

## INVITATION TO BID

The City of Rochester, New Hampshire is accepting sealed bids for **“Portable Packaged Engine Generator System (Diesel)”**. Bids must be submitted in a sealed envelope plainly marked:

**Portable Packaged Engine Generator System (Diesel)”**

**“Bid # 10-28**

City of Rochester  
31 Wakefield Street  
Rochester, NH 03867  
Attn: Purchasing Agent

All bids must be received no later than **“March 11, 2010”** at **“2:15”** p.m. Actual bid opening will begin at 2:30 p.m. No late bids, faxed, e-mailed or telephone bids will be accepted. Bid proposals and specifications may be obtained by visiting [www.rochesternh.net](http://www.rochesternh.net), or emailing [purchasing@rochesternh.net](mailto:purchasing@rochesternh.net), or by contacting the Purchasing Agent at City Hall, 31 Wakefield Street, Rochester, NH 03867, (603) 335-7602. All bid questions must be submitted in writing (email preferred) to the Purchasing Agent. All bid proposals must be made on the bid proposal forms supplied, and the bid proposal forms must be fully completed when submitted.

### **Bid Specifications**

The City of Rochester is looking to purchase the following Portable Packaged Engine Generator System (Diesel).

- 1) Purchase of a New 30 KW 120/280v 3 Phase Portable Packaged Engine Generator System (Diesel).

OR

- 2) Bid Alternate: Purchase of a Used (less than (<) 2 years old and less than (<) 1,000 original run hours) 30 KW 277/480v 3 Phase, 120/280v 3 Phase and 120/240v 1 Phase (w/derate) Portable Packaged Engine Generator System (Diesel) – Acceptance Subject to City Inspection.

OR

- 3) Bid Alternate: Purchase of a New 30 KW 277/480v 3 Phase, 120/280v 3 Phase and 120/240v 1 Phase (w/ derate) Portable Packaged Engine Generator System (Diesel) – Same Specifications as above Number 2 Bid Alternate except New Unit vs. Used Unit.

The City of Rochester reserves the right to reject any or all bids, to waive technical or legal deficiencies, and to accept any bid that it may deem to be in the best interest of the City.

## CITY OF ROCHESTER, NEW HAMPSHIRE

**BID SPECIFICATIONS****Bid Option 1) NEW PORTABLE PACKAGED ENGINE GENERATOR SYSTEM  
(DIESEL)****PART 1 GENERAL****1.1 SUMMARY****A. SECTION INCLUDES**

1. Portable packaged engine generator system.
2. Critical exhaust silencer and fittings.
3. Fuel tank and associated fuel fittings.
4. Battery and charger.
5. Vibration isolation.
6. Sound Attenuation/weather protective housing.
7. New over-the-road trailer and accessories.
8. Manufacturer's field services.
9. Training.

**1.2 REFERENCES**

- A. ANSI/NEMA 250 - Enclosures for Electrical Equipment 1000 Volts Maximum.
- B. ANSI/NEMA MG1 - Motors and Generators, including all applicable reference standards.
- C. ANSI/NFPA 70 - National Electrical Code.
- D. ANSI/NEMA AB1 - Molded Case Circuit Breakers.

**1.3 SYSTEM DESCRIPTION**

- A. Engine generator system to provide standby source of emergency power in accordance with NEC 700.
- B. The engine generator system shall be mounted on a new over-the-road trailer complete with all accessories suitable for Department of Motor Vehicles registration in the State of NH and within a manufacturer supplied sound attenuation/weather protective enclosure housing, lighting, the engine generator set, fuel tank, battery, battery charger, and the generator controls.
- C. The engine generator shall be trailer mounted on an over-the-road trailer.
- D. The engine shall carry current US EPA Certification for use in mobile applications.
- E. System Capacity – A manufacturer's standard nominal 30 KW standby rating at 0.8 power factor, 120/280 volts, 3 phase, 60 Hz at generator speed of 1800 RPM, and ambient temperature between - 20 and 110 degrees F using radiator cooling. It is the intent that

the generator be a model and type conforming to a standard production unit meeting or exceeding the performance specified.

F. Fuel System - Diesel.

#### 1.4 SUBMITTALS

- A. Submit three (3) sets of shop drawings to the Owner for review and approval.
- B. Submittals shall clearly indicate components being proposed. Any exceptions to the Specifications shall be clearly indicated.
- C. Submit standard manufacturer's information providing fuel consumption rate curves at various loads and electrical diagrams.
- D. Submit product data showing nameplate data, dimensions, weights, ratings, interconnection points, and internal wiring diagrams for engine, generator, control panel, battery, battery rack, battery charger, exhaust silencer, vibration isolators, cord, plug and accessories.
- E. Submit three (3) sets of each of the following to the Owner for review and comment:
  - 1. Operations and Maintenance manuals (O&Ms) - Include instructions for normal operation, routine maintenance requirements, service manuals for engine as Specified below, oil sampling and analysis for engine wear, and emergency maintenance procedures.
  - 2. Submit manufacturer's installation instructions.
  - 3. Submit test data for MG1-16.50, 16.51 and 16.86.2.
- F. Submit two (2) complete copies (at time of delivery) of the engine manufacturers' service manual providing all information necessary to completely dismantle, repair/replace damaged parts and rebuild the engine at time of delivery.

#### 1.5 QUALIFICATION

- A. Manufacturer - Company specializing in packaged engine generator system with minimum ten years documented experience and more than 10 similar units in successful service for at least two years each.
- B. Supplier - Authorized distributor of engine generator manufacturer with service facilities within 50 miles of the City of Rochester, NH.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver trailer mounted engine generator system to the Owner ready for registration for over-the-road use and ready for standby power generation service.
- B. Store and protect products.

## PART 2    PRODUCTS

### 2.1    GENERAL

- A.     The engine generator set shall be new and the manufacturer's latest model.

### 2.2    MANUFACTURERS

- A.     Caterpillar, Kohler
- B.     or approved equal

### 2.3    ENGINE

- A.     Type - 4 cycle, water-cooled with integral radiator, V-type or in-line, compression ignition internal combustion engine.
- B.     Fuel System - Appropriate for use of No. 2 fuel oil.
- C.     Governor (electronic) - Maintain engine speed within 0.5 percent at steady state, and 5 percent from no load to full load, with recovery to steady state within 2 seconds following sudden load changes. Equip governor with means for manual operation and adjustment.
- D.     Safety Devices - Engine shutdown on high water temperature, low oil pressure, over speed, and engine over crank. Limits as specified by manufacturer.
- E.     Engine Starting - DC starting system with positive engagement, number and voltage of starter motors in accordance with manufacturer's instructions.
- F.     Engine Jacket Heater - Thermal circulation type water heater with integral thermostatic control, sized to maintain engine jacket water at 90 degrees F and suitable for operation on 120/240 volts AC. Jacket heater not to exceed 3000 watts.
- G.     Engine Accessories - Fuel filter, lube oil filter, intake air filter, lube oil cooler, gear-driven water pump. Include water temperature gauge, and lube oil pressure gauge on engine-generator control panel.
- H.     Mounting – Furnish an over-the-road trailer complete with all lights and safety equipment for legal use in NH. The trailer shall be tandem axle design, with GVW designed to carry the combined weight of generator set, fuel and all accessory equipment. The trailer shall include electric brakes, 3" pintel eye style connector, one front and two (2) rear stabilizer jack assemblies, and a new spare tire mounted to trailer. Mount the complete engine generator assembly and fuel tank on the trailer. The trailer shall also include lockable weather protective diamond plate cable storage box(es) sized to accommodate one (1) 30' multi-conductor cable sets. Trailer wiring connector must be compatible with existing City vehicle(s) wire connectors.

- I. The oil drain from the engine shall be piped to the exterior of the skid using flexible hosing. A ball valve with hand operator shall be mounted to the skid framing with its discharge end connected through the skid framing and securely connected to the frame. A stainless steel quick-connect shall be installed on the outside of the frame for connection of a removable flexible hose. Provide a three (3) foot piece of flexible hose with a mating quick-connect for oil changes.

## 2.4 FUEL TANK

- A. Provide a skid mounted fuel tank with minimum capacity sufficient to operate the generator at full output for 24 hours. Provide 3-way valve system to allow the connection of auxiliary fuel tank.
- B. Provide a readily visible fuel gauge.
- C. Provide a low fuel cut-off switch.

## 2.5 GENERATOR

- A. Generator - ANSI/NEMA MG 1, three phase, four pole, 12 lead, reconnectible brushless synchronous generator with brushless permanent magnet exciter capable of sustaining a minimum 350 percent of rated current for at least 10 seconds under a 3 phase symmetrical short.
- B. Insulation - ANSI/NEMA MG 1, Class F, epoxy varnish.
- C. Temperature Rise - 105 degrees C continuous. 130 degrees C standby.
- D. Enclosure - ANSI/NEMA MG 1, open drip proof, self-ventilated.
- E. Voltage Regulation - Include generator-mounted volts per Hertz exciter-regulator to match engine and generator characteristics, with voltage regulation  $\pm 2$  percent from no load to full load. Include manual controls to adjust voltage drop  $\pm 5$  percent voltage level, and voltage gain.
- F. Voltage Dip - Not to exceed 30 percent and shall recover to  $\pm 2$  percent of rated voltage within one second.

## 2.6 ACCESSORIES

- A. Exhaust Silencer – Critical type silencer, with muffler companion flanges and flexible stainless steel exhaust fitting, sized in accordance with engine manufacturer's instructions. Exhaust silencer system shall be mounted within the generator enclosure.
- B. Batteries - Heavy duty type lead acid storage batteries, capacity selected by the manufacturer. Match battery voltage to starting system. Include necessary cables and clamps. Provide pre-mounted in the battery tray meeting the requirements below.

- C. Battery Tray - Plastic coated metal tray treated for electrolyte resistance, constructed to contain spillage of electrolyte.
- D. Battery Charger - Current limiting type, 5 Amp D.C. output, designed to float at 2.17 volts per cell and equalize at 2.33 volts per cell. Include overload protection, full wave rectifier, DC voltmeter and ammeter, and 120 volts AC fused input. Provide pre-mounted and pre-wired in the generator enclosure. Locate the charger cord's plug on the outside of the skid near the oil drain.
- E. Line Circuit Breaker – Provide one (1) circuit breaker, to provide over-current protection. NEMA AB 1 molded case circuit breaker on generator output with integral thermal and instantaneous magnetic trip in each pole; sized in accordance with ANSI/NFPA 70. Include battery-voltage operated shunt trip, connection to open circuit breaker on engine failure. Mount unit in enclosure to meet ANSI/NEMA 250, Type 1 requirements. Load side lugs for customer-provided cable shall be included.
- F. Provide flexible fuel lines rated 300 degrees F and 100 PSI, ending in pipe thread.
- G. Engine-Generator Control Panel - ANSI/NEMA 250, Type 1 generator mounted control panel enclosure with engine and generator controls and indicators as follows:
  - 1. Frequency Meter.
  - 2. AC Output Voltmeter.
  - 3. AC Output Ammeter.
  - 4. Output voltage adjustment.
  - 5. Push-to-test indicator lamps, one each for low oil pressure, high water temperature, over speed, and over crank.
  - 6. Engine start/stop selector switch.
  - 7. Engine running time meter.
  - 8. Oil pressure gauge.
  - 9. Water temperature gauge.
- H. Vibration Isolators - Provide vibration isolators to support the complete engine-generator as recommended by the generator manufacturer.
- I. Sound Attenuated Housing - Provide factory-installed sound attenuated housing with silencer mounted internally that shall attenuated noise to 64 dB(A) at 23 feet under full load conditions. Housing shall be constructed of heavy gauge reinforced sheet steel (painted white) and attached to the generator set's standard mounting base and radiator cowling. Housing shall allow ample airflow. Access to the engine generator shall be provided by removable panels on each side of the housing. A hinged door shall provide access to the fuel fill and the instrument panel.

## EXECUTION

### 2.7 INSTALLATION

- A. Install the engine generator and all accessories on a new trailer in accordance with the manufacturer's recommendations.

### 2.8 FIELD QUALITY CONTROL

- A. Before testing, check phasing with phase meter and make necessary wiring changes.
- B. Perform a two-hour full load test using a portable load bank.
- C. During two hour test, record the following at 15 minute intervals (provide three (3) copies of full report):
  - 1. Kilowatts.
  - 2. Amperes.
  - 3. Voltage.
  - 4. Coolant temperature.
  - 5. Room temperature.
  - 6. Frequency.
  - 7. Oil pressure.
- D. Test alarm and shutdown circuits by simulating conditions.

### 2.9 MANUFACTURER'S FIELD SERVICES

- A. After the engine generator has been mounted on the trailer and is ready for start-up, prepare, start, test, and adjust system to specifications.
- B. Test the generator set under load at one of the Owner's pumping stations – determined by the Owner.
- C. Provide to the Owner all information necessary to start and maintain all warranties.
- D. Provide established Standard Operating Procedures (SOP) on nameplates with electrical power options and hook up sequence. Procedures shall be permanently mounted to match that of the existing portable generator set. Nameplates shall be of same material, color and letter size of existing nameplates.
- E. Provide training as Specified below.

### 2.10 TRAINING

- A. Training shall be provided by the Manufacturer's representative at the Wastewater Treatment Plant, after the generator has been successfully tested and adjusted.
- B. There shall be two (2), two-hour sessions that shall be coordinated and scheduled with the Owner.
- C. Training shall include starting/stopping the generator, making adjustments to the voltage output and frequency output, routine maintenance procedures and times each item should be checked/maintained.



- D. Training should provide the Owner's personnel with a basic understanding of where each component is located on the generator, and how to access the maintenance items. It shall include connecting the generator to each pump station using the supplied cord; there shall be no additional charges for any additional time requirements necessary to complete this training section.

## 2.11 CLEANING

- A. After successfully testing the generator and performing the training as specified, the manufacturer's service personnel shall clean the engine and generator surfaces; replace oil, oil filter and fuel filter. All materials necessary to perform this work shall be in addition to the spares listed above.

## 2.12 WARRANTY

- A. The complete Portable Package Engine Generator System (diesel) shall be warranted for a period of one (1) years from the date of final acceptance. Multiple warranties for individual components (engine, generator controls, trailer, etc) will not be acceptable. Satisfactory warranty documents must be provided. This warranty shall be detailed in available written documents. In the judgment of the specifying authority, the manufacturer supplying the warranty for the complete system must have necessary financial and technical expertise with all components supplied to provide adequate warranty support.

END OF SECTION

**BID ALTERNATE SPECIFICATIONS****Bid Alternate 2) USED PORTABLE PACKAGED ENGINE GENERATOR  
SYSTEM (DIESEL)****CRITERIA: LESS THAN (<) 2 YEARS OLD & LESS THAN (<) 1,000 RUN HRS****ACCEPTANCE SUBJECT TO CITY INSPECTION****Bid Alternate 3) NEW PORTABLE PACKAGE ENGINE GENERATOR SYSTEM  
(DIESEL)****PART 3     GENERAL****3.1     SUMMARY****A.     SECTION INCLUDES**

1.     Portable packaged engine generator system.
2.     Critical exhaust silencer and fittings.
3.     Fuel tank and associated fuel fittings.
4.     Battery and charger.
5.     Vibration isolation.
6.     Sound Attenuation/weather protective housing.
7.     New over-the-road trailer and accessories.
8.     Manufacturer's field services.
9.     Training.

**3.2     REFERENCES**

- A.     ANSI/NEMA 250 - Enclosures for Electrical Equipment 1000 Volts Maximum.
- B.     ANSI/NEMA MG1 - Motors and Generators, including all applicable reference standards.
- C.     ANSI/NFPA 70 - National Electrical Code.
- D.     ANSI/NEMA AB1 - Molded Case Circuit Breakers.

**3.3     SYSTEM DESCRIPTION**

- A.     Engine generator system to provide standby source of emergency power in accordance with NEC 700.
- B.     The engine generator system shall be mounted on a original/new over-the-road trailer complete with all accessories suitable for Department of Motor Vehicles registration in the State of NH and within a manufacturer supplied sound attenuation/weather protective enclosure housing, lighting, the engine generator set, fuel tank, battery, battery charger, and the generator controls.
- C.     The engine generator shall be trailer mounted on the original over-the-road trailer.
- D.     The engine shall carry current US EPA Certification for use in mobile applications.

- E. System Capacity – A manufacturer's standard nominal 30 KW standby rating at 0.8 power factor, available voltages of 277/480 volts, 3 phase, 120/280 volts, 3 phase, and 120/240 volt single phase (with derate), 60 Hz at generator speed of 1800 RPM, and ambient temperature between -20 and 110 degrees F using radiator cooling. It is the intent that the generator be a model and type conforming to a standard production unit meeting or exceeding the performance specified.
- F. Fuel System - Diesel.

### 3.4 SUBMITTALS

- A. Submit three (3) sets of shop drawings to the Owner for review and approval.
- B. Submittals shall clearly indicate components being proposed. Any exceptions to the Specifications shall be clearly indicated.
- C. Submit standard manufacturer's information providing fuel consumption rate curves at various loads and electrical diagrams.
- D. Submit product data showing nameplate data, dimensions, weights, ratings, interconnection points, and internal wiring diagrams for engine, generator, control panel, battery, battery rack, battery charger, exhaust silencer, vibration isolators, cord, plug and accessories.
- E. Submit three (3) sets of each of the following to the Owner for review and comment:
  - 1. Operations and Maintenance manuals (O&Ms) - Include instructions for normal operation, routine maintenance requirements, service manuals for engine as Specified below, oil sampling and analysis for engine wear, and emergency maintenance procedures.
  - 2. Submit manufacturer's installation instructions.
  - 3. Submit test data for MG1-16.50, 16.51 and 16.86.2.
- F. Submit two (2) complete copies (at time of delivery) of the engine manufacturers' service manual providing all information necessary to completely dismantle, repair/replace damaged parts and rebuild the engine.

### 3.5 QUALIFICATION

- A. Manufacturer - Company specializing in packaged engine generator system with minimum ten years documented experience and more than 10 similar units in successful service for at least two years each.
- B. Supplier - Authorized distributor of engine generator manufacturer with service facilities within 50 miles of the City of Rochester, NH.

### 3.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver trailer mounted engine generator system to the Owner ready for registration for over-the-road use and ready for standby power generation service.
- B. Store and protect products.

## PART 4 PRODUCTS

### 4.1 GENERAL

- A. Bid Alternate 2) The engine generator set shall be less than (<) 2 years old, have less than (<) 1,000 original run hours and be the manufacturer's latest model. All maintenance and service records shall be provided. Generator set shall be delivered to the Rochester Department of Public Works (DPW) located at 45 Old Dover Road and left for a period of not less than 24 hrs to provide time for complete inspection and trial run. Supplier shall be available to provide information and answer questions regarding generator set.

Bid Alternate 3) The engine generator set shall be new and the manufacturer's latest model.

### 4.2 MANUFACTURERS

- A. Caterpillar, Kohler
- B. or approved equal

### 4.3 ENGINE

- A. Type - 4 cycle, water-cooled with integral radiator, V-type or in-line, compression ignition internal combustion engine.
- B. Fuel System - Appropriate for use of No. 2 fuel oil.
- C. Governor (electronic) - Maintain engine speed within 0.5 percent at steady state, and 5 percent from no load to full load, with recovery to steady state within 2 seconds following sudden load changes. Equip governor with means for manual operation and adjustment.
- D. Safety Devices - Engine shutdown on high water temperature, low oil pressure, over speed, and engine over crank. Limits as specified by manufacturer.
- E. Engine Starting - DC starting system with positive engagement, number and voltage of starter motors in accordance with manufacturer's instructions.
- F. Engine Jacket Heater - Thermal circulation type water heater with integral thermostatic control, sized to maintain engine jacket water at 90 degrees F and suitable for operation on 120/240 volts AC. Jacket heater not to exceed 3000 watts.
- G. Engine Accessories - Fuel filter, lube oil filter, intake air filter, lube oil cooler, gear-driven water pump. Include water

temperature gauge, and lube oil pressure gauge on engine-generator control panel.

- H. Mounting – Furnish original over-the-road trailer complete with all lights and safety equipment for legal use in NH. The trailer shall be tandem axle design, with GVW designed to carry the combined weight of generator set, fuel and all accessory equipment. The trailer shall include electric brakes, 3” pintel eye style connector, one front and two (2) rear stabilizer jack assemblies, and a new spare tire mounted to trailer. Mount the complete engine generator assembly and fuel tank on the trailer. The trailer shall also include lockable weather protective diamond plate cable storage box(es) sized to accommodate two (2) 30’ multi-conductor cable sets. Trailer wiring connector must be compatible with existing City vehicle(s) wire connectors.
- I. The oil drain from the engine shall be piped to the exterior of the skid using flexible hosing. A ball valve with hand operator shall be mounted to the skid framing with its discharge end connected through the skid framing and securely connected to the frame. A stainless steel quick-connect shall be installed on the outside of the frame for connection of a removable flexible hose. Provide a three (3) foot piece of flexible hose with a mating quick-connect for oil changes.

#### 4.4 FUEL TANK

- A. Provide a skid mounted fuel tank with minimum capacity sufficient to operate the generator at full output for 24 hours. Provide 3-way valve system to allow the connection of auxiliary fuel tank.
- B. Provide a readily visible fuel gauge.
- C. Provide a low fuel cut-off switch.

#### 4.5 GENERATOR

- A. Generator - ANSI/NEMA MG 1, three phase, four pole, 12 lead, reconnectible brushless synchronous generator with brushless permanent magnet exciter capable of sustaining a minimum 350 percent of rated current for at least 10 seconds under a 3 phase symmetrical short.
- B. Insulation - ANSI/NEMA MG 1, Class F, epoxy varnish.
- C. Temperature Rise - 105 degrees C continuous. 130 degrees C standby.
- D. Enclosure - ANSI/NEMA MG 1, open drip proof, self-ventilated.
- E. Voltage Regulation - Include generator-mounted volts per Hertz exciter-regulator to match engine and generator characteristics, with voltage regulation  $\pm 2$  percent from no load to full load. Include manual controls to adjust voltage drop  $\pm 5$  percent voltage level, and voltage gain.

- F. Voltage Dip - Not to exceed 30 percent and shall recover to  $\pm 2$  percent of rated voltage within one second.

#### 4.6 ACCESSORIES

- A. Exhaust Silencer – Critical type silencer, with muffler companion flanges and flexible stainless steel exhaust fitting, sized in accordance with engine manufacturer's instructions. Exhaust silencer system shall be mounted within the generator enclosure.
- B. Batteries - Heavy duty type lead acid storage batteries, capacity selected by the manufacturer. Match battery voltage to starting system. Include necessary cables and clamps. Provide pre-mounted in the battery tray meeting the requirements below.
- C. Battery Tray - Plastic coated metal tray treated for electrolyte resistance, constructed to contain spillage of electrolyte.
- D. Battery Charger - Current limiting type, 5 Amp D.C. output, designed to float at 2.17 volts per cell and equalize at 2.33 volts per cell. Include overload protection, full wave rectifier, DC voltmeter and ammeter, and 120 volts AC fused input. Provide pre-mounted and pre-wired in the generator enclosure. Locate the charger cord's plug on the outside of the skid near the oil drain.
- E. Line Circuit Breakers – Provide one (1) circuit breaker, to provide over-current protection at all voltages, in conjunction with an additional over current relay for use in high voltage (480) applications. NEMA AB 1 molded case circuit breaker on generator output with integral thermal and instantaneous magnetic trip in each pole; sized in accordance with ANSI/NFPA 70. Include battery-voltage operated shunt trip, connection to open circuit breaker on engine failure. Mount unit in enclosure to meet ANSI/NEMA 250, Type 1 requirements.
- F. Distribution panel – Provide two (2) single phase California style twist-locks, 50 amps @ 208 volt phase to phase, 120 volt phase to ground; two (2) single phase duplex receptacles, 20 amps @ 120 volts; two (2) three phase NEMA locking receptacles, 20 amps @ 208/120 volts; one (1) single phase locking inlet receptacle (male) for 125 volt, 30 amp rated auxiliary supply; Individual circuit breaker protection for receptacles; two wire remote start connection terminals.
- G. Provide flexible fuel lines rated 300 degrees F and 100 PSI, ending in pipe thread.
- H. Engine-Generator Control Panel - ANSI/NEMA 250, Type 1 generator mounted control panel enclosure with engine and generator controls and indicators as follows:
  - 1. Frequency Meter.
  - 2. AC Output Voltmeter.
  - 3. AC Output Ammeter.
  - 4. Output voltage adjustment.

5. Push-to-test indicator lamps, one each for low oil pressure, high water temperature, over speed, and over crank.
6. Engine start/stop selector switch.
7. Engine running time meter.
8. Oil pressure gauge.
9. Water temperature gauge.
  - I. Vibration Isolators - Provide vibration isolators to support the complete engine-generator as recommended by the generator manufacturer.
  - J. Sound Attenuated Housing - Provide factory-installed sound attenuated housing with silencer mounted internally that shall attenuated noise to 68 dB(A) at 23 feet under full load conditions. Housing shall be constructed of heavy gauge reinforced sheet steel (painted white) and attached to the generator set's standard mounting base and radiator cowl. Housing shall allow ample airflow. Access to the engine generator shall be provided by removable panels on each side of the housing. A hinged door shall provide access to the fuel fill and the instrument panel.

## PART 5 EXECUTION

### 5.1 INSTALLATION

- A. Install the engine generator and all accessories on the original trailer in accordance with the manufacturer's recommendations.

### 5.2 FIELD QUALITY CONTROL

- A. Before testing, check phasing with phase meter and make necessary wiring changes.
- B. Perform a two-hour full load test using a portable load bank.
- C. During two hour test, record the following at 15 minute intervals (provide three (3) copies of full report):
  1. Kilowatts.
  2. Amperes.
  3. Voltage.
  4. Coolant temperature.
  5. Room temperature.
  6. Frequency.
  7. Oil pressure.
- D. Test alarm and shutdown circuits by simulating conditions.

### 5.3 MANUFACTURER'S FIELD SERVICES

- A. After the engine generator has been mounted on the trailer and is ready for start-up, prepare, start, test, and adjust system to specifications.
- B. Test the generator set under load at one of the Owner's pumping stations – determined by the Owner.

- C. Provide to the Owner all information necessary to start and maintain all warranties.
- D. Provide established Standard Operating Procedures (SOP) on nameplates with electrical power options and hook up sequence. Procedures shall be permanently mounted to match that of the existing portable generator set. Nameplates shall be of same material, color and letter size of existing nameplates.
- E. Provide training as Specified below.

#### 5.4 TRAINING

- A. Training shall be provided by the Manufacturer's representative at the Wastewater Treatment Plant, after the generator has been successfully tested and adjusted.
- B. There shall be two (2), two-hour sessions that shall be coordinated and scheduled with the Owner.
- C. Training shall include starting/stopping the generator, making adjustments to the voltage output and frequency output, routine maintenance procedures and times each item should be checked/maintained.
- D. Training should provide the Owner's personnel with a basic understanding of where each component is located on the generator, and how to access the maintenance items. It shall include connecting the generator to each pump station using the supplied cord; there shall be no additional charges for any additional time requirements necessary to complete this training section.

#### 5.5 CLEANING

- A. After successfully testing the generator and performing the training as specified, the manufacturer's service personnel shall clean the engine and generator surfaces; replace oil, oil filter and fuel filter. All materials necessary to perform this work shall be in addition to the spares listed above.

#### 5.6 WARRANTY

- A. Bid Alternate 2): The complete Portable Package Engine Generator System (diesel) shall be warranted for a period of One (1) year from date of final acceptance. Multiple warranties for individual components (engine, generator controls, trailer, etc.) will not be acceptable. Satisfactory warranty documents must be provided. This warranty shall be detailed in available written documents. In the judgment of the specifying authority, the manufacturer supplying the warranty for the complete system must have necessary financial and technical expertise with all components supplied to provide adequate warranty support.



Bid Alternate 3): The complete Portable Package Engine Generator System (diesel) shall be warranted for a period of one (1) year from date of final acceptance. Multiple warranties for individual components (engine, generator controls, trailer, etc.) will be acceptable. Satisfactory warranty documents must be provided. This warranty shall be detailed in available written documents. In the judgment of the specifying authority, the manufacturer supplying the warranty for the complete system must have necessary financial and technical expertise with all components supplied to provide adequate warranty support.

END OF SECTION

CITY OF ROCHESTER NEW HAMPSHIRE  
PURCHASING AGENT**ROCHESTER PORTABLE PACKAGED ENGINE GENERATOR SYSTEM  
(DIESEL)**

## BID PROPOSAL FORM

**1) NEW GENERATOR PER SPECIFICATIONS (Dedicated Voltage):**TOTAL BID: \$ \_\_\_\_\_ / \$ \_\_\_\_\_  
(word) (figure)

Delivery Date: \_\_\_\_\_

**2) BID ALTERNATE: USED GENERATOR PER SPECIFICATIONS (Multiple Voltage Options):**TOTAL BID: \$ \_\_\_\_\_ / \$ \_\_\_\_\_  
(word) (figure)

Delivery Date: \_\_\_\_\_

**3) BID ALTERNATE: NEW GENERATOR PER SPECIFICATIONS (Multiple Voltage Options):**TOTAL BID: \$ \_\_\_\_\_ / \$ \_\_\_\_\_  
(word) (figure)

Delivery Date: \_\_\_\_\_

The Portable Packaged Engine Generator (Diesel) must be delivered in full within 90 days of the bid being awarded.

The undersigned agrees that for extra work, if any, performed in accordance with the terms and provisions of the Contract Documents, he will accept compensation as stipulated therein.

VENDOR NAME: \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_ FAX# \_\_\_\_\_ E-MAIL \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

All Bids are to be submitted on this form and in a sealed envelope, plainly marked on the outside with the Bidder's name and address and the Project name as it appears at the top of the Proposal Form.

## **INSTRUCTION TO BIDDERS**

### **PREPARATION OF BID PROPOSAL**

1. The Bidder shall submit her/his proposal upon the form(s) furnished by the City (attached). The bidder shall specify a unit price for each pay item for which a quantity is given and shall also show the products of the respective unit prices and quantities written in figures in the space provided for that purpose. The total amount of the proposal, written both in words and figures shall be obtained by adding the amounts of all bid items. All words and figures shall be in ink or typed.
2. If a unit price or lump sum bid already entered by the bidder on the proposal form is to be altered it should be crossed out with ink, the new unit price or lump sum bid entered above or below it, and initialed by the bidder, also with ink. In case of discrepancy between the prices written in words and those written in figures, the prices written in words shall govern.
3. The bidder's proposal must be signed with ink by the individual, by one or more members of the partnership, by one or more members or officers of each firm representing a joint venture, by one or more officers of a corporation, or by an agent of the contractor legally qualified and acceptable to the owner. If the proposal is made by an individual, his name and post office address must be shown, by a partnership the name and post office address of each partnership member must be shown; as a joint venture, the name and post office address of each must be shown; by a corporation, the name of the corporation and its business address must be shown, together with the name of the state in which it is incorporated, and the names, titles, and business addresses of the President, Secretary, and Treasurer.
4. All questions shall be submitted in writing to and received by the Purchasing Agent at the above address, a minimum of 7 days prior to the scheduled bid opening. The Purchasing Agent, will then forward both the question and the City's response to the question to all prospective bidders.

### **IRREGULAR PROPOSALS**

Bid proposals will be considered irregular and may be rejected for any of the following reasons:

1. If the proposal is on a form other than that furnished by the Owner or if the form is altered or any part thereof is detached.
2. If there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite or ambiguous as to its meaning.
3. If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
4. If the proposal does not contain a unit price for each pay item listed, except in the case of authorized alternate pay items.

### **DELIVERY OF BID PROPOSALS**

When sent by mail, the sealed proposal shall be addressed to the City of Rochester, Purchasing Agent, 31 Wakefield Street, Rochester, NH 03867. All proposals shall be filed prior to the time and at the place specified in the invitation for bids. Proposals

received after the time for opening of the bids will be returned to the bidder, unopened. Emailed or faxed bid proposals are not acceptable.

### **WITHDRAWAL OF BID PROPOSALS**

A bidder will be permitted to withdraw his proposal unopened after it has been deposited if such request is received in writing prior to the time specified for opening the proposals.

### **PUBLIC OPENING OF BID PROPOSALS**

Proposals will be opened and read publicly at the time and place indicated in the invitation for bids. Bidders, their authorized agents, and other interested parties are invited to be present.

### **DISQUALIFICATION OF BIDDERS**

Either of the following reasons may be considered as being sufficient for the disqualification of a bidder and the rejection of her/his bid proposal(s):

1. Evidence of collusion among bidders.
2. Failure to supply complete information as requested by the bid specifications.

### **AWARD AND EXECUTION OF CONTRACT**

#### **CONSIDERATION OF PROPOSALS**

1. Bids will be made public at the time of opening and may be reviewed only after they have been properly recorded. In case of discrepancy between the prices written in words and those written figures, the prices written in words shall govern. In case of a discrepancy between the total shown in the proposal and that obtained by adding the products of the quantities of items and unit bid prices, the latter shall govern.
2. The right is reserved to reject any or all proposals, to waive technicalities or to advertise for new proposals, if in the judgment of the City, the best interest of the City of Rochester will be promoted thereby.
3. Bid results will be available on the website at [www.rochesternh.net](http://www.rochesternh.net) within 48 hours of the bid opening.

#### **AWARD OF CONTRACT**

If a contract is to be awarded, the award will be made to the lowest responsible and qualified bidder whose proposal complies with all the requirements prescribed as soon as practical after the bid opening. No bid shall be withdrawn for a period of (60) sixty days subsequent to the opening of bids without the consent of the City of Rochester. The successful bidder will be notified, via mail to the address on his proposal, that her/his bid has been accepted and that she/he has been awarded the contract.

#### **CANCELLATION OF AWARD**

The City reserves the right to cancel the award of any contract at any time before the execution of such contract by all parties without any liability against the City.

#### **BID EVALUATION**

In addition to the bid amount, additional factors will be considered as an integral part of the bid evaluation process, including, but not limited to:

1. The bidder's ability, capacity, and skill to perform within the specified time limits.

2. The bidder's experience, reputation, efficiency, judgment, and integrity.
3. The quality, availability and adaptability of the supplies and materials sold.
4. The bidder's past performance.
5. The sufficiency of bidder's financial resources to fulfill the contract.
6. The bidder's ability to provide future maintenance and/or services.
7. Any other applicable factors as the City determines necessary and appropriate (such as compatibility with existing equipment).

### **CONDITIONS AT SITE**

Bidders shall be responsible for having ascertained pertinent local conditions, such as: location, accessibility and general character of the site of the building. The character and extent of existing work within or adjacent to the site, and any other work being performed thereon at the time of the submission of her/his bid.

### **LAWS, PERMITS AND REGULATIONS**

1. The Contractor shall obtain and pay for all licenses and permits as may be required of him by law, and shall pay for all fees and charges for connection to outside services, and use of property other than the site of the work for storage of materials or other purposes.
2. The Contractor shall comply with all State and Local laws, ordinances, regulations and requirements applicable to work hereunder, including building code requirements. If the Contractor ascertains at any time that any requirement of this Contract is at variance with applicable laws, ordinances, regulations or building code requirements, she/he shall promptly notify the City of Rochester in writing.

### **CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE**

1. The Contractor shall deliver at the time of execution of the Contract, certificates of all insurance required hereunder and shall be reviewed prior to approval by the City of Rochester. The certificates of insurance shall contain the description of the Project, and shall state that the companies issuing insurance will endeavor to mail to the City of Rochester ten (10) days notice of cancellation, alteration or material change of any listed policies. The Contractor shall keep in force the insurance required herein for the period of the Contract. At the request of the City of Rochester, the Contractor shall promptly make available a copy of any and all listed insurance policies. The requested insurance must be written by a Company licensed to do business in New Hampshire at the time the policy is issued.
2. The City of Rochester, NH shall be listed as additional insured on all the Certificates of Insurance.
3. The Contractor shall require each Subcontractor employed on the Project to maintain the coverage listed below unless the Contractor's insurance covers activities of the Subcontractor on the Project.
4. No operations under this Contract shall commence until certificates of insurance attesting to the below listed requirements have been filed with and approved by the Department of Public Works, and the Contract approved by the City Manager.
  - a. Workmen's Compensation Insurance

Limit of Liability - \$100,000.00 per accident

b.      Commercial General Liability

Limits of Liability

Bodily Injury: \$1,000,000.00 per occurrence, \$1,000,000.00 aggregate

Property Damage: \$500,000.00 per occurrence, \$500,000.00 aggregate

Combined Single Limit, Bodily Injury and Property Damage:

\$5,000,000.00 aggregate

c.      Automobile Liability

Limits of Liability - \$500,000.00 per accident

5. The Contractor shall indemnify, defend, and save harmless the City of Rochester and its agents and employees from and against any suit, action or claim of loss or expenses because of bodily injury. Including death at any time resulting there from, sustained by any person or persons or on account of damage to property, including loss of use thereof, whether caused by or contributed to by said City of Rochester, its agents, employees or others.

## **ACCIDENT PROTECTIONS**

It is a condition of this Contract, and shall be made a condition of each subcontract entered into pursuant to the Contract. That a Contractor and any Subcontractors shall not require any laborer or mechanic employed in the performance of the Contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to health or safety, as determined by construction safety and health standards of the Occupational Safety and Health Administration, United States Department of Labor, which standards include, by reference, the established Federal Safety and Health regulations for Construction. These standards and regulations comprise Part 1910 and Part 1926 respectively of Title 29 of the Code of Federal Regulations and are set forth in the Federal Register. In the event any revisions in the Code of Federal Regulations are published, such revisions will be deemed to supersede the appropriate Part 1910 and Part 1926, and be effective as of the date set forth in the revised regulation.

## **SUBCONTRACTS**

1. Nothing contained in the Specifications or Drawings shall be construed as creating any contractual relationship between any Subcontractor and the City of Rochester. The Division or Sections of the Specifications are not intended to control the Contractor in dividing the work among Subcontractors or to limit the work performed by any trade.
2. The Contractor shall be as fully responsible to the City of Rochester for the acts and omissions of Subcontractors and of persons employed by her/him, as she/he is responsible for the acts and omissions of persons directly employed by her/him.

## **PROTECTION OF WORK AND PROPERTY**

The Contractor shall, at all times, safely guard the City's property from injury or loss in connection with this Contract. She/he shall, at all times, safely guard and protect her/his own work and that of adjacent property from damage. All passageways, guard fences,

lights and other facilities required for protection by State or Municipal laws, regulations and local conditions must be provided and maintained.

### **USE OF PREMISES AND REMOVAL OF DEBRIS**

#### **The Contractor expressly undertakes at his own expense:**

1. To take every precaution against injuries to persons or damage to property;
2. To comply with the regulations governing the operations of premises which are occupied and to perform his Contract in such a manner as not to interrupt or interfere with the operation of the Institution;
3. To perform any work necessary to be performed after working hours or on Sunday or legal holidays without additional expense to the City, but only when requested to do so by the City;
4. To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other Contractors;
5. Daily to clean up and legally dispose of (away from the site), all refuse, rubbish, scrap materials and debris caused by his operation. Including milk cartons, paper cups and food wrappings left by his employees, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;
6. **All work shall be executed in a workmanlike manner by experienced mechanics in accordance with the most modern mechanical practice and shall represent a neat appearance when completed.**

### **MATERIALS AND WORKMANSHIP**

1. Unless otherwise specified, all materials and equipment incorporated into the work under the Contract shall be new. All workmanship shall be first class and by persons qualified in their respective trades.
2. Where the use of optional materials or construction method is approved, the requirements for workmanship, fabrication and installation indicated for the prime material or construction method shall apply wherever applicable. Required and necessary modifications and adjustments resulting from the substitution or use of an optional material or construction method shall be made at no additional cost to the City.

### **STANDARDS**

1. Materials specified by reference to the number, symbol or title of a specific standard, such as a Commercial Standard, a Federal Specification, Department's Standard Specifications, a trade association standard or other similar standard. Shall comply with requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of advertisement, except as limited to type, class or grade or modified in such reference.
2. Reference in the Specifications to any article, device, product, material, fixture, form or type of construction by name, make or catalog number shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. In such cases the Contractor may, at his option, use any articles, device, product,

material fixture, form or type of construction that, in the judgment of the City expressed in writing to all Bidders before opening of bids as an addendum, is an acceptable substitute to the specified.

3. Substitution During Bid Time: Whenever any particular brand or make of material or apparatus is called for in the Specifications, a Bidder's Proposal must be based upon such material or apparatus, or upon a brand or make which has been specifically approved as a substitution in an Addendum issued to all Bidders during the bidding time.
4. The intent is that the brand or make of material or apparatus that is called for herein establishes a standard of excellence that, in the opinion of the Consultant and Engineer, is necessary for this particular Project.
5. Substitution After Bid Opening: No substitutions will be considered after bids have been opened unless necessary due to strikes, lockouts, bankruptcy or discontinuance of manufacture, etceteras. In such cases, the Contractor shall apply to the City, in writing within ten (10) days of his realizing his inability to furnish the article specified, describing completely the substitution he desires to make.

### **EXTRAS**

Except as otherwise herein provided, no charge for any extra work or material will be allowed unless the Director of Public Works has ordered the same, in writing.

### **GUARANTEE OF WORK**

1. Except as otherwise specified, all work shall be guaranteed by the Contractor against defects resulting from the use of inferior materials, equipment or workmanship for one (1) year from the Date of Final Acceptance.
2. Make good any work or material, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.
3. In any case, wherein fulfilling the requirements of the Contract or of any guarantee, should the Contractor disturb any work guaranteed under another contract, the Contractor shall restore such disturbed work to a condition satisfactory to the Director of Public Works. And guarantee such restored work to the same extent as it was guaranteed under such other contracts.
4. If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the City of Rochester may have the defects corrected and the Contractor shall be liable for all expense incurred.
5. All special guarantees applicable to definite parts of the work that may be stipulated in the Specifications or other papers forming a part of the Contract shall be subject to the terms of this paragraph during the first year of the life of such special guarantee.

### **DEFAULT AND TERMINATION OF CONTRACT**

If the Contractor:

1. Fails to begin work under Contract within the time specified in the notice to proceed; or
2. Fails to perform the work with sufficient workers and equipment, or with sufficient materials to assume prompt completion of said work; or



3. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable; or
4. Discontinues the prosecution of the work; or
5. Fails to resume work, which has been discontinued, within a reasonable time after notice to do so; or
6. Becomes insolvent or has declared bankruptcy, or commits any act of bankruptcy or insolvency; or
7. Makes an assignment for the benefit of creditors; or
8. For any other causes whatsoever, fails to carry on the work in an acceptable manner the City of Rochester will give notice, in writing, to the Contractor for such delay, neglect, and default.

If the Contractor does not proceed in accordance with the Notice, then the City of Rochester will have full power and authority without violating the Contract to take the prosecution of the work out of the hands of the Contractor. The City of Rochester may enter into an agreement for the completion of said Contract according to the terms and conditions thereof, or use such other methods as in the City's opinion will be required for the completion of said Contract in an acceptable manner.

All extra costs and charges incurred by the City of Rochester as a result of such delay, neglect or default, together with the cost of completing the work under the Contract will be deducted from any monies due or which may become due to said Contractor. If such expenses exceed the sum which would have been payable under the contract, then the Contractor shall be liable and shall pay to the City of Rochester the amount of such excess.

### **OBTAINING BID RESULTS**

Bid results will be available on the website at [www.rochesternh.net](http://www.rochesternh.net) within 48 hours of the bid opening.