APPENDIX A

PROPOSED REGULATION ORDER

AMENDMENTS TO SECTIONS 2290, 2291, 2292.5 AND 2292.6, TITLE 13, CALIFORNIA CODE OF REGULATIONS, REGARDING THE COMPRESSED NATURAL GAS AND LIQUEFIED PETROLEUM GAS SPECIFICATIONS IN THE ALTERNATIVE FUELS FOR MOTOR VEHICLE REGULATIONS

The text of the proposed amendments is shown in underline to indicate additions and ~~strikeout~~ to indicate deletions, compared to the preexisting regulatory language.

Amend section 2290, title 13, California Code of Regulations, to read as follows:

§ 2290. Definitions.

(a) For the purposes of this article, the following definitions apply:
(1) "Alternative fuel" means any fuel which is commonly or commercially known or sold as one of the following: M-100 fuel methanol, M-85 fuel methanol, E-100 fuel ethanol, E-85 fuel ethanol, compressed natural gas, liquefied petroleum gas, or hydrogen.
(2) "ASTM" means the American Society for Testing Materials.
(3) "Bobtail truck" means any liquefied petroleum gas transportation truck capable of being run off the fuel from the cargo tank with a maximum cargo capacity of 3000 gallons.
~~(3)~~(4) "Motor vehicle" has the same meaning as defined in section 415 of the Vehicle Code.
(5) "South Central Coast" for the purpose of the CNG specifications is defined as San Luis Obispo and Santa Barbara County.
(6) "Southern San Joaquin Valley" for the purpose of the CNG specifications means the following areas within the San Joaquin Valley Air Pollution Control District: Fresno, Kings, and Tulare Counties and the western portion of Kern County.
~~(4)~~(7) "Supply" means to provide or transfer a product to a physically separate facility, vehicle, or transportation system.

NOTE

Authority cited: Sections 39600, 39601, 43013, 43018, ~~and~~ 43101, and 43806, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975). **Reference:** Sections 39000, 39001, 39002, 39003, 39010, 39500, 40000, 43000, 43016, 43018 ~~and~~ 43101, and 43806, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975).

Amend section 2291, title 13, California Code of Regulations, to read as follows:

§ 2291. Basic Prohibitions.

(a) Starting January 1, 1993, no person shall sell, offer for sale or supply an alternative fuel intended for use in motor vehicles, excluding LPG bobtail trucks, in California unless it conforms with the applicable specifications set forth in this article 3.

(b) An alternative fuel shall be deemed to be intended for use in motor vehicles in California if it is:

(1) stored at a facility which is equipped and used to dispense that type of alternative fuel to motor vehicles, or

(2) delivered or intended for delivery to a facility which is equipped and used to dispense that type of alternative fuel to motor vehicles, or

(3) sold, offered for sale or supplied to a person engaged in the distribution of motor vehicle fuels to motor vehicle fueling facilities, unless the person selling, offering or supplying the fuel demonstrates that he or she has taken reasonably prudent precautions to assure that the fuel will not be used as a motor vehicle fuel in California.

(c) For the purposes of this section, each retail sale of alternative fuel for use in a motor vehicle, and each supply of alternative fuel into a motor vehicle fuel tank, shall also be deemed a sale or supply by any person who previously sold or supplied such alternative fuel in violation of this section.

NOTE

Authority cited: Sections 39600, 39601, 43013, 43018, ~~and~~ 43101, and 43806, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975). Reference: Sections 39000, 39001, 39002, 39003, 39010, 39500, 40000, 43000, 43016, 43018 ~~and 43101~~, 43101, and 43806, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975).

SPECIFICATIONS FOR COMPRESSED NATURAL GAS

Amend section 2292.5, title 13, California Code of Regulations, to read as follows:

§ 2292.5 Specifications for Compressed Natural Gas.

The following Standards apply to compressed natural gas
(The identified test methods are incorporated herein by reference):

~~Specifications for Compressed Natural Gas~~

Motor Vehicle Compressed Natural Gas Fuel must meet one of the following specifications:

A. Statewide Specifications

Specification	**Value**	**Test Method**
Hydrocarbons (expressed as mole percent)		
Methane	88.0% (min.)	ASTM D 1945-96~~81~~
Ethane	6.0% (max.)	ASTM D 1945-96~~81~~
C_3 and higher HC	3.0% (max.)	ASTM D 1945-96~~81~~
C_6 and higher HC	0.2% (max.)	ASTM D 1945-96~~81~~
Other Species (expressed as mole percent unless otherwise indicated)		
Hydrogen	0.1% (max.)	ASTM D 2650-88
Carbon Monoxide	0.1% (max.)	ASTM D 2650-88
Oxygen	1.0% (max.)	ASTM D 1945-96~~81~~
Inert Gases		
Sum of CO_2 and N_2	1.5-4.5% (range)	ASTM D 1945-96~~81~~
Water	[a]	
Particulate Matter	[b]	
Odorant	[c]	
Sulfur	16 ppmv by vol. (max.)	Title 17 CCR Section 94112

[a] The dewpoint at vehicle fuel storage container pressure shall be at least 10 ^{o} F below the 99.0% winter design temperature listed in Chapter 24, Table 1, Climatic Conditions for the United States, in the American Society of Heating, Refrigerating and Air Conditioning Engineers ~~Engineer's~~ (ASHRAE) Handbook, 1989 fundamentals volume. Testing for water vapor shall be in accordance with ASTM D 1142-90, utilizing the Bureau of Mines apparatus.

[b] The compressed natural gas shall not contain dust, sand, dirt, gums, oils, or other substances in an amount sufficient to be injurious to the fueling station equipment or the vehicle being fueled.

[c] The natural gas at ambient conditions must have a distinctive odor potent enough for its presence to be detected down to a concentration in air or not over 1/5 (one-fifth) of the lower limit of flammability.

B. Statewide Alternative Specifications

Specification[a]	**Value**	**Test Method**
Methane Number[b]	80	ASTM 1945-96

[a] This specification may be used as an alternative to the "Hydrocarbons" portion of the Statewide Specification in part A. All of the specifications under the title "Other Species" must be met to comply with the regulation.

[b] Methane Number is determined by the following calculation:

$MN = 1.624 * (-406.14 + 508.04 * RHCR - 173.55 * RHCR^2 + 20.17 * RHCR^3) - 119.1$

Where RHCR= (% methane*4 + % ethane*6 + % propane*8+(% isobutane + % n-butane)*10 + (% isopentane + n-pentane)*12+ (% hexane and longer hydrocarbon chains) *14) /(% methane*1+% ethane*2+ % propane*3+(% isobutane + % n-butane)*4+(% isopentane + % n-pentane)*5+% (hexane and longer hydrocarbon chains)*6).

C. Limited Area Alternative Specifications

This specification is limited to fueling facilities that meet the following conditions:

1) The fueling station is located in one of the following counties: San Luis Obispo, Santa Barbara, Ventura, Kings, Fresno, Tulare, and the portion of Kern that is in the San Joaquin Valley Air Pollution Control District;
2) The natural gas service provider does not provide natural gas that meets an MN of 80 at the service connection;
3) The fleet vehicles can operate on CNG with a MN of 73 as recommended and documented by the engine manufacturer; and
4) The fueling station has controls in place that will prevent misfueling.

Specification[a]	**Value**	**Test Method**
Methane Number [b]	73 (min.)	ASTM D 1945-96

[a] This specification may be used as an alternative to the "Hydrocarbons" portion of the Statewide Specification in part A. All of the specifications under the title "Other Species" must be met to comply with the regulation.

[b] Methane Number is determined by the following calculation:

$MN = 1.624 * (-406.14 + 508.04 * RHCR - 173.55 * RHCR^2 + 20.17 * RHCR^3) - 119.1$

Where RHCR= (% methane*4 + % ethane*6 + % propane*8+(% isobutane + % n-butane)*10 + (% isopentane + n-pentane)*12+ (% hexane and longer hydrocarbon chains) *14) /(% methane*1+% ethane*2+ % propane*3+(% isobutane + % n-butane)*4+(% isopentane + % n-pentane)*5+% (hexane and longer hydrocarbon chains)*6).

NOTE

Authority cited: Sections 39600, 39601, 43013, 43018, ~~and~~ 43101, and 43806, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975). Reference: Sections 39000, 39001, 39002, 39003, 39010, 39500, 40000, 43000, 43016, 43018~~ and 43101~~, 43101, and 43806, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975).

SPECIFICATIONS FOR LIQUEFIED PETROLEUM GAS

Amend section 2292.6 title 13, California Code of Regulations, to read as follows:

§ 2292.6. Specifications for Liquefied Petroleum Gas

The following Standards apply to liquefied petroleum gas
(The identified test methods are incorporated herein by reference):

Specification	**Value**	**Test Method**
Propane	85.0 vol. % (min.) [a]	ASTM D 2163-87
Vapor Press. at 100° F	208 psig (max.)	ASTM D 1267-89 ASTM D 2598-88 [b]
Volatility residue: Evaporated temp., 95% or	-37 ° F (max.)	ASTM D 1837-86
butanes	5.0 vol. % (max.)	ASTM D 2163-87
Butenes	2.0 vol. % (max.)	ASTM D 2163-87
Pentenes and heavier	0.5 vol. % (max.)	ASTM D 2163-87
Propene	10.0 vol. % (max.)	ASTM D 2163-87
Residual matter: Residue on evap. of 100 ml	0.05 ml (max.)	ASTM D 2158-89
Oil stain observed.	Pass [c]	ASTM D 2158-89
Corrosion, copper strip	No. 1 (max.)	ASTM D 1838-89
Sulfur	80 ppmw (max.)	ASTM D 2784-89
Moisture content	Pass	ASTM D 2713-86
Odorant	[d]	

[a] Propane shall be required to be a minimum of 80.0 volume percent starting on January 1, 1993. Starting on January 1, 1999, the minimum propane content shall be 85.0 volume percent.

[b] In case of dispute about the vapor pressure of a product, the value actually determined by Test Method ASTM D 1267-89 shall prevail over the value calculated by Practice ASTM D 2598-88.

[c] An acceptable product shall not yield a persistent oil ring when 0.3 ml of solvent residue mixture is added to a filter paper, in 0.1 ml increments and examined in daylight after 2 min. as described in Test Method ASTM 2158-89.

[d] The liquefied petroleum gas upon vaporization at ambient conditions must have a distinctive odor potent enough for its presence to be detected down to a concentration in air of not over 1/5 (one-fifth) of the lower limit of flammability.

Within five years from the effective date of adoption or implementation, whichever comes later, of the amendments approved December 11, 1998, the Air Resources Board, in consultation with the Secretary for Environmental Protection, shall review the provisions of this chapter to determine whether it should be retained, revised or repealed.

NOTE

Authority cited: sections 39600, 39601, 43013, 43018, ~~and~~ 43101, and 43806, Health and Safety Code; and Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975). Reference: sections 39000, 39001, 39002, 39003, 39010, 39500, 40000, 43000, 43016, 43018, ~~and~~ 43101, and 43806, Health and Safety Code; and Western Oil and Gas Ass'n v. Orange County Air Pollution Control District, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975).