State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER B-4-77

Relating to Conversion of Engines to Alternative Fuels

IMPCO TECHNOLOGIES

Pursuant to the authority vested in the Air Resources Board by Sections 43004 and 43006 of the Health and Safety Code and Section 10753(d) of the Revenue and Taxation Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: The dedicated compressed natural gas (CNG) retrofit system, manufactured by IMPCO Technologies, Inc. (IMPCO) of 7100 East 15 Mile Road, Sterling Heights, Michigan 48312, is certified as described below for the following 2013 model-year General Motors LLC 6.0 liter heavy-duty engine.

Fuel Type: Gasoline to CNG

Engine Family: DGMXE06.0584 Displacement: 6.0 liter

Engine Models: L96, LC8

Major Retrofit System Components:

Component	Part Number
Injector	IJ-52696-003
Regulator	PMP01622
Alt. Fuel Device (AFD) (i.e., Alt. Fuel Gauge)	MD52692-003

All emission control systems, excluding the gasoline fuel and evaporative emission control systems, and the engine manufacturer's tune-up label shall be retained. The engine shall be adjusted to IMPCO's tune-up specifications. The production retrofit system shall be in all material respect the same as that for which certification is granted. The certification exhaust emission standards for this engine family in grams per brake horsepower-hour are:

		NMHC	NOx	CO	PM	HCHO
Emission Standard						
HDO	@110,000 Miles	0.14	0.20	14.4	0.01	0.01

The certification exhaust emission values for this engine family with the dedicated CNG retrofit system in grams per brake horsepower-hour are:

		NMHC	NOx	CO	PM	HCHO
Certification Levels	@110,000 Miles	0.11	0.08	6.3	0.01	0.002

BE IT FURTHER RESOLVED: The retrofit system manufacturer has submitted and the Executive Officer hereby approves the materials in the application to demonstrate certification compliance with the emission standards set forth in Section 4 of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines."

BE IT FURTHER RESOLVED: The retrofit system manufacturer has stated that the retrofit system described above is identical, as defined in Title 13, California Code of Regulations, Section 2030(c), to the alternative fuel system described in the certification application of its engine family DZ9XE06.0DCA which was certified by ARB per Executive Order A-328-0059. At the request of the manufacturer, the retrofit system is certified under Section 2030(c) (expedited approval using carry-over / carry-across of data from new engine certification).

BE IT FURTHER RESOLVED: The retrofit system manufacturer has submitted and the Executive Officer hereby approves the materials in the application to demonstrate certification compliance with the on-board diagnostic system requirements in Section 6 of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines."

BE IT FURTHER RESOLVED: The retrofit system manufacturer shall provide a supplemental emission control information label, which shall be affixed in a permanent manner adjacent to the original Vehicle Emission Control Information label, and shall comply with the labeling requirements described in Section 3(e) of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines."

BE IT FURTHER RESOLVED: The retrofit system manufacturer has submitted and the Executive Officer hereby approves the materials required to demonstrate certification compliance with the warranty requirements, including warranty notification under Sections 3(f)(5) , 3(g), and 9 of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines."

BE IT FURTHER RESOLVED: The retrofit system manufacturer may be subject to in-use enforcement emission testing as described in Section 12 of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines."

BE IT FURTHER RESOLVED: The retrofit system manufacturer shall maintain a record of each engine on which the retrofit system is installed as required in Section 3(h) of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model Year On-Road Motor Vehicles and Engines." The manufacturer shall supply a copy of installation information upon request and annually report the annual sales by March 1 of the following calendar year.

BE IT FURTHER RESOLVED: At the request of the retrofit system manufacturer, the alternative fuel retrofit system described herein is certified conditionally upon the Office of Administrative Law's approval of the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for 2004 and Subsequent Model-Year On-Road Motor Vehicles and Engines", and the amendments to title 13, CCR sections 2030 and 2031 , which were approved by the Board at its September 26, 2013 public hearing. The retrofit system manufacturer acknowledges and accepts the risks pertaining to such conditional certification.

The retrofit system certified under this Executive Order must conform to all applicable California emission regulations. Certification of the retrofit system shall not be construed as a certification to sell, offer for sale, or advertise any component of the retrofit system as an individually certified part.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this 19th day of May 2014.

Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division