



Request for Proposals 6 Standby Generators City of Jefferson

August 15, 2019

Background and Instructions to Bidders:

The City of Jefferson has begun the process of developing construction drawings and specifications to install generators at six sites, including MLK #2 Pump Station, Holders Mill Pump Station, Jett Roberts Pump Station, I.W. Davis Pump Station, the Water Treatment Plant, and the Raw Water Intake.

To help facilitate the proposed generators, the City of Jefferson wishes to solicit a proposal from Caterpillar, Kohler, and Onan for furnishing the Generators for the project such that the equipment can be “installed” during the solicitation of bids from electrical contractors, at a later date. Under the “installation” arrangement, the City of Jefferson will purchase the generators directly and then provide the generators to the electrical contractor for installation.

Your proposal should include firm pricing, delivery schedule and a scope of supply (including bill of materials, dimensions and weights for the generator and ATS) for furnishing the required equipment and services in accordance with request for proposals (RFP). Detailed shop drawings will be required after issue of purchase order.

If you are interested in submitting a proposal for this equipment as outlined herein, please submit your proposal by 5:00 pm, September 24, 2019 to the City of Jefferson, 1048 Washington Street, Jefferson, GA 30549. This submittal shall be delivered in paper with an electronic copy sent to Mr. Russ Brink, PE (RBrink@eminc.biz) and Mr. David Zimmer, P.E. (DZimmer@esad-llc.com).

Additional details concerning the proposed Generators and submittal of your proposal are outlined in the following paragraphs.

Project Schedule

For purposes of preparing your proposal, assume the following major activities will be completed on or before the start dates listed:

| <u>Activity</u> | <u>Start Date</u> |
|--|--------------------|
| Receive proposals from suppliers | September 24, 2019 |
| Begin solicitation of bids from electrical contractors | October 24, 2019 |
| Issue Notice to Proceed to electrical contractor | November 26, 2019 |
| Select generator supplier & issue purchase order | November 26, 2019 |

The construction period is estimated to be 4 months.

System Design Parameters

Your proposal shall be based on supplying all of the necessary equipment and technical support needed to provide a complete working system which can be installed by a third party general or electrical contractor. Your quotation shall be in general accordance with the intent of this RFP. Any and all deviations and/or exceptions from the requirements of this RFP shall be clearly noted in your proposal. These deviations and/or exceptions will be taken into consideration in evaluating the proposals. All items which are not included in your proposal, but are required to provide a complete working system shall be clearly indicated in your proposal. The delivery of the equipment must be coordinated with the electrical contractor chosen by the City of Jefferson to install the Generators.

Proposals shall be based on Specification Section 16231 – Generator and Automatic Transfer Switch located at the end of this document.

Submission of Proposals

At a minimum, please provide the following information in the written proposal submitted to the City:

1. Bill of Materials and Drawings: The proposal shall include a 6 separate prices for each generator on the bid form included in this package. Bidder shall include verbiage with a detailed description of all items and services to be supplied within your scope of services. Approximate dimensions and weights of each generator, enclosure, tank, and ATS shall be clearly shown. Formal shop drawings for each location, for review and approval of the Engineer, will only be required from the selected manufacturer.
2. Delivery Schedule: Include lead times for the generator and automatic transfer switch.
3. Proposed Exceptions: Clearly state and summarize all exceptions to the RFP and supporting documentation.

4. Calculations: Calculations supporting generator selection shall be provided for each site. Calculations shall be based on the following parameters:

- a. Voltage: Site Specific
- b. Phase: 3
- c. Frequency: 60
- d. Alt. Temp. Rise Duty: 130C Standby
- e. Fuel Type: Site Specific
- f. Application: Stationary Emergency
- g. Altitude: 500 Feet
- h. Min. Genset Loading: 0%
- i. Max. Genset Loading: 90%
- j. Voltage Dip Limit: 27.5%
- k. Frequency Dip Limit: 15%
- l. Harmonic Distortion Limit: 15%
- m. Max. Ambient Temperature: 100F

A. MLK #2 Pump Station

- a. Voltage: 120/240V, 3Ph, 4W
- b. Fuel Type: Diesel
- c. Step 1 = Pump 1: 15HP, 240V, 3P, ATL Starter
- d. Step 2 = Pump 2: 15HP, 240V, 3P, ATL Starter
- e. Step 1 = Vacuum Pump 1: 0.5HP, 120V, 1P
- f. Step 2 = Vacuum Pump 2: 0.5HP, 120V, 1P
- g. Step 1 = Misc: 2,500W, 120V, 1P

C. Jett Roberts Pump Station

- a. Voltage: 480V, 3Ph, 3W
- b. Fuel Type: Diesel
- c. Step 1 = Pump 1A: 20HP, 480V, 3P, ATL Starter
- d. Step 1 = Pump 1B: 20HP, 480V, 3P, ATL Starter
- e. Step 2 = Pump 2A: 20HP, 480V, 3P, ATL Starter
- f. Step 2 = Pump 2B: 20HP, 480V, 3P, ATL Starter
- g. Step 1 = Misc: 2,500W, 120V, 1P

E. Water Treatment Plant

- a. Voltage: 480V, 3Ph, 3W
- b. Fuel Type: Natural Gas
- c. Step 2 = Pump 1: 150HP, 480V, 3P, RVSS
- d. Step 1 = Panel DC = 50kW, 480V, 3P
- e. Step 1 = Panel M = 75kW, 480V, 3P

B. Holders Mill Pump Station

- a. Voltage: 120/240V, 3Ph, 4W
- b. Fuel Type: Diesel
- c. Step 1 = Pump 1: 25HP, 240V, 3P, ATL Starter
- d. Step 2 = Pump 2: 25HP, 240V, 3P, ATL Starter
- e. Step 1 = Vacuum Pump 1: 1/6HP, 120V, 1P
- f. Step 2 = Vacuum Pump 2: 1/6HP, 120V, 1P
- g. Step 1 = Misc: 2,500W, 120V, 1P

D. I.W. Davis Pump Station

- a. Voltage: 120/240V, 3Ph, 4W
- b. Fuel Type: Diesel
- c. Step 1 = Pump 1: 15HP, 240V, 3P, ATL Starter
- d. Step 2 = Pump 2: 15HP, 240V, 3P, ATL Starter
- e. Step 1 = Misc: 2,500W, 120V, 1P

F. Raw Water Intake

- a. Voltage: 480V, 3Ph, 3W
- b. Fuel Type: LP
- c. Step 1 = Pump 1: 40HP, 480V, 3P, VFD 6 Pulse
- d. Step 1 = Misc: 5,000W at 120V

Support Services: As part of the proposed scope, the Generator supplier shall furnish the services of competent field representatives of the manufacturer. At a minimum, support services shall be based on the following:

- a. Furnish services of manufacturer's field representative experienced in installation of products furnished for not less than -three (3) trips, for one (1) eight (8) hour days each trip, minimum for on-site installation inspection, equipment startup, field testing, certification that all equipment has been installed and started up properly according to the manufacturer's instructions and guidelines, and instructing Owner's personnel in maintenance of equipment. All costs associated with these services shall be included in the lump sum bid amount.
 - b. Demonstrate equipment startup, shutdown, routine maintenance, alarm condition responses, and weekly testing procedures to Owner's personnel during the site visits. The Owner reserves the right to video tape all on-site training.
5. Terms and Conditions: A copy of the manufacture's standard terms and conditions of payment. Final terms and conditions, including payment terms, will need to be negotiated with the general contractors at bid time.
 6. Lump Sum Price: The lump sum price for each generator equipment and services shall include all royalties and license fees. The lump sum prices shall also include delivery of equipment to the job site (FOB destination) and any applicable taxes. The City of Jefferson is tax exempt per attached Sales and Use Tax Certificate of Exemption form.
 7. Guarantees: Include a listing of all equipment guarantees/warranties. A minimum equipment guarantee/warranty (100% replacement costs) of twenty-four (24) months after official start-up and acceptance of the equipment is required.
 8. Spare Parts: Furnish a list of recommended spare parts for the first two years of continuous operation along with a separate lump sum price for furnishing these parts.
 9. O&M Manuals: Costs for Operating & Maintenance & Training Manuals shall be included in the lump sum cost for the equipment. A minimum of six (6) hard copies and one (1) electronic copy of each of these documents shall be supplied.
 10. Schedule: Furnish required times for fabrication and delivery of the materials and equipment to the project site.
 11. Service Center: Provide the address of the factory certified service center that would be responsible for providing technical support and equipment repairs to the City of Jefferson after the Generators are installed and in operation.
 12. E-Verify: Bidder must complete and submit the E-verify Affidavit included in this package.

Selection Criteria

The City of Jefferson will select the proposal they feel best serves their needs. Such things as capital costs, flexibility of operation, ease of construction, ease of maintenance, clarity of proposal and scope of supply, delivery schedules, etc. will be used by the City of Jefferson to evaluate the proposals. Capital costs of the equipment will not be the sole basis of selection.

The City of Jefferson reserves the right during the evaluation process to request additional information and details from vendors and to request clarifications and modifications to the proposals. The vendors shall, at the time of supplying the requested clarifications or modifications to the City of Jefferson, state in writing all required changes in bid price or time.

The City of Jefferson reserves the right to waive any informality or to reject any or all proposals. Proposals must be valid for a minimum of 90 days after the proposal closing date and must be valid for the schedules included herein.

If you have any questions or need any additional information prior to submittal of your proposal, please feel free to David Zimmer at (678) 469-5196 or by email at dzimmer@esad-llc.com (email is preferred). Thank you for your interest in this project.

CONTRACTOR/VENDOR AFFIDAVIT FOR ELECTRONIC VERIFICATION OF WORK AUTHORIZATION PROGRAMS [under O.C.G.A. § 13-10-91(b)(1)]

By executing this affidavit, the undersigned Contractor/Vendor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of City of Jefferson, Georgia (name of public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned Contractor/Vendor will continue to use the federal work authorization program throughout the contract period and the undersigned Contractor/Vendor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the Contractor/Vendor with the information required by O.C.G.A. § 13-10-91 (b). Contractor/Vendor here attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Contractor/Vendor

Six Generators for the City of Jefferson
Name of Project

City of Jefferson, Georgia
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, 20____, in _____(City), _____(State).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

Subscribed and sworn before me

On this the _____ day of _____, 20 ____.

Notary Public

My commission expires: _____

PROPOSAL PRICE FORM

**Six Generator Sets
for the
City of Jefferson, Georgia**

THIS BID IS SUBMITTED TO:

City of Jefferson
147 Athens Street
Jefferson, GA 30549
706-367-5121 (T)

(Hereinafter called "Owner")

THIS BID IS SUBMITTED BY:

(Name)
(Address)

(Telephone)

(Hereinafter called "Bidder")

| Item No. | Description | Unit | Qty | Total for Item |
|-----------------|----------------------------|-------------|------------|--|
| 1 | MLK #2 Pump Station | LS | 1 | Dollars and Cents (Unit Price in Words) |
| 2 | Holdings Mill Pump Station | LS | 1 | Dollars and Cents (Unit Price in Words) |
| 3 | Jett Roberts Pump Station | LS | 1 | Dollars and Cents (Unit Price in Words) |
| 4 | I.W. Davis Pump Station | LS | 1 | Dollars and Cents (Unit Price in Words) |
| 5 | Water Treatment Plant | LS | 1 | Dollars and Cents (Unit Price in Words) |
| 6 | Raw Water Intake | LS | 1 | Dollars and Cents (Unit Price in Words) |

Total Amount Bid: \$ _____

(Price in Words)

NOTE: Amounts shall be shown in words and figures; the amount written in words shall take precedence.

Upon receipt of the written notice of the acceptance of this bid, BIDDER will execute a formal Contract with the City within fifteen (15) days.

Respectfully Submitted: Name: _____

 Address: _____

 Phone No.: _____

 Fax No.: _____

 Email Address.: _____

Dun & Bradstreet Data Universal Numbering System (DUNS) No: _____

FEDERAL TAX NO. OR SOCIAL SECURITY NO.: _____

Signature of Principal: _____

Title: _____

Date: _____

Telephone: _____

ATTEST:

Signature: _____

Corporate Secretary/Partner/Notary

(SEAL)

Name: _____

(Please type)

NOTE: Attest for a corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.

SECTION 16231

GENERATOR AND AUTOMATIC TRANSFER SWITCHES

PART 1 - GENERAL

1.1 REFERENCES

- A. The equipment covered by these specifications shall be designed, tested, rated, assembled and installed in strict accordance with all applicable standards of ANSI, NEC, ISO, U.L., IEEE and NEMA.

1.2 WORK INCLUDED

- A. The work includes supplying a complete integrated emergency generator system at six separate sites. The systems consist of a diesel generator set at the four pump stations, a natural gas generator set at the water treatment plant, and an LP generator set at the intake. The generator sets shall include related component accessories and Automatic Transfer Switches as specified herein.
- B. A complete system 4 hour load test shall be performed for each generator after all equipment is installed.
- C. The equipment supplied and installed shall meet the requirements of the NEC and all applicable local codes and regulations. All equipment shall be of new and current production by a Manufacturer who has 25 years of experience building this type of equipment. Manufacturer shall be ISO9001 certified. All equipment shall be UL rated and listed.
- D. Each generator shall be provided with a weather protective, sound attenuated enclosure. Sound attenuation shall meet the following requirements:
1. MLK #2 Pump Station = 68 dBA at 23 Feet (Full Load)
 2. Holders Mill Pump Station = 68 dBA at 23 Feet (Full Load)
 3. Jett Roberts Pump Station = 78 dBA at 23 Feet (Full Load)
 4. I.W. Davis Pump Station = 78 dBA at 23 Feet (Full Load)
 5. Water Treatment Plant = 78 dBA at 23 Feet (Full Load)
 6. Raw Water Intake = 78 dBA at 23 Feet (Full Load)
- E. The Automatic Transfer Switch shall be NEMA 4X Stainless Steel and rated accordingly:
1. MLK #2 Pump Station = 150A, 240V, 3P, 42 kAIC, Solid Neutral
 2. Holders Mill Pump Station = 175A, 240V, 3P, 42 kAIC
 3. Jett Roberts Pump Station = 200A, 480V, 3P, 25 kAIC
 4. I.W. Davis Pump Station = 100A, 240V, 3P, 42 kAIC
 5. Water Treatment Plant = 800A, 480/277V, 3P, 42kAIC, SERVICE ENTRANCE
 6. Raw Water Intake = 200A, 480/277V, 3P, 42kAIC, SERVICE ENTRANCE

1.3 SUBMITTALS

- A. Engine-generator submittals shall include the following information
1. Factory published specification sheet indicating standard and optional accessories, ratings, etc.
 2. Manufacturer's catalog cut sheets of all auxiliary components such as Automatic Transfer Switches, battery charger, control panel, enclosure, main circuit breaker, etc.
 3. Dimensional elevation and layout drawings of the generator set, enclosure and transfer switchgear and related accessories.
 4. Weights of all equipment.
 5. Concrete pad recommendation, layout and stub-up locations of electrical and fuel systems.
 6. Interconnect wiring diagram of complete emergency system, including generator, switchgear, day tank, remote pumps, battery charger, jacket water heater, remote alarm indications.
 7. Engine mechanical data including heat rejection, exhaust gas flows, combustion air and ventilation air flows, noise data, fuel consumption, etc.
 8. Generator electrical data including temperature and insulation data, cooling requirements, excitation ratings, voltage regulation, voltage regulator, efficiencies, waveform distortion and telephone influence factor.
 9. Generator resistances, reactances, and time constants.
 10. Generator motor starting capability.
 11. Control panel schematics.
 12. Oil sampling analysis, laboratory location, and information.
 13. Manufacturer's and dealer's written warranty.

1.4 WARRANTY

- A. The manufacturer's standard warranty shall in no event be for a period of less than two (2) years from date of substantial completion and shall include repair parts, labor, reasonable travel expense necessary for repairs at the job site, and expendables (lubricating oil, filters, antifreeze, and other service items made unusable by the defect) used during the course of repair. Submittals received without written warranties as specified will be rejected in their entirety.

1.5 PARTS AND SERVICE QUALIFICATIONS

- A. The engine-generator supplier shall have service facilities within 75 miles of the project site and maintain 24-hour parts and service capability. The distributor shall stock parts as needed to support the generator set package for this specific project.
- B. The dealer shall maintain qualified, factory trained service personnel that can respond to an emergency call within 4 hours of notification, 24 hours per day.

PART 2- PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. The generator set shall be Standby
- B. All materials and parts comprising the unit shall be new and unused.

2.2 DIESEL ENGINE

- A. The engine shall be water-cooled inline or vee-type, four cycle compression ignition diesel. It shall meet specifications when operating on number 2 domestic burner oil. Two cycle engines will not be considered. The engine shall be equipped with fuel, lube oil, and intake air filters, lube oil cooler, fuel transfer pump, fuel priming pump, service meter, gear-driven water pump.
- B. The complete engine block shall be machined from one casting. Designs incorporating multiple blocks bolted together are not acceptable.
- C. The engine shall utilize a gear-type, positive displacement, full pressure lubricating oil pump and water-cooled lube oil cooler. Pistons shall be spray-cooled. Provide oil filters, oil pressure gauge, dipstick and oil drain.
- D. Fuel filter and serviceable fuel system components shall be located to prevent fuel from spilling onto generator set batteries.
- E. The engine shall be equipped with an isochronous electronic governor to maintain 0% droop from no load to full load and +/- 0.25% steady state frequency variation. The governor shall be equipped with speed adjustment.

2.3 NATURAL GAS ENGINE

- A. The engine shall be spark ignited, a minimum 10-cylinder, water-cooled, Vee type, four-stroke cycle. The engine shall not use turbocharging.

The engine shall be equipped with fuel, lube oil, intake air filters, lube oil cooler, service meter, gear-driven water pump, instruments, water temperature gauge, and lubricating oil pressure gauge.

The engine speed will be optimized to maintain a BMEP (brake mean effective pressure) less than 120.5 psi, so as to minimize engine wear.

The engine will run at 1,800 rpm during periodic exercising; an internal exerciser will provide an option to test at reduced speed (rpm) so as to minimize unnecessary noise.

- B. Governor: Engine governor shall be Electronic type which shall control the frequency within 3% of rated frequency from no load to full load for droop operation or isochronous frequency regulation when supplying electronic or other non-linear loads. The frequency of any constant load shall remain within a steady-state band width of $\pm 0.25\%$ of rated frequency.
- C. Mounting: The engine-generator set shall be mounted on a structural base supplied by the manufacturer.
- D. Protective Devices: Safety shutoffs for high water temperature, low oil pressure, electrical over-speed, and engine over-crank shall be provided.

2.4 LP ENGINE

- A. The engine speed shall be governed at 1800 rpm, and shall be equipped with the following:
 - 1) Electronic isochronous governor capable of 0.5% steady-state frequency regulation
 - 2) 12-volt positive-engagement solenoid shift-starting motor
 - 3) Automatic battery charging alternator with a solid-state voltage regulation
 - 4) Positive displacement, full-pressure lubrication oil pump, cartridge oil filters, dipstick, and oil drain
 - 5) Dry-type replaceable air cleaner elements for normal applications
 - 6) The engine shall be naturally aspirated and fueled by LP vapor.
 - 7) The engine shall have a minimum of 4 cylinders and be liquid-cooled
- B. The engine shall be EPA certified from the factory
- C. The generator must accept rated load in one-step.

2.5 GENERATOR

- A. The synchronous generator shall be a single bearing, self-ventilated, drip-proof design in accordance with NEMA MG 1 and directly connected to the engine flywheel housing with a flex coupling.
- B. The insulation material shall meet NEMA standards for Class H insulation and be vacuum impregnated with epoxy varnish to be fungus resistant. Temperature rise of the rotor and stator shall not exceed NEMA class F (130° C rise by resistance over 40° C ambient). The excitation system shall be of brushless construction.
- C. The brushless exciter shall be independent of main stator windings (either permanent magnet or auxiliary windings) and shall consist of a three-phase armature and a three-phase full wave bridge rectifier mounted on the rotor shaft. Surge suppressors shall be included to protect the diodes from voltage spikes. Generator shall have the ability to sustain short circuit current of 300% of rated current to allow protective devices to operate.
- D. The automatic voltage regulator (AVR) shall maintain generator output voltage within +/- 0.5% for any constant load between no load and full load. The regulator shall be a totally solid state design which includes electronic voltage buildup, volts per Hertz regulation, three phase sensing, over-excitation protection, loss of sensing protection, temperature compensation, shall limit voltage overshoot on startup, and shall be environmentally sealed.

2.6 CIRCUIT BREAKER

Provide a generator mounted circuit breaker, molded case or insulated case construction. Breaker shall utilize a thermal magnetic trip unit and 24 VDC shunt trip. The breaker shall be UL listed with shunt trip device connected to engine/generator safety shutdowns. Breaker shall be housed in an extension terminal box mounted on the side of the generator. Mechanical type lugs, sized for the circuit breaker feeders, shall be supplied on the load side of breaker.

2.7 CONTROLS

A. Generator Mounted Control Panel:

1. Provide a generator mounted control panel for complete control and monitoring of the engine and generator set functions. Panel shall include automatic start/stop operation, adjustable cycle cranking, digital LCD AC metering (0.5% true rms accuracy) with phase selector switch, digital engine monitoring, shutdown sensors and alarms with horn and reset, adjustable cooldown timer and emergency stop push-button. Panel shall incorporate self-diagnostics capabilities and fault logging. Critical components shall be environmentally sealed to protect against failure from moisture and dirt. Components shall be housed in a NEMA 1/IP22 enclosure with hinged lid.
2. Provide the following digital readouts on the Generator Mounted Control Panel:
 - Engine oil pressure
 - Coolant temperature
 - Engine RPM
 - System DC Volts
 - Engine running hours
 - Generator AC volts
 - Generator AC amps
 - Generator frequency
3. Control Panel Annunciation - Provide the following indications for protection and diagnostics according to NFPA 110 level 1:
 - Low oil pressure
 - High water temperature
 - Low coolant level
 - Overspeed
 - Overcrank
 - Emergency stop depressed
 - Approaching high coolant temperature
 - Approaching low oil pressure
 - Low coolant temperature
 - Low voltage in battery
 - Control switch not in auto. position
 - Low fuel main tank
 - Battery charger ac failure
 - High battery voltage
 - Generator supplying load
 - Spare

2.8 COOLING SYSTEM

- A. The generator set shall be equipped with a rail-mounted, engine-driven radiator with blower fan and all accessories. The cooling system shall be sized to operate at full load conditions and 110° F ambient air entering the room or enclosure (If an enclosure is specified) without derating the unit and 50/50 anti-freeze mixture. The generator set supplier is responsible for providing a properly sized cooling system based on the enclosure static pressure restriction.

2.9 FUEL SYSTEM

- A. Filter/Separator - In addition to the standard fuel filters provided by the engine manufacturer, there shall also be installed a primary fuel filter/water separator in the fuel inlet line to the engine.
- B. All fuel piping shall be black iron or flexible fuel hose rated for this service. No galvanized piping will be permitted. Final fuel piping location will be determined during shop drawing review.
- C. Flexible fuel lines shall be rated for 300 degrees F and 100 PSI.

2.10 EXHAUST SYSTEM

- A. A critical type silencer, companion flanges, and flexible stainless steel exhaust fitting properly sized shall be furnished and installed according to the manufacturer's recommendation.
- B. Mounting shall be provided by the contractor as shown on the drawings. The silencer shall be mounted so that its weight is not supported by the engine.
- C. Exhaust pipe size shall be sufficient to ensure that exhaust back pressure does not exceed the maximum limitations specified by the engine manufacturer.

2.11 STARTING SYSTEM

- A. A DC electric starting system with positive engagement shall be furnished. The motor voltage shall be as recommended by the engine manufacturer.
- B. Jacket Water Heater: A unit mounted thermal circulation type water heater. The heater watt rating shall be 1000 watts minimum, sized by the manufacturer to maintain jacket water temperature at 90 degrees F, and shall be a 120 volt, single phase, 60 hertz. Jacket water heater shall be prewired to a 120V terminal box or duplex receptacle (by generator manufacturer) located inside the generator enclosure.
- C. Batteries: A lead-acid storage battery set of the heavy duty diesel starting type shall be provided. Battery voltage shall be compatible with the starting system. The battery set shall be rated no less than 140 ampere hours and 1000 CCA. Necessary cables and clamps shall be provided. Battery shall be located inside the generator enclosure.
- D. A battery tray shall be provided for the batteries. It shall be treated to be resistant to deterioration by battery electrolyte. Further, construction shall be such that any spillage or boil-over battery electrolyte shall be contained within the tray to prevent a direct path to ground.
- E. Battery Charger: A current limiting battery charger shall be furnished to automatically recharge batteries. Charger shall float at 2.17 volts per cell and equalize at 2.33 volts per cell. It shall include overload protection, silicon diode full wave rectifiers, voltage surge suppressor, DC ammeter, DC voltmeter, and fused AC input. AC input voltage shall be 120 volts, single phase. Charger shall have LED annunciation for low DC volts, rectifier failure, loss of AC power, high DC volts. Amperage output shall be no less than ten (10) amperes. Charger shall be wall mounting type in NEMA 1 enclosure, installed in the generator set enclosure. Battery charger shall be prewired to a 120V terminal box or duplex receptacle (by generator manufacturer) located inside the generator enclosure.

2.12 GENERATOR SET ENCLOSURE – SOUND ATTENUATED AND WEATHER PROTECTIVE

- A. The complete diesel engine generator set, including generator control panel, engine starting batteries and fuel oil tank, shall be enclosed in a factory assembled, weather protective enclosure mounted on the fuel tank base.
- B. The enclosure shall be constructed of corrosion resistant steel with electrostatically applied powder coated baked polyester paint. It shall consist of a roof, side walls, and end walls. Fasteners shall be either zinc plated or stainless steel.
- C. Diesel generators shall include a dual wall fuel tank base of 24 hour capacity at 100% load shall be provided as an integral part of the enclosure. It shall be contained in a rupture basin with 110% capacity. The tank shall be pressure tested for leaks prior to shipment and have all necessary venting per UL142 standards. A locking fill cap, a mechanical reading fuel level gauge, low fuel level alarm contact, and fuel tank rupture alarm contact shall be provided.
- D. The enclosure shall reduce the ambient noise level at full load to a maximum rating shown in Section 1.2 D.
- E. Number of doors on enclosure shall be as required so that all normal maintenance operations, such as lube oil change, filter change, belt adjustment and replacements, hose replacements, access to the control panels, etc., may be accomplished without disassembly of any enclosure components. Access doors shall be fabricated of the same material as the enclosure walls and shall be reinforced for rigidity.
- F. Handles shall be key lockable, all doors keyed alike, and hinges shall be stainless steel. Fasteners shall be stainless steel. Doors shall be of a lift off design allowing one person to remove door if necessary.
- G. Air handling will be sized and designed by the manufacturer for 0.5” static pressure drop through enclosure. Intake openings shall be screened to prevent the entrance of rodents.
- H. Lube oil and coolant drains shall be extended to the exterior of the enclosure and terminated with drain valves. Radiator access shall be through a hinged, lockable cover on enclosure. Cooling fan and charging alternator shall be fully guarded to prevent injury.
- I. Lifting points shall be provided on base frame suitable for lifting combined weight of base tank, generator set and enclosure.

2.13 AUTOMATIC TRANSFER SWITCH

- A. GENERAL
 - 1. The service entrance transfer switch shall be rated for the voltage and ampacity as shown 1.2.F and shall have 600 volt insulation on all parts in accordance with NEMA standards. Service entrance automatic transfer switches shall include a utility main circuit breaker rated for service entrance. Switch shall be capable of being locked out in the OFF position.
 - 2. The current rating shall be a continuous rating when the switch is installed in an unventilated enclosure, and shall conform to NEMA temperature rise standards. Designs which require cabinet ventilation are unacceptable and do not meet this specification.

3. The unit shall be rated based on all classes of loads, i.e., resistive, tungsten, ballast and inductive loads. Switches rated 400 amperes or less shall be UL listed for 100% tungsten lamp load.
4. As a precondition for approval, all transfer switches complete with accessories shall be listed by Underwriters Laboratories, under Standard UL 1008 (automatic transfer switches) and approved for use on emergency systems.
5. The withstand current capacity of the main contacts shall not be less than 20 times the continuous duty rating when coordinated with any molded case circuit breaker established by certified test data.
6. Temperature rise tests in accordance with UL 1008 shall have been conducted after the overload and endurance tests to confirm the ability of the units to carry their rated currents within the allowable temperature limits.
7. Transfer switches shall comply with the applicable standards of UL, CSA, ANSI, NFPA, IEEE, NEMA and IEC.
8. The transfer switches shall be supplied with a solid state control panel as detailed further in these specifications.

B. SEQUENCE OF OPERATION

1. The ATS shall incorporate adjustable three phase under-voltage sensing of the normal source.
2. When the voltage of any phase of the normal source is reduced to 80% of nominal voltage, for a period of 0-10 seconds (programmable) a pilot contact shall close to initiate starting of the engine generator.
3. The ATS shall incorporate adjustable single phase under-voltage sensing of the emergency source.
4. When the emergency source has reached a voltage value within 10% of nominal voltage and achieved frequency within 5% of the rated value, the load shall be transferred to the emergency source after a programmable time delay.
5. When the normal source has been restored to not less than 90% of rated voltage on all phases, the load shall be re-transferred to the normal source after a time delay of 0 to 30 minutes (programmable). The generator shall run unloaded for 5 minutes (programmable) and then automatically shut down. The generator shall be ready for automatic operation upon the next failure of the normal source.
6. If the engine generator should fail while carrying the load, retransfer to the normal source shall be made instantaneously upon restoration of proper voltage (90%) on the normal source.
7. The transfer switch shall be equipped with a solid state control panel. The control panel shall perform the operational and display functions of the transfer switch. The display functions of the control panel shall include ATS position and source availability. Provide auxiliary sets of contacts for remote monitoring of ATS position.
8. The control panel shall include indicators for timing functions, and ATS test switch.
9. The control panel shall be provided with calibrated pots (accessible only by first opening the lockable cabinet door) to set time delays, voltage and frequency sensors. The ATS shall be capable of being adjusted while the controls are energized and the unit in automatic mode. Designs which force a "programming mode" or require the controls be de-energized during adjustment are unacceptable.

10. The control panel shall be opto-isolated from its inputs to reduce susceptibility to electrical noise and provided with the following inherent control functions and capabilities:

An LED display for continuous monitoring of the ATS functions.

Test switch to simulate a normal source failure.

Time delay to override momentary normal source failure prior to engine start. Field programmable 0-10 seconds (continuously adjustable via a calibrated potentiometer factory set at 3 seconds.

Time delay on retransfer to normal source, continuously adjustable 0-30 minutes, factory set at 30 minutes. If the emergency source fails during the retransfer time delay, the transfer switch controls shall automatically bypass the time delay and immediately retransfer to the normal position.

Time delay on transfer to emergency, continuously adjustable 0-15 seconds, factory set at 1 second.

An in-phase monitor or time delayed neutral shall be provided to prevent excessive transient currents from switching motor loads.

An interval-type automatic clock exerciser with load/no load electability shall be incorporated in the ATS.

C. CONSTRUCTION AND PERFORMANCE

1. The automatic transfer switch shall be of double throw construction operated by a reliable electrical mechanism momentarily energized. There shall be a direct mechanical coupling to facilitate transfer in 6 cycles or less.
2. The normal and emergency contacts shall be mechanically interlocked such that failure of any coil or disarrangement of any part shall not permit a neutral position.
3. For switches installed in systems having ground fault protective devices, and/or wired so as to be designated a separately derived system by the NEC, a 4th pole shall be provided. This additional pole shall isolate the normal and emergency neutrals. The neutral pole shall have the same withstand and operational ratings as the other poles and shall be arranged to break last and make first to minimize neutral switching transients. Add-on or accessory poles that are not of identical construction and withstand capability are not acceptable.
4. The contact structure shall consist of a main current carrying contact, which is a silver alloy with a minimum of 50% silver content. The current carrying contacts shall be protected by silver tungsten arcing contacts on all sizes above 400 Amps.
5. The automatic transfer switch manufacturer shall certify sufficient arc interrupting capabilities for 50 cycles of operation between a normal and emergency source that are 120 degrees out of phase at 480 volts, 600% of rated current at .50 power factor. This certification is to ensure that there will be no current flow between the two isolated sources during switching.
6. All relays shall be continuous duty industrial type with wiping contacts. Customer interface contacts shall be rated 10 amperes minimum. Coils, relays, timers and accessories shall be readily front accessible. The control panel and power section shall be interconnected with a harness and keyed disconnect plugs for maintenance.
7. Main and arcing contacts shall be visible without major disassembly to facilitate inspection and maintenance.

8. A manual handle shall be provided for maintenance purposes with the switch de-energized. An operator disconnect switch shall be provided to defeat automatic operation during maintenance, inspection or manual operation.
9. The switch shall be mounted in a NEMA 4X Stainless Steel outdoor enclosure unless otherwise indicated on the plans.
10. Switches composed of molded case breakers, contactors or components thereof not specifically designed as an automatic transfer switch will not be acceptable.
11. To afford the advantage of a single source of supply to the owner, the automatic transfer switch shall be supplied by the manufacturer of the engine generator set and covered under the same warranty program.

PART 3 - EXECUTION

3.1 START-UP AND TESTING

- A. After installation is complete and normal power is available, the manufacturer's local dealer shall perform the following:
 1. Verify that the equipment is installed properly.
 2. Check all auxiliary devices for proper operation, including battery charger, jacket water heater(s), generator space heater, remote annunciator, etc.
 3. Test all alarms and safety shutdown devices for proper operation and annunciation.
 4. Check all fluid levels.
 5. Start engine and check for exhaust, oil, fuel leaks, vibrations, etc.
 6. Verify proper voltage and phase rotation at the transfer switch before connecting to the load.
 7. Connect the generator to building load and verify that the generator will start and run all designated loads in the plant.
- B. Perform a 4 hour load bank test at full nameplate load using a load bank and cables supplied by the local generator dealer. Observe and record the following data at 15 minute intervals:
 1. Service meter hours
 2. Volts AC - All phases
 3. Amps AC - All phases
 4. Frequency
 5. Power factor or Vars
 6. Jacket water temperature
 7. Oil Pressure
 8. Fuel pressure
 9. Ambient temperature
- C. Operation and Maintenance Manuals
 1. Provide three (3) sets of operation and maintenance manuals covering the generator, switchgear, and auxiliary components. Include parts manuals, final as-built wiring interconnect diagrams and recommended preventative maintenance schedules.

3.2 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators.

1. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, troubleshooting, servicing, and maintaining equipment.
2. Review data in maintenance manuals. Refer to Division 1 Section "Operation and Maintenance Data".
3. Schedule training with Owner, with at least seven days' advance notice.
4. Minimum Instruction Period: Eight hours. **END OF SECTION**

HOTEL/MOTEL TAX EXEMPTION REQUEST

Georgia law authorizes an exemption from local option excise tax on rooms, lodgings and accommodations for Georgia government employees traveling on official business.

Official Code of Georgia Annotated Section 48-13-51(a) (1) "...no tax shall be levied as provided in this code section upon the fees or charges for any rooms, lodgings, or accommodations furnished for a period of one or more days for use by Georgia state or local government officials or employees when travelling on official business."

This certifies that _____
Name of State or Local Government Official

was a guest at the _____
Name of Public Accommodation

For the period _____ 20__ to _____ 20__

The above named individual represented:

Name of State or Local Government Agency

Address

Telephone Number

I. D. or Social Security Number

And was on official business for the above named agency during the period for which the exemption is requested.

Signature of Official

Date:

Representative of Lodging Place

Date:

PROVIDED BY GEORGIA HOSPITALITY & TRAVEL ASSOCIATION – AUG., 1987



Federal Tax ID#
58-6000597

STATE OF GEORGIA
DEPARTMENT OF REVENUE
SALES TAX CERTIFICATE OF EXEMPTION
GEORGIA PURCHASER OR DEALER

To: _____
(SUPPLIER) (DATE)

(SUPPLIER'S ADDRESS) (CITY) (STATE) (ZIP CODE)

THE UNDERSIGNED DOES HEREBY CERTIFY that all tangible personal property purchased or leased after this date will be for the purpose indicated below and that this certificate shall remain in effect until revoked in writing. Any tangible personal property obtained under this certificate of exemption is subject to the sales and use tax if it is used or consumed by the purchaser in any manner other than that indicated on this certificate. (Check appropriate box.)

- 1. Purchases or leases of tangible personal property or services for resale. O.C.G.A. § 48-8-30.
- 2. Purchases or leases of tangible personal property or services made by the Federal Government, The American Red Cross, Georgia State Government, any county, municipality, qualifying authority or public school system of this state. When paid for by warrant on appropriated Government funds. A Georgia Sales and Use tax number is not required for this exemption. O.C.G.A. § 48-8-3(1)(6)(6.1)(6.2)
- 3. Purchases or leases of tangible personal property or services for **RESALE ONLY** by a church, qualifying nonprofit child caring institution, nonprofit parent teacher organization or association, nonprofit private school (grades K-12), nonprofit entity raising funds for a public library, member councils of the Boy Scouts of the U.S.A. or Girl Scouts of the U.S.A. **THIS EXEMPTION DOES NOT EXTEND TO ANY PURCHASE TO BE USED BY OR DONATED BY THE PURCHASING ENTITY.** A Georgia Sales and Use tax number is not required for this exemption. O.C.G.A. § 48-8-3(15)(39)(41)(56)(59)(71)
- 4. Materials used for packaging tangible personal property for shipment or sale. Such materials must be used solely for packaging and must not be purchased for reuse by the shipper or seller. A Georgia Sales and Use tax number is not required for this exemption. O.C.G.A. § 48-8-3(94)
- 5. Aircraft, watercraft, motor vehicles, and other transportation equipment manufactured or assembled in this state sold by the manufacturer or assembler for use exclusively outside of this state when possession is taken by the purchaser within this state for the sole purpose of removing the property from this state under its own power due to the fact that the equipment does not lend itself more reasonably to removal by other means. A Georgia Sales and Use tax number is not required for this exemption. O.C.G.A. § 48-8-3(32)
- 6. The sale of aircraft, watercraft, railroad locomotives and rolling stock, motor vehicles, and major components and replacement/repair parts of each, which will be used principally to cross the borders of this state in the service of transporting passengers or cargo by common carriers in interstate or foreign commerce under authority granted by the United States government. Private and contract carriers are not exempt. O.C.G.A. § 48-8-3(33)(A)
- 7. Purchases or leases of tangible personal property or services made by a federally chartered credit union, credit unions organized under the laws of this state, and credit unions organized under the laws of the United States and domiciled within this state. A Georgia Sales and Use tax number is not required for this exemption. 12 U.S.C.S. 1768; O.C.G.A. § 48-6-97

(Describe Purchaser's Business Activity)

Under penalties of perjury I declare that this certificate has been examined by me and to the best of my knowledge and belief is true and correct, made in good faith, pursuant to the sales and use tax laws of the State of Georgia.

Business Name: CITY OF JEFFERSON Sales Tax Number: _____

Business Address: 147 ATHENS STREET City: JEFFERSON State: GA Zip Code: 30549

Purchaser's Name: AMIE PIRKLE Signature: Amie Pirkle Title: FINANCE DIRECTOR

A dealer must secure one properly completed certificate of exemption from each buyer making purchases without payment of the tax. The dealer must maintain a copy of the certificate of exemption presented for audit purposes.