



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

قائمة التأكيد للمواصفات الفنية

TECHNICAL SPECIFICATION

BID NO. NWD-TC-2025-T-50-07 عطاء رقم

Item	Qty	UOI	Description
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 $\pm 10V$)
			programmable (PWM) Inputs
			Emergency stop
			Remote start
			12 programmable digital inputs
			Oil pressure and water temperature
			3 programmable inputs ($\pm 10V$, 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 TECHNICAL SPECIFICATION.