



**DEFENSE LOGISTICS AGENCY
AVIATION
8000 JEFFERSON DAVIS HIGHWAY
RICHMOND, VIRGINIA 23297-5100**

Question and Answer via Email for Gas Cylinder Project SPE4A6-15-R-0340

Following is the question received via email regarding RFP SPE4A6-15-R-0340 on June 24, 2015:

- 1) Q:** The RFP requires that the contractor submit a waiver for Ultrasonic testing. However; DLA changed from MIL STD 1411A to MIL STD 1411B in 2010. MIL STD-1411B states UE testing is permissible calling out DOT Special Permit 14313. Can you please provide clarification as to whether Ultrasonic testing is acceptable in all forms under the potential new contract or if a waiver request will still be a requirement in order to make UE testing permissible?

A: Paragraph 3.31 of MIL-STD-1411B is the definition of Ultrasonic examination (UE). Please refer to Paragraphs 5.2.6, 5.2.6.1 and 5.2.6.2 of MIL-STD-1411B regarding the UE requirements. DOT-SP-14313 was granted to Airgas. The special permit which is attached does NOT apply to all cylinders and the cylinders that are covered are in paragraph 2 of the permit.

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U.S. Department
of Transportation

East Building, PHH - 30
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 14313
(SIXTH REVISION)

EXPIRATION DATE: August 31, 2016

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Airgas USA LLC
Tulsa, OK
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the use of certain DOT Specification 3A, 3AA, and 3AL cylinders and cylinders manufactured under DOT-SP 9001, 9370, 9421, 9706, 9791, 9909, 10047, 10869, 11692 and 12440 for the transportation in commerce of the compressed gases described in paragraph 6 below, when retested by a one hundred percent (100%) ultrasonic examination (UE) in lieu of the internal visual and the hydrostatic retest required in 49 CFR § 180.205. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce.
 - c. Party status will not be granted to this special permit.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 172.203(a) and 172.301(c) in that marking the special permit number is waived; §180.205 in that the ultrasonic examination (UE) is performed in lieu of the specified internal visual examination and hydrostatic pressure test for DOT 3A, 3AA,

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and DOT 3AL cylinders made from AA 6061 and that ultrasonic examination (UE) and eddy current examination (EE) is performed in lieu of the specified internal visual examination and hydrostatic pressure test for DOT 3AL cylinders made from AA 6351; and §173.302a(b) in that the plus marking is authorized.

NOTE: This does not relieve the holder of this special permit from securing and maintaining a valid approval for retesting cylinders from the Associate Administrator for Hazardous Materials Safety.

5. BASIS: This special permit is based on Airgas USA, LLC's application dated September 18, 2013 in accordance with § 107.105, and the public proceeding therein.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Liquefied or non-liquefied compressed gases, or mixtures of such compressed gases, classed as Division 2.1 (flammable gas), Division 2.2 (nonflammable gas), Division 2.3 (inhalation hazard), which are authorized in the hazardous materials regulations for transportation in DOT Specification 3A, 3AA, and 3AL cylinders and cylinders manufactured under DOT-SP 9001, 9370, 9421, 9706, 9791, 9909, 10047, 10869, 11692 and 12440.	2.1, 2.2 or 2.3 as applicable	As Appropriate	N/A

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7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a DOT Specification 3A, 3AA, or 3AL (manufactured from aluminum alloy 6061, or 6351) cylinder or a cylinder manufactured under DOT-SP 9001, 9370, 9421, 9706, 9791, 9909, 10047, 10869, 11692 and 12440 that is subjected to periodic retesting, re-inspection and marking requirements prescribed in §§ 180.205 and 180.209(a), except that the cylinder's sidewall is examined by an ultrasonic method in lieu of the hydrostatic pressure test and internal visual inspection. Each cylinder must be subjected to an external visual examination and retested and marked in accordance with the procedure described herein and Airgas Inc. application for special permit on file with the Office of Hazardous Materials Safety Approvals and Permits Division (OHMSAPD). A cylinder that has been exposed to fire or to excessive heat may not be retested under the terms of this special permit.

b. Equipment and Performance:

(1) Ultrasonic System - The ultrasonic equipment performance must conform to the Airgas, Inc. application on file with OHMSAPD and as prescribed in this special permit. The UE equipment must be pulse echo type, and incorporate multiple channel transducers with interactive software. The UE channels must be arranged to perform straight and angle beam examinations. The ultrasonic pulses must enter into the cylinder wall in both longitudinal and circumferential directions and normal to the cylinder wall to ensure 100 percent coverage of the cylinder wall. All flaws (such as isolated pits, sidewall cracks and flaws inside the sidewall-to-base transition area (SBT)) must be detected. The transducers or cylinder must be arranged so that the ultrasonic beams enter into the cylinder wall and measure thickness and detect the sidewall flaws. Gain control accuracy must be checked annually with equipment that is calibrated in accordance with industry standards for checking gain linearity accuracy, as published in ASTM-E317. Search units of 2.25 to 10 MHz nominal frequency and ¼" to a 1" diameter must be used during ultrasonic examination. A manual contact shear or longitudinal search unit may be used for confirmation and sizing of an indicated flaw. If manual UE is used it must be performed under

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direct supervision of a Senior Review Technologist by a minimum Level II operator and in accordance with American Society of Testing & Materials (ASTM) practice E-213 and this special permit. This safety control measure must be an integral part of the test equipment design incorporating Lack-of-Expected-Response (LER) monitoring independent of operator actions.

(2) Eddy Current Equipment - The Eddy Current Equipment, such as the Visual Plus, must be capable of detecting the notches on a standard reference ring.

c. Standard References:

(1) UE Reference Cylinder - A cylinder or cylinder section must be used as a standard reference and must have similar acoustic properties, surface finish and metallurgical condition as the cylinders under test. The standard reference (reference cylinder) must have a known minimum design wall thickness (t_{min}) which is less than or equal to the cylinder under test. The standard reference cylinder for cylinders less than or equal to 6-inches in diameter must have the same nominal diameter as the cylinder being tested. Cylinders greater than 6-inches in diameter must conform to the allowable size ranges shown in the following table:

Standard Reference	Cylinder Size Ranges is being retested by UE	
	Minimum OD- inches	Maximum OD- Inches
7	6.30	10.50
7.50	6.75	11.25
9.00	8.10	13.50
9.25	8.33	13.88
10.00	9.00	15.00
12.00	10.80	18.00

Prior to placing the simulated defects, such as minimum wall thickness, the average minimum wall thickness for the standard reference must be determined by means of an independent method.

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(2) The standard reference (reference cylinder) is based upon cylinder type to be inspected and must be prepared to include the following artificial defects:

(i) DOT 3A and 3AA Cylinders:

(A) Simulated defect for reduction in wall thickness (area corrosion). A simulated defect for area corrosion must be machined into the inside surface of the cylinder. A minimum of two different thickness steps must be machined into the inside cylinder wall. For DOT 3A and 3AA cylinders the simulated defect must be less than or equal to 0.7 square inches (in^2) and less than or equal to $1/20$ of the design minimum wall thickness (t_{\min}) deep. The remaining wall thickness is equal to or greater than t_{\min} .

(B) Simulated defect for an isolated pit. A flat bottom hole (FBH) must be machined into the inside surface of the cylinder to simulate an isolated pit. Dimensions must be as follows:

(1) For cylinders with diameter less than or equal to 4 inches, the FBH must be $1/8$ -inch diameter and $1/3$ of t_{\min} depth.

(2) For cylinders with diameter greater than 4 inches, the FBH must be $1/4$ -inch diameter and $1/3$ of t_{\min} depth.

(C) Simulated defect for line corrosion in the sidewall-to-base transition (SBT). A circumferential notch must be machined into the internal surface of the cylinder to simulate SBT line corrosion. The notch must be 0.10 of t_{\min} depth, 1 inch long and less than or equal to 0.02 inch width.

(ii) DOT-SP 9001, 9370, 9421, 9706, 9791, 9909, 10047, 10869 and 11692 cylinders:

(A) Simulated defect for reduction in wall thickness (area corrosion). A simulated defect for area corrosion must be machined

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into the inside surface of the cylinder. A minimum of two different thickness steps must be machined into the inside cylinder wall. For cylinders manufactured under DOT-SP 9001, 9370, 9421, 9706, 9791, 9909, 10047, 10869 and 11692 the simulated defect must be less than or equal to 0.25 square inch (in²) and less than or equal to 1/20 of the minimum design wall thickness (t_{min}) depth. The remaining wall thickness is equal to or greater than t_{min} .

(B) Simulated defect for an isolated pit. A flat bottom hole (FBH) must be machined into the inside surface of the cylinder to simulate an isolated pit. Dimensions must be as follows for cylinders manufactured under DOT-SP 9001, 9370, 9421, 9706, 9791, 9909, 10047, 10869 and 11692. The FBH must be 1/4-inch diameter and 1/4 of t_{min} depth.

(C) Simulated defect for line corrosion in the sidewall-to-base transition (SBT). A circumferential notch must be machined into the internal surface of the cylinder to simulate SBT line corrosion. The notch must be 0.10 of t_{min} depth, 1 inch long and less than or equal to 0.02 inch width.

(D) Simulated defect for longitudinal sidewall crack (LSC). A longitudinal notch must be machined into the surface of the cylinder to simulate LSC line corrosion. Dimensions of the LSC notch for cylinders manufactured under DOT-SP 9001, 9370, 9421, 9706, 9791, 9909, 10047, 10869 and 11692 must be 0.06 of t_{min} depth, 1 inch long and less than or equal to 0.02 inches in width.

(iii) DOT 3AL and DOT-SP 12440 Cylinders:

(A) Simulated defect for reduction in wall thickness (area corrosion). A simulated defect for area corrosion must be machined into the inside surface of the cylinder. A minimum of two different thickness steps must be machined into the inside cylinder wall. The simulated defect must be less than or

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equal to 0.70 square inches (in^2) and less than or equal to $1/20$ of the design minimum wall thickness (t_{\min}) depth. The remaining wall thickness is equal to or greater than t_{\min} .

(B) Simulated defect for an isolated pit. A flat bottom hole (FBH) must be machined into the inside surface of the cylinder to simulate an isolated pit. Dimensions must be as follows:

(1) For cylinders with diameter less than or equal to 4 inches the FBH must be $1/8$ -inch diameter and $1/3$ of t_{\min} depth.

(2) For cylinders with diameter greater than 4 inches the FBH must be $1/4$ -inch diameter and $1/3$ of t_{\min} depth.

(C) Simulated defect for longitudinal and circumferential line corrosion. The artificial defects for line corrosion consists of two circumferential (one internal and one external) and two longitudinal (one internal and one external) notches. These notches shall be electro discharge machined (EDM), measuring $0.10 t_{\min}$, in depth, 1 inch in length and less than or equal to 0.010 inch width.

(d) A separate UE Reference Cylinders must be used for cylinders made under DOT-SP 12440 that made from aluminum alloy 7032 alloy.

(3) A certification statement signed by an Airgas Inc. senior review technologist (SRT) must be available for all standard references at each site where retesting is performed. The certification statement must include a standard reference drawing for each size and type of cylinder. A standard reference drawing must include dimensions and the locations of each simulated defect.

(4) Eddy Current Reference Ring - The reference ring must be produced to represent one or more DOT 3AL-6351 alloy cylinders. The reference ring must include artificial notches that simulate neck crack (SLC). The

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size of artificial notch (depth and length) must be obtained from the EE equipment manufacturer. A certification statement signed by an Airgas senior review technologist (SRT) must be available for all EE reference rings at each site where retesting is performed. The certification statement must include a standard reference drawing for each reference ring. The standard reference drawing must include the depth of each notch, diameter and type of DOT 3AL cylinder that the reference ring is used for.

d. System Standardization (Calibration)

(1) Ultrasonic Examination (UE) System Standardization. Prior to retesting a cylinder, the cylinder class (DOT specification or special permit) must be identified. The UE system must be standardized for testing the identified cylinder by using a standard reference. The standard reference must be similar (material of construction, size, wall thickness, etc.) to the identified cylinders to be tested. Standardization of the UE system must be performed by using a relevant reference cylinder that is described in paragraph 7.c. of this special permit. The standardization of the UE system is as follows and is dependent upon the requirements of the relevant reference cylinder:

(i) A reference cylinder with a machined simulated defect made to represent area corrosion must be placed in the UE system. The UE system must be standardized to indicate rejection for an area equal to or greater than the machined surface for that class of cylinder (e.g. 0.70 in² for DOT 3A, 3AA, 3AL and 0.25 in² for DOT-SP 9001, 9370, 9421, 9706, 9791, 9909, 10047, 10869 and 11692). Where the wall thickness is reduced below t_{min} , a straight ultrasound beam must be used to measure the wall thickness of the machined area.

(ii) A reference cylinder with a machined FBH made to represent an isolated pit must be placed in the UE system. The FBH must be detected by a minimum of two shear wave beams that strike the FBH from opposite sides (e.g. the first shear wave direction is from top to bottom of the cylinder and the second shear wave direction is from the

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bottom to top). The UE gain must be increased until the signal from FBH is maximized at 80 percent of the screen height.

(iii) A reference cylinder with a machined notch made to represent SBT line corrosion must be placed in the UE system. The notch must be detected by a minimum of one shear wave beam. The UE gain must be increased until the signal from the notch is maximized at 80 percent of the screen height.

(iv) A reference cylinder with a machined notch to represent a longitudinal sidewall crack (LSC) must be placed in the UE system. The notch must be detected by a minimum of two shear wave beams that strike the LSC from opposite directions (e.g. the first shear wave direction is clockwise and second shear wave direction is counterclockwise). The UE gain must be increased until the signal from the notch is maximized at 80 percent of the screen height.

(v) A reference cylinder with circumferential notches made to represent line corrosion must be placed in the UE system. Each internal and external notch must be detected by a minimum of one shear wave beam. The UE gain must be increased until the signal from each notch is maximized at 80 percent of the screen height.

(2) Eddy Current Examination (EE) Equipment

Standardization - The EE equipment must be standardized for each type of DOT 3AL cylinder made from aluminum alloy 6351-T6, using the standard reference ring that includes simulated neck crack notch. The EE system is considered standardized when the probe is threaded into the mid-length of standardization ring and the sensitivity adjusted to produce a spike that crossed the gate as it passes over the simulated neck crack notch. The details of the equipment standardization for each type of DOT 3AL cylinder must be obtained from the manufacturer's instruction manual included as part of this standardization procedure.

e. Test Procedures.

(1) During the test, each cylinder must be examined by the standardized (calibrated) UE system using a relevant set-up that is described in paragraph 7.d. of this special permit.

(2) For each cylinder tested, all 5 scan passes must be performed as they are described in paragraph 7.d.

(3) All DOT 3A cylinders manufactured between January 1937 and December 1945 may be inspected by Spectrosort CCD system and in accordance with Air Gas procedure on file (OHMSAPD) to identify all Cr-Mo and Ni-Cr-Mo alloy steel cylinders. This pre-test sorting will occur before UE of any DOT-3A cylinder manufactured during this period. After each subsequent requalification period, the cylinders will be resorted and identified in according to their steel type.

(i) Any cylinders identified as intermediate carbon manganese steel cylinders shall be ultrasonically examined using the DOT 3A reject criteria for thickness and flaws as currently required in paragraph 7.f. of this special permit.

(ii) Any cylinders identified as Cr-Mo and Ni-Cr-Mo alloy steel cylinders shall be ultrasonically examined using the DOT 3A (Cr-Mo) reject criteria for thickness and flaws. These reject criteria shall be the same as that utilized for DOT 3AA cylinders as currently required in paragraph 7.f. of this special permit.

(iii) Since the Spectrosort CCD system or equivalent shall be used to inspect, identify, then sort all Cr-Mo and Ni-Cr-Mo alloy steel cylinders at Airgas UE testing facilities, no additional markings shall be stamped onto the cylinders.

(iv) If the cylinders from this manufacturing period are not sorted with the Spectrosort CCD system or equivalent they shall be ultrasonically examined using the DOT 3A reject criteria for thickness and flaws as currently required in paragraph 7.f. of this special permit.

(4) A copy of the operating test procedure (as approved and acknowledged in writing by OHMSAPD) for performing ultrasonic examination, eddy current and enhanced visual inspection of cylinders under the terms of this special permit must be at each facility performing ultrasonic examination. At a minimum, this procedure must include:

(i) A description of the test set-up; test parameters; transducer model number, frequency, and size; transducer assembly used; system standardization procedures and threshold gain used during the test; and other pertinent information.

(ii) Requirement for the equipment standardization to be performed at the end of the test interval (cal-out), after 200 cylinders or four hours, whichever occurs first. This cal-out can be considered the cal-in for the next interval during continuous operation. Cylinders examined during the interval between cal-in and cal-out must be quarantined until an acceptable cal-out has been performed. An acceptable cal-out occurs when the calibration cylinder is examined and all required features are revealed without changing examination settings. If an acceptable cal-out does not occur, or if any equipment that affects the UE results are replaced or altered (such as a search unit or coaxial cable etc.), all cylinders examined since the last successful calibration must be re-examined. When a loss of power occurs a re-standardization must be performed when power is returned and before cylinder examination commences. If no adjustments are made to the examination settings then this recalibration may be considered a cal-out for the quarantined cylinders. However, if examination settings are changed then all cylinders examined since the last successful calibration must be re-examined. Additionally, standardization of test equipment shall be performed at the beginning of each work shift, when the cylinder under test has dimensions that exceed the allowable ranges of the reference cylinder, when there is a change of operator(s), if any equipment that affects the UE results are

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replaced or altered (such as a search unit or coaxial cable etc.) or when a loss of power occurs, and at the end of each work shift.

(5) A copy of the most recent approved operating test procedure must be made available to a DOT representative when requested. Any change to the written procedures or in UE or EE equipment (software or hardware), other than as supplied by the original equipment manufacturer, must be submitted to and approved by AAHMS prior to implementation.

(6) The UE equipment may not allow testing of a cylinder unless the system has been properly standardized (calibrated).

(7) The rotational speed of a reference cylinder must be such that all simulated defects are adequately detected, measured and recorded.

(8) The rotational speed of the cylinder under UE must not exceed the rotational speed used during the standardization.

(9) The pulse rate must be adjusted to ensure a minimum of 10% over-lapped for each helix.

(10) The area of ultrasonic examination (UE) coverage must be 100% of the cylindrical section. The coverage must extend at least three inches into the sidewall-to-base transition taper.

(11) The external surface of the cylinder to be examined must be free of loose material such as scale and dirt.

(12) The area of eddy current and enhanced visual examination coverage must be 100% of the threaded neck of the cylinder.

(13) The external area of the cylinder to be examined must be free of loose material such as scale and dirt.

f. Acceptance/Rejection Criteria. A cylinder must be rejected based on any of the following:

(1) The measured wall thickness is less than the calculated design minimum wall thickness using a maximum allowable stress of 58,000 psi for 3A cylinders and 73,000 psi for 3AA cylinders for the area described in paragraph 7.d.

(2) If any of the flaws such as the isolated pit, circumferential line corrosion or longitudinal sidewall crack (LSC) which meet the rejection criteria and produce a signal with an amplitude which crosses the reference threshold set in the standardization section (paragraph 7.d.).

(3) EE and Enhanced Visual Examination Acceptance/Rejection Criteria of the Neck Crack (Sustain Load Crack).

(i) EE Reject Criteria - thirty percent screen height indications on two consecutive revolutions of the probe at approximately the same bore location are cause for visual follow up inspection for final disposition.

(ii) Enhanced Visual Examination/Verification - Enhanced visual inspection shall be performed before and after eddy current examination or when required by eddy current examination. The inspection is performed with the use of supplemental tools, which typically include an inspection light and mirror. The light is a high intensity type and the mirror a ½ inch diameter 2X dental mirror.

(A) Visual Examination Reject Criteria

(1) Neck Cracks: Cylinders with neck cracks must be condemned. Repair of neck cracks is not allowed.

(2) Folds: Condemn all cylinders with folds that enter into more than one continuous full neck thread.

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(3) Valleys: Cylinders with one or more valleys are acceptable for use, provided the valley(s) does not enter into the minimum number of required threads. Seven full threads for tapered threads and six full threads for straight threads.

(4) Threads: Cylinders must be condemned if seven continuous full threads for tapered threads or six continuous full threads for straight threads are not present. A thread shall be considered full if its root and crest display no significant visual difference to that of the uppermost cylinder thread. Threads that do not meet this criteria are considered to be incomplete or a partial thread.

(5) Tool Stop Mark: A neck with a tool stop mark is to be distinguished from a crack. Cylinders with tool stop marks are acceptable for use.

g. Rejected cylinders: When a cylinder is rejected, the retester must stamp a series of X's over the DOT specification number and marked service pressure, or stamp "CONDEMNED" on the shoulder, top head, or neck using a steel stamp, and must notify the cylinder owner, in writing, that the cylinder is rejected and may not be filled with hazardous material for transportation in commerce.

(1) Alternatively, at the direction of the owner, the retester may render the cylinder incapable of holding pressure.

(2) If a condemned cylinder contains hazardous materials and the testing facility does not have the capability of safely removing the hazardous material, the retester must stamp the cylinder "CONDEMNED" and affix conspicuous labels on the cylinder(s) stating: "UE REJECTED DOT-SP 14313 RETURNING TO ORIGIN FOR PROPER DISPOSITION". The retester may only offer the condemned cylinders for transportation by a motor vehicle operated by a private carrier to a facility, identified to, and acknowledged in writing with OHMSAPD

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that is capable of safely removing the hazardous material. A current copy of this special permit must accompany each shipment of condemned cylinders transported for the disposal of hazardous material.

h. Marking. Each cylinder passing retests under the provisions of this special permit must be marked as prescribed in accordance with § 180.213. In addition, each cylinder must be marked UE, or UE/EE for cylinders manufactured from AA 6351 T-6, in characters not less than 1/4 high for a cylinder with a diameter equal to or greater than 4 inches and 1/8" for a cylinder with a diameter less than 4 inches. The marking must be at a location close to the retester's marking.

i. UE Report. A report must be generated for each cylinder that is examined. The UE report must include the following:

- (1) UE and EE equipment, model and serial number
- (2) Transducer specification, size, frequency and manufacturer
- (3) Specification of each standard reference used to perform UE and EE. Standard reference must be identified by serial number or other stamped identification marking.
- (4) Cylinder serial number and type
- (5) UE technician's name and certification level
- (6) Examination Date
- (7) Location and type of each defect on the cylinder (e.g. longitudinal line corrosion 5 inches from base)
- (8) Dimensions (area, depth and remaining wall thickness) and brief description of each defect
- (9) Acceptance/rejection results
- (10) The UE report must be on file at each test facility, and copies made available to a DOT official when requested.

j. Personnel Qualification: Each person who performs retesting, and evaluates and certifies retest results must meet the following qualification requirements:

- (1) Project Manager - The Senior Review Technologist (SRT) is the UE project manager and must ensure that each operator maintains the required certifications described herein. Additionally, the SRT for Airgas Inc. is responsible for compliance with DOT regulations including this special permit.

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(2) The personnel responsible for performing cylinder retesting under this special permit must be qualified to an appropriate Ultrasonic Testing Certification Level (Level I, II or III) in accordance with the American Society for Nondestructive Testing (ASNT) Recommended Practice SNT-TC-1A depending upon the assigned responsibility as described below:

(i) System startup and calibration must be performed by a Level II operator. A Level II operator may review and certify test results. However, written procedures for accepting/rejecting a cylinder must be provided by the senior review technologist. Based upon written criteria, the Level II Operator may authorize cylinders that pass the retest to be marked in accordance with paragraph 7.h of this special permit. A person with Level I certification may perform a system startup, check calibration, and perform ultrasonic testing under the direct guidance and supervision of a Senior Review Technologist or a Level II Operator, either of whom must be physically present at the test site so as to be able to observe testing conducted under this special permit.

(ii) Senior Review Technologist (SRT) - is a person who provides written UE procedure, supervisory training, examinations (Level I and II) and technical guidance to operators, and reviews and verifies the retest results. A SRT must have a thorough understanding of the DOT Regulations (49 CFR) pertaining to the requalification and reuse of DOT cylinders that are authorized under both this special permit and ASNT Recommended Practice SNT-TC-1A and must possess either:

(A) A Level III certification from ASNT in Ultrasonic Testing; or,

(B) A Professional Engineer (PE) License with a documented experience for a minimum of 2 years experience in Non-Destructive Evaluation (NDE) of pressure vessels or pipelines using the ultrasonic examination technique; or,

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(C) A PhD degree in a discipline of Engineering/Physics with documented evidence of experience in Non-Destructive Evaluation (NDE) of pressure vessels or pipelines using the ultrasonic examination technique or research/thesis work and authoring/co-authoring of technical papers published, in recognized technical journals, in the fields of ultrasonic testing methods.

(D) The SRT must prepare and submit the reports required in paragraphs 7.i. and annually verify that the UE program is being operated in accordance with the requirements of this special permit.

The most recent copies of certification (e.g. ASNT Level III, P.E., or Ph.D.) must be available for inspection at each requalification facility.

k. OPERATIONAL CONTROLS.

(1) No person may perform inspection and testing of cylinders subject to this special permit unless:

(i) that person is an employee of Airgas, Inc. and has a current copy of this special permit at the location of such inspection and testing; and

(ii) that person complies with all the terms and conditions of this special permit.

(2) The marking of the retester's symbol on the cylinders certifies compliance with all of the terms and conditions of this special permit and the HMR.

(3) Each facility approved by OHMSAPD to test cylinders under the terms of this special permit must have a resident operator with at least an ASNT Level II Certification in UT.

(4) The UE and EE equipment and operating procedures identified in this special permit are only authorized for use when the approved SRT is available (or alternatively available by telephone or other electronic means) at each facility operating under the special permit.

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(5) Notwithstanding the requirements of a RIN Approval for notification of address and personnel changes, any change in Project manager or SRT, with appropriate documentation (i.e. ANST certification), must be submitted to and acknowledged in writing by OHMSAPD immediately.

8. SPECIAL PROVISIONS:

a. The ultrasonic examination (UE) data, results, and additional technical information deemed pertinent in successful application of the UE must be recorded and kept at each facility for a minimum of 5 years after completion of UE. For any rejected cylinder, the defect causing the rejection must be fully characterized and profiled. That is, the specific type of defect should be identified (i.e. isolated pits, line corrosion or SBT crack) and the specific size of the defect should be determined (i.e. length, depth, width, diameter, area, etc.). The record includes cylinder type, size, minimum design wall thickness, age, etc. of the rejected cylinder.

b. Shippers (offerors) may use the cylinders specified and tested in accordance with the provisions of this special permit for the transportation in commerce of those hazardous materials specified herein, provided no modifications or changes are made to the cylinders. All terms of this special permit and other applicable requirements contained in 49 CFR Parts 100-185 must be met.

c. Shippers using the cylinders covered by this special permit must comply with the provisions of this special permit, and all other applicable requirements contained in 49 CFR Parts 100-185.

d. In order to authorize a cylinder for a special filling limit (+ marking) stated in § 173.302a(b) the cylinder must meet the following:

(1) The cylinder must meet the requirement of § 173.302a(b) (1).

(2) The wall thickness of the cylinder is equal to or greater than the design minimum wall thickness as it is described in the accept/reject criteria of this special permit for each cylinder type.

e. Transportation of Division 2.1 (flammable gases) and Division 2.3 (gases which are poisonous by inhalation) are not authorized aboard cargo vessel or aircraft unless specifically authorized in the Hazardous Materials Table (§ 172.101).

f. Transportation of oxygen is only authorized by aircraft when in accordance § 175.501.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, cargo aircraft only and passenger-carrying aircraft, as currently authorized by the regulations for the hazardous materials being transported.

10. MODAL REQUIREMENTS: None, other than as required by the HMR.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

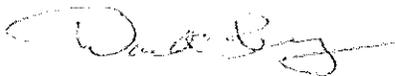
No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

June 11, 2014

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)-"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 Immediate notice of certain hazardous materials incidents, and 171.16 Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: Toughiry/TG