California Environmental Protection Agency Air Resources Board	ISUZU MOTORS LIMITED	EXECUTIVE ORDER U-R-006-0377 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety 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-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2013	DSZXL07.8LXA	7.8	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Control Module, Turbocharger, Charge Air Cooler, Electronic Direct Injection, Exhaust Gas Recirculation, Diesel Oxidation Catalyst, Periodic Trap Oxidizer	Excavator, Crane, Loader

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Interim Tier 4 Alt NOx	STD	0.19	2.0	N/A	3.5	0.02	N/A	N/A	N/A
		CERT	0.06	1.9	--	0.1	0.02	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 2 day of October 2012.

Annette Hebert, Chief
Mobile Source Operations Division

CARB EO. U-R-006-0377
DATE: 09/17/12

ATTACHMENT

Engine Model Summary Template

Engine Family	Engine Code	Engine Model	BHP@RPM (SAE Gross)	Fuel Rate: mm/stroke @ peak HP (for diesel only)	Fuel Rate: lbs/hr @ peak HP (for diesels only)	Torque @ RPM (SEA Gross)	Fuel Rate: mm/stroke @peak torque	Fuel Rate: lbs/hr @peak torque	Emission Control Device Per SAE J1930
DSZXL07.8LXA	6HK1XDLAA -01	AL-6HK1X	281.6@1900	159.2@1900	100.9@1900	796.6@1500	159.3@1500	79.7@1500	ECM, TC, CAC, DFI, EGR, OC, PTOX
DSZXL07.8LXA	6HK1XDLAA -02	AL-6HK1X	215.9@1800	123.0@1800	73.8@1800	693.3@1500	139.9@1500	70.0@1500	ECM, TC, CAC, DFI, EGR, OC, PTOX
DSZXL07.8LXA	6HK1XDLAA -03	AL-6HK1X	249.4@2000	132.1@2000	88.2@2000	774.4@1500	157.7@1500	78.9@1500	ECM, TC, CAC, DFI, EGR, OC, PTOX
DSZXL07.8LXA	6HK1XDLAA -04	AL-6HK1X	221.3@2000	120.5@2000	80.4@2000	728.7@1500	149.1@1500	74.6@1500	ECM, TC, CAC, DFI, EGR, OC, PTOX