PHMSA-2137-AF04 (HM 218H)
Hazardous Materials: Miscellaneous Amendments
Environmental Assessment

The National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4375, requires that federal agencies analyze proposed actions to determine whether the action will have a significant impact on the human environment. The Council on Environmental Quality (CEQ) regulations require federal agencies to conduct an environmental review considering (1) the need for the proposed action, (2) alternatives to the proposed action, (3) probable environmental impacts of the proposed action and alternatives, and (4) the agencies and persons consulted during the consideration process (40 C.F.R. § 1508.9(b).)

Need for the Proposed Action:

This NPRM would amend the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) by making miscellaneous revisions to update and clarify certain regulatory requirements, responds to seven petitions for rulemaking submitted to PHMSA by various stakeholders, and addresses two National Transportation Safety Board (NTSB) recommendations. These amendments are intended to promote safety, regulatory relief, and clarity. The proposed changes were identified through an internal review of the HMR as well as in response to communications with various stakeholders affected by the HMR. These proposed minor changes will clarify the HMR and enhance safety, while offering some net economic benefits.

This action is necessary to: (1) fulfill our statutory directive to promote transportation safety; (2) fulfill our statutory directive under the Administrative Procedure Act (APA) that requires Federal agencies to give interested persons the right to petition an agency to issue, amend, or repeal a rule (5 U.S.C. 553(e)); (3) support governmental efforts to provide regulatory relief to the regulated community; (4) address safety concerns raised by the NTSB and remove regulatory ambiguity identified by the regulated community; and (5) simplify and clarify the regulations in order to promote understanding and compliance.

The intended effect of this action is to enhance the safe transportation of hazardous materials and, in conjunction, clarify, simplify and relax certain regulatory requirements for carriers, shippers, and other stakeholders. These regulatory revisions will offer more efficient and effective ways of achieving the PHMSA goal of safe and secure transportation, protecting both people and the environment, of hazardous materials in commerce.

Alternatives:

In proposing this rulemaking, PHMSA is considering the following alternatives:

Alternative 1: No Action

If PHMSA chose this alternative, it would not proceed with any rulemaking on this subject and the current regulatory standards would remain in effect. This option would not address outstanding petitions for rulemaking or NTSB Safety Recommendations. We rejected the no action alternative.

Alternative 2: Go forward with the proposed amendments to the HMR in this NPRM

This alternative is the current proposal as it appears in this NPRM, applying to transport of hazardous materials by various transport modes (highway, rail, vessel and aircraft.) The proposed amendments encompassed in this alternative are more fully addressed in the preamble and regulatory text sections. However, they generally include the following changes to the HMR, grouped below for ease of discussion:

Incorporation by Reference and use of International Standards:

- Remove the entry for CGA Pamplet C-1.1 in Table 1 to § 171.7.
- Incorporate by reference in § 171.7 CGA Pamplet G-1.6, Standard for Mobile Acetylene Trailer Systems, Seventh Edition (responds to petition for rulemaking P-1605 and two NTSB Safety Recommendations, H-09-01 and H-09-02).
- Incorporate by reference in § 171.7 AAR Manual of Standards and Recommended Practices, Section C-III, Specifications for Tank Cars, Specification M-1002 (AAR Specifications for Tank Cars).

- Amend the marking requirements for poisonous by inhalation shipments transported in accordance with the IMDG Code or TDG Regulations (responds to petition for rulemaking P-1591).

§ 172.101 Hazardous Materials Table and § 172.102 Special Provisions:

- Remove the packing group II designation for certain organic peroxides, self-reactive substances and explosives (responds to petition for rulemaking P-1590).
- Revise the § 172.101 table to add special provision B120 to column 7 for the entry "Calcium nitrate, UN1454."
- Revise the entry for "Propellant, solid, UN0501" to remove vessel stowage provision 24E from column 10B of the HMT.
- Revise the packing group II HMT entry for UN 2920, Corrosive liquids, flammable, n.o.s., to harmonize the HMR with the UN Model Regulations, International Maritime Dangerous Goods (IMDG) Code, and the International Civil Aviation Organization Technical Instructions (ICAO TI) to clarify that this entry is eligible for the limited quantity exceptions provided in § 173.154.
- Revise the entry for "Oxidizing solid, corrosive, n.o.s., UN 3085, PG II" to harmonize with international standards by adding a reference to § 173.152 to column 8A of the HMT.
- Revise the HMT entries for "Trinitrophenol (piric acid), wetted, with not less than 10 percent water by mass, UN 3364" and "Trinitrophenol, wetted with not less than 30 percent water, by mass, UN 1344" to harmonize the HMR with the UN Model Regulations, IMDG Code, and the ICAO TI to clarify that the 500 gram limit per package does not apply to UN 1344 but does apply to UN 3364.
- Revise special provision 136, for Dangerous goods in machinery or apparatus, in § 172.102 to include reference to subpart G of part 173.
- Remove reference to obsolete Special Provison 18 for the HMT entry "UN 1044, Fire extinguishers" and in § 180.209(j).

Hazard Communication (Marking, Labeling, Placarding, Emergency Response):

- Correct a reference in § 172.201 to exceptions for the requirement to provide an emergency response telephone number on a shipping paper.
- Revise §§ 172.301(f), 172.326(d) and 172.328(e) to include the clarification that the NOT-ODORIZED or NON-ODORIZED marking may appear on packagings used for both unodorized and odorized LPG, and remove the effective date of October 1, 2006 if it appears these paragraphs, as the effective date has passed.
- Amend § 172.406(d) by expressly authorizing the use of labels described in subpart E with a dotted or solid line outer border on a surface background of contrasting color.
- Amend the address in § 172.407(d)(4)(ii) to read Standards and Rulemaking Division, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, East Building, 1200 New Jersey Avenue, SE., Washington, DC 20590-0001.
- Clarify the marking size requirements for an IBC that is labeled instead of placarded by replacing the bulk package marking reference in § 172.514(c) with the non-bulk marking reference, § 172.301(a)(1).
- Require that emergency response telephone numbers be displayed on shipping papers numerically (responds to petition for rulemaking P-1597).

Shipper Requirements:

- Revise § 173.4a(a) to clarify that articles (including aerosols) are not eligible for excepted quantity reclassification under § 173.4a, although some are eligible to be shipped as small quantities by highway and rail in § 173.4.
- Revise § 173.21(e) to include the prohibition of transporting or offering for transport materials in the same transport vehicle (e.g. trailer, rail car) with another material, the mixing of which is likely to cause a dangerous evolution of heat, flammable or poisonous gases or vapors, or to produce corrosive materials.
- Clarify that the requirements provided in paragraph § 173.24a(c)(1)(iv) do not apply to limited quantities packaged in accordance with § 173.27(f)(2).
- Clarify the quantity limits for mixed contents packages prepared in accordance with § 173.27(f)(2).
- Clarify the requirements applicable to bulk transportation of combustible liquids by adding § 173.150(f)(3)(xi) stating that the registration requirements in subpart G of part 107 is applicable and

revising §§ 173.150(f)(3)(ix) and 173.150(f)(x) for punctuation applicable to a listing of requirements.

- Require that certain shipments of nitric acid utilizing glass inner packagings be contained in intermediate packaging (responds to petition for rulemaking P-1601).
- Propose to create a new paragraph (j) in § 173.159 to address the need for provisions that allow shippers to prepare for transport and offer into transportation damaged wet electric storage batteries.
- Revise § 173.166(e)(6) to add the words "or cargo vessel."
- Revise §§ 173.170 and 173.171 by changing the term motor vehicle to transport vehicle to allow for motor vehicles comprised of more than one cargo-carrying body to carry 100 pounds of black or smokeless powder reclassed as Division 4.1 in each cargo-carrying body instead of 100 pounds total in the motor vehicle.
- Revise the provisions in § 173.199(a)(4) by removing the reference to the steel rod impact test in § 178.609(h).
- Amend the bulk packaging section reference in Column (8C) of the HMT from § 173.240 to § 173.216 for the entries NA2212, UN2212, and UN2590. In addition, we are proposing to revise paragraph (c)(1) in § 173.216 by authorizing the use of bulk packages prescribed in § 173.240.
- Amend § 173.306(k) to clarify that aerosols shipped for recycling or disposal by motor vehicle containing a limited quantity are afforded the applicable exceptions provided for ORM-D materials granted under §§ 173.306(i) and 173.156(b).

Modal Requirements (Air, Vessel, and Highway):

- Create a new paragraph (d) in § 175.1, stating that this subchapter does not apply to dedicated air ambulance, fire fighting, or search and rescue operations.
- Correct § 175.8 by adding the appropriate 14 CFR, Part 125 citations.
- Clarifying exceptions for passengers, crewmembers, and air operators in paragraphs (a)(18), (a)(22), and (a)(24) of § 175.10.
- Clarify § 175.75(e)(2) by replacing the word “located” with “certificated.”
- Clarify § 176.30(a)(4) by replacing the word “packaging” with “package.”
- Clarify that the loading restrictions in § 177.835(c)(1) through (4) area applicable to § 177.848(e).

Packaging design and requalification:

- Revise § 178.65(i)(1) to correctly reference the manufacturer’s report requirements in § 178.35(g).
- Clarify § 178.337-17(a) to eliminate confusion of the name plate and specification plate requirements.
- Correct an inadvertent editorial error in the formula in § 178.345-3(c)(1).
- Include provisions consistent with the non-bulk packaging and IBC approval provisions for Large Packagings in § 178.955.
- Clarify the applicability to subpart E in § 180.401 by revising the term “person” to “hazmat employee or hazmat employer.”
- Extend the pressure test and internal visual inspection test period to ten years for certain MC 331 cargo tanks in dedicated propane delivery service (responds to petition for rulemaking P-1604).
- Clarify the requirements applicable to the testing of pressure relief devices for cargo tank motor vehicles (responds to petition for rulemaking P-1609).

Probable Environmental Impacts of the Alternatives :

Background:

Hazardous materials are substances that may pose a threat to public safety or the environment during transportation because of their physical, chemical, or nuclear properties. The hazardous materials regulatory system is a risk management system that is prevention-oriented and focused on identifying a safety hazard and reducing the probability and quantity of a hazardous material release. Hazardous materials are categorized by hazard analysis and experience into hazard classes and packing groups. The regulations require each shipper to classify a material in accordance with these hazard classes and packing groups. The process of classifying a hazardous material is itself a form of hazard analysis. Further, the regulations require the shipper to communicate a material’s hazards through use of the hazard class, packing group, and proper shipping name on the shipping paper and the use of labels on

packages and placards on transport vehicles. Thus, the shipping paper, labels, and placards communicate the most significant findings of the shipper's hazard analysis. A hazardous material is assigned to one of three packing groups based upon its degree of hazard, from a high hazard, Packing Group I to a low hazard, Packing Group III material. The quality, damage resistance, and performance standards of the packaging in each packing group are appropriate for the hazards of the material transported.

Under the HMR, hazardous materials are transported by aircraft, vessel, rail, and highway. The potential for environmental damage or contamination exists when packages of hazardous materials are involved in accidents or en route incidents resulting from cargo shifts, valve failures, package failures, loading, unloading, collisions, handling problems, or deliberate sabotage. The release of hazardous materials can cause the loss of ecological resources (e.g. wildlife habitats) and the contamination of air, aquatic environments, and soil. Contamination of soil can lead to the contamination of ground water. Compliance with the HMR substantially reduces the possibility of accidental release of hazardous materials.

When developing potential regulatory requirements, PHMSA evaluates those requirements to consider the environmental impact of each amendment. Specifically, PHMSA evaluates the: risk of release and resulting environmental impact; risk to human safety, including any risk to first responders; longevity of the packaging; and if the proposed regulation would be carried out in a defined geographic area, the resources, especially any sensitive areas, and how they could be impacted by any proposed regulations. Of the regulatory changes proposed in this rulemaking, most have been determined to be editorial. As such, these amendments have no impact on: the risk of release and resulting environmental impact; human safety; longevity of the packaging; and none of these amendments would be carried out in a defined geographic area. General possible environmental benefits, and disbenefits, are discussed below. Where specific changes which are part of a set of amendments may be more than editorial, they are discussed individually in more detail.

Alternative 1: No Action
If PHMSA were to select the No Action Alternative, current regulations would remain in place, and no new provisions would be added. However, this option would not address outstanding petitions for rulemaking, NTSB Safety Recommendations or consider amendments based on PHMSA's own initiatives intended to update, clarify, or provide relief from certain existing regulatory requirements. Foregone efficiencies in the No Action Alternative also include freeing up limited resources to concentrate on hazardous materials transportation issues of potentially much greater environmental impact.

Additionally, the Preferred Alternative encompasses enhanced and clarified regulatory requirements, which would result in increased compliance and less environmental and safety incidents. Not adopting the proposed environmental and safety requirements in the NPRM under the No Action Alternative would result in a lost opportunity for reducing environmental and safety-related incidents.

Greenhouse gas emissions would remain the same under the No Action Alternative.

Alternative 2: Go forward with the proposed amendments to the HMR in this NPRM:
If PHMSA selects the provisions as proposed in this NPRM, we believe that safety and environmental risks would be reduced and that protections to human health and environmental resources would be increased. .

Enhanced environmental protection will also be achieved through more targeted and effective training. This proposed set of amendments will eliminate inconsistent hazardous materials regulations, which hamper compliance training efforts. By maintaining consistency between these international regulations and the HMR, shippers and carriers are able to train their hazmat employees in a single set of requirements for classification, packaging, hazard communication, handling, stowage, etc., thereby minimizing the possibility of improperly preparing and transporting a shipment of hazardous materials because of differences between domestic and international regulations.
This proposed set of amendments will create more streamlined, easier-to-understand hazardous regulations, resulting in compliance training efforts which truly facilitate the regulated community's ability to comply with the HMR.
Potential environmental impacts of each proposed group of amendments in Alternative 2 (selected for NPRM) are discussed individually below. To facilitate analysis, the discussion for each group of amendments is written to be stand-alone

Incorporation by Reference and use of International Standards:
PHMSA believes that this proposed set of amendments, which will increase standardization and consistency of regulations, will result in greater protection of human health and the environment. Consistency between US and international regulations enhances the safety and environmental protection of international hazardous materials transportation through better understanding of the regulations, an increased level of industry compliance, the smooth flow of hazardous materials from their points of origin to their points of destination, and consistent emergency response in the event of a hazardous materials incident. Incorporation of the *CGA Pamphlet G-1.6, Standard for Mobile Acetylene Trailer Systems,* will mitigate acetylene release and enhance environmental protection during overturn incidents and unloading. Incorporation of AAR Manual of Standards and Recommended Practices, Section C-III, Specifications for Tank Cars, Specification M-1002 (AAR Specifications for Tank Cars) and certain subsequent amendments will update the previously incorporated 2000 edition ensuring increased safety through compliance with revised tank car standards.

Current greenhouse gas emissions would be unaffected under this proposed set of amendments.

§ 172.101 Hazardous Materials Table and § 172.102 Special Provisions:
PHMSA believes that this proposed set of amendments, which will increase standardization and consistency of regulations, will result in greater protection of human health and the environment. Consistency between US and international regulations enhances the safety and environmental protection of international hazardous materials transportation through better understanding of the regulations, an increased level of industry compliance, the smooth flow of hazardous materials from their points of origin to their points of destination, and consistent emergency response in the event of a hazardous materials incident. New and revised entries to the HMT reflect emerging technologies, and a need to better describe or differentiate between existing entries. These proposed changes mirror changes in the Dangerous Goods list of The 18th Revised Edition of the UN Model Regulations, the 2015-2016 ICAO TI and the 37-14 amendments to the IMDG Code. It is extremely important for the domestic HMR to mirror the UN Model Regulations, the ICAO TI, and the IMDG Code with respect to the entries in the HMT to ensure consistent naming conventions across modes and international borders.

The packing group assignment reflects a degree of danger associated with a particular material and identifies appropriate packaging. However, assignment of a packing group is not appropriate in all cases (e.g. explosives, gases, radioactive material). In such cases the packing group does not indicate a degree of danger and the packaging requirements for those materials are specified in the appropriate section in part 173. Similarly for articles, the packing group only reflects the degree of the danger posed by the hazardous component, but may not reflect danger of the article itself which may be substantially reduced or changed when compared to shipping the hazardous component. Currently and without specific rationale, some articles are assigned packing groups while others are not. The inconsistent application of packing groups to articles can create problems for trainers when trying to explain regulatory structure to students. This proposed change provides a level of consistency for all articles specifically listed in the HMT, without diminishing environmental protection and safety.

Current greenhouse gas emissions would be unaffected under this proposed set of amendments.

Hazard Communication (Marking, Labeling, Placarding, Emergency Response):
PHMSA believes that this proposed set of amendments, which will provide for enhanced hazard communication (hazcom), will result in greater protection of human health and the environment. The proposed changes communicate the nature of various specialized packaging configurations to package handlers and emergency responders. The proposed amendments would ensure that hazard markings are visible, universally recognizable, and that they contain all information required by emergency responders, thus resulting in decreased incidents with impacts to the environment and safety.

Similar to the above sets of amendments, PHMSA believes that this proposed set of amendments, which will increase standardization and consistency of regulations, will result in greater protection of human health and the environment. Consistency between US and international regulations enhances the safety and environmental protection of international hazardous materials transportation through better understanding of the regulations, an increased level of industry compliance, the smooth flow of hazardous materials from their points of origin to their points of destination, and consistent emergency response in the event of a hazardous materials incident.

Current greenhouse gas emissions would be unaffected under this proposed set of amendments.

Shipper Requirements:
PHMSA believes that this proposed amendment, which will revise, clarify and enhance current regulations, will result in greater protection of human health and the environment. Compliance with the HMR will be facilitated for shippers and transporters of hazardous materials through regulations which are easier to understand and more streamlined. Additionally, the revisions include emphasis being placed in areas requiring more attention.

Specific to this set of amendments, improving the packaging requirements applicable to glass packages of nitric acid reduces the occurrences of fires caused by broken inner containers and enhances human health and environmental protection. PHMSA believes that the additional intermediate packaging required by this particular amendment will add another layer of protection in preventing breakage, leakage and fires. Additionally, this particular amendment creates a more streamlined and efficient HMR through incorporation of a petition for rulemaking, P-1601. A more streamlined and efficient HMR allows both regulators and the regulated community to target limited resources at the most pressing hazmat compliance issues.

Current greenhouse gas emissions would be unaffected under this proposed set of amendments.

Modal Requirements (Air, Vessel, and Highway):
PHMSA believes that this proposed amendment, which will revise, clarify and enhance current regulations, will result in greater protection of human health and the environment. Compliance with the HMR will be facilitated for air, vessel and highway shippers and transporters of hazardous materials through regulations which are easier to understand and more streamlined. Additionally, the revisions include emphasis being placed in areas requiring more attention.

Current greenhouse gas emissions would be unaffected under this proposed set of amendments.

Packaging design and requalification:
PHMSA believes that this proposed amendment, which will revise, clarify and enhance current regulations, will result in greater protection of human health and the environment. Compliance with the HMR will be facilitated for shippers and transporters of hazardous materials through regulations which are easier to understand and more streamlined. Additionally, the revisions include emphasis being placed in areas requiring more attention.

Specific to this set of amendments, decreasing the required frequency for pressure testing of certain cargo tanks in dedicated propane service by extending the requalification period from five years to ten years will ease the burden on regulators and the regulated community. This test, which requires significant equipment down-time and man-hours to perform, has been shown to achieve no additional safety or environmental protection when performed at a five- versus a ten-year interval. Both regulators and the regulated community will realize extra time available for focusing on the most pressing hazmat transport issues, which will result in enhanced environmental protection. Pressure testing requires a significant amount of

water usage. Decreasing the testing frequency by half will result in significant volumes of water being conserved. Additionally, this particular amendment creates a more streamlined and efficient HMR through incorporation of a petition for rulemaking, P-1609. A more streamlined and efficient HMR allows both regulators and the regulated community to target limited resources at the most pressing hazmat compliance issues.

Current greenhouse gas emissions would be unaffected under this proposed set of amendments.

Agencies Consulted:

This final rule would affect some PHMSA stakeholders, including hazardous materials shippers and carriers by highway, rail, vessel, and aircraft, as well as package manufacturers and testers. PHMSA sought comment on the environmental assessment contained in the April 26, 2012, NPRM published under Docket PHMSA 2011-0138 [77 FR 24885] (HM-218G) however, PHMSA did not receive any comments on the environmental assessment contained in that rulemaking. In addition, PHMSA sought comment from the following Federal Agencies and modal partners:

- Department of Commerce
- Department of Homeland Security
- Department of Justice
- Environmental Protection Agency
- Health and Human Services
- National Institute of Science and Technology
- Occupational Safety and Health Administration
- Federal Aviation Administration
- Federal Motor Carrier Safety Administration
- Federal Railroad Administration

PHMSA did not receive any adverse comments on the amendments adopted in this final rule from these Federal Agencies.

Conclusion:

PHMSA proposes to make miscellaneous amendments to the HMR based on comments from the regulated community, NTSB recommendations, and PHMSA's own rulemaking initiatives. The proposed amendments are intended to update, clarify, or provide relief from certain existing regulatory requirements to promote safer transportation practices; eliminate unnecessary regulatory requirements; facilitate international commerce; and make these requirements easier to understand. These proposed clarifications of regulatory requirements, if adopted, will foster a greater level of compliance with the HMR and thus, diminished levels of hazardous materials transportation incidents affecting the health and safety of the environment. Therefore, the net environmental impact of this proposal will be positive. The provisions of this proposed rule build on current regulatory requirements to enhance the transportation safety and security of shipments of hazardous materials transported by highway, rail, aircraft and vessel, thereby reducing the risks of an accidental or intentional release of hazardous materials and consequent environmental damage. PHMSA believes that there are no significant environmental impacts associated with this proposed rule.

PHMSA welcomes any views, data, or information related to environmental impacts that may result if the proposed requirements are adopted, as well as possible alternatives and their environmental impacts.

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Patricia Jackson, P.E. Date
NEPA Program Manager

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Dr. Magdy El-Sibaie
Associate Administrator

Date