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DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Parts 107, 171, 173, 178, 179, and 180

[Docket No. PHMSA-2010-0019 (HM-241)]

RIN 2137-AE58

Hazardous Materials: Incorporation of ASME Code Section XII and the National Board Inspection Code

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: PHMSA is amending the Hazardous Materials Regulations (HMR) to incorporate by reference and authorize the use of the 2015 edition of the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code, Section XII - Rules for Construction and Continued Service of Transport Tanks* for the construction and continued service of certain specification cargo tank motor vehicles (CTMVs), cryogenic portable tanks, and multi-unit tank car tanks. PHMSA is also amending the HMR to incorporate by reference and authorize the use of the 2015 edition of the National Board of Boiler and Pressure Vessel Inspectors *National Board Inspection Code, Parts 2 and 3 (including Supplement 6)* as it applies to the continued service of transport packagings constructed to ASME *Section XII* standards, as well as for existing CTMVs constructed in accordance with ASME requirements and the HMR. PHMSA finds these updates will result in cost savings and increased regulatory flexibility without compromising safety.

DATES: *Effective date:* **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

Voluntary compliance date: [**INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER**].

Incorporation by reference date: The incorporation by reference of the publications listed in this rule is approved by the Director of the *Federal Register* as of **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

FOR FURTHER INFORMATION CONTACT: Arthur Pollack, Standards and Rulemaking Division, at 202-366-8553, or Kin Wai Alex Cheng, Engineering and Research Division, at 202-366-4545, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, 1200 New Jersey Avenue, S.E., East Building, 2nd Floor, Washington, D.C. 20590-0001.

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I. Executive Summary

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is updating the Hazardous Materials Regulations (HMR; 49 CFR parts 171-180) to incorporate by reference and authorize the use of the following industry standards for the construction and continued service of transport tanks, subject to certain conditions, limitations, and exceptions:

- The 2015 edition of the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code (BPVC), Section XII - Rules for Construction and Continued Service of Transport Tanks* (hereinafter referred to as "*Section XII*"); and
- The 2015 edition of the National Board of Boiler and Pressure Vessel Inspectors (National Board) *National Board Inspection Code* (*NBIC*), *Parts 2 and 3, including Supplement 6 (*hereinafter referred to as "*NBIC*").

This action finalizes efforts initiated by the Research and Special Programs Administration (RSPA)—PHMSA's predecessor agency—to develop construction and continued service standards specifically for transport tanks (*e.g.*, cargo tank motor vehicles (CTMVs), cryogenic portable tanks, and multi-unit tank car tanks (hereinafter referred to as ton tanks)). This final rule is deregulatory. The amendments impose no new

costs on the regulated community and introduce potential cost savings through increased regulatory flexibility. By providing more options when manufacturing bulk transport tanks, PHMSA is creating opportunities for cost savings, innovation, and economic development. PHMSA estimates the annualized quantified net cost savings of this rulemaking for the regulated community—using a seven percent discount rate—are approximately $8.1 million per year.

This final rule also advances the goals articulated in Executive Order (E.O.) 14192 (*Unleashing Prosperity Through Deregulation*) by addressing three longstanding petitions for rulemaking from industry stakeholders (P-1459, P-1474, and P-1502).[1] These petitions support the incorporation by reference of more modern editions of the ASME and NBIC standards. This final rule also addresses two National Transportation Safety Board (NTSB) recommendations.[2] In the interest of maximizing regulatory flexibility, this final rule permits the use of ASME *Section XII* as an alternative to ASME *Section VIII, Division 1, 2017 Edition*—currently incorporated by reference (hereinafter referred to as "*Section VIII, Division 1*")—rather than mandating the use of *Section XII* as the sole standard for the construction of transport tanks.[3] *Section VIII, Division 1* will remain a permitted construction standard to be used in conjunction with the HMR requirements in Part 178 for the construction of CTMVs and cryogenic portable tanks, and the requirements in Part 179 for the construction of ton tanks. This final rule also provides additional flexibility by permitting the use of the 2015 edition of NBIC for *Section VIII, Division 1* tanks as an alternative to the 1992 NBIC and the continued

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[1] 90 FR 9065 (Feb. 6, 2025); and American Society of Mechanical Engineers, *P-1459*, Docket ID PHMSA-2005-21351, (May 10, 2005), Pressure Vessel Manufacturers Association, *P-1474*, Docket ID PHMSA-2006-24712, (Feb. 27, 2006), and National Board of Boiler and Pressure Vessel Inspectors; *P-1502*, Docket ID PHMSA-2007-28809, (Jul. 12, 2007).

[2] For additional information regarding the two NTSB recommendations H-11-5 and H-11-6, *see* Section "III.E. NTSB Recommendations".

[3] "Construction" is an all-inclusive term comprising of materials, design, fabrication, examination, inspection, testing, certification, and over-pressure protection.

service requirements in Part 180.[4]

Table 1 lists the specification packagings for the various transport tanks for which *Section XII* may be used for construction. Specifically:

Table 1: Authorized Transport Tanks under *Section XII*	
Tank Type	**Specification**
CTMV	MC 331 and 338, and DOT 406, 407, and 412
Cryogenic Portable Tank	UN T75
Ton Tank	DOT 106A and 110AW

The HMR specify requirements for the design, construction, qualification, maintenance, and repair of packagings used to transport hazardous materials in commerce, such as cargo tanks, portable tanks, and ton tanks. In addition to the general design and construction requirements specified in the HMR, PHMSA incorporates by reference ASME *Section VIII, Division 1*, which provides supplemental design and construction criteria. *Section VIII, Division 1* sets forth detailed criteria for the design, construction, certification, and marking specifically intended for stationary boilers and pressure vessels. Due to the limitations associated with applying design and construction standards intended for stationary pressure vessels to transport tanks, *Section VIII, Division 1* must be used in conjunction with the HMR to provide additional transportation-specific safety assurances.

In 1995, RSPA asked the ASME Board on Pressure Technology Codes and Standards to develop new standards specifically to address transport tanks. In 2004, ASME published the *ASME BPVC Section XII*, Rules for Construction and Continued Service of Transport Tanks, which is based on *Section VIII, Division 1* of the BPVC. Like *Section VIII, Division 1*, *Section XII* sets forth standards for construction but also includes standards for the continued service of transport tanks. With this rulemaking,

[4] "Continued service" is an all-inclusive term referring to inspection, testing, repair, alteration, and recertification of a transport tank that has been in service.

manufacturers will have the option to either build the specification tanks listed in Table 1 to *Section XII* standards or continue using *Section VIII*, *Division 1*.

This rulemaking also incorporates an updated version of the *NBIC*. The *NBIC* provides standards for the installation, inspection, and repair or alteration of boilers, pressure vessels, and pressure relief devices. The *NBIC* provides rules and guidelines for continued service inspections, repairs, and modifications of transport tanks as well, including methods to be used and the criteria for inspections, reports, document control, and inspector duties and responsibilities.[5] The *NBIC* was revised in conjunction with *Section XII* to provide updated standards for the qualification and continued service of transport tanks. Certain transport vessels built to *Section VIII, Division 1* standards are currently required to follow the 1992 edition of the *NBIC*, which is incorporated by reference, in addition to the continued service requirements found in part 180.[6] But pressure vessels built to *Section XII* will only be permitted to follow the 2015 *NBIC* for continued service. Current HMR provisions for the continued use of pressure vessels built to *Section VIII, Division 1* standards precede the development of *Section XII* and do not account for the divergent comparative elements between the two standards.

Table 2 describes the framework available to manufacturers and owners of transport tanks regarding portions of *Section XII* and *NBIC* that are incorporated by reference in this rulemaking.

Table 2: Framework for Continued Service

If a....	**Is built to....**	**Then,**
Cargo Tank Motor Vehicle	*Section XII*	The 2015 *NBIC* and *Supplement 6* must be used.
Cargo Tank Motor Vehicle	*Section VIII, Division 1*	Part 180 of the HMR must be used along with the 2015 *NBIC* or the 1992 *NBIC*—previously incorporated by reference in the HMR—as applicable.
Cryogenic	*Section XII*	The 2015 *NBIC* and *Supplement 6* must be used.

[5] *Supplement 6* provides detailed inspection requirements for transport tanks and is intended to be used consistent with *Section XII*.

[6] Continued service regarding repairs of MC 330 and 331 CTMVs—*see* 49 CFR 180.413(b).

Portable Tank		
Cryogenic Portable Tank	*Section VIII, Division 1*	Part 180 of the HMR, or, alternatively, the 2015 *NBIC*.
Ton Tank	*Section XII*	The 2015 *NBIC* and *Supplement 6* must be used.
Ton Tank	Part 179 and AAR approval.	Part 180 and AAR approval for tank car facility quality assurance program must be used.

Permissive use of the 2015 *ASME Section XII* will maintain the HMR's high safety standard. PHMSA expects safety benefits to be derived from improved compliance and alternative construction standards related to a regulatory standard developed specifically for transport tanks. Manufacturers who choose to continue using *Section VIII, Division I* will be required to maintain the same high safety standards already in place.

II. Incorporation by Reference Discussion Under 1 CFR Part 51

PHMSA currently incorporates by reference into the HMR all or parts of several standards and specifications developed and published by standards development organizations (SDO). The National Technology Transfer and Advancement Act (NTTAA) of 1995 (Pub. L. No. 104–113) directs Federal agencies to use standards developed by voluntary consensus standards bodies in lieu of government-written standards whenever possible. Voluntary consensus standards bodies develop, establish, or coordinate technical standards using agreed-upon procedures.

Consistent with the NTTAA, Office of Management and Budget (OMB) Circular A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, requires government agencies to use voluntary consensus standards wherever practical in the development of regulations.[7] This OMB circular provides guidance for agencies participating in voluntary consensus standards bodies and describes procedures for satisfying the reporting requirements in the NTTAA.

[7] 81 FR 4673 (Jan. 27, 2016).

Under the NTTAA and Circular A-119, PHMSA is responsible for determining which currently referenced standards should be updated, revised, or removed, and which standards should be added to the HMR. Revisions to materials incorporated by reference in the HMR are handled via the rulemaking process, which allows the public and regulated entities to provide input. During the rulemaking process, PHMSA must also obtain approval from the Office of the Federal Register to incorporate by reference any new materials.

ASME *Boiler and Pressure Vessel Code, Section XII – Rules for Construction and Continued Service of Transport Tanks* (2015) and the National Board of Boiler and Pressure Vessel Inspectors *National Board Inspection Code*, *Parts 2 and 3*, and *Supplement 6 to Parts 2 and 3* (2015) are available for purchase directly from ASME and the National Board at https://www.asme.org/shop/standards#des=BPVC and by request via e-mail to orders@nationalboard.org, respectively. The standards are summarized in Section I. Executive Summary and are discussed in greater detail in Section VII: Section-by-Section Review.

III. Rulemaking Background

A. Petitions for Rulemaking

After receiving three petitions for rulemaking from industry stakeholders concerning the incorporation of certain consensus industry standards into the HMR (P-1459, P-1474, and P-1502), PHMSA initiated an advanced notice of proposed rulemaking (ANPRM) followed by a notice of proposed rulemaking (NPRM). The ANPRM and NPRM both received predominantly negative feedback from stakeholders. PHMSA made adjustments to the proposal and issued a supplemental notice of proposed rulemaking (SNPRM). The SNPRM received much more positive reception from stakeholders, prompting PHMSA to issue this final rule.

B. ANPRM and NPRM

On December 23, 2010, PHMSA published an ANPRM that posed several questions pertaining to the potential costs, burdens, or safety concerns regarding the incorporation by reference of the 2011 edition of *Section XII* and the *NBIC* for the construction and continued service of CTMVs, cryogenic portable tanks, and ton tanks.[8] The ANPRM generated 40 sets of comments from stakeholders, most of which opposed incorporating the referenced standards into the HMR. That opposition was based primarily on the presumption by commenters that PHMSA intended to replace *Section VIII*, *Division 1* with *Section XII*, rather than to provide the option of using either standard. The commenters were familiar with the manufacturing and continued service requirements under the HMR (*i.e.*, the status quo) and expressed concern that *Section XII* would present complicated changes in the way their transport tanks are manufactured and requalified.

On December 30, 2013, PHMSA published an NPRM that proposed to incorporate the 2013 edition of *Section XII*—with limited exceptions—as an alternative to existing standards for certain CTMVs, cryogenic portable tanks, and ton tanks.[9] PHMSA also proposed to incorporate the 2013 edition of the *NBIC* for alterations, repairs, and inspections performed on all ASME-constructed tanks used for the transportation of hazardous materials. The NPRM generated 20 sets of comments from stakeholders. The majority of the comments opposed incorporating the referenced standards (*Section VIII, Division 1 and Section XII*) into the HMR. Two commenters supported the proposals, and three commenters supported the proposals with modification. Several commenters posed questions or proposed additional modifications. Commenters who supported the proposals generally indicated: (1) the need to incorporate *Section XII* to reflect present-day improvements, especially the new definitions of authorized inspection agencies; and

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[8] 75 FR 80765 (Dec. 23, 2010).

[9] 78 FR 79363 (Dec. 30, 2013).

(2) support for alternative standards. Commenters opposing the proposals generally indicated: (1) lack of public input and inaccessibility to current and future versions of *Section XII* and the *NBIC*; (2) inefficient and excessive cost to the industry; and (3) an assertion that no improvement in hazardous materials transportation safety would be realized. Commenters also questioned how the continued service requirements of *Section XII* would affect small industry stakeholders and expressed concerns about what role PHMSA would have in oversight of the manufacturing process.

C. SNPRM

On April 29, 2016, PHMSA issued an SNPRM proposing the following changes to the HMR:[10]

- Incorporating the 2015 edition of *Section XII* (instead of the 2013 edition, as previously proposed in the December 2013 NPRM);
- Incorporating the 2015 edition of the *NBIC* (instead of the 2013 edition, as previously proposed in the December 2013 NPRM);
- Authorizing construction and continued service of CTMVs, cryogenic portable tanks, and ton tanks in accordance with *Section XII*. In Table 3, the following transport tanks would be eligible for construction and continued service under *Section XII*:

Table 3: Authorized Transport Tanks under *Section XII*	
Tank Type	**Specification**
Cargo Tank Motor Vehicle	MC 331 and 338, and DOT 406, 407, and 412
Cryogenic Portable Tank	UN T75
Ton Tanks	DOT 106A and 110AW

Note: Tanks listed in this table that are already constructed under *Section VIII, Division 1* were not proposed to be eligible for continued service using *Section XII*. Tanks that have been constructed under *Section VIII, Division 1* must be evaluated in accordance with the 1992 or 2015 NBIC and the requirements of the HMR.

[10] 81 FR 25627 (Apr. 29, 2016).

- Requiring the use of the 2015 edition of the *NBIC* and Supplement 6, where applicable, for the qualification, requalification, and maintenance of transport tanks (if constructed to *Section XII*) listed in Table 3; and
- Authorizing the use of the 2015 edition of the *NBIC* for the continued service, inspection, and repair of CTMVs currently in service and constructed to *Section VIII, Division 1* and the HMR.

The stated goals of the SNPRM were to:

- Provide stakeholders further opportunity to comment on the content of *Section XII* and the *NBIC*, as well as the safety improvements and updates reflected in the revised 2015 editions;
- Synchronize the timing of PHMSA's rulemaking action with the biennial updates of *Section XII* and *NBIC* by ASME and the National Board, respectively; and
- Minimize or relieve the public and the government of possible administrative burdens (*i.e.*, special permit applications) that would be associated with incorporating the 2013 editions by reference, when 2015 editions have been published.

Please note that PHMSA is aware that ASME has published marginally revised editions of *Section XII* since the 2015 edition. However, incorporating these newer editions into this rulemaking would require additional procedural steps for only minor updates. These additional steps would significantly delay the voluntary use of *Section XII*, postponing PHMSA's efforts to provide immediate regulatory flexibility to the regulated community. Furthermore, today's final rule represents a vast improvement because it implements a new option for manufacturing transport tanks, even when incorporating the 2015 edition of *Section XII*. Lastly, PHMSA personnel actively participate as voting members on various ASME consensus and code committees and remain in constant communication with the regulated community. Through this

involvement, PHMSA is aware that diverse stakeholder groups anticipate the completion of this rulemaking effort without further delay and welcome adopting the 2015 edition as a positive change despite the existence of more recent editions.

Therefore, PHMSA is incorporating by reference the 2015 edition as proposed in the SNPRM. PHMSA will evaluate and consider incorporation of newer editions of the ASME (and NBIC) in future rulemakings.

D. DOT's 2017 Notification of Regulatory Review Comments

On October 2, 2017, DOT published a notice in the *Federal Register* informing the public that it was reviewing existing regulations and other agency actions to evaluate their continued necessity, effectiveness, or burden on energy resources.[11] DOT invited the public to provide input on existing rules and other agency actions that are good candidates for repeal, replacement, suspension, or modification.

Container Technology Incorporated submitted input supporting publication of this final rule, noting that the use of *Section XII* would provide regulatory relief via new opportunities for tank operators to haul more payload.[12] Container Technology estimated that truckers who operate compressed gas tanks would be able to gain the equivalent of an extra load approximately every 35 trips.

E. NTSB Recommendations

This rulemaking addresses two National Transportation Safety Board (NTSB) recommendations that PHMSA received on September 2, 2011, as a result of NTSB's investigation of a rollover and subsequent fire of a truck-tractor and cargo tank semitrailer carrying liquefied petroleum gas.

Recommendation H-11-5 advised PHMSA to study the dynamic forces acting on susceptible structures under varying accident conditions, and to develop performance

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[11] 82 FR 45750 (Oct. 2, 2017).

[12] Container Tech. Inc., Comment, Docket ID DOT-OST-2017-0069-2698 (Dec. 1, 2017).

standards to eliminate or mitigate these risks after conducting an analysis of accident data on DOT-specification cargo tanks.[13] NTSB recommended that PHMSA identify cargo tank designs and the associated dynamic forces that pose a higher risk of failure and release of hazardous materials in accidents. As discussed in the 2013 NPRM, several research and development projects support adopting the 2013 editions of the *NBIC* and *Section XII*. The studies referenced in the NPRM support incorporating the 2015 edition of these standards as well. In developing *Section XII*, the ASME subcommittee on transport tanks (SC XII), as well as other stakeholders, commissioned studies on materials used in the construction of tanks, components of tanks, and tanks themselves, to aid in developing safe specifications for transport tanks.

Recommendation H-11-6 further advised that PHMSA require all newly manufactured cargo tanks to comply with the performance standards identified as a result of H-11-5.[14] Though PHMSA is not mandating that cargo tanks be constructed to *Section XII* standards, giving vehicle manufacturers additional flexibility for materials, design, fabrication, examination, inspection, testing, certification, and over-pressure protection will improve the survivability of cargo tanks involved in rollover accidents. Cargo tanks constructed to *Section XII* standards will be better able to withstand the conditions encountered in transportation, including rollover accidents.

IV. Response to SNPRM Comments

PHMSA received 17 sets of comments on the SNPRM from the following entities:

Table 4: Commenter Docket Table	
Commenter	**ID Number**
Container Technology Incorporated	DOT-OST-2017-0069-2698
Mr. Andrew Duggleby (6x)	PHMSA-2010-0019-0105 - 110

[13] Nat'l Transp. Safety Bd., *Safety Recommendation H-11-005* (Sept. 2, 2011), available at: https://data.ntsb.gov/carol-main-public/sr-details/H-11-005.

[14] Nat'l Transp. Safety Bd., *Safety Recommendation H-11-006* (Sep. 2, 2011), available at: https://data.ntsb.gov/carol-main-public/sr-details/H-11-006.

Mr. Pardhasarathi Chilukuri	PHMSA-2010-0019-0117
Commercial Vehicle Safety Alliance (CVSA)	PHMSA-2010-0019-0113
The International Tank Container Organisation (ITCO)	PHMSA-2010-0019-0115
National Propane Gas Association (NPGA)	PHMSA-2010-0019-0114
NJP Engineering	PHMSA-2010-0019-0111
Mr. Robert Sallash (2x)	PHMSA-2010-0019-0112; - 120
Mr. James Silver / @TCO Asia	PHMSA-2010-0019-0116
Mr. James Silver / CIMS Inspection Services LLC	PHMSA-2010-0019-0118
Mr. Alexander Varghese (Gardner Cryogenics)	PHMSA-2010-0019-0119

Most of the comments expressed support for the changes proposed in the SNPRM. Commenters noted that incorporating *Section XII* would enhance public safety, welfare, and economic interests of the United States by facilitating international approval of U.S. manufactured transportation tanks. Commenters also cited additional benefits of incorporating *Section XII* by reference, including: (1) *Section XII*'s improvements to design standards for transportation tanks, which reflect present-day technologies; (2) the provision of an alternative to *Section VIII*, *Division 1* design standards for stationary pressure vessels (*i.e.*, stationary tanks); and (3) the flexibility provided by the new rational design methodology in *Section XII*. Commenters who supported incorporating *Section XII* expressed frustration over the delay in adopting these standards, which are already in use and increasingly in demand by manufacturers. One commenter noted that he looked forward to no longer being limited to a standard that was intended for fixed equipment, which, consequently, requires supplemental reference to the HMR. Commenters further noted the benefits of incorporating *Section XII*, which is a standard intended for tanks that will be transported. Commenters stated that *Section XII* is a more accurate assessment of the service life of transportation tanks on the road, which includes addressing the hazards and stresses associated with transportation and the transportation cycle.

Only two commenters—both of whom were associated with the international transport of portable tanks and expressed similar concerns in responding to the 2013

NPRM—opposed incorporating *Section XII* and the 2015 edition of *NBIC*. These commenters raised concerns with: (1) the actual benefits to hazardous materials transportation that would result from incorporating the 2015 editions; (2) the registration, inspections, and National Board requirements; (3) the negative impacts that the 2015 editions would have on the design, inspection, and international use of cryogenic portable tanks (*i.e.*, UN T75 portable tanks); (4) the lack of public input and inaccessibility to current and future versions of *Section XII* and the *NBIC;* and (5) implementation.

PHMSA also received a few comments pertaining to the impact that a 2016 rulemaking, titled *Hazardous Materials: Incorporation by Reference Edition Update for the American Society of Mechanical Engineers Boiler and Pressure Vessel Code and Transportation Systems for Liquids and Slurries: Pressure Piping Code* (HM-261 final rule), would have on this final rule.[15] In the HM-261 final rule, PHMSA replaced the 1998 edition of *Section VIII, Division 1* with the 2015 edition.

Comments received and responses to the 2016 SNPRM are summarized and discussed further below.

A. Benefits of Section XII

PHMSA highlights the supportive comment received from NJP Engineering and others that similarly stated that the use of a standard that is specific to transport tanks is an inherent advantage. Because *Section VIII, Division 1* does not consider transportation conditions (*i.e.*, dynamic loads on tanks), CTMV manufacturers have not been permitted to take advantage of reduced design margins (except through a special permit) even though greater allowable stresses have been permitted under ASME *Section VIII, Division 1* since the late 1990s.

[15] 81 FR 25613 (Apr. 29, 2016).

PHMSA notes *Section XII* provides additional advantages over *Section VIII, Division 1*. *Section XII* incorporates a rational design methodology, rather than providing strict, prescriptive design requirements as in *Section VIII, Division 1*. As explained in the 2013 NPRM, rational design methodology enables tanks to be designed with greater efficiency.[16] *Section XII* also provides specific standards for fatigue analysis as a part of the continued service for transport tanks. Transport tanks, more often than stationary tanks, are subjected to pressure cycles (*i.e.*, frequent and rapid fill and discharges of the lading), as well as shocks and vibration from movement. Fatigue analysis is therefore essential for the examination of these tanks. Though the HMR and *Section VIII*, *Division 1* mention fatigue as a design consideration, no specific standards are provided therein. Finally, safety improvements under *Section XII* include adjustments to the minimum thickness conversion formula for designing transport tanks for penetration resistance, as defined in various international standards—such as the United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (UN Model Regulations)[17]—and the HMR.

In addition to these safety benefits, the incorporation by reference of *Section XII* will continue to provide the benefit of transport cost savings from the modified design standards (*i.e.*, greater allowable stresses) for the construction of cargo tanks. Those cost savings are reflected largely in fuel savings.

Not all commenters shared a positive outlook on the proposed changes. Specifically, Mr. Colin Rubery, on behalf of ITCO, and Mr. James Silver, on behalf of Silver/Cims LLC and @TCO, stated that this rulemaking is inefficient, redundant, and would increase costs to the industry with no return or improvement in the transport of

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[16] 78 FR 79363 (Dec. 30, 2013).

[17] UN Model Regulations Rev. 24 (2025), available at: https://unece.org/transport/dangerous-goods/un-model-regulations-rev-24.

hazardous materials. Mr. Silver further suggested this final rule should not be adopted because one of PHMSA's justifications for incorporating *Section XII* and NBIC was cost savings due to the reduced safety factor required for pressure vessels. Mr. Silver argued that this economic benefit was no longer credible because the adoption of the HM-261 final rule voided the savings projections and all other benefits relating to this final rule.

PHMSA disagrees that permitting the use of *Section XII* is inefficient or redundant because of the HM-261 final rule. PHMSA notes that the cost savings of this final rule outweigh the total costs (*see* the RIA). Furthermore, the HM-261 final rule updated the version of *Section VIII, Division I* and other sections incorporated by reference but did not incorporate *Section XII*.

On April 29, 2016, PHMSA published a direct final rule, entitled *Hazardous Materials: Incorporation by Reference Edition Update for the American Society of Mechanical Engineers Boiler and Pressure Vessel Code and Transportation Systems for Liquids and Slurries: Pressure Piping Code* (HM-261 direct final rule).[18] The HM-261 direct final rule updated the incorporated edition of *Section VIII, Division 1*, from the 1998 edition to the 2015 edition, as well as other sections of the ASME BPVC.[19] PHMSA issued the HM-261 direct final rule because industry was already manufacturing DOT specification CTMVs and other non-DOT specification CTMVs (*e.g.*, nurse tanks) in accordance with various editions of *Section VIII, Division 1* (between the 1998 edition and the 2015 edition) to maintain ASME certifications. PHMSA determined that there were no adverse safety issues with incorporating earlier editions of *Section VIII, Division 1*, provided tanks had been properly constructed and maintained in accordance with ASME standards.

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[18] 81 FR 25613 (Apr. 29, 2016).

[19] PHMSA subsequently incorporated by reference the 2017 Edition of *Section VIII, Division 1.* 85 FR 75680 (Nov. 25, 2020).

The HM-261 direct final rule strengthened PHMSA's ability to ensure compliance with CTMVs constructed to more recent versions of *Section VIII, Division 1*. The HM-261 direct final rule simply replaced the 1998 edition of *Section VIII, Division 1* with the 2015 edition. It did not negate the limitations associated with applying a construction code intended for stationary pressure vessels to tanks that are used to transport hazardous materials. For that reason, when using the 2017 edition of *Section VIII, Division 1*, several HMR requirements remain applicable, whereas *Section XII* requires fewer supplements from the HMR. Furthermore, though the use of S*ection VIII, Division 1* is limited to construction of new pressure vessels, *Section XII* is applicable for construction and continued service of transport tanks. Similar technical improvements found in the 2015 edition of *Section XII* also appear in the 2015 edition of *Section VIII, Division 1*, but there are several benefits singularly provided by *Section XII*. PHMSA has addressed these benefits in the NPRM and SNPRM.

B. Registration, Inspection, and Training

PHMSA received various comments regarding registration and inspection requirements for tank inspectors and repair facilities. These comments were primarily from members of the portable tank community (ITCO, @TCO, and Silver/Cims, LLC) who inspect tanks that may be transported outside of the United States. Many of the commenters expressed confusion regarding the use of *Section XII* and the implicit use of the 2015 edition of the *NBIC*, and the requirements to have certain credentials from the National Board. These commenters also specifically suggested that the inspections and credentials required by using ASME *Section XII* would impose a financial burden. PHMSA has determined that most of the comments on this topic are either overstated or based on a misunderstanding of the 2015 edition. To address the comments, PHMSA is providing clarification of the registration and inspection requirements below.

Mr. James Silver, on behalf of two organizations (@TCO and Silver/Cims, LLC), provided comments concerning registration and inspection requirements for inspectors and repair facilities. He suggested that PHMSA proposed additional registration requirements, which he attributes to the incorporation of *Section XII*. Mr. Silver asserted that the portable tank industry would suffer excessive costs due to "redundant registration and need for redundant (multiple inspectors)," and that every test facility and tester would be "beholden to NBIC for registration and test fees forever more."[20] Similarly, Mr. Colin Rubery, on behalf of ITCO, suggested that incorporating by reference *Section XII* and the *NBIC* (required in combination) would create what he characterizes as a monopoly on inspector training by the National Board. ITCO estimated that, to prepare for the arrival of these tanks in the global marketplace, international inspectors (including the International Association of Classification Societies (IACS) and third-party inspectors) and testing and repair facilities would incur costs of $3.64 million.[21] In addition, Mr. Silver stated that: (1) the *NBIC* should not be employed for the continued service inspections of portable tanks, because the National Board does not recognize competent authority designated approval agencies; and (2) international stakeholders rely on designated approval agencies with IACS membership for approval and periodic inspection requirements (which PHMSA addresses in the next comment discussion).

PHMSA notes that the regulatory framework of the HMR consists of requirements for the design, manufacture, assembly, inspection, testing, certification, and repair of packagings, such as portable and cargo tanks, to minimize safety risks. As explained in the comment from Mr. Alexander Varghese, this is especially important for the safety of the public considering that "transportation tanks are exposed to the public

[20] James R. Silver, Comment, Docket ID PHMSA-2010-0019-0104 (Jun. 28, 2016).

[21] Int'l Tank Container Org., Comment, Docket ID PHMSA-2010-0019-0076 (Apr. 28, 2014).

substantially more than stationary tanks."[22] PHMSA has historically relied on external entities (*i.e.*, Registered Inspectors for cargo tanks and Designated Approval Agencies (DAAs), such as Silver/Cims, LLC for portable tanks) to perform many of the functions relating to verification of the requirements previously mentioned. Oversight of entities that ensure transport vessels meet the applicable standards for the safe transport of hazardous materials on behalf of PHMSA begins with the registration or approval of those parties. Acquiring registration or an approval requires the inspector or agency to demonstrate their qualification to determine whether a pressure vessel conforms to DOT requirements, as specified in subparts E and F of part 107. Similarly, PHMSA has incorporated construction and design standards developed by other organizations, as is the case for ASME BPVC and the NBIC. ASME and the National Board have their own administrative oversight procedures and designated entities that ensure these construction and design standards are met. Like DAAs and Registered Inspectors working on behalf of DOT, these entities perform their duties on behalf of ASME and NBIC. The entities authorized by ASME and NBIC to provide certifications (*e.g.*, "T," "U," or "R" stamps) include Authorized Inspectors (AI), Qualified Inspectors (QI), Certified Inspectors (CI), and in the case of the National Board, inspectors who are "commissioned."[23] Although the HMR incorporate by reference standards set forth by ASME and NBIC, PHMSA has not required that ASME or NBIC inspectors register with DOT. Consequently, in the interest of oversight, the HMR requires registered inspectors and DAAs to verify the inspections are completed by an ASME AI.

Although multiple inspections and tests are required for portable tanks and cargo tanks, these are not new requirements resulting from the incorporation by reference of

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[22] Alexander P. Varghese, Comment, Docket ID PHMSA-2010-0019-0104 (Jun. 30, 2016).

[23] A National Board commissioned inspector is an individual who has met the education, experience, employment, and examination requirements as outlined in NB-263, RCI-1, Rules for Commissioned Inspectors. *See* Nat'l Bd., *Rules for Commissioned Inspectors* (2025), available at: https://www.nationalboard.org/SiteDocuments/Commissioned%20Inspectors/NB-263_RCI-1_2021.pdf.

Section XII and the 2015 *NBIC*—nor are they redundant. The certification and associated inspections carried out by ASME inspectors serve to verify that the tank meets the ASME design and construction standards. DAAs or Registered Inspectors verify that the ASME constructed transport vessel meets PHMSA's safety standards. These requirements and processes are in place to mitigate the risk of a catastrophic failure of pressurized tanks while transporting hazardous materials.

Part 180, subpart G of the HMR outlines the schedule and criteria for periodic inspections and tests. These requirements are mirrored in *Section XII* specifically to align with the HMR. For portable tanks constructed to *Section VIII*, periodic inspections may be performed by following the HMR and do not require any reference to the *NBIC*. For repair or alterations, the HMR defers to the requirements of the original design and construction standard of the portable tank. Regarding the commenter's point, many *Section VIII* portable tanks are currently inspected and certified by inspectors who hold a National Board commission. As required by ASME, *Section VIII* pressure vessels must be repaired or altered only by organizations holding a National Board "R" Certificate of Authorization. This rulemaking does not alter the inspection requirements for *Section VIII* tanks.

The most significant change in this rulemaking is the incorporation by reference of *Section XII*, which will permit construction to ASME *Section XII* as an alternative. For ASME *Section XII* constructed tanks, all inspections, repairs, and alterations must still be carried out in accordance with the *NBIC*. ASME extended the inspector credential requirements, previously reserved for entities involved in repairs and alterations, to those providing periodic inspections to ensure uniformity for the level of safety of the tanks and inspection activities. Specifically, a National Board commissioned inspector must be involved in the inspections of repairs and alterations. Periodic inspections for *Section XII* transport vessels may still be carried out by a DOT-recognized Registered Inspector upon

completion of a web-based training course. Aside from hydrostatic testing, which must now be witnessed by an AI, QI, or CI, the role of Registered Inspectors in the HMR is not changing for cargo tanks. PHMSA notes that because all cargo tanks must be ASME stamped under this final rule, repairs are required to be made by an "R" certificate holder, unlike the current requirements in the HMR, which allow certain cargo tanks to be repaired by a "U" certificate holder.

PHMSA disagrees with ITCO's assertion that adoption of *Section XII* and the *NBIC* (required in combination) would create a monopoly. *Section XII* specifies that individuals who repair tanks constructed and certified to that standard must use a National Board commissioned inspector. This process mirrors PHMSA's oversight of inspectors and approval agencies that verify safety requirements of packagings on the agency's behalf. PHMSA has also determined that it is no different from the practice described by the commenter, in which "enforcement authorities in most foreign countries only recognize IACS-member approval agencies."[24] A baseline requirement is needed for individuals or organizations that are responsible for verifying the acceptability of tanks prior to transportation. Requiring an individual or organization to have specific credentials is not unique to this agency or this rulemaking. Such a requirement ensures the safety of packagings that contain hazardous materials. PHMSA expects the incorporation by reference of the 2015 *NBIC* for continued service of *Section XII* tanks to be the best course of action due to the development of Supplement 6 for use with *Section XII*. PHMSA finds that National Board-commissioned inspectors are best positioned for inspection of *Section XII* transport tanks.

Regarding "NBIC registration," as mentioned in the comment from Silver/Cims LLC,[25] PHMSA has determined this is a misunderstanding of the registration required

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[24] Int'l Tank Container Org., Comment, Docket ID PHMSA-2010-0019-0027 (May 25, 2011).

[25] James R. Silver, Comment, Docket ID PHMSA-2010-0019-0104 (Jun. 29, 2016).

under part 107 and the concept of a "commissioned inspector" under *NBIC*—neither of which are new requirements added under this rulemaking.

PHMSA disagrees with the two commenters from the portable tank community who stated that this rule will add an estimated $3.64 million in costs for the industry. Any increased costs to industry will be outweighed by offsetting cost savings and benefits. Furthermore, the commenters provided no data to support this estimate. PHMSA estimates that the actual costs for certain facilities could be as low as $250 to purchase the newest ASME code. PHMSA acknowledges that those enforcing compliance with these standards will likely incur some training costs regardless of the usage rate of the new standard. PHMSA also agrees that the costs associated with obtaining a National Board commission or completing required testing would be new costs to some test facilities that perform leakage and pneumatic/hydrostatic tests, and for inspectors who have not already begun conducting inspections of *Section XII* tanks. The final rule does mandate the use of *Section XII* and the *NBIC*. Such use, whether continuing to construct transport tanks to *Section VIII, Division 1*, or foregoing training and a National Board commission, are business decisions to be made by individual organizations. This rule provides additional regulatory flexibility to make those business decisions.

Inspectors who have conducted inspections in accordance with the HMR, rather than acquiring an "R" certificate from the National Board, will be able to continue doing so for *Section VIII* tanks in addition to conducting inspections for *Section XII* tanks. This is consistent with the decision to construct all authorized DOT-specification CTMVs, to specialize in a single specification of the DOT 400 series CTMVs, or to transport portable tanks within the United States only. In addition, the incorporation by reference of *Section XII* does not require equipment purchase, employee training, or standard purchase unless it is in the interest of a manufacturer, non-manufacturer, or an inspector to do so. A comment from Exosent Engineering indicated that the company had already

obtained a “T” stamp and stated the additional cost and administrative work was “minimal.” Exosent Engineering went on to state that the design and construction were achieved at no extra cost. Although costs to each type of industry stakeholder will vary, PHMSA expects that users will assess whether it makes economic sense for them to adopt *Section XII*, and that the overall cost burden will be minimized because of a lower usage rate. Furthermore, PHMSA believes it is very likely that many in this industry already have the most current codes to maintain their ASME “U” or “R” stamps.

C. Impact on Portable Tank Market

Mr. James Silver reiterated concerns regarding the effect of permitting the use of *Section XII* on the portable tank industry. Mr. Silver argued that existing UN portable tank standards and regulations ensure the safe transportation of hazardous materials, and that incorporating the 2015 editions of *Section XII* and the *NBIC* for in-service and continued use inspection of portable tanks would be counterproductive to the efforts of the international portable tank community. In addition, Mr. Silver asserted that if National Board-registered inspectors or authorized inspection agencies inspect UN portable tanks for continued service, regional authorities and port inspectors in foreign countries would reject the tanks for import and continued transit. Mr. Silver further argued that the enforcement authorities in most foreign countries only recognize IACS-member approval agencies due to their long-standing involvement with the International Maritime Dangerous Goods (IMDG) Code. He provided examples of tanks that were inspected by non-IACS members being stopped in transit and material needing to be transloaded to an approved portable tank with IACS-member periodic test stamp only. Mr. Silver and Mr. Rubery (on behalf of ITCO) expressed their similar belief that the public would be better served if PHMSA introduced the changes to incorporate by reference *Section XII* and the *NBIC*, with respect to portable tanks, under the scope of the UN Sub-Committee of Experts on the Transport of Dangerous Goods and pursue the

changes as amendments to the UN Model Regulations. Lastly, Mr. Silver suggested that *Section XII* should not be offered as an alternative construction standard for UN T75 portable tanks because *Section VIII*, *Division 1* and *Section XII* are currently employed either through incorporation by reference or by special permit, respectively.

PHMSA agrees that existing portable tank standards and regulations are effective for the safe transportation of hazardous materials—that is why *Section VIII* will continue to be authorized for use. But PHMSA still has the authority to implement an updated alternative design standard that provides at least an equivalent level of safety, in addition to providing the industry demonstrable advantages such as cost savings, advanced design guidelines, and more realistic tank life estimates. *Section XII* is such an updated alternative.

PHMSA disagrees that the incorporation of *Section XII* will lead to disruption in the international market. *Section XII* and the *NBIC* were both developed as international standards and written to be compatible with UN recommendations and other international codes. In responding to this concern, Gardner Cryogenics stated that "ASME *Section XII* is very close in requirements to International Standards Organization (ISO) Standard 20421-1 for cryogenic transportation tanks," and that "several industrial countries have already approved its use or are in the process of evaluation."[26] The UN Model Regulations, IMDG Code, and related ISO standards allow for a nation's Competent Authority to determine the requirements that apply for the construction and repair of packagings used in the transportation of hazardous materials and recognize ASME and National Board codes.[27] PHMSA anticipates reciprocity from foreign countries to recognize cryogenic portable tanks authorized in accordance with the HMR such that *Section XII* transport tanks, inspected in accordance with the *NBIC* (*i.e.,* the HMR), will

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[26] Alexander P. Varghese, Comment, Docket ID PHMSA-2010-0019-0104 (Jun. 30, 2016).

[27] UN Model Regulations, at Paragraphs 6.1.1 and 6.1.2; IMDG Code, at Chapter 6.1.

be recognized internationally in the same manner as foreign inspections of UN portable tanks are recognized through the approval process of a DAA under the HMR. There is no specific requirement under the IMDG Code to use IACS inspectors, only that the inspections and tests of portable tanks intended for transport of refrigerated liquefied gases must be witnessed by an expert approved by the competent authority or its authorized body (*i.e.*, a National Board-certified inspector). Thus, PHMSA has determined the incorporation by reference of the *NBIC* for the continued service of *Section XII* transport tanks will not have any negative international impact.

D. Public Input to Future Versions of Section XII and the NBIC

PHMSA received comments from Mr. James Silver and ITCO regarding the practice of incorporating by reference codes such as the *NBIC* and ASME *Sections VIII* and *XII*. Specifically, the commenters restated their opinion that incorporating these standards reduces transparency because the authoring standards development organizations are not obligated to provide comment periods, as is required for Federal agencies when making regulatory changes and therefore do not assure public input for future revisions. The commenters noted that industry and the public would be better served with standards and training developed by PHMSA.

PHMSA disagrees that developing an entirely new set of standards would be the best approach for industry or the HMR. By addressing advances related to materials, design, fabrication, examination, inspection, testing, certification, and over-pressure protection, *Section XII* was developed to be a model for modernization of the HMR. It is intended to: (1) be a standard that would be more readily adoptable by jurisdictions worldwide; (2) cut government costs; (3) establish a way to accredit manufacturers of these tanks; (4) establish requirements for third-party inspection and for various sorts of inspectors, both during construction and in-service; and (5) incorporate industry

consensus standards into the Federal regulations as required by the Unfunded Mandates Reform Act of 1995 (UMRA; Pub. L. No. 104).

These standards were developed by voluntary consensus standards development organizations comprised of stakeholders and government representatives—including PHMSA—involved in the design, certification, continued qualification, and maintenance of transport tanks.[28] These stakeholders have expert knowledge of how to design, construct, and maintain tanks to withstand the unique dynamic conditions and stresses of a normal transportation environment. Both *Section XII* and the *NBIC* were developed as global standards and were written to be compatible with the UN Model Regulations. ASME meets due process requirements as defined by the non-governmental American National Standards Institute (ANSI). As such, the meetings for the development of ASME standards are open to the public and operate under the ANSI consensus process that allows for public review and comment much like the DOT rulemaking process.

Information about the development and coordination of *Section XII* and the *NBIC* was made available online to the public, and draft revisions are made available for public review and input.[29] In addition to hosting public meetings, ASME committee participation is open to anyone with an interest in a particular subject area and with the requisite technical expertise. Further, ASME and the NBIC committee meetings are open to public participation and free of charge. Both the ASME and NBIC subcommittees consider correspondence from the public in the form of requests for interpretation and revision to existing codes, requests for code cases, and requests to develop new standards. The standards-writing subcommittees, subgroups, and task groups are also open to

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[28] For example, the American Society of Mechanical Engineers and the National Board of Boiler and Pressure Vessel Inspectors.

[29] For example, public comments may be submitted on proposed new ASME Standards drafts and on proposals to revise existing ASME Standards. All ASME public review proposals are available in hard copy at no cost, and some are available electronically also at no cost. *See* ASME Codes and Standards, *ASME Proposals Available for Public Review* (last accessed Feb. 26, 2026), available at: https://cstools.asme.org/csconnect/PublicReviewpage.cfm.

participation by representatives of individuals that are materially affected by the code. Each year, the NBIC committee updates the NBIC and presents the updates on the National Board's website for public review in April–May and August–September. Furthermore, PHMSA ultimately makes the determination on conditions and limitations of material incorporated by reference. If there is a particular issue with a standard, commenters can raise concerns with PHMSA during the notice stage of a rulemaking.

The Commercial Vehicle Safety Alliance (CVSA) commented that it supports the incorporation by reference of technical standards "provided that the U.S. Department of Transportation requires access (including electronic access) for enforcement and government purposes, at no charge, to these materials," and that "when those in industry develop standards that can be used by government it is appropriate to do so...[h]owever, if care is not taken in how that incorporation by reference is designed, it could result in materials not being accessible."[30] CVSA argued that prohibitive fees render certain incorporation by reference materials inaccessible to State and Federal Government officials.

The industry-developed materials incorporated in this final rule are available for review free of charge in-person at PHMSA's headquarters and regional offices, as well as through the Federal Motor Carrier Safety Administration (FMCSA) headquarters. State enforcement officials have access to *Section XII* and the *NBIC* for performance of enforcement activities (*i.e.*, roadside checks). Specifically, PHMSA's understanding is that these activities primarily entail verification of marking requirements, for example, and not in-depth review of compliance with design, construction, and repair standards. Since the marking requirements are no different than the current marking requirements under the HMR for the same packagings constructed in accordance with *Section VIII*,

[30] Commercial Vehicle Safety Alliance, Comment, Docket ID PHMSA-2010-0019-0113 (Jun. 22, 2016).

Division 1, the HMR—which is readily accessible and available for free at PHMSA's website—can be used as a reference for the marking requirements.

E. Implementation

1. Section XII and the HMR

Mr. Chilikuri commented that *Section XII* does not address all the existing HMR requirements for transport tanks, such as rear-end damage protection.[31] NJP Engineering further noted that proposed § 173.14 (now § 173.252 for consistency with the construct of the HMR) is broad in its application and that part 178 covers items that are not addressed in *Section XII* (*i.e.*, manhole assembly requirements in § 178.345-5(e)).[32] Therefore, Mr. Chilikuri requested clarification of the requirements in this instance for the benefit of designers, manufacturers, and enforcement officials.

PHMSA agrees that the 2015 edition of *Section XII* does not address all conditions associated with transport tanks. Entities opting to use *Section XII* for construction of transportation tanks must still comply with parts 178 and 180 of the HMR for items not covered by *Section XII*. This is emphasized by reading *Section XII* at TG-100.3, which states that "applicable laws and regulations may contain additional requirements for pressure vessels used in the transportation of dangerous goods which are not addressed in this section." The new provisions in this final rule at § 173.252 have been revised to clarify this distinction.

2. Use of the 1992 NBIC

The NPGA requested a modification of the proposed requirements allowing the use of the HMR and either the 1992 or 2015 editions of the *NBIC* for qualification of CTMVs constructed to *Section XII*, stating that such a change would remove financial

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[31] Pardhasarathi Chilukuri, Comment, Docket ID PHMSA-2010-0019-0104 (Jun. 28, 2016).

[32] Nickolas Paulick, Comment, Docket ID PHMSA-2010-0019-0111 (May 17, 2016).

and training constraints while maintaining the safety objectives of this rulemaking.[33] NPGA noted that PHMSA has not justified limiting which edition of the *NBIC* may be used for the qualification of *Section XII* CTMVs. Furthermore, NPGA asserted that there is no evidence to suggest employees or businesses trained and relying on current regulations for inspection and qualification of CTMVs designed according to ASME *Section VIII, Division 1* are unfit to qualify CTMVs designed according to ASME *Section XII*.

PHMSA has determined that it would not be in the interest of modernizing transportation safety measures or in alignment with best engineering practices to incorporate an outdated reference. Since the 1992 *NBIC* predates ASME *Section XII* by more than a decade, its incorporation could result in confusion and increased violations of the HMR. ASME *Section XII* and the 2015 edition of the *NBIC* were also developed in tandem, so there is no practical way to use the 1992 *NBIC* for *Section XII* pressure vessels.

The 2015 edition of the *NBIC* accounts for numerous changes that have been made to both the construction, repair, and inspection methods for pressure vessels since the early 1990s. Many of these changes take advantage of newer technology, such as the use of ultrasonic examination instead of radiographic examination. When compared to radiographic examination, ultrasonic examination is lower in cost, easier to use, faster to implement, and poses less environmental concerns. Other changes that offer similar improvements include the use of alternative welding methods instead of post-weld heat treatment, and new standard welding procedures designed to control quality and result in more reliable, and consequently, safer welds.

3. Certification Stamp(s)

[33] National Propane Gas Association, Comment, Docket ID PHMSA-2010-0019-0114 (Jun. 28, 2016).

ITCO commented that incorporating *Section XII* and the 2015 *NBIC* would cause confusion by introducing a "T" stamp certification when portable tanks are already subject to "T" code marking requirements.[34] In addition, CIMS Inspection Services noted that PHMSA has not accounted for the cost of repair shops needing to obtain a "TR" stamp and estimates a cost of more than $10 million for initial certification. The commenter also noted potential future costs of purchasing updated codes and stamp certification renewal costs.

PHMSA disagrees that introducing a "T" stamp will cause confusion given the difference in location and current industry use. The marking requirements of ASME pressure vessels with the "T" stamp is a distinct mark with specific criteria similar to that currently in place for "U" stamped vessels. The location is normally on an ASME data plate on the tank, whereas the UN markings are located on the tank proper as already required by the HMR and UN Model Regulations. The potential costs associated with obtaining a "TR" stamp—as proposed in the 2015 SNPRM—have been removed from the cost of this final rule. This final rule does not require the use of the "TR" stamp initially proposed under the SNPRM. Instead, the final rule requires the use of the "R" stamp. Repair shops must already hold the "R" stamp to perform repairs or alterations in accordance with industry code requirements.

4. Market Conditions

One commenter suggested that PHMSA delay the incorporation of *Section XII* to allow the industry time to assess market conditions and determine whether the continued use of *Section VIII* eliminates the need for *Section XII*.

PHMSA believes industry has had sufficient time since the publication of the SNPRM to make the requested assessment. In addition, PHMSA agrees with other

[34] The International Tank Container Organisation, Comment, Docket ID PHMSA-2010-0019-0115 (Jun. 28, 2016).

commenters who stated that *Section XII* should be incorporated by reference without further delay. Industry need drives the development of industry codes, as was the case for *Section XII*. As discussed above, the industry lacked a set of standards specifically designed for transport tanks, which resulted in the development of such a standard by the applicable standards development organization. Companies have already made use of *Section XII* and have designed and built these transportation tanks through a special permit, as mentioned in the comments from Gardner Cryogenics and Exosent Engineering. These commenters further stated that their companies have not experienced any additional difficulties in producing the tanks according to *Section XII* as opposed to *Section VIII*. PHMSA reiterates that the use of ASME *Section XII* is optional. An individual company who determines that it would not be to its benefit to use the standard has an alternative: use *Section VIII, Division 1* and follow the HMR.

V. Section-by-Section Review

The following is a section-by-section review of the amendments in this final rule:

A. Part 107

Section 107.307

Section 107.307 outlines the process for compliance orders and civil penalties (*i.e.*, enforcement). PHMSA is revising paragraph (a) to underscore PHMSA's existing authority to enforce compliance with industry standards that are incorporated by reference into the HMR. This change does not implement any changes to the regulations or PHMSA's authority. Rather, it clarifies the existing authority to aid in regulatory understanding and compliance.

Section 107.503

Part 107, subpart F establishes a registration procedure for persons engaged in the manufacture, assembly, inspection and testing, certification, or repair of both cargo tanks

and CTMV manufactured in accordance with a DOT specification or under terms of a special permit issued under part 107.

In this final rule, PHMSA is adopting a revision to accommodate the creation of the "T" stamp in *Section XII.* Specifically, PHMSA is adding a reference to the "T" stamp along with the existing references to "U" stamp in § 107.503(b) and the "U" and "R" stamps in § 107.503(c). This revision will ensure that a facility that manufactures or repairs a *Section XII* CTMV submits their "T" stamp authorization to FMCSA, just as facilities than manufacture or repair *Section VIII* CTMVs submit their "U" and/or "R" stamp authorizations.

In addition, PHMSA is noting for general awareness that the new § 173.252 (originally proposed as § 173.14), as discussed below, references the registration requirement in this subpart by noting that CTMV "manufacturers," "inspectors," and "repairers" of these packagings must be registered with the DOT.

B. Part 171

Section 171.7

Section 171.7 provides a listing of all voluntary consensus standards incorporated by reference into the HMR,

This final rule amends § 171.7—Reference material—to list the 2015 edition of *Section XII,* to reference the 2017 edition of *Sections II, V, VIII, and IX*, and to list the 2015 edition of the *NBIC*. Specifically:

- PHMSA revises the introductory text of paragraph (h) to reflect ASME's new headquarters address.
- PHMSA redesignates paragraphs (h)(1) and (2) as paragraphs (h)(2) and (4), respectively. The redesignation is necessary to reflect numerically the insertion of new paragraph (h)(1) accurately to include an entry for the 2015 edition of *Section XII* in addition to the sections of the 2017 edition of the

"ASME Code" currently referenced, *i.e.*, *Section VIII, Division 1*. As discussed previously in Section I: Executive Summary, the *Section XII*, Rules for Construction and Continued Service of Transport Tanks, is based on *Section VIII, Division 1* of the ASME BPVC. Like *Section VIII, Division 1*, *Section XII* sets forth standards for construction, but differs in that it also includes standards for continued service of transport tanks. Supplement 6 to parts 2 and 3 are included to address continued service and inspection of transport tanks specifically. The other supplements to both parts are specifically excluded as they are not relevant to the transportation of hazardous materials.

- PHMSA is adding a new paragraph (h)(3) to authorize the use of the ASME Code, *Section VIII, Division 2*, exclusively for conducting fatigue analyses on the new *Section XII* packagings. Though the HMR already incorporates specific provisions of ASME Code *Section VIII, Division 2* is not currently incorporated by reference. For context, ASME *Section II* defines allowable ferrous and nonferrous materials; *Section V* covers nondestructive testing methods; *Section VIII, Division 1* provides pressure vessel construction rules; and *Section IX* details welding and brazing qualifications.
- PHMSA revises paragraph (x) introductory text to include contact information for the National Board of Boiler and Pressure Vessel Inspectors and revises paragraph (x)(2) to authorize the 2015 edition of the *NBIC*.

C. Part 173

Section 173.252

PHMSA is adding a new § 173.252 addressing the use of *Section XII* for the construction and continued service of certain types of transport tanks as discussed above. For requirements in parts 178 and 180 of the HMR not covered by *Section XII*, persons must continue to comply with applicable requirements for the respective transport tanks in accordance with the HMR in addition to the *Section XII* requirements. Note that PHMSA originally proposed to adopt the language in this section under new § 173.14 in subpart A (General). After further consideration, PHMSA has determined it is more logical and simpler to connect with other authorized bulk packagings by placing this regulatory text in subpart F (Bulk Packaging for Hazardous Materials Other Than Class 1 and Class 7).

For All Tank Types. General conditions for all authorized transport tank types are specified in paragraph (a) as follows:

1. Authorized incorporation by reference material includes ASME *Section XII* Modal Appendices, Mandatory Appendices, and Non-Mandatory Appendices; and use of ASME *Section II* materials, *Section V* Nondestructive Examination, *Section VIII, Division 1* for Parts only, *Section VIII, Division 2* for Fatigue Analysis only, *Section IX* for welding and brazing in accordance with *Section XII* requirements; authorized incorporation by reference material also includes the *NBIC Parts 2* and *3*, and *Supplement 6* of *Parts 2* and *3*;
2. The *NBIC* and *Supplement 6 of Parts 2 and 3* must be used for the design, repair, alteration, certification, qualification, and maintenance of CTMVs, cryogenic portable tanks, and ton tanks constructed to *Section XII*;
3. Repairs must be performed by a facility holding a current National Board certificate of authorization for the use of the National Board "R" stamp;

4. Nameplate character markings must be a minimum 4 mm (5/32”); markings directly on the tank must be a minimum 8 mm (5/16”);
5. Marking must be in accordance with *Supplement 6.* Periodic test information is prohibited on the ASME nameplate;
6. Inspection personnel must have qualifications as required by *Section XII*, Article TG-4, and as evident by having a current National Board commission with endorsement for the level and type of inspection (Transport Tank Class) to be performed, or certification from their employer when applicable; and
7. The inspector, and their employer, must be registered with DOT.

For CTMVs. Conditions and requirements specific to CTMVs are specified in paragraph (b). The CTMVs must conform to all applicable requirements of part 173 of the HMR and must meet: *Section XII, Modal Appendix 1* and the appropriate *Article* of the appendix for the category of CTMV; all *Section XII Mandatory Appendices*; and applicable *Non-Mandatory Appendices,* except as follows:

1. Repairs must be performed by a DOT-registered facility holding a current National Board certificate of authorization for the use of the “R” stamp; and
2. For DOT MC 338 Cargo Tanks Motor Vehicles, *Section XII*, *Modal Appendix 1*, *Article 4*, *paragraph 1-4.4(g)(6)* does not apply. For evacuated jackets used in flammable liquid service, a minimum jacketed thickness of 2.4 mm (0.0946 in) 12 gauge in the reference steel is allowed.

For Cryogenic Portable Tanks (UN T75 portable tanks). Conditions and requirements specific to cryogenic portable tanks are set forth in paragraph (c). These portable tank types must conform to all applicable requirements of part 173 of the HMR and must meet: *Section XII*, *Modal Appendix 3*, *Article 1*; all *Section XII Mandatory Appendices*; and applicable *Non-Mandatory Appendices*, except as follows:

1. External and internal visual inspections in accordance with *NBIC Supplement 6*

are required in addition to *Section XII*, *Modal Appendix 3*, *Article 1*, *paragraph 3-1.10(b)* and *Article 1*, *3-1.10(b)(5)*;

2. *Section XII*, *Modal Appendix 3*, *Article 1*, *paragraph 3-1.10* requires repairs to be performed by a facility holding a current National Board certificate of authorization for the use of the "R" stamp. Records must be in accordance with the NBIC *Supplement 6,* as applicable; and
3. *Section XII, Modal Appendix 3, Article 1, paragraph 3-1.10(b)(6)* does not apply to cryogenic portable tanks because, in most cases, the insulating jacket precludes an inspector from seeing if the markings on the portable tank are legible and in accordance with the requirements when conducting internal and external examinations.

For Ton Tanks. Conditions and requirements specific to ton tanks are set forth in paragraph (d). Ton tanks must conform to all applicable requirements of part 173 and must meet: *Section XII, Modal Appendix 4*, *Article 1*; all *Mandatory Appendices*; and applicable *Non-Mandatory Appendices*, except as follows:

1. *Section XII*, *Modal Appendix 4*, *Article 1*, *paragraph 3-1.10*. Manufacturer-certified fusible plugs tested and qualified under the fuse plug manufacturers' written quality control system are required;
2. *Section XII*, *Modal Appendix 4*, *Article 1*, *paragraph 4-8*. Non-ASME marked fusible plugs are allowed;
3. *Section XII*, *Modal Appendix 4*, *Article 1*, *paragraph 4-12(a)*. External and internal visual inspections must be in accordance with *Supplement 6*;
4. *Section XII*, *Modal Appendix 4*, *Article 1*, *paragraph 4-12(e)*. Records must be kept in accordance with NBIC *Supplement 6*; and
5. A ton tank that fails a prescribed test or inspection must be repaired by a facility holding a current National Board certificate of authorization for the use of the "R"

stamp or be removed from service.

D. Part 178

Section 178.278

PHMSA adds a new § 178.278 to subpart H authorizing the use of *Section XII* for the design, construction, inspection, and qualification of cryogenic portable tanks.

Section 178.301

PHMSA adds a new § 178.301 to subpart J authorizing the use of *Section XII* and the *NBIC* for the design, construction, inspection, and qualification of CTMVs.

E. Part 179

Section 179.302

PHMSA revises § 179.302 to authorize the use of *Section XII* and the *NBIC* (and *Supplement 6*) for the design, construction, inspection, and qualification of ton tanks.

F. Part 180

Section 180.402

PHMSA adds a new § 180.402 to subpart E authorizing the use of the *NBIC* for the continuing qualification, maintenance, and periodic testing of CTMVs.

Section 180.502

PHMSA adds a new § 180.502 to subpart F authorizing the use of the *NBIC* for the continuing qualification, maintenance, and periodic testing of ton tanks constructed to *Section XII*.

Section 180.602

PHMSA adds a new § 180.602 to subpart G authorizing the use of the *NBIC* for the continuing qualification, maintenance, and periodic testing of cryogenic portable tanks (*i.e.*, UN T75 portable tanks) constructed to *Section XII*.

VI. Regulatory Analyses and Notices

A. Statutory/Legal Authority

This final rule is published under the authority of the Federal Hazardous Materials Transportation Act (HMTA; 49 U.S.C. §§ 5101–5127). Section 5103(b) of the HMTA authorizes the Secretary of Transportation to "prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce." Section 5120(b) authorizes the Secretary to ensure that, to the extent practicable, regulations governing the transportation of hazardous materials in commerce are consistent with standards adopted by international authorities. The Secretary has delegated the authority granted in the HMTA to the PHMSA Administrator at 49 CFR 1.97(b).

The Administrative Procedure Act (APA; 5 U.S.C. § 553(e)) requires Federal agencies to give interested persons the right to petition an agency to issue, amend, or repeal a rule. Through this final rule, PHMSA addresses three specific petitions for

rulemaking filed by ASME, the National Board, and the Pressure Vessels Manufacturers Association.

B. Executive Order 12866; Regulatory Planning and Review

Executive Order (E.O.) 12866 (*Regulatory Planning and Review*), as implemented by DOT Order 2100.6B ("Policies and Procedures for Rulemaking"), requires agencies to regulate in the "most cost-effective manner," to make a "reasoned determination that the benefits of the intended regulation justify its costs," and to develop regulations that "impose the least burden on society."[35]

E.O. 12866 and 49 CFR part 5, subpart B require that PHMSA submit "significant regulatory actions" to the Office of Information and Regulatory Affairs (OIRA) within the Executive Office of the President's Office of Management and Budget (OMB) for review. This rulemaking is not considered a significant regulatory action under Section 3(f) of E.O. 12866 and, therefore, was not formally reviewed by OMB. This rulemaking is also not considered a significant rule under 49 CFR part 5, subpart B.

In addition, PHMSA accomplishes the directives of E.O. 12866 by harmonizing the HMR with widely used consensus standards to address safety concerns and provide regulatory flexibility and manufacturing efficiency. PHMSA estimates this rulemaking will help ensure the HMR is consistent with the latest technologies and reduces regulatory burdens by authorizing the use of standards that allow the design and construction of transport vessels to more precise and efficient specifications.

C. Executive Orders 14192 and 14219

PHMSA finds this final rule is an E.O. 14192 (*Unleashing Prosperity Through Deregulation*) deregulatory action.[36] PHMSA has determined the total costs of the rule on the regulated community will be less than zero and estimates an annualized net cost

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[35] 58 FR 51735 (Oct. 4, 1993).

[36] 90 FR 9065 (Feb. 6, 2025).

savings of approximately $8.1 million per year, at a seven percent discount rate. Further details on the costs, cost savings, and benefits of this rulemaking can be found in the Regulatory Impact Analysis (RIA), which is available in the public docket. In addition, PHMSA finds this rule does not implicate any of the factors identified in section 2(a) of E.O. 14219 indicative of a regulation that is "unlawful . . . [or] that undermine[s] the national interest."[37]

D. Energy-Related Executive Orders 13211, 14154, and 14156

The President declared in E.O. 14156 (*Declaring a National Energy Emergency*) a national emergency to address America's inadequate energy development production, transportation, refining, and generation capacity.[38] Similarly, E.O. 14154 (*Unleashing American Energy*) asserts a Federal policy to unleash American energy by ensuring access to abundant supplies of reliable, affordable energy from (inter alia) the removal of "undue burden[s]" on the identification, development, or use of domestic energy resources.[39] PHMSA finds this final rule is consistent with each of E.O. 14156 and E.O. 14154.

This final rule is not a "significant" energy action under E.O. 13211 (*Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*).[40] It also is not a significant regulatory action under E.O. 12866 and is therefore not likely to have a significant adverse effect on the supply, distribution, or use of energy for purposes of the requirements of E.O. 14156 (*Declaring a National Energy Emergency*) and E.O. 14154 (*Unleashing American Energy*). In fact, as opposed to having an adverse effect on the domestic supply, distribution, or use of energy, this final rule may actually

[37] 90 FR 10583 (Feb. 25, 2025).

[38] 90 FR 8353 (Jan. 29, 2025).

[39] 90 FR 8353 (Jan. 29, 2025).

[40] 66 FR 28355 (May 22, 2001).

contribute to streamlining such transportation through overall efficiencies gained in the hazardous materials transportation industry.

E Executive Order 13132

PHMSA analyzed this rulemaking in accordance with the principles and criteria contained in E.O. 13132 (*Federalism*).[41] In addition, PHMSA analyzed under its implementing Presidential Memorandum (*Preemption*).[42] E.O. 13132 requires agencies to assure meaningful and timely input by State and local officials in the development of regulatory policies that may have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

This rulemaking may preempt State, local, and Native American Tribe requirements, but it does not propose any regulation that has substantial direct effects on the States, the relationship between the Federal Government and the States, or the distribution of power and responsibilities among the various levels of government.

The HMTA contains an express preemption provision at 49 U.S.C. § 5125(b), that preempts State, local, and Tribal requirements on certain covered subjects, unless the non-Federal requirements are "substantively the same" as the Federal requirements, including the following:

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

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

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

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[41] 64 FR 43255 (Aug. 10, 1999).

[42] 74 FR 24693 (May 22, 2009).

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

(5) The design, manufacture, fabrication, inspection, marking, maintenance, recondition, repair, or testing of a packaging or container represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce.

This final rule addresses covered subject items (2) and (5) above, and will preempt State, local, and Tribal requirements not meeting the "substantively the same" standard. In this instance, the preemptive effect of the final rule is limited to the minimum level necessary to achieve the objectives of the hazardous materials transportation law under which the final rule is promulgated. Therefore, the consultation and funding requirements of E.O. 13132 do not apply. PHMSA did not receive any comments in response to the NPRM or SNPRM concerning the effect of the adoption of the specific proposals on State, local or Tribal Governments.

F. Executive Order 13175

PHMSA has analyzed this final rule according to E.O. 13175 (*Consultation and Coordination with Indian Tribal Governments*) and DOT Order 5301.1A ("Department of Transportation Tribal Consultation Policies and Procedures").[43] PHMSA finds this final rule does not significantly or uniquely affect the communities of the Indian Tribal Governments or impose substantial direct compliance costs. PHMSA notes it did not receive any comments from Native American Tribes.

G. Regulatory Flexibility Act, Executive Order 13272

This rulemaking has been developed in accordance with E.O. 13272 (*Proper Consideration of Small Entities in Agency Rulemaking*) and DOT's procedures and policies to promote compliance with the Regulatory Flexibility Act to ensure that

[43] 65 FR 67249 (Nov. 9, 2000).

potential impacts of draft rules on small entities are properly considered.[44] As discussed at length in the RIA found in the rulemaking docket, PHMSA concludes that the adoption of *Section XII* and the 2015 edition of the *NBIC* will not have a significant impact on a substantial number of small entities or any foreseeable impact on small businesses given that the provisions adopted under this rulemaking are optional.

H. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995 (PRA; 44 U.S.C. § 3501, *et seq*.), no person is required to respond to any information collection unless it has been approved by OMB and displays a valid OMB control number. Pursuant to 44 U.S.C. § 3506(c)(2)(B) and 5 CFR 1320.8(d), PHMSA must provide interested members of the public and affected agencies an opportunity to comment on information collection and recordkeeping requests. PHMSA has analyzed this rule in accordance with the PRA. The recordkeeping requirements in *Section XII* and the *NBIC* are analogous. Thus, the recordkeeping costs of complying with *Section XII* and the *NBIC* are no different than those required under the current regulatory scheme. Moreover, PHMSA has determined that the recordkeeping requirements of *Section XII* and *NBIC* (specifically *Supplement 6*) are more straightforward than *Section VIII*. Please direct PRA questions related to this final rule to Steven Andrews, Office of Hazardous Materials Standards (PHH-12), Pipeline and Hazardous Materials Safety Administration, 1200 New Jersey Avenue, S.E., 2nd Floor, Washington, D.C. 20590-0001.

I. Unfunded Mandates Reform Act of 1995

The Unfunded Mandates Reform Act of 1995 (UMRA; 2 U.S.C. § 1501, *et seq.*) requires agencies to assess the effects of Federal regulatory actions on State, local, and Tribal Governments, and the private sector. For any NPRM or final rule that includes a

[44] 67 FR 53461 (Aug. 16, 2002).

Federal mandate that may result in the expenditure by State, local, and Tribal Governments, or by the private sector of $100 million or more in 1996 dollars in any given year, the agency must prepare, amongst other things, a written statement that qualitatively and quantitatively assesses the costs and benefits of the Federal mandate.

As explained in the RIA, this rulemaking does not impose unfunded mandates under the UMRA. It will not result in costs of $100 million or more in 1996 dollars to either State, local, or Tribal Governments, or to the private sector, in any one year. A copy of the RIA is available for review in the docket.

J. National Environmental Policy Act

PHMSA has analyzed this rule pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. § 4321, *et seq*.) and has determined it is categorically excluded under 23 CFR 771.117(c)(20), which applies to the promulgation of rules, regulations, and directives. Under Section 9 of DOT Order 5610.1D, PHMSA may apply a categorical exclusion (CE) established in another Operating Administration's procedures. PHMSA followed the requirements outlined in DOT Order 5610.1D to apply the Federal Highway Administration's CE to this deregulatory action. PHMSA does not anticipate any adverse environmental impacts from this rule, and PHMSA has determined no unusual circumstances are present under 23 CFR 771.117(b). PHMSA's Categorical Exclusion Determination memo for this action is available on PHMSA's website.[45]

K. Privacy Act

In accordance with 5 U.S.C. § 553(c), DOT solicits comments from the public to inform better any amendments to the HMR considered in this rulemaking. DOT posts these comments, without edit, including any personal information the commenter provides, to www.regulations.gov, as described in the system of records notice

[45]PHMSA, *Implementing Procedures* (last accessed Feb. 11, 2026), available at: https://www.phmsa.dot.gov/planning-and-analytics/environmental-analysis-and-compliance/implementing-procedures.

(DOT/ALL–14 FDMS). DOT's complete Privacy Act Statement is available at http://www.dot.gov/privacy.

L. Executive Order 13609 and International Trade Analysis

E.O. 13609 (*Promoting International Regulatory Cooperation*) requires agencies to consider whether the impacts associated with significant variations between domestic and international regulatory approaches are unnecessary or may impair the ability of American business to export and compete internationally.[46] In meeting shared challenges involving health, safety, labor, security, environmental, and other issues, international regulatory cooperation can identify approaches that are at least as protective as those that are or would be adopted in the absence of such cooperation. International regulatory cooperation can also reduce, eliminate, or prevent unnecessary differences in regulatory requirements.

Similarly, the Trade Agreements Act of 1979 (Pub. L. No. 96-39), as amended by the Uruguay Round Agreements Act (Pub. L. No. 103-465), prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to the Trade Agreements Act, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standards have a legitimate domestic objective, such as providing for safety, and do not operate to exclude imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards.

PHMSA participates in the establishment of international standards to protect the safety of the American public. PHMSA finds this rulemaking does not create unnecessary

[46] 77 FR 26413 (May 4, 2012).

obstacles to foreign trade. Accordingly, this rulemaking is consistent with E.O. 13609 and PHMSA's obligations under the Trade Agreements Act.

M. National Technology Transfer and Advancement Act

The National Technology Transfer and Advancement Act of 1995 (15 U.S.C. § 272 note) directs Federal agencies to use voluntary consensus standards in their regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, specification of materials, test methods, or performance requirements) that are developed or adopted by voluntary consensus standard bodies. This final rule involves multiple voluntary consensus standards that are discussed at length in the section on § 171.7 and in Section II (Incorporation by Reference Material) of this final rule.

N. Cybersecurity and Executive Order 14028

Executive Order 14028 (*Improving the Nation's Cybersecurity*) directs the Federal Government to improve its efforts to identify, to deter, and to respond to "persistent and increasingly sophisticated malicious cyber campaigns."[47] PHMSA has considered the effects of the final rule and determined that its regulatory amendments will not materially affect the cybersecurity risk profile for the transportation of hazardous materials.

O. Severability

The purpose of this final rule is to operate holistically in addressing different issues related to the safe transportation of hazardous materials. However, PHMSA recognizes that certain provisions focus on unique topics. Therefore, PHMSA finds the various provisions of this final rule are severable and able to function independently if

[47] 86 FR 26633 (May 17, 2021).

severed from each other. Thus, in the event a court were to invalidate one or more of this final rule's unique provisions, the remaining provisions stand and continue in effect.

List of Subjects

49 CFR Part 107

Administrative practice and procedure, Hazardous materials transportation, Penalties, Reporting and recordkeeping requirements.

49 CFR Part 171

Applicability, Definitions, General Requirements, Exports, Hazardous materials transportation, Imports, Incorporation by reference.

49 CFR Part 173

Hazardous materials transportation, Incorporation by reference, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 178

Hazardous materials transportation, Incorporation by reference, Motor vehicle safety, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 179

Hazardous materials transportation, Incorporation by reference, Packaging and containers, Rail safety, Reporting and recordkeeping requirements.

49 CFR Part 180

Hazardous materials transportation, Incorporation by reference, Motor vehicle safety, Packaging and containers, Qualification and maintenance, Railroad safety, Reporting and recordkeeping requirements.

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

PART 107—HAZARDOUS MATERIALS PROGRAM PROCEDURES

1. The authority citation for part 107 continues to read as follows:

Authority: 49 U.S.C. 5101-5128, 44701; Pub. L. 101-410 Section 4; Pub. L. 104-121 Sections 212-213; Pub. L. 104-134 Section 31001; Pub. L. 114-74 Section 701 (28 U.S.C. 2461 note); 49 CFR 1.81 and 1.97; 33 U.S.C. 1321.

2. In § 107.307, revise paragraph (a) introductory text to read as follows:

§ 107.307 General.

(a) When the Associate Administrator and the Office of Chief Counsel have reason to believe that a person is knowingly engaging or has knowingly engaged in conduct which is a violation of the Federal hazardous material transportation law or any provision of this subchapter or subchapter C of this chapter, or any standard incorporated by reference in subchapter C of this chapter, or any exemption, special permit, or order issued thereunder, for which the Associate Administrator or the Office of Chief Counsel exercise enforcement authority, they may—

* * * * *

3. In §107.503, revise paragraphs (b) and (c) to read as follows:

§ 107.503 Registration statement.

* * * * *

(b) In addition to the information required under paragraph (a) of this section, each person who manufactures a cargo tank or cargo tank motor vehicle must submit a copy of the manufacturer's current ASME Certificate of Authorization for the use of the ASME "U" and/or "T" stamp.

(c) In addition to the information required under paragraph (a) of this section, each person who repairs a cargo tank or cargo tank motor vehicle must submit a copy of the repair facility's current National Board Certificate of Authorization for the use of the "R" stamp or ASME Certificate of Authorization for the use of the ASME "U" and/or "T" stamp. Any person who repairs MC-series cargo tanks which are not certified to the

ASME Code must have submitted a copy of the National Board or ASME Certificate of Authorization to PHMSA before June 30, 1992.

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

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

Authority: 49 U.S.C. 5101-5128, 44701; Pub. L. 101-410 section 4; Pub. L. 104-134, section 31001; Pub. L. 114-74 section 701 (28 U.S.C. 2461 note); 49 CFR 1.81 and 1.97.

5. In § 171.7, revise paragraphs (h) and (x) to read as follows:

§171.7 Reference material.

* * * * *

(h) *American Society of Mechanical Engineers* (ASME), Two Park Avenue, Suite 1600, New York, NY 10016-5990; phone: 1-800-843-2763; email: CustomerCare@asme.org; website: www.asme.org.

(1) ASME BPVC.XII-2015: 2015 ASME Boiler and Pressure Vessel Code, Section XII – Rules for Construction and Continued Service of Transport Tanks, 2015 Edition, July 1, 2015 (*ASME Code Section XII*); into §§ 173.252; 178.278; 178.301; 179.302.

(2) ASME Boiler and Pressure Vessel Code, 2017 Edition, July 1, 2017 (ASME Code), as follows, into §§ 172.102; 173.3; 173.5b; 173.24b; 173.252; 173.306; 173.315; 173.318; 173.420; 178.255-1; 178.255-2; 178.255-14; 178.255-15; 178.273; 178.274; 178.276; 178.277; 178.320; 178.337-1; 178.337-2; 178.337-3; 178.337-4; 178.337-6; 178.337-16; 178.337-18; 178.338-1; 178.338-2; 178.338-3; 178.338-4; 178.338-5; 178.338-6; 178.338-13; 178.338-16; 178.338-18; 178.338-19; 178.345-1; 178.345-2; 178.345-3; 178.345-4; 178.345-7; 178.345-14; 178.345-15; 178.346-1; 178.347-1; 178.348-1; 179.400-3; 180.407:

(i) ASME BPVC.II.A-2017 (vols. 1 and 2), Section II—Materials—Part A—

Ferrous Materials Specifications.

(ii) ASME BPVC.II.B-2017, Section II—Materials—Part B—Nonferrous Material Specifications.

(iii) ASME BPVC.V-2017, Section V—Nondestructive Examination.

(iv) ASME BPVC.VIII.1-2017, Section VIII—Rules for Construction of Pressure Vessels Division 1.

(v) ASME BPVC.IX-2017, Section IX—Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators.

Note 1 to paragraph (h)(2): The requirement for a 6% knuckle radius on torispherical heads are excepted.

(3) ASME BPVC.VIII.2-2017, 2017 ASME Boiler and Pressure Vessel Code, Section VIII—Rules for Construction of Pressure Vessels Division 2, 2017 Edition, July 1, 2017 (ASME Code Section VIII Division 2); into §173.252.

(4) ASME B31.4-2012, Pipeline Transportation Systems for Liquids and Slurries, November 12, 2012, into § 173.5a.

* * * * *

(x) *National Board of Boiler and Pressure Vessel Inspectors* (NBBI), 1055 Crupper Avenue, Columbus, Ohio 43229; phone: (614)-888-8320; email: orders@nbbi.org; website: www.nationalboard.org.

(1) NB-23, National Board Inspection Code, A Manual for Boiler and Pressure Vessel Inspectors, 1992 Edition; into § 180.413.

(2) 2015 National Board Inspection Code (NBIC), 2015 Edition, Issued July 1, 2015, as follows; into §§ 173.252; 178.278; 178.301; 179.302; 180.402; 180.502; 180.602:

(i) Part 2, *Inspection* (including only Supplement 6).

(ii) Part 3, *Repairs and Alterations* (including only Supplement 6).

* * * * *

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

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

Authority: 49 U.S.C. 5101–5128, 44701; 49 CFR 1.81, 1.96 and 1.97.

7. Add § 173.252 to subpart F to read as follows:

§ 173.252 Bulk packaging constructed to ASME Code *Section XII*.

This section authorizes, with certain conditions and limitations, the use of *ASME Code Section XII* (IBR, *see* § 171.7 of this subchapter) for the construction and continued service of cargo tank motor vehicles, cryogenic portable tanks, and multi-unit tank car tanks (ton tanks). For requirements in parts 178 and 180 of this subchapter not covered by *ASME Code Section XII*, persons must continue to comply with applicable requirements (*e.g.*, accident damage protection for cargo tank motor vehicles) for the respective packagings in accordance with this subchapter in addition to the *Section XII* requirements. Table 1 to this section presents the specification packagings authorized for construction using *ASME Code Section XII*. Conditions and limitations on the use of the *ASME Code Section XII* for design, construction, qualification and certification, and maintenance are as follows—

(a) *All tank types*. (1) Use of *ASME Code Section XII* for design, construction, qualification, and certification of authorized packaging includes use of ASME Code Section II, Section V, Section VIII Division 1 for parts only, and Division 2 for fatigue analysis only, and Section IX (IBR, *see* § 171.7 of this subchapter);

(2) Continuing qualification, unless excepted, must be in accordance with the NBIC (IBR, *see* § 171.7 of this subchapter), in conjunction with ASME Code *Section XII* as authorized in part 180 of this subchapter;

(3) Nameplate character markings must be a minimum 4 mm (5/32”), markings directly on the tank must be a minimum 8 mm (5/16”);

(4) Marking must be in accordance with NBIC Supplement 6;

(5) A person performing a certification inspection (*i.e.*, an inspector) must be qualified in accordance with ASME Code *Section XII* under its general rules for inspection (Article TG-4), and hold either a current National Board of Boiler and Pressure Vessel Inspectors (National Board) commission and endorsement of the ASME tank class (*e.g.*, Class 3 for DOT 406 cargo tanks) for the type of inspection to be performed or, when applicable, a certification (in accordance with the NBIC) from his or her employer. Inspectors of cargo tank motor vehicles, or their employer, must be registered with DOT in accordance with 49 CFR part 107, subpart F; and

(6) A person (*e.g.*, a facility) performing repairs on a cargo tank authorized under this section must hold a current National Board certificate of authorization for the use of the National Board “R” stamp. Persons, or the employer, performing repairs on cargo tanks must also be registered with DOT in accordance with 49 CFR part 107, subpart F.

(b) *Cargo tank (motor vehicles)*. A cargo tank motor vehicle must conform to all applicable requirements of this part, and must meet the standards of *ASME Code Section XII*, Modal Appendix 1 (for cargo tanks), all Mandatory Appendices and, when opted for, Non Mandatory Appendices, except as follows:

(1) For MC 338 Cargo Tanks, *ASME Code Section XII*, Modal Appendix 1, Article 4, paragraph 1-4.4(g)(6) does not apply. For evacuated jackets used in flammable liquid service, a minimum jacketed thickness of 2.4 mm (0.0946 in) 12 gauge in the reference metal is permitted.

(2) [Reserved]

(c) *Cryogenic portable tanks (UN T75 tanks)*. Cryogenic portable tanks must conform to all applicable requirements of this part, and must meet *ASME Code Section*

XII, Modal Appendix 3, Article 1, all Mandatory Appendices and, when opted for, Non Mandatory Appendices, except as follows:

(1) An inspector must perform external and internal visual inspection in accordance with NBIC Supplement 6 in addition to *ASME Code Section XII*, Modal Appendix 3, Article 1, paragraph 3-1.10(b), and Article 1, paragraph 3-1.10(b)(5);

(2) *ASME Code Section XII*, Modal Appendix 3, Article 1, paragraph 3-1.10(b)(6) does not apply; and

(3) Records must be kept in accordance with the NBIC Supplement 6, as applicable.

(d) *Ton tanks*. Ton tanks must conform to all applicable requirements of this part and must meet *ASME Code Section XII*, Modal Appendix 4, Article 1, all Mandatory Appendices and, when opted for, Non Mandatory Appendices, except as follows:

(1) *ASME Code Section XII*, Modal Appendix 4, Article 1, paragraph 3-1.10 does not apply. Manufacturer-certified fusible plugs, tested, and qualified under the fuse plug manufacturers' written quality control system must be used;

(2) Notwithstanding *ASME Code Section XII*, Modal Appendix 4, Article 1, paragraph 4-8, non-ASME marked fusible plugs are authorized;

(3) Per *ASME Code Section XII*, Modal Appendix 4, Article 1, paragraph 4-12(a), an inspector must perform an external and internal visual inspection in accordance with NBIC Supplement 6;

(4) Per *ASME Code Section XII*, Modal Appendix 4, Article 1, paragraph 4-12(e), records must be kept in accordance with NBIC Supplement 6, as applicable; and

(5) A ton tank that fails a prescribed test or inspection must be repaired in accordance with the NBIC or removed from service.

Table 1 to § 173.252

Authorized Specification Packaging using *ASME Code Section XII*	
Tank Type	**Specification**

Cargo Tank Motor Vehicle	MC 331 and 338, and DOT 406, 407, and 412
Cryogenic Portable Tank	UN T75
Ton Tank	DOT-106A and 110AW

PART 178—SPECIFICATIONS FOR PACKAGINGS

8. The authority citation for part 178 is revised to read as follows:

Authority: 49 U.S.C. 5101–5128, 44701; 49 CFR 1.81, 1.96, and 1.97.

9. Add § 178.278 to read as follows:

§ 178.278 Alternative requirements for the design, construction, inspection, and testing of portable tanks intended for the transportation of refrigerated liquefied gases.

Notwithstanding the requirements of §§ 178.274 and 178.277, UN T75 cryogenic portable tanks may be designed, constructed, inspected, tested, and certified in accordance with ASME Code *Section XII* (IBR, *see* § 171.7 of this subchapter) in conjunction with the NBIC (IBR, *see* § 171.7 of this subchapter), and in accordance with the conditions and limitations of § 173.252 of this subchapter.

10. Add § 178.301 to subpart J to read as follows:

§ 178.301 Alternative requirements for the design, construction, inspection and testing of cargo tank motor vehicles.

Notwithstanding the requirements of this subpart, cargo tank motor vehicles of Specification MC 331 and 338, and DOT 406, 407, or 412 may be designed, constructed, inspected, tested, and certified in accordance with ASME Code *Section XII* (IBR, *see* § 171.7 of this subchapter) in conjunction with the NBIC (IBR, *see* § 171.7 of this subchapter), and in accordance with the conditions and limitations of § 173.252 of this subchapter.

PART 179—SPECIFICATIONS FOR TANK CARS

11. The authority citation for part 179 is revised to read as follows:

Authority: 49 U.S.C. 5101–5128, 44701; 49 CFR 1.81, 1.96, and 1.97.

12. Add § 179.302 to read as follows:

§ 179.302 Alternative requirements for the design, construction, inspection, and testing of multi-unit tank car tanks.

Notwithstanding the requirements of this subpart, Class DOT-106A and 110AW multi-unit tank car tanks may be designed, constructed, inspected, tested, and certified in accordance with *ASME Code Section XII* (IBR, *see* § 171.7 of this subchapter) in conjunction with the NBIC (IBR, *see* § 171.7 of this subchapter), and in accordance with the conditions and limitations of § 173.252 of this subchapter.

PART 180—CONTINUING QUALIFICATION AND MAINTENANCE OF PACKAGINGS

13. The authority citation for part 180 is revised to read as follows:

Authority: 49 U.S.C. 5101–5128, 44701; 49 CFR 1.81, 1.96, and 1.97.

14. Add § 180.402 to read as follows:

§ 180.402 Alternative qualification and maintenance.

Notwithstanding the applicability of § 180.401 (for ASME Code Section VIII, Division 1 cargo tanks) for the continuing qualification and maintenance of an authorized specification cargo tank motor vehicle, and subject to conditions and limitations set forth in § 173.252 of this subchapter, the NBIC (IBR, *see* § 171.7 of this subchapter)—

(a) Must be used for the continuing qualification, maintenance, and periodic testing (*i.e.*, continued service) of cargo tanks constructed to *ASME Code Section XII* in accordance with § 178.301 of this subchapter; and

(b) May be used, in combination with the requirements of this part, for the continuing qualification, maintenance, and periodic testing (*i.e.*, continued service) of cargo tank motor vehicles constructed to ASME Code Section VIII, Division 1. Specifically, DOT specification cargo tank motor vehicles constructed to ASME Section VIII, Division 1 that bear a “U” stamp may be inspected, repaired and tested under this

subpart and the NBIC, excluding all supplements except Supplement 6.

15. Add § 180.502 to read as follows:

§ 180.502 Alternative qualification and maintenance.

Notwithstanding the applicability of § 180.501 for the qualification and maintenance of multi-unit tank car tanks, and subject to conditions and limitations set forth in § 173.252 of this subchapter, the NBIC (IBR, *see* § 171.7 of this subchapter), must be used for the continuing qualification, maintenance, and periodic testing (*i.e.*, continued service) of Class DOT-106A and 110AW multi-unit tank car tanks constructed to *ASME Code Section XII* in accordance with § 179.302 of this subchapter.

16. Add § 180.602 to read as follows:

§ 180.602 Alternative qualification and maintenance.

Notwithstanding the applicability of § 180.601 for the continuing qualification, maintenance, or periodic testing of portable tanks, and subject to conditions and limitations set forth in § 173.252 of this subchapter, the NBIC (IBR, *see* § 171.7 of this subchapter), must be used for the continuing qualification, maintenance, and periodic testing (*i.e.*, continued service) of UN T75 cryogenic portable tanks constructed to *ASME Code Section XII* in accordance with § 178.278 of this subchapter.

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