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U.S. Department
of Transportation

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

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 16524
(FIRST REVISION)

EXPIRATION DATE: 2018-08-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Quantum Fuel Systems LLC
Lake Forest, CA
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification fully wrapped fiber reinforced composite gas cylinders that meet ISO 11515:2013, except as specified. 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. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.302(a) in that non-DOT specification cylinders are not authorized, except as specified herein.

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5. BASIS: This special permit is based on the application of Quantum Fuel Systems Technologies Worldwide, Inc. dated June 18, 2015 submitted in accordance with § 107.105 and the public proceeding thereon and additional information dated September 12, 2016.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identi- fication Number	Packing Group
Air, compressed	2.2	UN1002	N/A
Argon, compressed	2.2	UN1006	N/A
Carbon dioxide	2.2	UN1013	N/A
Helium, compressed	2.2	UN1046	N/A
Hydrogen, compressed	2.1	UN1049	N/A
Krypton, compressed	2.2	UN1056	N/A
Methane, compressed or Natural gas, compressed (<i>with high methane content</i>)	2.1	UN1971	N/A
Neon, compressed	2.2	UN1065	N/A
Nitrogen, compressed	2.2	UN1066	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification fully wrapped fiber reinforced composite cylinder with a non-load sharing plastic liner as described in the Quantum Fuel Systems Technologies Worldwide, Inc. application and drawing number 600134-X2, dated June 07, 2015 and on file with the Office of Hazardous Materials Safety Approvals and Permits Division (OHMSAPD). The maximum water volume and service pressure are 1,100 liters and 350 bar (5,077 psig), respectively. Each cylinder is designed and tested in accordance with ISO 11515:2013 (Gas

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Cylinders - Refillable composite reinforced tubes of water capacity between 450L and 3,000L - Design, construction and testing) for type IV composite cylinder, except as follows:

(1) § 1 Scope - Cylinders made under this special permit are limited to a minimum water volume of 450 Liters and a maximum water volume of 1,100 liters, a maximum working pressure up to 35 MPa (5,077 psi).

(2) § 8.1 Type approval procedure, General requirements -

(i) A DOT Independent Inspection Agency (IIA), approved in writing by the Associate Administrator for Hazardous Materials Safety (AAHMS) must, in accordance with 49 CFR Part 107, Subpart I, review the results of the design qualification testing that was submitted in the application for special permit. The IIA must either verify that the cylinder design meets the requirements of the special permit based on the test results and other documentation submitted in the application for special permit, or the IIA may require additional testing and/or information from the manufacturer in order to verify the cylinder design meets all requirements of the special permit. Prior to cylinder production, the IIA's verification of the cylinder design must be submitted to and be acknowledged in writing by the OHMSAPD.

(ii) Prior to marking any cylinder under this special permit, an IIA, approved in writing by the AAHMS, must provide inspections and verifications of all batch testing and all new design qualification testing in accordance with the requirements of this special permit.

(3) § 8.2 Prototype tests - Cylinders that are manufactured for prototype testing must be representative of production units. Subscale units are permitted as follows:

(i) Hydraulic proof pressure test - Test cylinders shall be full scale.

(ii) Cylinder burst test - Test cylinders shall be full scale.

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(iii) Ambient cycle test - Test cylinders shall be full scale.

(iv) Environmental cycle test - Test cylinders may be subscale; smaller in diameter and shorter in length.

(v) Flaw test - Test cylinders shall be full diameter and may be shorter in length.

(vi) Fire resistance test - Test cylinders shall be full scale.

(vii) Neck strength test - Test cylinders shall be full diameter and may be shorter in length.

(viii) Leak test - Test cylinders shall be full scale.

(ix) Permeability test - Test cylinders may be subscale; same diameter and shorter in length. The data from subscale permeation test will be the base for extrapolation in determining total permeation of a full scale tube.

(x) Gas cycle test - Test cylinders shall be full scale.

(A) A representative (subscale) prototype cylinder is shorter in length than the production unit, but has the same nominal diameter. It is manufactured using the same materials and manufacturing technique, and has a composite wrapping pattern (same number of strands and layers) that represents an equivalent stress condition when compared to a full scale prototype.

(B) The design submission will cover a design family of composite cylinders of the same diameter and pressure with different cylindrical lengths from 2 times the diameter and up to 3 times the length of the representative composite cylinder and with a water capacity between 450 liters and 1,100 liters.

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(C) § 8.2.2, § 8.2.3, § 8.2.4 - The IIA must witness all testing as specified in this special permit (see Table 2).

(4) § 8.4 Design Variants - Table 2 shown below (Qualification for Design Variants) may be used in lieu of Table 4 presented in ISO 11515:

Table 2. Qualification tests for cylinder design variants with maximum test pressure ≤ 525 bars, water volume greater than 450 liters and less than or equal to 1,100 liters.

Qualification for Design Variants																
	Test	New Design	Length ≤50%	Length >50%	Diameter ≤20%	Diameter >20% or ≤50%	Liner thickness >20%	Liner material	Equivalent fiber	Test pressure ≤20%	Test pressure >20% or ≤60%	Test pressure >20%	Composite thickness or pattern	Boss-to-liner interface	Equivalent resin matrix	Resin Matrix
Liner Material							X									
Composite material								X				X ¹			X ¹	
Hydraulic pressure	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tube burst	X	X ¹	X ¹	X ¹	X	X ¹	X ¹	X	X	X ¹	X	X	X	X ¹	X ¹	X ¹
Ambient cycle	X				X ¹	X		X	X ¹	X ¹	X	X	X	X ¹		
Environmental cycle	X															X
Flaw	X				X ¹											X ¹
Blunt impact	X				X ²						X ¹					X
High velocity impact (gunfire)	X				X ²						X					X
Neck strength	X							X						X		X
Leak	X				X			X		X	X			X		
Permeability	X				X	X	X				X ¹					
Gas cycling	X				X ¹	X ¹	X							X ¹		

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1. For a new cylinder design with a water volume larger than 450 L, a minimum of 1 cylinder may be used for each design change. For a design change to the boss-liner interface, a leak check of the liner interface is acceptable. The pneumatic cycle test is not required if the boss-liner interface does not change.

(5) § 8.5 Type approval test procedures and criteria -

(i) § 8.5.1.1 Hydraulic proof pressure test, Procedure - The test pressure shall be held for at least 30 seconds with the tube isolated from the pressure source during which time there shall be no decrease in the recorded pressure or evidence of any leakage.

(ii) § 8.5.3 Liner burst test is not required for Type 4 cylinders.

(iii) § 8.5.4.2 Cylinder burst test criteria, Criteria - The burst pressure, p_b , or pressure at failure shall not be less than 1.6 times the test pressure, P_h , of the composite cylinder.

(iv) § 8.5.5 Ambient cycle test - The cylinders must be cycled to an upper pressure value of at least 1.25 times the working pressure. Cylinders shall undergo a minimum of 45,000 pressure cycles.

(v) § 8.5.6.2 Environmental cycle test - The cylinder shall be conditioned at or above 85°C and hydraulically pressure cycled between less than or equal to 10 percent of working pressure and 125 percent of working pressure for 4,000 cycles. The cylinder shall then be conditioned at or below -40°C and hydraulically pressure cycled between less than or equal to 10 percent of working pressure and 80 percent of working pressure for 4,000 cycles.

(vi) § 8.5.7.2 & 8.5.7.3 Flaw test - One uncoated cylinder shall have two flaws in the longitudinal direction cut into the composite sidewall. One flaw shall be a minimum 25 mm (1 in) long and minimum 1.25 mm (0.05 in) in depth, and the other flaw shall be a minimum 200 mm (8 in) long and minimum 0.75 mm (0.03 in) in depth. The flawed cylinder shall then be pressure cycled, from not

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more than 10 percent of the working pressure to 125 percent of the working pressure for a number of cycles equivalent to 750 times the service life of the container in years. The cylinder shall not leak or rupture within the first 3,000 cycles, but may fail by leakage up to the maximum number of cycles.

(vii) § 8.5.8.1 & 8.5.8.2 Blunt Impact Test - Cylinders covered under this special permit will be contained within a rigid framework and container that acts to prevent potential dropping of tanks and impact from the environment; therefore, blunt impact test is not required.

(viii) § 8.5.9.2 Fire resistance test - As an alternative to the Fire Resistance Test specified in § 8.5.9 of ISO 11515:2013, one representative subsystem container consisting of six full scale cylinders mounted within the framework may be subjected to a bonfire test specified in Quantum Fuel Systems Technologies Worldwide, Inc.'s "Fire Protection System Test Plan and Justification" on file with the OHMSAPD.

(ix) § 8.5.10.2 & 8.5.10.3 Neck strength test - A finished cylinder shall be restrained against rotation and a torque of 2 times the valve or PRD installation torque specified by the manufacturer shall be applied to each polar boss of the cylinder. The polar boss shall then be torqued in the loosening direction to 2 times the valve or PRD installation torque specified by the manufacturer. The polar boss shall then be torqued to 2 times the valve or PRD installation torque specified by the manufacturer in the tightening direction. If the polar boss and liner rotate within the composite prior to reaching 2 times the valve or PRD installation torque specified by the manufacturer, it is considered to meet the torque requirement. If rotation occurs prior to 2 times the valve or PRD installation torque specified by the manufacturer, the maximum torque measured must be recorded and the "modified" leak test must be conducted. The cylinder shall then be subjected to a leak test. Modified Leak Test: The completed cylinder shall be thoroughly dried and pressurized to 125% of the

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working pressure, P_w , with dry air, inert gas and/or a detectable gas such as natural gas, hydrogen or helium. The pressure in the cylinder must be maintained at 125% of the working pressure, P_w , for no less than 2.0 hours. The cylinder shall then be placed in an enclosure to permit detection of any leaks for at least 10 minutes. Any leakage greater than 10^{-3} mbar/liter/sec (i.e., approximately 1 visible bubble in 2 min or 6 cc/hour in the bubble leak test) shall constitute a failure of the test. The cylinder shall then be purged of the leak test gas.

(x) § 8.5.11 Leak test - An acceptable procedure for leak testing is to pressurize the cylinder to the working pressure using a suitable fluid. With the cylinder having been pressurized for at least 15 minutes, the cylinder must be carefully examined for signs of leakage (e.g., a visual indication or decrease in pressure).

(xi) § 8.5.12 Accelerated stress rupture test - The accelerated stress rupture test is not required for cylinders reinforced with carbon fiber.

(xii) § 8.5.13.2 & 8.5.13.3 Permeability test - A trace gas may be used in lieu of the end user specified gas; however, if a trace gas is used, correlation between the trace gas and end user specified gas must be provided. A torque at least twice as great as the torque specified by the container manufacturer shall be added beforehand to the container boss. After hydrogen gas has been filled into the container up to a pressure equal to or greater than the maximum filling pressure, gas permeation volume must be measured. The container must be placed in a chamber sealed at room temperature, and testing must take place until the gas permeation volume per unit of time reaches a fixed level. The gas permeation test is passed if, after the gas permeation volume per unit of time has become constant, the rate of

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hydrogen gas permeation is less than 2 ml per hour per liter of container internal cubic capacity. The Permeability Test may be combined with the Neck Strength Test, but this test must be performed.

(xiii) § 8.5.14.2 Gas cycle test, Procedure - One finished cylinder shall be cycle tested according to the following procedure:

(A) Cycle the pressure in the cylinder for 1,000 cycles, between 10% of working pressure and working pressure, with CNG, air, nitrogen or other gas determined by the inspector.

(B) Following the high pressure hold of the final cycle, the gas shall be released freely to atmosphere; and

(C) The cylinder must then be subjected to a leak test. Following the completion of the test, liner and liner/end boss interface must undergo a visual inspection for evidence of any deterioration, such as fatigue cracking or electrostatic discharge.

(xiv) § 8.5.14.3 Gas cycle test, Criteria - The cylinder must have no signs of leakage or deterioration.

(xv) § 8.5.15 Coatings test - This test is not required for uncoated cylinders.

(xvi) § 8.5.16 Salt spray test - This test is not required for type 4 (plastic lined cylinders).

(xvii) § 8.5.17 Acid environment test - This test is not required for carbon fiber reinforced cylinders.

(xviii) § 8.5.18 Vacuum Test - When this test is not carried out, a warning shall be permanently marked on the cylinder label to indicate that use under vacuum conditions is not permitted.

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(6) § Batch inspection and testing.

(i) § 9.2.4 Liner batch inspection & testing, Criteria - The supplier's certification of the liner and liner boss properties may serve as verification of compliance with the design specifications.

(ii) § 9.4 Overwrap materials - The supplier's certification of the fiber and resin matrix properties may serve as verification of compliance with the ISO 11515 Standard.

(iii) § 9.5.6 Batch testing criteria - The ambient cycle test may be conducted on the second unit of the batch. The pressure shall be cycled from not more than 2 MPa (290 psi) to not less than the working pressure for a minimum of 15,000 cycles.

(iv) § 9.5.7 Batch testing criteria - The burst test may be conducted on the first unit of the batch. After reaching the minimum required burst pressure and holding for 5 seconds, the cylinder shall have passed the test.

(7) § Cylinder marking - The marking must contain the following:

(i) The special permit number followed by working pressure expressed in bar (psig). The marking may be on a label permanently attached to the outside of the cylinder.

(ii) A serial number and the manufacturer's identification number or a symbol as obtained from the AAHMS, located just below or immediately following the DOT marking. The serial number and the manufacturer's identification number may be placed on the boss provided the markings are accessible for inspection.

(iii) The DOT IIA official mark must be placed near the serial number. The marking must contain the date (month and year) of the initial hydraulic proof pressure test for that cylinder.

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(iv) The size of the letters and numbers used must be at least 0.64 cm (1/4 inch) high if space permits.

(v) The following are examples of an authorized format for marking:

DOT-SP AAAAA-YYYY

(Where AAAAA is the special permit number and YYYY is the working pressure)

CCCC MMI

(Where CCCC is the serial number and MMI is the manufacturer's mark or symbol)

DDD - MM/YY

(Where DDD is the inspector's mark and MM/YY is the month and year of the hydraulic proof pressure test).

Additional markings are permitted, provided the additional markings do not obscure the required marking and are not detrimental to the integrity of the cylinder. Provisions for marking of the required requalification dates and RIN information must be made near the cylinder markings.

b. ADDITIONAL REQUIREMENTS FOR EACH NEW DESIGN -

(1) Fire Protection System - Prior to any manufacture and marking of cylinders under this special permit, each cylinder or tube of an assembly must be equipped with a Fire Protection System (FPS) as described in accordance with Quantum Fuel Systems Technologies Worldwide, Inc.'s "Fire Protection System Test Plan and Justification", on file with the OHMSAPD.

(2) The assembly containing cylinders/tubes must be subjected to a bonfire testing as described in Quantum Fuel Systems Technologies Worldwide, Inc.'s procedure, dated May 26, 2016. The bonfire testing must be witnessed and confirmed by A DOT certified IIA to ensure each FPS is in compliance in relieving the internal pressure of the cylinder/tube prior to cylinder rupturing. The FPS must meet the following characteristics:

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(i) The FPS consists of a shape memory alloy wire linkage that is encapsulated in stainless steel tubing. During a fire scenario, the linkage acts as a trigger for the cylinder/tube assembly's Pressure Relief Device (PRD) and, through mechanical action, activates the PRD to vent the hazardous lading from the system.

(ii) The FPS vent lines direct the released gas upward and outside of the frame system.

(iii) No additional pressure relief devices (e.g., rupture disks) are authorized on the cylinders/tubes.

(3) High Velocity Impact Test - The high velocity impact test must be in accordance with the ISO Standard 11119-3 (Gas Cylinders - Refillable composite gas cylinders and tubes - Part 3: Fully wrapped fibre reinforced composite gas cylinders and tubes up to 450L with non-load sharing metallic or non-metallic liners) with the exception that the cylinder shall be impacted by a minimum 7.62 millimeter (0.3 inch) diameter armor-piercing projectile. If a single projectile will not penetrate the wall, additional rounds may be used.

c. REQUALIFICATION -

(1) Each cylinder must be requalified once every 5 years by a qualified person holding a valid DOT RIN in accordance with § 107.805 as follows:

(i) Perform an external and internal visual inspection in accordance with CGA pamphlet C-6.2 (Guidelines for Visual Inspection and Requalification of Fiber Reinforced High Pressure Cylinders) and a hydraulic proof pressure test at a pressure equal to 1.5 times the marked working pressure. The pressure shall be held for a minimum of 2 minutes without loss of pressure.

(ii) Perform a Non-destructive Examination (NDE) which is approved by the OHMSAPD and may be used in lieu of internal visual inspection and hydraulic proof pressure test.

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(2) Persons who perform inspection and testing of cylinders subject to this special permit must comply with § 180.205(b) and with all the terms and conditions of this special permit and the HMR.

(3) Requalification date (month/year) must be permanently marked on the cylinder as specified in paragraph § 180.213. The marking of the RIN symbol on the cylinder certifies compliance with all of the terms and conditions of this special permit.

d. OPERATIONAL CONTROLS -

(1) Cylinders manufactured under this special permit are not authorized for use 15 years from the date of manufacture, except as specified under paragraph 8.a. of this special permit.

(2) A cylinder that has been subjected to fire may not be returned to service.

(3) Cylinders are permanently mounted inside of framing that is designed, marked (approval plate) and approved in accordance with the International Convention for Safe Containers (CSC) (49 CFR Part 451) as described in the Quantum Fuel Systems Technologies Worldwide, Inc. application on file with the OHMSAPD. The structural framework has been evaluated for transportation of the cylinders/tubes under this special permit by Finite Element Analysis (FEA) on file with the OHMSAPD. This FEA has demonstrated the framework's ability to protect the tubes from damage due to front, rear, or side impact, and rollover. The frame design meets the following:

(i) All requirements of § 173.301(i);

(ii) All requirements of CGA TB-25;

(iii) Cylinders may be mounted horizontally or vertically; and

(iv) Cylinders assemblies containing flammable gases (e.g., CNG) must be transported on trailers that are pulled by tractors equipped with an Electronic Stability Control (ESC) System in accordance with the Federal Motor Vehicle Safety

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Standard (FMVSS) 136. When an ESC equipped tractor is not used, the trailer shall be equipped, in accordance with FMVSS 393.55, with an Anti-Lock Braking (ABS) System that contains an electrical circuit to signal a malfunction in the trailer's ABS system.

(4) Quantum Fuel Systems Technologies Worldwide, Inc. must develop a standard operating procedure (SOP) for the FPS inspection. The SOP must be provided to each filling facility and it will apply prior to each filling. The SOP inspection must cover the entire FPS that include all relevant valves, piping, fittings and gauges. The SOP must be submitted to the OHMSAPD.

(5) Cabinet Flammability Limit - The Lower Flammability Limit (LEL) of each gas or gas mixtures must be calculated for the highest pressure and temperature to ensure the cabinet of the cylinder assembly is equipped with proper ventilation to avoid a fire or explosion during transportation.

(6) Prior to use in Offshore Service under the terms of this special permit, additional information justifying such use must be submitted to and be acknowledged in writing by the AAHMS.

(7) Low pressure/temperature prior to filling - The following procedure must be followed in case the pressure of a cylinder (tube) drops below 100 psig (7 bar) while the ambient temperature is below -12°C: Prior to filling, either the tube must be held at or above 16°C for 8 hours, or the tube must be filled to 435 psig (30 +/- 3 bar) from a compressor, and held for one hour, before returning to normal fill procedures.

(8) Transportation of Division 2.1 (flammable gas) is not authorized aboard cargo vessel unless specifically authorized in the Hazardous Materials Table (§ 172.101).

(9) When transported by cargo vessel, the cylinders must be stowed on deck only and are prohibited from passenger ships (Stowage Category D).

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(10) SOPs that govern the inspection of the FPS, gauges, fittings, valves and vent system must be submitted to the OHMSAPD before the deployment of the first production unit. SOPs that govern filling/discharging operations and incident reporting must be submitted to the OHMSAPD before deployment of the first unit.

(11) A cylinder that has been subjected to collision/crash or dropped from a height greater than 1 foot (measured from the drop surface to the cylinder's lower profiles highest point above the ground) shall not enter service.

8. SPECIAL PROVISIONS:

a. Cylinders manufactured under this special permit are authorized for a maximum service life of 15 years from the date of manufacture unless approved by the OHMSAPD for an additional 15 years under a pre-approved service life extension program that must be submitted within 12 months of the date on which the special permit is granted.

b. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

c. A person who is not a holder of this special permit, but receives a package covered by this special permit, may reoffer it for transportation provided no modification or change is made to the package and it is offered for transportation in conformance with this special permit and the HMR.

d. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

e. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

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- f. A current copy of this special permit must be maintained at each facility where the packaging is manufactured under this special permit. It must be made available to a DOT representative upon request.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight and cargo vessel.
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel or motor vehicle used to transport packages covered by this special permit.
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.

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

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"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 William Schoonover
Acting Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

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: Andrew Eckenrode