



DEPARTMENT OF
TRANSPORTATION
SAFETY OPERATIONS

P-1591

Air Products and Chemicals, Inc.

2012 JUL -6 A 10:07

7201 Hamilton Boulevard

Allentown, PA 18195-1501

Telephone (610) 481-4911

Office of Hazardous Materials Standards
Pipeline and Hazardous Materials Safety Administration
Attention: PHH-10
U.S. Department of Transportation
East Building
1200 New Jersey Avenue, SE.
Washington, D.C. 20590-0001

03 May 2012

Subject: Petition for Rulemaking

On behalf of Air Products and Chemicals, Inc., I ask that you please accept this Petition for Rulemaking. This Petition is submitted in accordance with the criteria specified in Subpart B of Part 106 of the 49CFR Hazardous Materials Regulations.

Air Products and Chemicals, Inc. is a Fortune 500 company with annual revenue exceeding \$10 billion. We are a major international manufacturer and distributor of compressed gases and chemicals, supplying products to global markets in various industrial and electronics applications. To support our business operations, we ship a large amount of hazardous materials from the United States to international locations. These shipments routinely include materials that are poisonous by inhalation (PIH). We prepare these shipments in accordance with the requirements outlined in 49 CFR, Subpart C of Part 171.

The purpose of this Petition is to propose an amendment to the regulations as currently written in Subparagraphs 171.23(b)(10)(iv)(A) and (B). Specifically, we believe that the UN ID marking requirement for the transport vehicle needs to be changed. The additional markings specified provide no additional measure of safety. The regulation adds economic burden, creates confusion, frustrates shipments, and is not consistent with global harmonization of hazard communication.

Enclosed with this Petition is a copy of PHMSA Interpretation dated 21 December 2011 that was issued on the same subject in response to our request. In our opinion, the guidance offered in the Interpretation has further complicated the issue. In an attempt to improve the situation, we respectfully submit this Petition and ask for your careful review and consideration to amend the regulations as they are currently written.

Air Products Internal Use Only

CURRENT REQUIREMENTS

When shipping PIH materials from the United States in accordance with Subpart C of Part 171, the transport vehicle or freight container must be marked in accordance with Subparagraphs 171.23(b)(10)(iv)(A) or (B). In both of these paragraphs, the regulations specify that "the transport vehicle or freight container must be marked with the identification numbers for the hazardous material, regardless of the total quantity contained in the transport vehicle or freight container, in the manner specified in paragraph 172.313(c) of this subchapter"

With the phrase, "regardless of the total quantity contained in the transport vehicle or freight container", it appears that the identification number marking requirement is applicable to any quantity. However, the remainder of the sentence goes on to state that the marking must be "in the manner specified in paragraph 172.313(c) of this subchapter". Paragraph 172.313(c) is further divided into three provisions and limitations, subparagraphs (1) through (3). The second provision, in paragraph (2) states, "The transport vehicle or freight container is loaded at one facility with 1,000 kg (2,205 pounds) or more aggregate gross weight of the material in non-bulk packages marked with the same proper shipping name and identification number."

So, here lies the confusion. Subparagraphs 171.23(b)(10)(iv)(A) and (B) both include the phrase, "regardless of the total quantity contained in the transport vehicle or freight container", while simultaneously stating the marking shall be "in the manner specified in paragraph 172.313(c) of this subchapter", which includes a provision for the quantities on the vehicle, as illustrated above.

INTERPRETATION

Because of the confusion caused by the contradictory nature of the regulations, we submitted a Request for Interpretation on 15 August 2011. An official Interpretation was issued 21 Decemebr 2011. It is our opinion that the Interpretation may have further complicated the issue.

- The last paragraph of the Interpretation concludes by stating, "...with the identification number specified for the hazardous material in the 172.101 table for all three hazardous materials in the shipment, *despite* the provisions and limitations stated in 172.313(c)." Most of this sentence is copied directly from paragraph 172.313(c), *with one glaring exception – the word, "despite"*. In paragraph 172.313(c), the word "*despite*" does not appear. Instead of "*despite*", the regulation uses the words, "*subject to*". With this difference in words, the Interpretation changes the entire meaning of Paragraph 172.313(c), and subsequently, the meaning of Subparagraph 171.23(b)(10)(iv)(A).
- The provisions and limitations stated in 172.313(c)(1) through (3) are an integral part of the regulation.
 - 1) The material is in Hazard Zone A or B;
 - 2) The transport vehicle or freight container is loaded at one facility with 1,000 kg or more aggregate gross weight of the material in non-bulk packages marked with the same proper shipping name and identification number; and
 - 3) For different materials in both Hazard Zones A and B, with the identification number for the Hazard Zone A material.
- There is no mention in 171.23(b)(10)(iv)(A) that the provisions and limitations outlined in 172.313(c) do not apply. The only exception to 172.313(c) stated in 171.23(b)(10)(iv)(A), is the stipulation, "regardless

of the total quantity contained in the transport vehicle or freight container." It can be assumed that this is a specific exception to the provision stated in subparagraph 172.313(c)(2). Subparagraphs 172.313(c)(1) and (3) do not directly apply to "quantity".

- Other than that, subparagraph 171.23(b)(10)(iv)(A) states that the UN ID markings must be "in the manner specified in paragraph 172.313(c)". Nowhere does it state that the provisions and limitations stated in paragraph 172.313(c) do not apply. In fact, it is the provisions and limitations specified in 172.313(c)(1) and (3) that limit the marking requirements to Zone A or Zone B materials.
- Nevertheless, based on the Interpretation's guidance that the provisions and limitations stated in 172.313(c) do not apply, it is very possible to conclude that subparagraph 171.23(b)(10)(iv)(A) applies to all PIH materials, Zones A through D, and that UN ID number markings must be applied to the transport unit for all PIH materials in the transport unit, regardless of the total quantity. If this is true, the UN ID marking requirements in 171.23(b)(10)(iv)(A) go far beyond the current marking requirements for the same materials when transported over the road, by rail, or by vessel, under USDOT jurisdiction as outlined in 172.313(c).
- We believe that the Interpretation meant to say, "despite the provisions and limitations stated in 172.313(c)(2)." This would make sense as 172.313(c)(2) outlines the "quantity" parameters. This would then agree with the phrase in Subparagraphs 171.23(b)(10)(iv)(A) and (B) that states, "regardless of the total quantity contained in the transport vehicle or freight container". Nevertheless, the Interpretation did not spike out 172.313(c)(2). The Interpretation states that none of the provisions and limitations of 172.313(c) apply. Consequently, the Interpretation has added more confusion to the issue.

USDOT DOMESTIC / IMDG / TDG

Subpart C of Part 171 specifies requirements for international shipments of PIH materials that involve the United States. In addition to 49CFR, the specific regulations applicable to PIH materials mentioned in this Subpart are the IMDG Code for ocean shipments and the Transport Canada TDG Regulations for road shipments involving Canada. A review of these individual regulations reveals the following marking requirements for transport vehicles containing PIH materials in non-bulk packages.

- IMDG, 2010 edition, Section 5.3.2 --- There is no additional marking requirement that is specific to transport units carrying PIH materials in non-bulk packages.
- TDG Transport Canada, Part 4 --- There is no additional marking requirement that is specific to transport units carrying PIH materials in non-bulk packages. **NOTE:** There is no additional TDG marking requirement that is specific to transborder shipments involving the United States.
- 49CFR 172.313(c) - (US Domestic Shipments) --- The USDOT specifies an additional PIH marking requirement that applies to Zone A or B materials in a quantity greater than 1,000 kg. In addition, it only applies to one PIH material when there is more than one Zone A or Zone B material on the vehicle.
- ***For small quantities of PIH materials in nonbulk packages (less than 1,000 kg per UN number), all three regulations agree. None require additional UN ID markings on the transport vehicle.***

SHIPMENT SCENARIOS

To further illustrate the marking requirements specified in Part 171, the recent Interpretation, the domestic US requirements in Part 172, and the requirements of IMDG and TDG, we have prepared two hypothetical shipment scenarios. Please see attachment B. There is a huge difference in the transport vehicle marking requirements between the domestic USDOT road/rail/inland waterway regulations stated in Subpart H of part 172 versus the "international" requirements stated in Subpart C of Part 171. Interestingly, the domestic requirements for the US are very similar to the IMDG and TDG requirements.

Attachment B describes two shipments of PIH materials. Trip Number 1 represents a transport vehicle that is loaded at one facility in Boston, MA and sealed for an ocean shipment to China, departing from Los Angeles, CA. It is prepared in accordance with Subpart C of Part 171. The vehicle must be marked with six or seven different UN ID numbers on each side and end. Trip Number 2 represents a shipment of a significantly larger quantity of PIH substances having the exact same UN ID numbers as Trip Number 1. Trip Number 2 is also loaded in Boston, but will terminate in Los Angeles. It is a domestic road shipment marked in accordance with Subpart D of Part 172. For this shipment, there are no UN ID number markings required.

If both of these vehicles would depart Boston at the same time, it would be very difficult to explain, from a hazard communication perspective, why one vehicle needs no UN ID number markings while the other vehicle needs up to twenty-eight markings. The logical and reasonable assumption is that the "marked" vehicle contains a much more hazardous load than the "unmarked" vehicle. However, quite the contrary is true.

The most ironic part of this requirement is the following -- For Trip Number 2, the 49CFR regulations for domestic transportation require no UN ID markings. This applies to all modes - road, rail, and inland waterway transportation. The IMDG regulations for international ocean transportation and the TDG Transport Canada regulations specify the exact same requirement -- no UN ID markings required. However, if an ocean shipment originates from the United States, or a vehicle crosses the US/Canada border, the requirements in Section 171.23 must be followed. Here, it is stated that numerous UN ID markings are required.

So, our question is this -- If it is acceptable to have no UN ID number markings on a qualified PIH shipment for 1) all modes of transport in the territorial United States, 2) international ocean transport in accordance with IMDG regulations, and 3) all modes of transport within Canada, why is it not acceptable for an ocean shipment that originates from the United States, or a road shipment that crosses the US/Canada border?

EMERGENCY RESPONSE

Providing efficient and accurate information in the event of an emergency is the most important reason for an effective hazard communication process. In the shipment scenarios described above, both transport vehicles would be placarded with the USDOT PIH "2" placards. As a general rule, the primary purpose for display of UN ID numbers on Orange Panels or Placards has been to indicate to Emergency Responders that there is a large quantity of the substance(s) on the vehicle. A review of Section 172.300 proves that the required usage of UN ID number display applies to bulk containers and large quantities of non-bulk packages.

Extending the UN ID marking requirement to any quantity of a PIH substance is both misleading and non-productive. For small quantities, the placard communicates the necessary information. However, in the event that there is a large quantity of a particular PIH substance, it makes perfect sense to display the UN

number. We fully support the USDOT requirement to display UN ID numbers for PIH substances in the manner specified in Paragraph 172.313. We do not, however, support the mandatory display of UN ID numbers for any quantity of PIH substances.

The display of UN ID numbers on a transport vehicle for small individual quantities falsely gives the impression that there are large amounts of the hazardous material. In an Emergency Response situation, it is not wise to cause reactions that are based on a representation of a large quantity, when in fact, there is no large quantity. Effective emergency response is based both on knowledge of the hazards and knowledge of the quantity. The more consistency we have for hazard communication processes, the better.

CONCLUSION

We have had numerous shipments of PIH materials frustrated because of this unusual and confusing regulation. The regulation causes economic hardship because of the additional labor to apply the extra UN ID numbers and the lost time due to delays at the port. It provides no additional benefit from a hazard communication or emergency response perspective. As little as one cylinder of each different UN number requires UN ID number markings on the vehicle. This is unreasonable, especially when no other regulations require it, including the domestic USDOT regulations. Because of all of these reasons, it is our professional opinion that this requirement is completely unnecessary and needs to be improved.

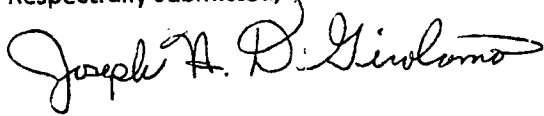
Therefore, in order to eliminate the problems caused by the language in 171.23(b)(10)(iv)(A) and (B), and the additional confusion caused by the Interpretation guidance, and to promote consistency and harmonization with the other regulations, we submit the following proposed changes.

- Paragraph 171.23(b)(10)(iv)(A) – second sentence. — Remove in its entirety, the phrase, “regardless of the total quantity contained in the transport vehicle or freight container” so that the subject sentence will read as follows: “The transport vehicle or freight container must be marked with the identification numbers for the hazardous material in the manner specified in 172.313(c) of this subchapter and placarded as required by subpart F of part 172 of this subchapter.”
- Paragraph 171.23(b)(10)(iv)(B) – second sentence. --- Remove in its entirety, the phrase, “regardless of the total quantity contained in the transport vehicle or freight container” so that the subject sentence will read as follows: “The transport vehicle or freight container must be marked with the identification numbers for the hazardous material in the manner specified in 172.313(c) of this subchapter and placarded as required by subpart F of part 172 of this subchapter.”

We believe these changes will provide an acceptable level of hazard communication for transport of PIH materials. As a major producer and shipper of gases that are toxic by inhalation, we understand the risks that are involved during transportation. We believe that making these proposed changes will bring the hazard communication requirements for PIH substances in Subpart C of Part 171 into alignment with the standard US domestic regulations for PIH materials. We see no reduction in the effectiveness of the hazard communication by doing this. What we do see is elimination of confusion and a regulation that would be much more consistent with the IMDG and TDG regulations, as well. We understand the importance of consistency between the regulations. Consistency goes a long way in eliminating confusion, especially in an emergency response situation when effective accurate communication is extremely important.

If there are any questions regarding this Petition, or if additional information is desired, please contact me at your earliest convenience.

Respectfully submitted,

A handwritten signature in black ink that reads "Joseph H. DiGirolamo". The signature is written in a cursive style with a large initial "J".

Joseph H. DiGirolamo

Manager, Global Dangerous Goods Transportation Compliance
Air Products and Chemicals, Inc.
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Enclosures:

PHMSA Interpretation (Attachment A)
Shipment Scenarios (Attachment B)



U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

DEC 21 2011

1200 New Jersey Ave., S.E.
Washington, DC 20590

Mr. Joe DiGirolamo
Dangerous Goods Specialist
Air Products & Chemicals, Inc.
7201 Hamilton Blvd.
Allentown, PA 18195

Ref. No.: 11-0197

Dear Mr. DiGirolamo:

This responds to your August 15, 2011 email seeking clarification of the placarding requirements of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically you ask what markings and placards are required for certain shipments of materials that are poisonous by inhalation that are loaded at one facility and prepared in accordance with the International Maritime Dangerous Goods (IMDG) Code and DOT SP-7835. You provided two examples of common shipments, which I have paraphrased in the following two scenarios:

Scenario 1:

What are the marking and placarding requirements for a motor vehicle containing 3,000 pounds of a Division 2.3, PIH Hazard Zone A material with a subsidiary Division 2.1 hazard; 8,000 pounds of a Division 6.1, PIH Hazard Zone B material with a subsidiary Class 8 hazard; and 500 pounds of a Class 8 material with a subsidiary Class 6.1, PIH Hazard Zone B hazard? You indicated that under the IMDG Code, the Class 8 material does not have a subsidiary hazard.

Scenario 2:

What are the marking and placarding requirements for a motor vehicle containing 1,000 pounds of a Division 2.3, PIH Hazard Zone A material with a subsidiary Division 2.1 hazard; 3,000 pounds of a Division 6.1, PIH Hazard Zone B material with a subsidiary Class 8 hazard; and 500 pounds of a Class 8 material with a subsidiary Class 6.1, PIH Hazard Zone B hazard? You indicated that under the IMDG Code, the Class 8 material does not have a subsidiary hazard.

Section 171.23(b)(10)(iv)(A) specifies the marking, labeling, and placarding requirements for materials poisonous by inhalation transported in accordance with the IMDG Code in a closed transport vehicle or freight container. The section states that a label or placard conforming to the IMDG Code specifications for a "Class 2.3" or "Class 6.1" label or placard may be substituted for the POISON GAS or POISON INHALATION HAZARD label or placard, as appropriate. It further states that a freight container must be marked with the ID number, regardless of the total

quantity in the freight container, as specified in § 172.313(c) and placarded as required by subpart F of part 172 of the HMR.

With respect to placarding in both scenarios, the transport vehicle or freight container must be placarded with the POISON GAS, FLAMABLE GAS, POISON INHALATION HAZARD and CORROSIVE placards in accordance with subpart F of part 172. However, a "Class 2.3" or "Class 6.1" placard may be substituted for the POISON GAS or POISON INHALATION HAZARD placard, as appropriate. Also, for domestic transportation, it should be noted, in accordance with §172.504(f)(8), a POISON INHALATION HAZARD placard is not required on a transport vehicle or freight container that is already placarded with a POISON GAS placard.

With respect to marking for non-bulk packagings, § 171.23(b)(10)(iv)(A) requires that the transport vehicle or freight container in both scenarios must be marked on each side and each end as stated in §172.332 or §172.336, with the identification number specified for the hazardous material in the §172.101 table for all three hazardous materials in the shipment, despite the provisions and limitations stated in § 172.313(c).

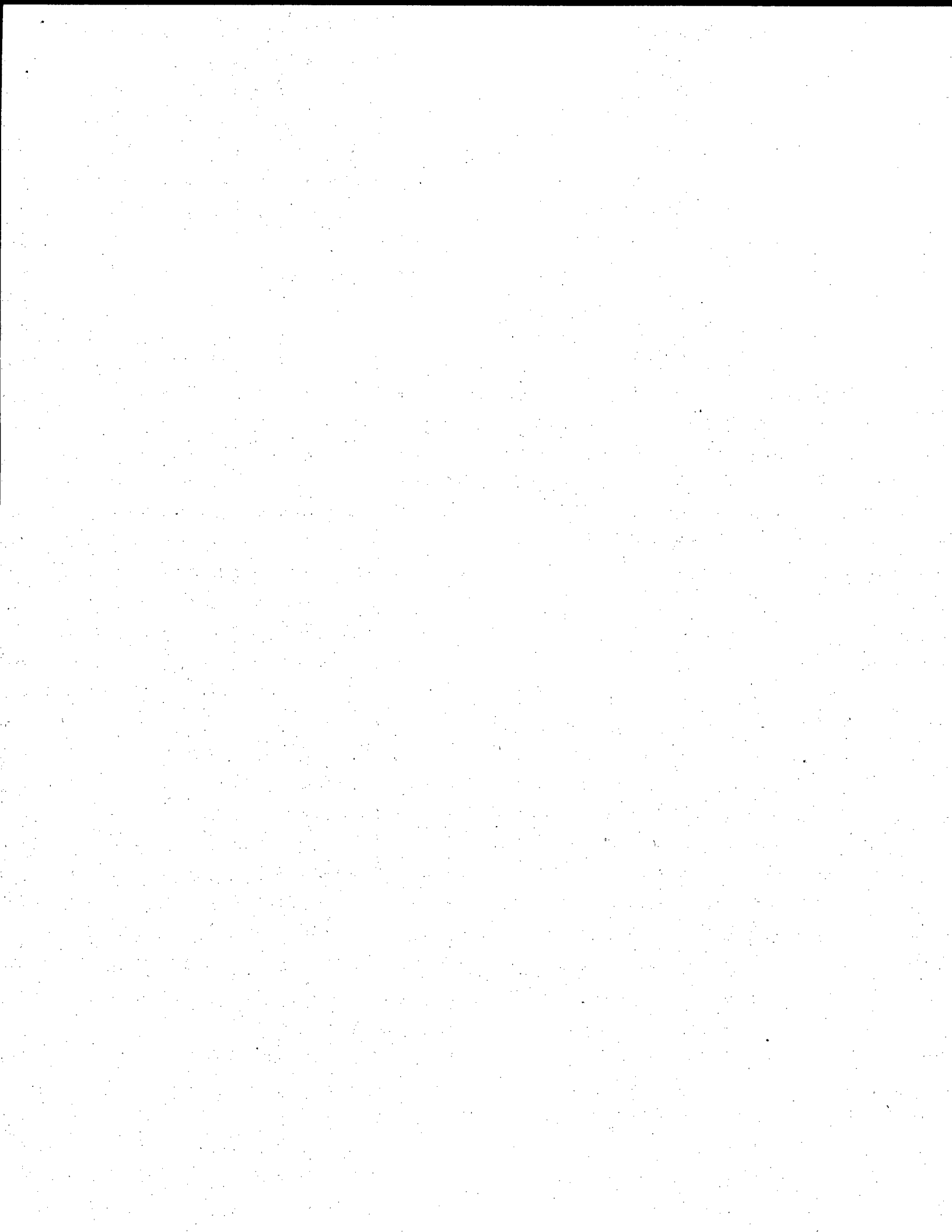
I hope this answers your inquiry. If you need additional assistance, please contact the Standards and Rulemaking Division at (202) 366-8553.

Sincerely,

A handwritten signature in black ink, appearing to read "Ben Supko". The signature is fluid and cursive, with the first name "Ben" and last name "Supko" clearly distinguishable.

Ben Supko
Acting Chief, Standards Development
Standards and Rulemaking Division

Type	All materials loaded at one facility	Total cys / Total weight	UN ID Markings Req'd -- 49CFR 172.313(c) -- US domestic road, rail, and vessel	UN ID Markings Req'd -- IMDG Section 5.3.2 -- ocean	UN ID Markings Req'd -- TDG intra- Canada	UN ID Markings Re- 49CFR 171.23(b)(1) "International"
1 --- (US to China)	UN2188 (Zone A) - 1,104 lbs. (502 kg.) - 6 cys. UN2189 (Zone A) - 872 lbs. (440 kg.) - 8 cys. UN1953 (Zone B) - 855 lbs. (297 kg.) - 5 cys. UN1955 (Zone B) - 665 lbs. (302 kg.) - 5 cys. UN2192 (Zone B) - 487 lbs. (221 kg.) - 5 cys. UN2202 (Zone A) - 458 lbs. (208 kg.) - 2 cys. UN1953 (Zone D) - 610 lbs. (415 kg.) - 4 cys.	33 cys. / 4,951 lbs. (2,385 kg.)	None	None	None	UN ID mark requires materials (1 thru 6). twenty-four UN ID n markings on transpo
2 --- (Boston to LA)	UN2188 (Zone A) - 1,840 lbs. (836 kg.) - 10 cys. UN2189 (Zone A) - 1,944 lbs. (881 kg.) - 12 cys. UN1953 (Zone B) - 1,965 lbs. (890 kg.) - 15 cys. UN1955 (Zone B) - 1,985 lbs. (906 kg.) - 15 cys. UN2192 (Zone B) - 1,850 lbs. (884 kg.) - 20 cys. UN2202 (Zone A) - 2,061 lbs. (936 kg.) - 9 cys. UN1953 (Zone D) - 1,525 lbs. (692 kg.) - 10 cys.	91 cys. / 13,280 lbs. (6,025 kg.)	None	None	None	UN ID mark requires materials (1 thru 6). twenty-four UN ID n markings on transpo





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27 June 2012

Subject: Petition for Rulemaking - ADDENDUM

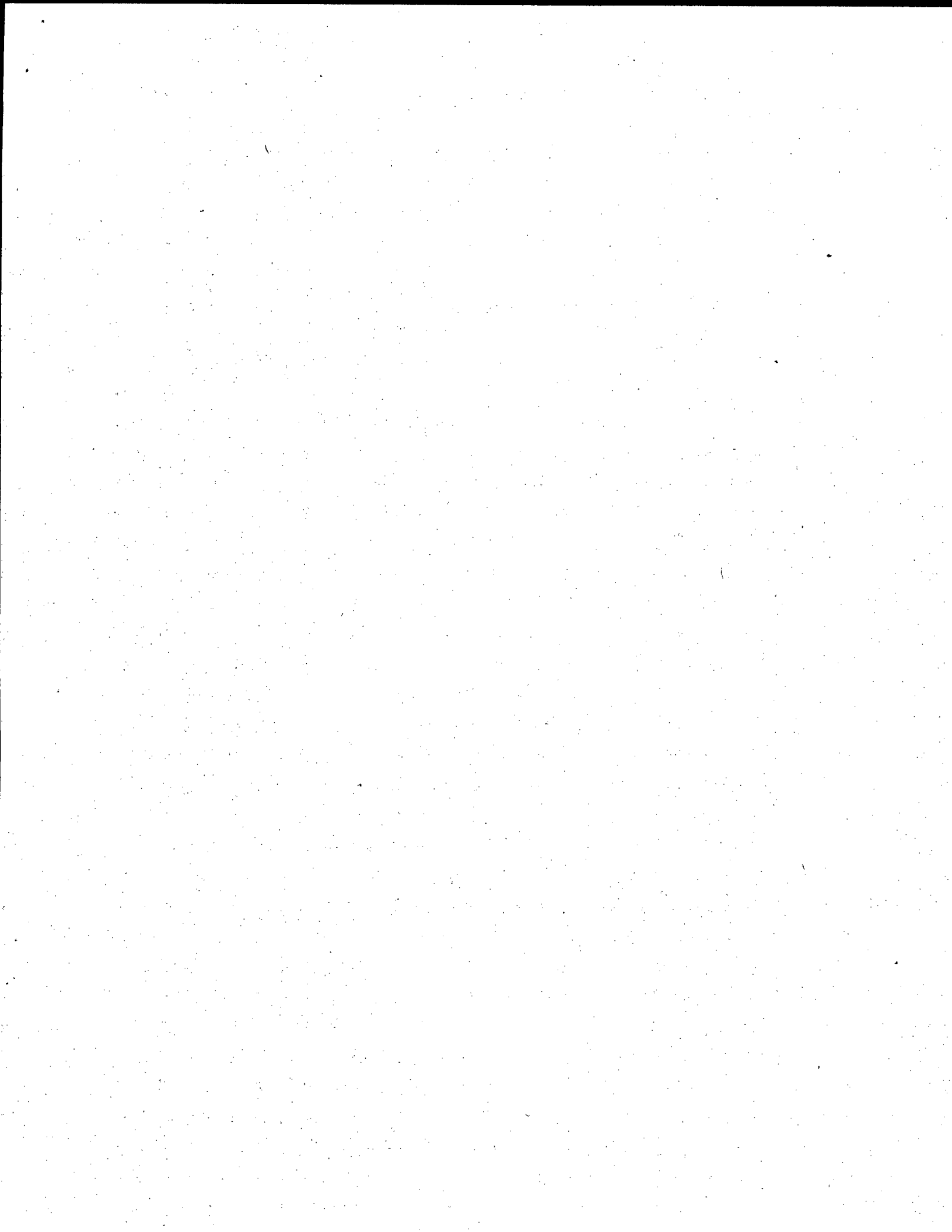
Dear Mr. Stevens,

In response to your request, please accept the following supplemental information in regard to the "impact" subjects described in 49 CFR Paragraph 106.100(b).

- 1) Costs and benefits – As mentioned in the initial Petition, we believe that changing the regulations will reduce confusion and the associated costs that occur. Listed below are examples of costs that are incurred today in attempts to follow the regulations in Subparagraph 171.23(b)(10)(iv)(A) and (B) and the Interpretation issued 21 December 2011 in conjunction with the marking requirements specified in Paragraph 172.313(c) and the IMDG marking requirements in the IMDG Code Paragraph 5.3.2.1.1.

Each frustrated shipment has included various amounts of time involving several different parties and personnel as follows. In most cases, there are different people involved, each having their own opinion of what is necessary to resolve the confusion:

- National Cargo Bureau (NCB) ocean transport inspection agency
 - Inconsistent interpretations of requirements - East Coast vs. West Coast
 - Rejection of shipment / Communication to involved parties
 - Cost to change markings to satisfy inspector
- Shipper Time / Labor to resolve
 - Transportation Planners / Plant Supervisors / Corporate Regulatory Experts / Corporate Supply Chain Managers / Corporate Import/Export Specialists / Plant Drivers / Trainers
 - Numerous communications, e-mails, telephone discussions
 - Additional training sessions with all personnel directly involved

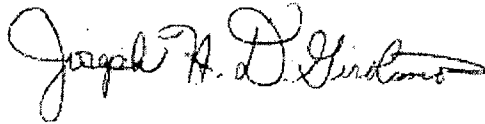


- Freight Forwarder time
 - Booking Agents / Supervisors / Regulatory Specialists
 - Carrier Time
 - Regulatory Specialists
 - Trade Association involvement
 - Dangerous Goods Advisory Council (DGAC) regulatory expert consultation
 - Customer Notification (shipment rolled)
 - Negative impact on customer / Potential production stoppage / Increased risk of runout
 - Penalties to Shipper
- 2) Effects on government – No negative effects expected
- 3) Burden on small entities – Less burden based on expected elimination of confusion. See text in item 1) Costs and Benefits above.
- 4) Recordkeeping / reporting burdens – No additional burden expected
- 5) Effect on natural / social environments – No negative effect expected

We believe that the reason for your request is based primarily on the Costs and Benefits item. Our Petition and the affected regulation have little bearing on the remainder of the topics outlined in Paragraphs 106.100(b)(2) through (5). I am hopeful that the information provided above will satisfy your request. We believe that this supplemental information along with our initial submission provides adequate justification to change the regulations. We are confident that you will agree.

Thank you very much for your kind consideration and review of this matter. If any additional information or clarification is necessary, please contact me at your convenience.

Sincerely,



Joseph H. DiGirolamo

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