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Date: October 11, 2019

To: All Branch Managers

From: Gene Maddox
Safety Director

Subject: Branch Office Monthly Safety Meeting – October 2019

Company policy requires that each branch office hold a minimum of one safety meeting each month with the documentation of the material covered and the attendance being recorded on the "Monthly Safety Meeting Minutes and Attendance Record" (see attached form). **Please detach the Monthly Safety Meeting Minutes and Attendance Record, fill it out and e-mail or fax a copy to Lynn Eldridge.** *Please keep the original for your records.*

NOTE: ONLY the Monthly Safety Meeting Minutes and Attendance Records is to be sent in.

To assist you in complying with this requirement, the following subjects are for your Monthly Safety Meeting, for the month of October 2019. You may add topics, but please document the following topics:

1. News Briefs!!! (Safety Strategies for Railroad Crossings)
2. Safety Meeting: (Cylinder Requalification)

It is recommended that you thoroughly read this material prior to your meeting.

It is strongly recommended that you use the 3-ring binder to store the last 12 months of the Safety Meeting Minutes and Attendance Record Form!!! This material should be referred to or used to train new employees from the website. This manual should be kept in an area of the office that is easily accessible to all employees.

Be Smart…Be Safe and Be Courteous!!!

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PROPANE
EXCEPTIONAL ENERGY

NEWS BRIEFS!!!

(This monthly "column" will include short newsworthy topics,
which will serve as a friendly reminder to us all)

Safety Strategies for Railroad Crossings

In 2018 alone, 99 people -- a 10-year high -- lost their lives because a motorist went around a lowered gate at a railroad crossing.

In the U.S., every four hours an individual or a vehicle is hit by a train and the majority of the incidents happen at a grade crossing, where the tracks meet the road.

September 22-28 is National Rail Safety Week. Remind yourself to stay safe when driving near or across train tracks. Most fatalities involving trains are preventable and involve lapses of judgment, according to the National Safety Council.

Every roadway-rail crossing fatality is preventable when drivers adhere to the following extra precautions:

- Never try to beat a train. When traveling at 55 mph, it takes a train at least a mile to come to a full stop.
- Slow down and yield when approaching a crossing. It's not just a safety precaution; it's the law. Stop behind the solid white line or at least 15 feet from the crossing.
- Never stop on the tracks. If your vehicle stalls on the tracks, get out immediately, walk to safety and call 911.
- Keep your vehicle off the tracks whenever the lights are on or the gate is down – even if you do not see a train approaching.
- Be aware that trains can suddenly appear at anytime of day or night.
- Be extra alert if there are two or more tracks – a second or third train may be approaching.
- If a gate is malfunctioning or there is a hazard on the tracks, look for the sign that identifies that rail crossing then call the toll-free number on it to report the problem. More that 210,000 railroad crossings in the U.S. now feature such signage.

OCTOBER 2019 SAFETY MEETING

Cylinder Requalification

For our October Safety Meeting, we will take a closer look at Cylinder Requalification. There are some that do not refill cylinders, but you should cover the material to have a general knowledge.

Please review the following sheets at the highlighted areas.

N **5.2.2.3** A cylinder with an expired requalification date shall not be refilled until it is requalified by the methods prescribed in DOT regulations.

Code History

Until the 2004 edition, the question of recertification of cylinders that were used outside of the scope of DOT (not in transportation) was not completely answered. This issue was resolved by the addition of 5.2.2.2 and 5.2.3, which address cylinders that are filled on site and are not subject to DOT regulation.

An important safety provision of NFPA 58 is that all LP-Gas containers have their fitness for service verified before they are filled. Cylinders that are built to DOT requirements can be filled for 12 years from the date of manufacture.

Commentary Table 5.4 shows the three different methods by which to requalify a cylinder. Refer to Annex C for a detailed description of these methods.

Closer Look: Cylinder Requalification 5.2.2.3

In August 2002, the DOT issued Final Rule HM-220D [9] requiring anyone performing requalification of DOT cylinders, including visual requalification, to register with DOT and receive a requalifier/retester identification number (RIN). Registration of a business facility covers individual employees at the facility. The following also applies to cylinder requalification using the visual method:

- Beginning May 31, 2004, only facilities that hold a RIN issued by DOT are permitted to requalify cylinders by external visual inspection.
- Inspections must be performed in accordance with CGA C-6, *Standard for Visual Inspection of Steel Compressed Gas Cylinders* [10], and/or CGA C-6.3, *Standards for Visual Inspection of Low Pressure Aluminum Alloy Compressed Gas Cylinders* [11].
- Cylinders passing requalification by external visual inspection must be marked with the RIN set in a square pattern between the month and year of the requalification date (see CFR excerpt below)
- Cylinder markings must be made by stamping, engraving, scribing, or any other method that produces a legible, durable mark. Interpretations obtained from the DOT allow the mark to be on a "durable pressure adhesive label."
- Each facility that requalifies cylinders must maintain records at the facility where the requalification is performed.

The following text has been excerpted in part from DOT regulations in 49 CFR 180.213(d), "Requalification Markings" [12], and gives an example of a RIN set in a square pattern for cylinder requalification:

> *(d) Requalification markings.* [...] A cylinder requalified in September 2006 and approved by a person who has been issued RIN "A123" would be marked plainly and permanently into the metal of the cylinder in accordance with location requirements of the cylinder specification or on a metal plate permanently secured to the cylinder in accordance with paragraph (b). An example of the markings prescribed in paragraph (d) is as follows:
>
> A1
> 9 06 X
> 32
>
> Where:
> "9" is the month of requalification,
> "A123" is the RIN,
> "06" is the year of requalification, and
> "X" represents the symbols described in paragraphs (f)(2) through (f)(9).

The requirement for a RIN applies only to those who requalify cylinders for use "in transportation" and does not apply to those who visually inspect stationary cylinders per the procedures in 5.2.3.

The DOT initially ran out of four-digit numbers to assign. Therefore, a seven-digit numbering system was started. Facilities using the seven-digit number must display it, along with the date of inspection, using one of the following formats:

V100001 0907 V100001 0907
0907 V100001

COMMENTARY TABLE 5.4 *Requalification Methods for Cylinders*

Requalification Method	*Time Before Next Recertification*
Water-jacket hydrostatic	12 years
Modified hydrostatic	7 years
Visual	5 years

5.2.3 Cylinders Filled on Site at the Point of Use.

Code History

Subsection 5.2.3 was added in 2011 to delineate between filling outside of a dispensing station and filling outside a central filling location.

FAQ Are all cylinders, whether or not they are under DOT jurisdiction, required to be requalified in accordance with DOT procedures?

Subsection 5.2.3 addresses the need to inspect stationary cylinders filled on site at the point of use and provides a method to requalify cylinders filled where they are used. Cylinders not "in transportation" are not subject to DOT regulations for requalification; however, they are required to be requalified by NFPA 58. Cylinders "in transportation" include cylinders transported by common carriers (e.g., trucking companies); by someone in the LP-Gas business; or by those who use them as a material of trade, such as a caterer or a roofer using propane fuel.

The need for this NFPA 58 requirement stems from the difficulty involved in requalifying cylinders filled on site, as required by DOT regulations, without disconnecting piping, emptying the cylinder, and inspecting and weighing the cylinder. Weighing is exempted here because of the potential safety disadvantages to the additional gas transfers that emptying the cylinder would require.

5.2.3.1 Cylinders in stationary service that are filled on site at the point of use and, therefore, are not under the jurisdiction of DOT shall comply with one of the following criteria:

(1) They shall be requalified in accordance with DOT requirements.
(2) They shall be visually inspected within 12 years of the date of manufacture and within every 5 years thereafter, in accordance with 5.2.3.2 through 5.2.3.4.

5.2.3.2 Any cylinder that fails one or more of the criteria in 5.2.3.4 shall not be refilled or continued in service until the condition is corrected.

5.2.3.3 Personnel shall be trained and qualified to perform inspections. Training shall be documented in accordance with Section 4.4.

Per 5.2.3.3, training received by persons visually inspecting stationary cylinders filled on site must be documented. As with any documentation required by the code, training documentation should be placed in the employee's file.

5.2.3.4 Visual inspection shall be performed in accordance with the following:

The procedures for visual inspection listed in 5.2.3.4 should identify cylinder defects and conditions that require correction. Several are taken from CGA C-6.

(1) The cylinder is checked for exposure to fire, dents, cuts, digs, gouges, and corrosion according to CGA C-6, *Standard for Visual Inspection of Steel Compressed Gas Cylinders*, except that 5.2.1.1(1) of that standard (which requires tare weight verification) shall not be part of the required inspection criteria.

ANNEX C

Design, Construction, and Requalification of DOT (ICC) Cylinders

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

CGA C-6, Standard for Visual Inspection of Steel Compressed Gas Cylinders [1], is a guide published by the Compressed Gas Association (CGA) that can be used to requalify cylinders, as required by the U.S. Department of Transportation (DOT) regulations. CGA C-6 contains examples of various types of pitting, corrosion, and failed cylinders and is useful for persons not completely familiar with those subjects. It also provides the complete set of DOT requirements, illustrations that demonstrate the use of the gauges needed to complete the inspection, and a visual inspection form.

The DOT requires that anyone who requalifies cylinders must apply to the DOT for registration as a requalifier. This registration will result in a requalifier identification number (RIN) assigned to that individual or company.

C.1 Scope.

C.1.1 Application.

C.1.1.1 This annex provides general information on cylinders referred to in this code. For complete information, consult the applicable specification *(see C.2.1)*. The water capacity of such cylinders is not permitted to be more than 1000 lb (454 kg).

C.1.1.2 This annex is not applicable to Department of Transportation (DOT) specifications for tank cars, portable tank containers, or cargo tanks. Portable and cargo tanks are basically ASME containers and are covered in Annex D.

C.1.1.3 Prior to April 1, 1967, these specifications were promulgated by the Interstate Commerce Commission (ICC). On this date, certain functions of the ICC, including the promulgation of specifications and regulations dealing with LP-Gas cylinders, were transferred to DOT. Throughout this annex, both ICC and DOT are used, ICC applying to dates prior to April 1, 1967, and DOT to subsequent dates.

C.2 LP-Gas Cylinder Specifications.

C.2.1 Publishing of DOT Cylinder Specifications. DOT cylinder specifications are published in 49 CFR 178, "Specifications for Packaging," available from the U.S. Government Printing Office, Washington, DC. The information in this publication is also issued as Tariff No. BOE-6000 by the Bureau of Explosives, American Railroads Building, 1920 L Street, NW, Washington, DC 20036.

C.2.2 DOT Specification Nomenclature.

C.2.2.1 The specification designation consists of a one-digit number, sometimes followed by one or more capital letters, then by a dash and a three-digit number. The one-digit number alone, or in combination with one or more capital letters, designates the specification number. The three-digit number following the dash shows the service pressure for which the cylinder is designed. Thus, "4B–240" indicates a cylinder built to Specification 4B for a 240 psig (1650 kPag) service pressure. *(See C.2.2.3.)*

C.2.2.2 The specification gives the details of cylinder construction, such as material used, method of fabrication, tests required, and inspection method, and prescribes the service pressure or range of service pressures for which that specification can be used.

C.2.2.3 The term *service pressure* is analogous to, and serves the same purpose as, the ASME design pressure. However, it is not identical, representing instead the highest pressure to which the cylinder will normally be subjected in transit or in use, but not necessarily the maximum pressure to which it might be subjected under emergency conditions in transportation. The service pressure stipulated for the LP-Gases is based on the vapor pressures exerted by the product in the cylinder at two different temperatures, the higher pressure of the two becoming the service pressure, as follows:

(1) The pressure in the cylinder at 70°F (21°C) must be less than the service pressure for which the cylinder is marked.
(2) The pressure in the container at 130°F (54.4°C) must not exceed ¾ times the pressure for which the cylinder is marked.

Example: Commercial propane has a vapor pressure at 70°F (21°C) of 132 psig (910 kPag). However, its vapor pressure at 130°F (54.4°C) is 300 psig (2070 kPag), so service pressure [¾ times, which must not exceed 300 psig (2070 kPag)] is 300 divided by ¾, or 240 psig (1650 kPag). Thus, commercial propane requires at least a 240 psig (1650 kPag) service pressure cylinder.

C.2.3 DOT Cylinder Specifications Used for LP-Gas.

C.2.3.1 A number of different specifications were approved by DOT (and its predecessor, ICC) for use with LP-Gases. Some of these are no longer published or used for new construction. It should be noted that recently DOT has elected to remove certain old cylinder specifications from the list of specification cylinders that can be requalified. *(See 49 CFR 180.209.)*

C.2.3.2 DOT specifications cover primarily safety in transportation. However, for the product to be used, it is necessary for it to come to rest at the point of use and serve as LP-Gas storage during the period of use. Cylinders adequate for transportation are also deemed to be adequate for use as provided in this code. Because small-size ASME containers were not available at the time cargo tank vehicle delivery was started, ICC (now DOT) cylinders have been equipped for cargo tank vehicle deliveries and permanently installed.

C.2.3.3 The DOT cylinder specifications most widely used for the LP-Gases are shown in Table C.2.3.3. The differing materials of construction, the method of fabrication, and the date of the specification reflect the progress made in knowledge of the products to be contained and the improvement in metallurgy and methods of fabrication.

TABLE C.2.3.3 DOT Cylinder Specifications

Specification No. and Marking	*Material of Construction*	*Method of Fabrication*
3B-300	Steel	Seamless
4B-300	Steel	2-piece welded and brazed
4B-240	Steel	2-piece welded and brazed
4BA-240	Alloy steel	2-piece welded and brazed
4E-240	Aluminum	Welded and brazed
4BW-240	Steel	3-piece welded

Note: The term *service pressure* had a different connotation at the time the specification was adopted.

C.3 Requalification, Retesting, and Repair of DOT Cylinders.

C.3.1 Application. This section outlines the requalification, retesting, and repair requirements for cylinders but should be used only as a guide. For official information, the applicable DOT regulations should be consulted.

C.3.2 Requalification (Including Retesting) of DOT Cylinders.

C.3.2.1 DOT rules prohibit cylinders from being refilled, continued in service, or transported unless they are properly qualified or requalified for LP-Gas service in accordance with DOT regulations.

C.3.2.2 DOT rules require a careful examination of every cylinder each time it is to be filled, and a cylinder must be rejected if there is evidence of exposure to fire or if there are bad gouges or dents, seriously corroded areas, leaks, or other conditions indicating possible weaknesses that might render it unfit for service. The following disposition is to be made of rejected cylinders:

(1) Cylinders subjected to fire are required to be requalified, reconditioned, or repaired in accordance with C.3.3 or permanently removed from service, except that DOT 4E (aluminum) cylinders and composite material cylinders used under a special permit issued by DOT must be permanently removed from service.
(2) Cylinders showing serious physical damage or leaks or showing a reduction in the marked tare weight of 5 percent or more are required to be retested in accordance with C.3.2.4(1) or (2) and, if necessary, repaired in accordance with C.3.3.

C.3.2.3 All cylinders, including those apparently undamaged, are required to be periodically requalified for continued service. The first requalification for a new cylinder is required within 12 years after the date of manufacture. Subsequent requalifications are required within the periods specified under the requalification method used. Composite material cylinders used under a special permit issued by DOT must be requalified in accordance with the terms of the permit.

C.3.2.4 DOT regulations permit three alternative methods of requalification for most commonly used LP-Gas cylinders *(see DOT regulations for permissible requalification methods for specific cylinder specifications)*. Two methods use hydrostatic testing, and the third uses

a carefully made and duly recorded visual examination by a competent person. DOT regulations cite in detail the data to be recorded for the hydrostatic test methods, the observations to be made during the visual examination for the hydrostatic and visual inspection methods, and the marking of cylinders to indicate the requalification date and the method used. The three methods — the volumetric expansion method, the proof pressure method, and the external visual inspection method — are outlined in C.3.2.4.1 through C.3.2.4.3.

C.3.2.4.1 Volumetric Expansion Method. The volumetric expansion method test, with determination of expansion readings, can be used to requalify cylinders for 12 years before the next requalification is due. A pressure of twice the marked service pressure is applied, using a water jacket (or the equivalent) so that the total expansion of the cylinder during the application of the test pressure can be observed and recorded for comparison with the permanent expansion of the cylinder after depressurization. The following disposition is made of cylinders tested in this manner:

(1) Cylinders that pass the retest and the visual examination required with it *(see C.3.2.4)* are marked with the retester identification number (RIN) and retest date. The RIN (e.g., A123) is set in a square pattern between the month and the year of the test date (e.g., 5/96). The first character of the RIN is positioned at the upper left corner of the square pattern, the second character in the upper right, the third character in the lower right, and the fourth character in the lower left. Minimum character size is ⅛ in. (3 mm) [¼ in. (6 mm) minimum height is recommended for the month and year]. Following marking, cylinders can be placed back into service.
(2) Cylinders that leak, or for which the permanent expansion exceeds 10 percent of the total expansion (12 percent for Specification 4E aluminum cylinders), must be rejected. If rejected for leakage, cylinders can be repaired in accordance with C.3.3.

C.3.2.4.2 Proof Pressure Method. Cylinders are requalified for 7 years before the next requalification is due, using the proof pressure method. A pressure of twice the marked service pressure is applied, but no provision is made for measuring total and permanent expansion during the test outlined in C.3.2.4.1. The cylinder is carefully observed while under the test pressure for leaks, undue swelling, or bulging indicating weaknesses. The following disposition is made of cylinders tested in this manner:

(1) Cylinders that pass the test and the visual examination required with it *(see C.3.2.4)* are marked with the retester identification number (RIN) and retest date. The RIN (e.g., A123) is set in a square pattern between the month and the year of the test date (e.g., 5/96), followed by an S. The first character of the RIN is positioned at the upper left corner of the square pattern, the second character in the upper right, the third character in the lower right, and the fourth character in the lower left. Minimum character size is ⅛ in. (3 mm) [¼ in. (6 mm) minimum height is recommended for the month and year]. Following marking, cylinders can be placed back into service.
(2) Cylinders that are developing leaks or showing undue swelling or bulging must be rejected. If rejected for leaks, cylinders are permitted to be repaired in accordance with C.3.3.

C.3.2.4.3 External Visual Inspection Method. The recorded external visual inspection method can be used to requalify cylinders for 5 years before the next qualification is due, provided that the cylinder has been used exclusively for LP-Gas commercially free of corroding components. Inspection is to be made by a competent person, using CGA C-6, *Standard for Visual Inspection of Steel Compressed Gas Cylinders*, for steel cylinders and CGA C-6.3,

Guidelines for Visual Inspection and Requalification of Low Pressure Aluminum Compressed Gas Cylinders, for aluminum cylinders and recording the inspection results as required by DOT regulations. The following disposition is to be made of cylinders inspected in this manner:

(1) Cylinders that pass the visual examination are marked with the retester identification number (RIN) and retest date and year of the examination, followed by an E (e.g., 6-07 A123 E, indicating requalification by the specific cylinder retester using the visual examination method in June 2007), and can be placed back into service. In certain situations, DOT has issued visual requalifier identification numbers (VRIN). Those issued this identification must place the VRIN in a straight line (e.g., V108231), followed by the month and year and the letter E.
(2) Cylinders that leak or show serious denting or gouging or excessive corrosion must be either scrapped or repaired in accordance with C.3.3.

C.3.3 Repair of DOT Cylinders. Repair of DOT cylinders is required to be performed by a manufacturer of the type of cylinder to be repaired or by a repair facility authorized by DOT.

Repairs normally made are for fire damage, leaks, denting, and gouges and for broken or detached valve-protecting collars or foot rings.

REFERENCE CITED IN COMMENTARY

1. CGA C-6, *Standard for Visual Inspection of Steel Compressed Gas Cylinders,* 2013, Compressed Gas Association, Chantilly, VA.

OCTOBER 2019
MONTHLY SAFETY MEETING
MINUTES & ATTENDANCE RECORD

Company Name:_____

City:_____ **State:**_____

Date:_____ **Time Started:**_____ **Time Finished:**_____

Instructed By:_____ **Number Attending:**_____

Subject Covered and Comments:
1. Safety Strategies for Railroad Crossings_____
2. Cylinder Requalification_____
_____
_____
_____

By my signature below, I certify that I attended and participated in this Safety Meeting and I understand the material presented.

Employee Name (Please print)	Employee Signature	License Expires *	Endorsements**	DOT Physical Expires***
1.				
2.				
3.				
4.				
5.				
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12.				
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14.				

**List driver's license expiration date in this column.*
**Check licenses for proper endorsements and re-testing (For example: "HazMat") *List endorsements in this column.*
****List DOT physical expiration date in this column.*

By my signature below, I hereby certify that the employees listed above have been trained in accordance with the applicable regulation and curriculum for this monthly safety meeting.

Instructor's Signature:_____

Date:_____

E-Mail or fax this sheet only to: Lampton-Love, Inc.
Gene Maddox/Lynn Eldridge
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