Integrity Assessment," November 1986) conducted by DOT's Transportation Systems Center (TSC) and a table ("Allowable Thickness Reduction from Minimum Prescribed Thickness of Carbon Steel Tank Car Tanks") developed by the Association of American Railroads (AAR) Tank Car Committee. The interested reader is directed to Amendment No. 173-208 and Notice No. 87-11 (52 FR 46511) for additional background information concerning this rulemaking.

**Petitions for Reconsideration**

In response to Amendment No. 173-208, RSPA received 13 petitions for reconsideration. On May 10, 1989, RSPA and FRA met with the petitioners to clarify certain aspects of their petitions. A summary of that meeting is in the docket. Subsequent to the meeting, the AAR submitted a technical report (M.R. Johnson and E.A. Phillips, "Study of Railroad Tank Car Thickness Minimums," Report No. RA-12-3-56, May 5, 1989) in support of its petition for reconsideration. The Railway Progress Institute (RPI) also submitted a survey of its members in support of its petition. Both of the latter documents are included in the docket.

None of the petitioners for reconsideration disagreed with the concept that tank car tanks with small localized reductions of shell thickness due to tank repairs should be allowed to continue in service. Instead, all of the petitioners requested additional relief.

**Meaning of Part 179 Standards**

Petitioners contend that the construction standards in part 179 specify a minimum tank thickness "after forming" of the various sections which are then joined to become the completed tank, and, once the tank is completed, § 173.31 describes a continuing qualification standard using hydrostatic and visual inspection techniques to check for tank integrity.

Petitioners point to the fact that the HMR do not require that tank thickness be measured once the tank is assembled or during its service life. The primary reason that the HMR do not require tank thickness measurements is that, until

recently, there were no reliable field-operable, non-destructive thickness testing techniques of sufficient accuracy for making thickness measurements of completed tanks. With no techniques to measure whatever thinning may have occurred, monitoring of a service life shell thickness was impractical.

DOT has service life shell thickness standards for cargo tanks and intermodal portable tanks. In addition, in August 1986, FRA's Chief Counsel stated in a letter to the AAR (a copy of which is in the docket) that FRA "cannot accede" to AAR's position that part 179 does not establish service life shell thickness standards.

RSPA and FRA have concluded that the shell thickness issue can be resolved only through a careful rulemaking process exploring all aspects of the issue, e.g., whether different requirements should apply depending on the type of car, its age, or the commodity being hauled. DOT has a current, companion rulemaking proceeding, Docket HM-201, in which these issues will be resolved. An NPRM under that docket addressing these issues will be issued soon. Until a final rule emerges in that docket, the shell thickness requirements specified in part 179, as amended by this final rule, are the minimum in service shell thickness requirements throughout the life of a tank car. Tank car thickness measurements, however, are required only at the time of construction and at the time of a repair involving removal of metal, as provided for in this rulemaking. Of course, the requirements for hydrostatic testing and visual observation must also be adhered to strictly.

**Corrosion and Other Mechanical  
Conditions**

Several petitioners contended that Amendment No. 173-208 was too limited in that it addressed only reductions in tank shell thickness due to repair and not reductions due to such other factors as corrosion. These petitioners believe that all reductions in tank shell thickness should be treated alike. RSPA and FRA believe that reductions in tank shell thickness due to causes other than tank repair should be carefully considered. For example, a reduction in shell thickness due to corrosion is potentially more serious than a similar reduction due to a repair, because the former indicates that additional reductions in shell thickness are likely to occur unless the tank user makes operational or mechanical changes.

Several of the petitioners for reconsideration estimate that between

30 and 50 percent of the tank car tanks in hazardous material service are thinner than the standards set in part 179. However, none of those estimates were based on a proven scientific sampling; in fact all but one of the parties acknowledged that the estimates were merely guesses. One party stated that during an *ad hoc* check of hazardous materials tank cars being serviced it was found that one third had thicknesses less than those stated in part 179. On August 31, 1989 RPI submitted to RSPA and FRA a survey of its membership (a copy of which is in the docket). RPI's extrapolation of that survey indicates that as many as 36,800 tank cars may have thicknesses less than those stated in part 179. RPI provided no information about the methodology used to conduct its survey. Because this issue is outside the scope of this docket, it will be addressed in Docket HM-201.

#### Tank Car Classes

Several petitioners recommended that the scope of Amendment No. 173-208 be expanded to include other classes of tank car tanks. In Amendment No. 173-208, the relief was limited to DOT class 105, 109, 111, 112, and 114 tank car tanks, because (1) both the TSC and AAR studies discussed above were limited to those classes of tank car tanks, and (2) other classes of tank car tanks may be very thin (e.g., a DOT class 103 or 104 tank car tank can be as thin as  $\frac{1}{4}$  inch on the top shell areas and a DOT class 115 tank car tank or AAR specification 206W tank car tank can be as thin as  $\frac{1}{8}$  inch in the inner tank). Upon further consideration, RSPA and FRA conclude that Amendment No. 173-208 is too restrictive as to the classes of tank car tanks for which relief is given. As several petitioners pointed out, most DOT class 103 and 104 tank car tanks have tank car thicknesses greater than  $\frac{1}{4}$  inch. Accordingly, § 173.31(a)(11) is being revised to allow the use of (1) large (i.e., inside diameter greater than 96 inches) diameter DOT class 103 or 104 tank car tanks with repair-caused thin spots anywhere on the tank except the lower half of the head ends, (2) small diameter DOT class 103 or 104 tank car tanks with repair-caused thin spots anywhere on the tank except the lower half of the head ends and the top shell areas, and (3) DOT class 115 and AAR specification 206W tank car tanks with repair-caused thin spots anywhere on the outer shell, except the lower half of the head ends of the outer shell. This final rule does not provide any relief for small diameter DOT class 103 or 104 tank car tanks with thin spots on the top shell areas or for DOT class 115 or AAR

specification 206W tank car tanks with thin spots anywhere on the inner tank area. RSPA and FRA believe that the minimum tank thicknesses for the top shells of small DOT class 103 or 104 tanks and the minimum inner tank thicknesses for DOT class 115 and AAR specification 206W tank car tanks are appropriate as provided in part 179.

#### Materials

Several petitioners recommended that the scope of Amendment No. 173-208 be expanded to include materials of construction other than carbon steel. In Amendment No. 173-208, the relief was limited to carbon steel tank car tanks, because both the TSC and AAR studies discussed above were limited to carbon steel tank car tanks. Upon further consideration, RSPA and FRA conclude that Amendment No. 173-208 is too restrictive; accordingly, relief is also being given to stainless steel tank car tanks and manganese-molybdenum steel tank car tanks. RSPA and FRA believe that the known physical properties of those materials support such an expansion of relief.

No relief is being provided for aluminum or nickel tank car tanks. Tentative research results from a study sponsored by FRA, with support from RPI and the AAR, indicate that aluminum tank car tanks, even when having tank thicknesses complying with part 179 of the HMR, may be punctured in impacts at low speeds. RSPA and FRA are not aware of any puncture tests of nickel tank car tanks, but based upon the physical properties of nickel, believe that nickel tank car tanks might also be punctured at low speeds. However, relief for existing aluminum or nickel tank car tanks that have thin spots will be considered in Docket HM-201.

#### Allowable Limits of Tank Thickness Reduction

Several petitioners recommended that the scope of Amendment No. 173-208 be expanded to allow increases in the allowable area of the reduction of shell thickness and/or in the amount of the reduction of shell thickness. Several petitioners specifically endorsed the table entitled "Allowable Thickness Reduction from Minimum Prescribed Thickness of Carbon Steel Tank Car Tanks" submitted by the AAR in comments to Notice 87-11. At the May 10, 1989, meeting discussed above, the AAR announced that it would be submitting two technical reports in support of the AAR table and on June 12, 1989, the AAR submitted one of the reports (Report No. RA-12-3-56). After reviewing the petitions and Report No. RA-12-3-56, RSPA and FRA have

concluded that sufficient data is not now available to permit relaxing the limits imposed in Amendment No. 173-208. However, relief for existing tank car tanks that have thin spots greater in area or in depth than is allowed in this final rule will be fully considered in Docket HM-201.

#### Tank Car Structure

Several petitioners recommended that the scope of Amendment No. 173-208 be expanded to allow the use of tank car tanks with thin spots on tank car structures not complying with § 6.2 of the AAR Specifications for Tank Cars. RSPA and FRA restricted the scope of Amendment No. 173-208 based on the recommendations of the AAR in their comments concerning Notice 87-11. In those comments, AAR presented a table of suggested allowable thickness reductions and noted "that the thickness reductions set forth in the table would be permitted only if the structural design requirements set forth in the AAR's Specification for Tank Cars (Specification M-1002), § 6.2, are met." In their petition for reconsideration, the AAR revised their position and recommended that tank car structural design not be a factor in allowing thin spots on tank car tanks.

RSPA and FRA understand that AAR adopted § 6.2 because some tank cars had buckled in railroad service. RSPA and FRA continue to believe that there might be an unacceptable reduction in safety if thin shell tank car tanks were permitted to be used in combination with car structures that are prone to buckling. Therefore, this final rule does not provide any relief for tank car tanks that are attached to car structures that do not comply with § 6.2 of the AAR Specifications for Tank Cars. However, this issue will also be addressed in Docket HM-201.

#### Ethylene Oxide Tank Car Tanks

AAR Report No. RA-12-3-56 pointed out that the TSC study discussed above identified a potential safety hazard associated with thin wall DOT class 111 tank car tanks carrying ethylene oxide, but that Amendment No. 173-208 prohibits the use of not only thin wall DOT class 111 tank car tanks, but also certain thin wall DOT class 105 for carrying ethylene oxide which have not been identified as posing a safety hazard. In this final rule § 173.31(a)(11)(v) is modified to allow the use of thin wall DOT class 105 tank car tanks for ethylene oxide.

### Repairs Requiring Tank Measurement

One petitioner recommended that Amendment No. 173-208 be rewritten to provide criteria for what constitutes a tank car tank repair. The petitioner stated that the trigger mechanisms in Amendment No. 173-208 for the measurement of a tank car tank wall thickness are tank repairs. However, the trigger mechanisms are "tank repairs, alterations, or conversions of a tank car tank that result in a possible reduction in the tank thickness at any point (emphasis added)." RSPA and FRA believe that § 173.31(f) in Amendment No. 173-208 is clear as to when a measurement of a tank wall thickness is required.

### Definitions

Section 179.201-2 provides that certain DOT class 103 and 104 tank car tanks may have reduced tank thicknesses in the "top shell" area of the tank, but that area is not defined. This rule would define, in § 171.8, the top and bottom shell area in accordance with the AAR Tank Car Committee's guidelines.

### Editorial Changes

This final rule makes the following editorial changes to Amendment No. 173-208: (1) In § 173.31, paragraph (a)(1) is revised to correct the inadvertent omission of "(a)(2)" from the beginning of the sentence, and (2) paragraphs 173.31(a)(11)(iii) and 173.31(a)(11)(vii) are revised for clarity.

### Administrative Notices

RSPA has determined that this rulemaking (1) is not "major" under Executive Order 12291; (2) is not "significant" under DOT's regulatory policies and procedures (44 FR 11034); (3) will not affect not-for-profit enterprises or small governmental entities; and (4) does not require an environmental impact statement under the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*).

A regulatory evaluation developed for Amendment No. 173-208 is available for review in the Docket. This rule does not change the assessments made in that regulatory evaluation.

Based on information concerning the size and nature of entities likely to be affected by this final rule, I certify that this rule will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. I have reviewed this regulation in accordance with Executive Order 12612 ("Federalism"). It has no substantial direct effects on States, on the Federal-

State relationship, or on the distribution of power and responsibilities among levels of government. Thus, this regulation contains no policies that have Federalism implications as defined in Executive Order 12612 and, therefore, no Federalism Assessment has been prepared.

This rule is effective in less than 30 days in order to grant relief for certain tank cars that otherwise would not conform to applicable specifications.

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

### List of Subjects

#### 49 CFR Part 171

Hazardous materials transportation, Definitions.

#### 49 CFR Part 173

Hazardous materials transportation, packaging and containers.

In consideration of the foregoing, 49 CFR parts 171 and 173 are amended as follows.

### PART 171—GENERAL INFORMATION REGULATIONS AND DEFINITIONS

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

Authority: 49 App. U.S.C. 1803, 1804, 1805, and 1808; 49 CFR part 1.

2. In § 171.8, the following definitions are added, in appropriate alphabetical order:

#### § 171.8 Definitions and abbreviations.

\* \* \* \* \*

"Bottom shell" means that portion of a tank car tank surface, excluding the head ends of the tank car tank, that lies within two feet, measured circumferentially, of the bottom longitudinal center line of the tank car tank.

\* \* \* \* \*

"Top shell" means the tank car tank surface, excluding the head ends and bottom shell of the tank car tank.

\* \* \* \* \*

### PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGING

3. The authority citation for part 173 continues to read as follows:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 1806, 1807 and 1808, 49 CFR part 1, unless otherwise noted.

4. In § 173.31, the introductory phrase of the first sentence in paragraph (a)(1) is revised and paragraph (a)(11) is revised, to read as follows:

#### § 173.31 Qualification, maintenance, and use of tank cars.

(a) \* \* \*

(1) Except as otherwise provided in paragraphs (a)(2) and (a)(11) of this section, \* \* \*

\* \* \* \* \*

(11) A tank car tank which as a result of a tank repair has one or more localized areas where the thickness of the tank is less than that prescribed in part 179 of this subchapter may be used to transport hazardous materials provided that—

(i) The tank is constructed of carbon steel, stainless steel, or manganese-molybdenum steel;

(ii) With respect to a DOT class 103 or 104 tank car tank with an inside diameter of 96 inches or less, the minimum plate thickness of the top shell sheets is not less than that prescribed in § 179.201-2 of this part,

(iii) The difference between the minimum thickness, after forming, of the tank car tank stated in part 179 of this subchapter and the actual thickness at the point of repair after repair of the tank car tank does not exceed one-sixteenth of an inch;

(iv) The total cumulative surface perimeter of the reductions in shell thickness on each tank car tank does not exceed six feet,

(v) The tank is not a DOT Class 111 tank car tank used for the transportation of ethylene oxide;

(vi) There are no reductions in shell thickness on the lower half of any tank car tank head or the lower half of the outer shell of a DOT class 115 tank car tank or a DOT specification 206W tank car tank;

(vii) No localized area with a reduction in shell thickness includes any scores, gouges or other areas of stress concentration;

(viii) The tank car tank is attached to a car structure that conforms with section 6.2 of the AAR Specifications for Tank Cars; and

(ix) With respect to a DOT class 115 tank car tank or a DOT specification 206W tank car tank, there are no reductions in the thickness of the inner tank.

\* \* \* \* \*

Issued in Washington, DC on December 29, 1989 under authority delegated in 49 CFR 1.53.

Mark Dowis,  
Acting Administrator, Research and Special  
Programs Administration  
[FR Doc 89-298 Filed 1-4-90, 8:45 am]  
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## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

RIN 1018-AB23

#### Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Endangered Mount Graham Red Squirrel (*Tamiasciurus hudsonicus grahamensis*)

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** The Service is designating critical habitat for the Mount Graham red squirrel (*Tamiasciurus hudsonicus grahamensis*) under the authority contained in the Endangered Species Act of 1973, as amended. The Mount Graham red squirrel was listed as an endangered species under the Act on June 3, 1987, however, final designation of the proposed critical habitat was postponed at that time in accordance with section 4(b)(6)(C) of the Act. Critical habitat is now being designated in portions of the Coronado National Forest in Graham county, Arizona. Federal actions that may affect the areas designated as critical habitat are now subject to consultation with the Service, pursuant to section 7(a)(2) of the Act.

**EFFECTIVE DATE:** February 5, 1990.

**ADDRESSES:** The complete file for this rule is available for inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service Ecological Services Office, 3616 W. Thomas Rd., Suite #8, Phoenix, Arizona 85019.

**FOR FURTHER INFORMATION CONTACT:** Lesley Fitzpatrick, Endangered Species Biologist, (see ADDRESSES above) (602/261-4720 or FTS 261-4720).

#### SUPPLEMENTARY INFORMATION:

##### Background

The Mount Graham red squirrel is a small grayish brown arboreal species, tinged rusty or yellowish along the back. In summer, a dark lateral line separates the light colored underparts from the

grayer or browner sides (Spicer et al. 1985).

The Mount Graham red squirrel's range lies entirely within the Safford Ranger District of the Coronado National Forest. This squirrel is now found at highest densities in Engelmann spruce (*Picea engelmannii*) and/or fir, especially corkbark fir (*Abies lasiocarpa* var. *arizonica*). In 1986, forty-eight percent of the active middens were above 10,200 feet (3109 m) in mature Engelmann spruce/corkbark fir (Warshall, Office of Arid Land Studies, pers. comm., 1986). Lower densities have been found in old growth Douglas fir (*Pseudotsuga menziesii*) and/or white fir (*Abies concolor*), often associated with Englemann spruce. Its diet consists largely of conifer seeds, and during the winter it depends on seed-bearing cones that it has stored at sites known as middens. The condition of midden sites is important and must remain cool and moist to preserve the cones and to prevent them from opening and losing their seeds. These caches, usually associated with logs, snags, stumps, or a large live tree, are the focal points of individual territories, and the number of midden complexes offers an approximation of the number of resident red squirrels in a particular area. In a 1986 midden census, the density of squirrels in excellent habitat was 15 per 100 acres (40.5 hectares), which is in the low end of the range for red squirrel densities in North America (Smith et al. 1988).

The Mount Graham red squirrel was described by Allen in 1894, based on three specimens taken that same year on Mount Graham in the Pinalenos. Subsequent reports indicate that the subspecies was common around the turn of the century, but was declining by the 1920's and rare by the 1950's (Hoffmeister 1956). This situation apparently was associated with loss and disruption of forest habitat, and perhaps with competition from an introduced population of the tassel-eared, or Abert's, squirrel (*Sciurus aberti*). From 1933 to 1987, Minckley (1968) was unable to find the Mount Graham red squirrel and was concerned that the subspecies had become extinct. Later, however, the continued existence of the Mount Graham red squirrel was verified. A Service-funded status survey in 1984-1985 located this mammal or its fresh sign at 18 localities in the Pinalenos and estimated the number of squirrels as 300-500 animals (Spicer et al. 1985). More recent midden surveys indicate that this estimate was too high. Based on a midden census in the spring of 1986, there were an estimated 328 red squirrels. This number dropped 25

percent by the fall of 1987, when 246 squirrels were estimated (Smith et al. 1988), and in the spring of 1988 was estimated at about 200. The spring of 1989 survey yielded a population estimate of 99-150 (L. Fitzpatrick, U.S. Fish and Wildlife Service, pers. comm., 1989). The June 1989 survey yielded a population estimate of 116-167 (K. Milne, pers. comm., 1989).

In both its original Review of Vertebrate Wildlife, published in the Federal Register on December 30, 1982 (47 FR 58454-58460), and the revised version, published on September 18, 1985 (50 FR 37948-37967), the Service included the Mount Graham red squirrel in category 2, meaning that information then available indicated that a proposal to determine endangered or threatened status was possibly appropriate but was not yet sufficiently substantial to biologically support such a proposal. The status survey and more recent surveys by the U.S. Forest Service (USFS), Arizona Game and Fish Department (AGFD), and the University of Arizona (U of A) have since become available and provide a substantial basis for determination of endangered status. Although the squirrel does still survive, its range and numbers have been reduced, and its habitat is threatened by a number of factors, including proposed construction of an astrophysical observatory. The Service published a proposed rule to list this subspecies as endangered on May 21, 1986 (51 FR 18630-18634). The rule designating this squirrel as endangered was published on June 3, 1987 (52 FR 20994). In accordance with section 4(b)(6)(C) of the Act, the proposed critical habitat designation was not made final at the time of listing, but was postponed for an additional year to allow for gathering and analyzing of economic data.

#### Summary of Comments and Recommendations

In the May 21, 1986, proposed rule and associated notifications, all interested parties were asked to submit factual reports or information that might contribute to the development of a final rule. The original comment period closed on July 21, 1986, but was reopened on August 26, 1986 (51 FR 27429), to accommodate two public hearings and remained open until November 21, 1986. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice, inviting general public comment, was published in the