

Return Bid To:
MARSHALL COUNTY
ENGINEERING DEPARTMENT
424 BLOUNT AVENUE SUITE 305
GUNTERSVILLE, AL 35976
(256) 571-7712

BID NO: 47 - 22

BID OPENING DATE & TIME: THURSDAY,
DECEMBER 8, 2022 - 2:00 P.M.

LOCATION: ROOM A319 - COMMISSION
CHAMBERS - 3RD FLOOR - MARSHALL
COUNTY COURTHOUSE - GUNTERSVILLE, AL

INVITATION FOR BIDS
FOR
GENERATOR FOR MARSHALL COUNTY SHERIFF'S OFFICE

CONTRACTOR RESPONSE:

CONTRACTOR NAME: _____

CONTRACTOR ADDRESS: _____

TELEPHONE NO. _____

EMAIL: _____

ALABAMA GENERAL CONTRACTOR LICENSE NO. _____

Make & Model: _____

TOTAL BID PRICE \$ _____

CONTRACTOR RESPONSE:

I hereby agree to furnish the above-named items on or by the dates requested and hereby certify that all specifications set above will be met.

Authorized Representative

Typed or Written Name

SECTION 263213 - EMERGENCY LIGHTING AND POWER SYSTEM

This project will be administered under a Construction Management arrangement. The Contractor responsible for the Work of this Section is responsible to review all portions of the Contract Documents for additional requirements and responsibilities that may be applicable to his work scope.

PART 1 - GENERAL

1.01 SCOPE:

- A. This specification defines requirements for standby engine-generator electric system. System consists of a natural gas-fueled engine directly coupled to an electric generator, with necessary transfer switches, controls wiring, piping, fuel system cooling, exhaust and accessories, to automatically provide continuous electric power during failure of normal power source.
- B. Furnishing of shop drawings.
- C. Installing testing and owner instruction.
- D. Generator annunciator shall be installed in Central Control.
- E. Caterpillar , ONAN, Generac, or approved equal.

1.02 QUALITY AND EXPERIENCE:

- A. Selling agency to provide shop drawings, furnish components and supervise of installation start-up and testing by factory trained service technician.
- B. UL2200 listed product and ISO9001 manufacturer certification
- C. Selling agency to have 24 hour, franchised service and parts within a radius of 100 miles of project. Selling agency franchised for manufacturer for past 5 years. Furnish nearest location of permanent parts outlets.
- D. Architect is to judge qualifications of installer and give approval of installer.

1.03 SUBMITTALS:

- A. Furnish factory data sheets covering all components of generator equipment, engine generator, battery charger, transfer switch, remote alarm, muffler, etc.
- B. Shop drawings for engine-generator to indicate all requirements of this Section.
- C. Submit with the shop drawings an erection drawing of generator enclosure showing physical arrangement of equipment, piping, electrical work, etc., at a minimum scale of 1/2" = 1'-0".
- D. Furnish system free of injurious torsional and bending vibrations within entire speed range from 0 to 125% of synchronous speed.

PART 2 - PRODUCTS

2.01 ENGINE:

- A. General purpose, industrial, natural gas, solid injection, water cooled, four-cycle, compression ignition type, to operate using natural gas(@2psi) and per ASTM specifications. Engine turbo charged.
- B. Engine Power Rating:
 - 1. Provide rated net horsepower at generator synchronous speed, with all accessories attached, required to produce KW specified, taking into account generator efficiency.
 - 2. Set to produce specified KW without overheating for minimum 24 hours under the following conditions:
 - a. Altitude: 1,000 ft.
 - b. Air temperature at engine intake: 95 degree F.
 - 3. Maximum engine speed - 1800 rpm.
- C. Engine Speed Control:

1. Engine equipped with mechanical flyweight, 5% droop governor to maintain frequency within limits or use of electronic governor(s) controlling engine and generator speed. Adjust governor to +3% speed regulation.
 2. Provide means to provide adjustable speed control.
 3. Governor – manufacturer standard
- D. Crank-Start System:
1. Electric starting motor with solenoid and Bendix or overrunning clutch drive.
 2. Starting motor voltage and ampere rating as recommended by engine manufacturer to start engine without overheating or continuous starting for 60 seconds.
 - a. Provide 12 volt battery system for engine starting.
 - b. Mount batteries on separate rack located beside engine with battery cables and connections. Provide High discharge rate Lead Acid type, 12 volts, with ampere rating required to start engine.
 3. Provide battery charger to maintain batteries at full charge.
 4. Charger to operate from normal or emergency power source.
 5. Furnish high and low adjustable (float) rates.
 6. Provide crank limiter designed to prevent damage during engine cranking (cranking circuit disconnect relay).
 7. Provide with D.C. failure relay for connection to alarm panels.
 8. Battery charger – UL 1236 for Lead Acid batteries, wall mounted in the engine room or in generator enclosure.
- E. Engine Cooling System:
1. Engine liquid cooled with engine mounted, air cooled radiator.
 2. Cooling liquid to circulate through engine block, inter-cooler, oil cooler, etc., as required to completely cool engine system.
 3. Discharge water to air cooled radiator by engine driven pump.
 4. Radiator capacity and cooling characteristics to cool engine discharge liquid adequately for engine to carry rated load with 122 degree F intake air per NFPA110.
 5. Furnish engine coolant with ethylene-glycol anti-freeze to prevent freezing to temperature of -10 degree F.
 6. Furnish electric jacket water heater recommended by manufacturer to maintain cooling water at 90 degree F. Heater rated for generator supply voltage, 1 phase with automatic thermostat.
- F. Engine Protective Devices:
1. Provide engine protective devices each with indicating light.
 - a. Combination alarm and shutdown system for high water temperature and/or low oil pressure.
 - b. Engine overspeed automatic shutdown and alarm.
 - c. Engine failed to start (over crank), and shutdown.
 2. Provide instrument board with following equipment properly connected for service and identified with permanent marking:
 - a. Pressure gage - lubricating oil.
 - b. Temperature gage - coolant outlet.
 - c. Temperature gage - lubricating oil.
 - d. Emergency stop switch.
 - e. Running time meter and tachometer (0 - 125% rated speed).
 3. Furnish oil lubrication system with oil cooler, oil filter with bypass valve, positive displacement oil pump, gear driven from engine.
 4. Shield moving engine parts to prevent contact by personnel.
- G. Air Supply / Exhaust System:

1. Provide Air Cleaner: As recommended by engine manufacturer. A drip-proof crankcase breather tube may terminate in the air cleaner intake.
- H. Exhaust System:
1. Silencer - high degree industrial grade silencing, Maxim M21 or approved equal.
 2. Size exhaust line to prevent excessive back pressure per engine manufacturer's recommendation.
 3. Provide steel flexible connection mounted between engine exhaust manifold and silencer.
- 2.02 NATURAL GAS:
- A. Provide fuel piping, valves, safety device fittings, regulator and safety cut off.
 - B. Fuel piping shall be schedule to black with screwed connection and fittings pipe joint compound suitable for fuel.
 - C. Verify BTU contact of fuel and make appropriate adjustments.
- 2.03 GENERATOR:
- A. Engine-driven, single bearing, open, drip-proof, revolving field, continuous duty, synchronous, brushless, and statically excited conforming to the applicable standards of IEEE and NEMA. Connected to the engine flywheel with flexible type coupling. Output not to deviate from standard sine wave more than 5% or less than 5%; TIF (Telephone Influence Factor) less than 50 based on the 1961 weighting curve.
 - B. Rated 200KW at 0.8 power factor, 250 KVA, 120/208 volts, 3 phase, 4 wire, 60 hertz.
 - C. Winding insulation - Class F with a maximum winding temperature rise of 130 degrees C. above 40 degree C. ambient.
 - D. Provide mounted generator breaker factory sized.
- 2.04 VOLTAGE REGULATOR (Mounted in Engine Control Panel):
- A. Provide solid state voltage regulator to maintain voltage within limits as specified below:
 1. Stability: More than or less than 1.0% maximum voltage variation at any constant load from no load to full load.
 2. Regulation: More than or less than 1.0% maximum voltage deviation between no-load steady state and full-load steady state.
 3. Transient: 25.0% maximum voltage dip or rise on one-step application or removal of 0.8 power factory full load.
 4. Transient: 30.0% maximum voltage dip in most severe motor starting condition.
 5. Transient: 2.0 seconds maximum voltage recovery time with application or removal of 0.8 power factory full load.
 - B. Regulator: Manufacturer Standard
- 2.05 VIBRATION ISOLATION:
- A. Factory Standard
- 2.06 ENGINE CONTROL AND TRANSFER PANEL:
- A. Reuse existing 225 amp transfer switch.
- 2.07 ENCLOSURE:
- A. Weatherproof enclosure to hold all generator components including muffler, batteries and generator breaker.
 - B. Housing shall be same manufacturer as generator.
 - C. Housing shall be sound attenuating type limited sound of set to 79 DBA at 23 feet.
 - D. Housing shall be weather proof with heavy duty latches lockable and tamper proof.]

PART 3 - EXECUTION

3.01 ENGINE-GENERATOR LOAD TEST:

- A. Conduct field load test supervised by manufacturer. The test shall consist of the following items as specified by NFPA 110:
 - B. Load Test: The on-site installation test shall be conducted in the following manner:
 - 1. With prime mover in a "cold start" condition and emergency load at normal operating level, initiate a normal power failure by opening all switches or breakers supplying the normal power to the building or facility. Test load shall be that load which is served by the generator.
 - 2. Observe and record the time delay on start.
 - 3. Observe and record the cranking time until the prime mover starts and runs.
 - 4. Observe and record the time required to come up to operating speed.
 - 5. Record voltage and frequency overshoot.
 - 6. Observe and record time required to achieve steady-state condition with all switches transferred to the emergency position.
 - 7. Record voltage, frequency, and amperes.
 - 8. Record prime mover oil pressure, water temperature, and battery charge rate at 5-minute intervals for the first 15 minutes and at 15-minute intervals thereafter.
 - 9. Continue load test with building load for one hour, observing and recording load changes and the resultant effect on voltage and frequency.
 - 10. Return normal power to the building or facility, record the time delay on retransfer to normal for each switch (15 minutes minimum), and the time delay on prime mover cool down period and shutdown.
 - C. After completion of the test, the prime mover shall be allowed to cool for 5 minutes.
 - D. Full Load Test: A load shall be applied for a (1) one-hour 25% load, (1) one-hour 50% load, and a two (2) hour full-load test. Provide a load equal to 100 percent of the nameplate KW rating of the generator. The full-load test shall be initiated immediately after cooling time by any method which will start the prime mover and, immediately upon reaching rated RPM, pick up 100 percent of nameplate KW rating on one step.
 - E. Cycle Crank Test: Utilize any method recommended by the manufacturer to prevent the prime mover from running. Put the control switch into "run" to cause the prime mover to crank. Cycle crank until alarm.
 - F. Test all safeties specified in NFPA 110.
 - G. Furnish the following to the Engineer at the time of the acceptance test:
 - 1. Copy of certified torsion analysis test of engine and generator. Prototype tests are acceptable.
 - 2. Furnish short circuit current capability at the output of the installed generator.
 - H. Furnish load testing apparatus, connections, load bank, etc., for tests.
 - I. If the tests are stopped for any reason, repeat entire 8 hour test until satisfactory results are obtained.
 - J. Architect (or) Engineer to witness tests.
- 3.02 GUARANTEE:
- A. Manufacturer and Electrical Contractor guarantee the engine-generator system to be free from defects in workmanship and material for one year from date of substantial completion. Replace defective parts without charge to Owner in guarantee period.

SPECIAL INSTRUCTIONS

- (1) The contractor shall fill in all required blanks on the bid pricing form included herein.
- (2) A bid bond in the amount of 5% of the total bid cost shall be included with each bid submitted, but not to exceed \$10,000.00.
- (3) A performance bond and payment bond each in the amount of 100% of the total bid price will be required within fifteen (15) calendar days of the notice of award.
- (4) Contractor shall submit with bid a copy of a certificate of insurance (\$1.0 million minimum) and workman's compensation.
- (5) The successful bidder shall begin work at least 15 calendar days after date of notice to proceed.

All work shall be completed within 45 calendar days from the date of notice to proceed.

- (6) The Contractor shall include in his/her bid price the cost for all materials, labor, equipment, and incidentals necessary for the work to be completed in-place.
- (7) Payment will be made on a monthly basis for work completed. There will be retained five (5) percent of the amount of the work done and will be held until completion of all work and final acceptance by the Marshall County Commission. No further retainage will be held after 50 percent of work completed.

Upon completion of all work, the contractor must give notice of completion of the project by advertising in a local newspaper.

Advertisement must run for a period of four (4) consecutive weeks and provide the County with proof of advertising (affidavit) from the paper, and a release of lien.

Upon completion and acceptance of all work, final payment will be made.

- (8) The Contractor shall indemnify and save harmless Marshall County, Marshall County Commission, the officers and employees from all suits, actions, or claims of any character brought because of any injuries or damages received by any person, persons, or property on account of the said Contractor, or through use of unacceptable materials in constructing the work; or because of any claims or amounts arising or recovered under the "Workman's Compensation Act" or any other law, ordinance, order or decree.
- (9) It shall be the bidder's responsibility to possess all proper City, County, State, and Federal licenses and shall familiarize himself with and shall comply with all Federal, State, and local laws, ordinances, and regulations.
- (10) By signing this contract, the contracting parties affirm, for the duration of the agreement that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom.

Each bidder is required to submit with the bid a certificate of E-Verify.

(11) Bids may be submitted either by mail or in person, however, Marshall County will not be responsible for the security of mailed bids. (Also, if mailing bid, please be advised that we do not receive mail before 10:00 A.M. daily, therefore mail early to ensure prompt arrival).

(12) By signing and submitting of this bid, the vendor certifies that he/she is an equal opportunity employer.

(13) Bidders are required to use this "Invitation For Bids". Bidders shall bid all items, sign, and return all sheets in the "Invitation For Bids" to *Marshall County Engineering, 424 Blount Ave., Suite 305, Guntersville, AL 35976*. Failure to do so will be cause for rejection of bid.

(14) Each individual bid must be submitted in a sealed envelope with the word "BID" and name of item marked on outside of envelope, along with the contractor's license number. **Bids need to be mailed to Marshall County Engineering Department, 424 Blount Ave., Suite 305, Guntersville, AL 35976**

(15) Any questions regarding the generator, or to arrange a site visit, please contact Mr. Brad Kilpatrick at 256-264-3668.

You are invited to bid on the above specifications. Any substitutes offered, other than the items specified, must include information showing that the substitute is of equal or better quality and equally or better suited for the purported use than the item specified. The right to reject any items or materials not of quality or under any provisions of this act is reserved.

THE MARSHALL COUNTY COMMISSION RESERVES THE RIGHT TO ACCEPT AND/OR REJECT ANY AND/OR ALL BIDS.



**JAMES HUTCHESON, CHAIRMAN
MARSHALL COUNTY COMMISSION**