State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER B-62-8

Relating to Conversion of Engines to Alternative Fuels

AMERICAN POWER GROUP

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 bi-fuel compressed natural gas/diesel (CNG/diesel) and liquefied natural gas/diesel (LNG/diesel) retrofit system, manufactured by American Power Group (APG) of 2503 East Poplar Street, Algona, Iowa 50611, is certified as described below for the following 2011 model-year Cummins Inc. 14.9L Heavy Heavy-Duty Diesel Engine.

Fuel Type: Diesel to bi-fuel CNG/diesel or LNG/diesel

Engine Family: BCEXH0912XAR Displacement: 14.9 liter

Engine Models: See Attachment A

Major Retrofit System Components:

Component	Part Number
High Pressure Shutoff Valve	100603
High Pressure Regulator	100618
Low Pressure Shutoff Valve	102235
Low Pressure Regulator	102111
Electronic Throttle Body	101120
Venturi Mixer Tube Assembly	101569
Venturi Sleeve	101573
Low vacuum Sensor	101254
Electronic Control Module	101398
Remote Display Unit	102114
Dedicated Wiring Harness	101763
	101435

All emission control systems and the engine manufacturer's tune-up label shall be retained. The engine shall be adjusted to APG'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:

FTP and SET	NMHC	NOx	CO	PM
Emissions Standards (g/bhp.hr)				
HDDE @ 10 Years/435,000 Miles/22,000 hrs	0.14	0.20	15.5	0.01
Family Emission Limit		0.25		

The certification exhaust emission values for this engine family with the diesel and bi-fuel CNG/diesel or bi-fuel LNG/diesel retrofit system in grams per brake horsepower-hour are:

Certification Levels (g/bhp.hr) @ 10 Years or 435,000 Miles or 22,000 hrs		NMHC	NOx	CO	PM
CNG/Diesel or LNG/Diesel	FTP	0.07	0.14	0.1	0.002
	SET	0.06	0.12	0.04	0.001
Diesel	FTP	0.03	0.18	0.0	0.001
	SET	0.02	0.15	0.0	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 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.

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 April 2016.

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

Engine Family	Engine Code	Engine Model	BHP@RPM	Fuel Rate MM/stroke @ peak HP	Fuel Rate (lbs/hr) @ peak HP	Torque@RPM	Fuel Rate mm/stroke @ peak torque	Fuel Rate (lbs/hr) @ peak torque	Emission Control Device
BCEXH0912XAR	3606;FR10967	ISX15 600	592@1888	331	211	2050@1200	388	157	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3606;FR10965	ISX15 600	592@1888	331	211	1850@1200	343	139	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3606;FR10962	ISX15 550	542@1888	304	193	2050@1200	388	157	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3606;FR10964	ISX15 550	542@1888	304	193	1850@1200	342	139	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3606;FR10961	ISX15 525	517@1888	287	183	1850@1200	342	139	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3606;FR10968	ISX15 600RV	571@1977	336	224	1950@1200	365	148	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3606;FR10964	ISX15 550RV	542@1888	304	193	1850@1200	348	141	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3349;FR10823	ISX15 600	583@1888	331	211	2050@1200	397	160	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3349;FR10821	ISX15 600	583@1888	331	211	1850@1200	348	141	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3349;FR10850	ISX15 550	541@1888	304	193	1850@1200	348	141	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3349;FR10819	ISX15 5525	516@1888	287	183	1850@1200	348	141	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3349;FR10840	ISX15 600RV	550@1977	301	201	1950@1200	372	150	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3349;FR10821	ISX15 600EV	583@1888	331	211	1850@1200	348	141	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3349;FR10850	ISX15 550RV	541@1888	304	193	1850@1200	348	141	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3349;FR10920	ISX15 550EV	541@1888	304	193	1850@1200	348	141	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM

Emergency	Vehicle	Engine	Models	Below					
BCEXH0912XAR	3606;FR10966	ISX15 600EV	583@1888	331	211	1850@1200	348	141	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM
BCEXH0912XAR	3606;FR10963	ISX15 550EV	542@1888	304	193	1850@1200	348	131	SCR-U, PTOX, EGR, OC, TC, CAC, DDI, ECM