الشركة الوطنية لحفر وصيانة آبار النفط
National Oil Wells Drilling & Workover Co.

قائمة التأكيد للمواصفات الفنية

CHECK LIST TECHNICAL SPECIFICATION

BID NO. NWD-TC-2025-T-50-07 عطاء رقم

Item	Qty	UOI	Description	Part No.	IF YOU APPROVE THICK HERE YES OR NO	REMARKS
1	**4**	**ea**	**Caterpillar 3512B** **turbo charged, after cooling 912 HP each with Kato 1225 KW (1750 KVA) AC generators. Engines are equipped with heavy-duty radiators, safety shut down devices, low oil, high temperature and over speed controls** **4 each Caterpillar 3512B Electronic Control Diesel Land Oilfield Generator, NEW and Built in USA open type include the following.**			
1		**A.**	**Caterpillar 3512B**			
			• Power Rating: 1225 KW			
			• Power Rating 0.7 pf / 1750KVA			
			• Exciter Volts 100 V			
			• Exciter Current 8.2 Amperes			
			• 1680Amps			
			• Voltage Output: 600Vac			
			• Phase: 3 Ø (phase)			
			• Frequency / RPM: 60Hz / 1200 RPM			
			• SAE Standard Rotation			
			• Following Equipment			
			• Electrical starting System 24 Vdc			
			• (Batteries to be enclosed and secure			
			AIR INLET SYSTEM			
			• Aftercooler Core, Corrosion Resistant			
			• Service Indicators			
			• Air Cleaner- Heavy Duty, Shipped loose			
			• Caterpillar ADEM latest edition			
			• Requires 24V DC, 10Amp Continuous, 20 Amp			
			• Intermittent, Clean Electrical Power			
			• Load Sharing Control			
			• Engine Governor Control- For use with 0-200ma			
			• External speed and load sharing control			
			COOLING SYSTEM			
			• Thermostats and housing, (Dual Outlet)			

			• Jacket water pump, gear driven,			
			• Aftercooler Fresh Water Pump, SCAC, Gear Driven			
			• Coolant drains lines with valve and level sight gauge			
			• Coolant conditioner			
			• SCAC, Thermostat			
			• Radiator Group-with guard 46 CVD, S/L, Two Circuit			
			• Includes for Connections, and Fuel Cooler			
			• Blower Fan, Fan pulley for desert operation with			
			• ambient temperature to 140 Degree F /50◦C			

			EXHAUST SYSTEM			
			• Exhaust Manifolds, Dry			
			• Top Mounted Turbochargers,			
			• Dual turbo chargers water cooled bearings			
			• Exhaust. stainless steel Flexible Fittings, S/L			
			• Muffler Group- Spark Arresting, 14-inch, S/L			
			• flanges, clean-out box, and spark box			
			• Elbows, flanges, expanders & Y adapters			
			• Flanged faced outlets			
			FUEL SYSTEM			
			• primary Fuel Filter, with water separator			
			• Fuel Transfer Pump			
			• Flexible Fuel Lines			
			• Fuel Priming Pump, LH			
			• Electronic Controlled Unit Injectors			
			• Fuel pressure gauge			
			LUBE SYSTEM			
			• Crankcase Breather			
			• Oil Cooler			
			• Oil Filter, LH			
			• Shallow Sump Oil Pan			
			• Oil Pump, Gear Type			
			• Fumes Disposal			
			• Oil drain extension,			
			• 2-inch NPT female connection			
			• Oil level regulator			
			• Centrifugal Oil Cleaner			
			• Caterpillar latest ADEM control system			
			INSTRUMENTATION			
			• Instrument panel			
			• Emergency stop button			
			• CAN, RS 485 MODBUS,			
			• Ethernet communications supp			
			• Remote e-stop/start/stop			

			• Electric Instrument Panel			
			• inch graphical display-5.5			

			• Engine/generator monitoring and protection			
			• Analog Gauges and Digital Display for:			
			• Engine Oil Pressure Gauge			
			• Engine Water Temperature Gauge			
			• Fuel Pressure Gauge			
			• System DC Voltage Gauge			
			• Air Inlet Restriction Gauge			
			• Exhaust Temperature Gauge			
			• (Prior to Turbocharger)			
			• Fuel Filter Differential Gauge			
			• Oil Filter Differential Gauge			
			• Service Meter (Digital Display)			
			• Tachometer (Digital Display)			
			• Instantaneous Fuel Consumption (Digital Display)			
			• Total Fuel consumed (Digital Display)			
			• Engine Start-Stop Switch (4 positions)			
			• Off / Reset, Auto Start,			
			• Manual Start, Cooldown Timer			
			• Engine start and crank attempt counter			
			PROTECTION SYSTEM			
			• . Latest ADEM ECM monitoring system Provides Engine			
			• De-ration or Shutdown Strategies to Protect Against			
			• Adverse Operating Conditions			
			• Selected Parameters are Customer Programmable.			
			• Status Available on Engine Mounted Instrument			
			• Panel and can be Broadcast Through the Optional			
			• Customer Communications Module or Programmable			
			• Relay Control Module(s).			
			• Initially Set as Follows:			
			• Safety Shutoff Protection, Electrical:			
			• Oil Pressure, Water Temperature, Overspeed,			
			• Crankcase Pressure Aftercooler Temperature.			
			• Includes Air Inlet Shutoff, Activated on Overspeed			
			• or Emergency stop			
			• ECM voltage, Oil pressure, Water Temperature			

			• (Low and High). Overspeed, Crankcase Pressure,			

			• Aftercooler Temperature Low Water Level (S/L) , air			
			• Inlet Restriction, Exhaust Stack Temperature, Filter			
			• Differential Pressure (Oil and Fuel)			
			• Derate, Electrical			
			• Jacket Water Heater, 12 KW, 240-480VAC			
			• Metal particle detector with annunciator			
			• Explosion relief valves (3)			
			GENERATOR			
			• Generator - 2 Bearing, 600V, 826 Frame, Self-Excited,			
			• 1200 RPM, 0.7 PF, 1900 KVA, 3 Phase, 4 Wire, Form			
			• Wound, VPI, Class H Insulation, 127C Rise, Brushless			
			• Excited, Drip-Proof,			
			• 1200-Watt Space Heater,			
			• Bus Bars, 100-ohm Platinum			
			• Embedded RTDs, Coupling Hub,			
			• Cable Access Box, RH Extension			
			• Generator Air Filter- Caterpillar Generator Only			
			• Increases generator temperature rise to 90 C.			
			• Includes differential pressure alarm switch, unwired			
			• Voltage Regulator not included			
			ELECTRIC MODULAR CONTROL PANEL (EMCP 4.4)			
			WITH THE FOLOWING FEATURES			
			• 140 mm (5.5 in) Graphical Display			
			• Generator AC voltage			
			• phase (L-L & L-N)-3			
			• accuracy 0.25% ± •			
			• rpm and battery voltage			
			• Generator AC current (per phase and average)			
			• Generator frequency			
			• Power metering (kW, kVA, kVAr, pf)			
			• Hour meters (kW-hour, kVAr-hour)			
			• Engine oil pressure (psi, kPa or bar)			
			• Engine oil temperature (°C or °F)			
			• Engine coolant temperature (°C or °F)			
			• Multiple language support			

			• Engine start and crank attempt counter			

			• Real time clock			
			•			
			Communication			
			• Accessory CAN data link			
			• RS-485 annunciator data link			
			• RS-485 SCADA (Modbus RTU)			
			• Ethernet SCADA (Modbus TCP)			
			Controls			
			• Auto/start/stop			
			• Engine cool down timer			
			• Emergency stop •			
			• Engine cycle crank			
			• Programmable cycle timer			
			Generator Set Protection			
			• Over/under voltage			
			• Over/under frequency			
			• Generator phase sequence			
			• Over current (timed and inverse)			
			• Reverse kW, kVA			
			• Current balance			
			• Low oil pressure			
			• High coolant temp			
			• Low coolant level			
			• Fail to start			
			• Over speed			
			Outputs			
			• programmable digital outputs 16			
			• 3 programmable (4-20mA or ±10V)			
			• programmable (PWM) Inputs			
			Emergency stop			
			• Remote start			
			• 12 programmable digital inputs			
			• Oil pressure and water temperature			
			• 3 programmable inputs (±10V, PWM, current,			

			• or resistive)			

			• Oil temperature, fuel level mounting.			
			• Inner Base for Mounted Engine and Generator			
			• Engine and Generator Mounting Group Coupling			
			• Isolators, Three Point Mounted to Customer Supply Subbase			
			Mounting			
			• Generator mounting support to install in generator house			
			• Towing points for forklift pockets**, skid base should**			
			not be wider than Generator complete with dragging points			
			• generators to be controlled by ROSSHILL			
			Other requirements			
			• Paint, Engine and generator Caterpillar Yellow,			
			• Except rails & radiators should be gloss black.			
			• Vibration Damper and Guard, Lifting Eyes, Engine Only			
			• Final testing and commissioning will be witnessed			
			By NWD personnel			
			• Training with full-board accommodation is required			
			For 6 NWD personnel 3 mechanics and 3 electricians			
			• 24 months Warranty is required on the complete sets			
			• The generators must be inspected and tested by NWD			
			Personnel before shipment.			
			• 3 each Manual and parts books in hard and soft copies			
			• The offer must include Detailed Technical Offer,			
			Data sheet, they can make also checklist based on			
			NWD requirements for easy evaluation			
			• . Complete with Test Certificate, Certificate of			
			Conformance from Caterpillar and other standard related documents			
			Are required.			
			END OF CHECK LIST TECHNICAL SPECIFICATION.			