



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

May 6, 2020

Chris Carthel
Senior Transportation Specialist
Consolidated Nuclear Security, LLC
Pantex Plant
PO Box 30020
Amarillo, TX 79120-0030

Reference No. 20-0012

Dear Mr. Carthel:

This letter is in response to your February 6, 2020 email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to explosives approvals. In your email, you state it is your understanding that installation of an unaltered, previously-approved explosive device into a new, larger article would alter the design of the explosive, thereby constituting a “new explosive” and requiring a new approval in accordance with § 173.56 of the HMR. You also state this requirement is appropriate for explosives classified in Divisions 1.1, 1.2, and 1.3, as there is a relatively high probability that placing those items into a larger article may introduce new hazards, such as additional fragmentation sources. However, you further state that it is your belief that this requirement is not appropriate for items classified as a Division 1.4S, particularly when the design is inherently self-contained and does not rely on packaging for the classification as Division 1.4S. Finally, as background, you refer to a previously issued Letter of Interpretation (LOI) Reference No. 10-0087 by PHMSA which stated that installation of an unaltered, previously approved explosive device into a new (larger) article alters the design, thereby constituting a new explosive and requiring a new examination, classification, and approval in accordance with § 173.56 of the HMR.

We have paraphrased and answered your questions as follows:

- Q1. You ask whether the response in LOI Reference No. 10-0087 applies when an unaltered, previously-approved explosive device will be assembled in or on a new, larger non-explosive assembly when the previously-approved device has a classification of Division 1.4S (self-contained designs), Division 4.1 (ref. EX 1995060038), Division 2.2 (ref. EX2007030164), or “not regulated as a Class 1 explosive” (ref. EX2003080116).
- A1. The answer is yes, for all articles which have been assigned a classification in Class 1, including Division 1.4S, as well as for articles which are assigned a classification other than hazard Class 1 on a conditional basis. By installing a previously-approved explosive device into a new article, you create a new explosive article, which may have different

explosive hazards or properties from the previously approved article. As a result, the proper shipping name and hazard class may no longer be appropriate, depending on how the explosive device is installed, the overall size, and the packaging. Thus, the article is a *new explosive* as defined in § 173.56(a) and must be examined, classed, and approved in accordance with § 173.56. For articles that are approved and assigned a classification as Division 4.1, Division 2.2, or as “not regulated as a Class 1 explosive,” and that are not conditional upon packaging or limited by regulatory provision, the answer is no. In these cases, the article is no longer considered to pose an explosive hazard and is not a Class 1 explosive; therefore, installation within a larger article containing no other explosives would not require re-examination unless the approved article itself has been altered or the manner of installation in the larger assembly directly affected the hazard of the energetic components.

- Q2. You ask if the Department of Energy (DOE) determines and confirms in writing to the Associate Administrator that there are no significant differences in hazard characteristics from the explosive previously approved, would that allow the use of the previously-approved explosive’s EX approval for the new and larger article configuration which contains the unaltered, previously approved explosive device.
- A2. The answer is yes. In accordance with § 173.56(a)(2), an explosive will not be considered a “new explosive” if an agency listed in § 173.56(b) has determined and confirmed in writing to the Associate Administrator that there are no significant differences in hazard characteristics from the explosive previously approved. DOE is one of the agencies listed, and is authorized to make this determination for articles made by or under the direction or supervision of the Department of Energy.
- Q3. You ask whether the DOE must receive acknowledgement in writing from the Associate Administrator before the explosive is authorized for transportation in accordance with § 173.56(c).

A3. The answer is no. Since the article is not considered a “new explosive” per DOE, and DOE has confirmed in writing to the Associate Administrator that there are no significant differences in hazard characteristics from the explosive previously approved, no acknowledgement is required. Once the Associate Administrator has received confirmation from the DOE, the article may be transported under the direction or supervision of the DOE utilizing the EX approval of the previously approved explosive, and PHMSA will revise the approval to include the new article.

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,

A handwritten signature in blue ink that reads "T. Glenn Foster". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

Dodd, Alice (PHMSA)

From: INFOCNTR (PHMSA)
Sent: Friday, February 7, 2020 1:11 PM
To: Hazmat Interps
Subject: FW: Request for Interpretation Regarding New Explosives
Attachments: Chris LOI.docx

Hello Alice and Ikeya,

See below for a request for letter of interpretation.

Thanks,

Jonathon, HMIC

From: Carthel, Chris [mailto:Chris.Carthel@cns.doe.gov]
Sent: Thursday, February 6, 2020 1:27 PM
To: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>
Cc: Beyers, Jesse <Jesse.Beyers@cns.doe.gov>
Subject: Request for Interpretation Regarding New Explosives

Hello:

According to U.S. Department of Transportation (DOT) interpretation 10-0087, installation of an unaltered, previously-approved explosive device into a new (larger) article alters the design, thereby constituting a new explosive and requiring a new examination, classification, and approval in accordance with 49 CFR § 173.56.

This makes particular sense for 1.1, 1.2, and 1.3 explosives, because there is a relatively high probability that placing those items into a larger article might introduce new hazards such as additional fragmentation sources (projection hazards, etc.); however, this starts to make less sense for 1.4S items (particularly when the design is inherently self-contained and does not rely on packaging for the 1.4S classification*), and even less sense for items which are unaltered and assigned a hazard classification by the EX-document of other than Class 1.

Q1: Is DOT interpretation 10-0087 also true when an unaltered, previously-approved device (which will be assembled into/onto a larger, otherwise non-explosive assembly) has been assigned a hazard classification of:

- Division 1.4S (e.g., inherently self-contained article designs)?
- Division 4.1 (ref. EX1995060038)?
- Division 2.2 (ref. EX2007030164)?
- "Not regulated as a Class 1 explosive" (ref. EX2003080116)?

The second half of the *new explosive* definition at § 173.56(a) states ". . . An explosive will not be considered a 'new explosive' if an agency listed in paragraph (b) of this section [e.g., the U.S. Department of Energy (DOE)] has determined, and confirmed in writing to the Associate Administrator, that there are no significant differences in hazard characteristics from the explosive previously approved."

Q2: If DOE determines, and confirms in writing to the Associate Administrator, that there are no significant differences in hazard characteristics from the explosive previously approved, does that allow use of the previously-approved

explosive's EX-number for the new (larger) article configuration which contains the unaltered, previously-approved explosive device?

Q3: If yes to question 2, must DOE first receive acknowledgement in writing from the Associate Administrator [ref. § 173.56(c)]?



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Notes:

* This is based on the definition of Compatibility Group S in Table 1 at § 173.52(b) which includes the phrase "... so *packed or designed* . . ." [italics added for emphasis].