Chain of Lakes City Centennial Celebration 1911 - 2011

June 30, 2011

Addendum 1

ITB-11-66

The Invitation To Bid –Portable Trailer Mounted Generators, ITB-11-66, is hereby changed by correction of the following:

1. Replaced the specifications with the attached Addendum 1 specifications. (The changes are primarily to the "receptacles").

All other terms and conditions remain the same.

Sincerely,

CITY OF WINTER HAVEN

Bob Bishop

Procurement Services Division Director

Addendum 1

One (1) ea 56kW Mobile Generator Set

The complete self-contained portable diesel engine generator electric system shall be furnished and installed with fuel tank, powder coated aluminum enclosure, direct mounted alternator to engine, generator set control panel, and all accessories necessary for a complete and operable trailer mounted Generator set. All materials and parts shall be new. Each component shall be of current design from the manufacture regularly engaged in the production of such equipment. The set shall be of a standard model in regular production at the manufacturer's place of business. The set shall be of a type that complies with the latest edition of the National Electrical Code, all applicable state, local, and federal codes and be approved by Underwriters Laboratories.

The material and workmanship used in the manufacture of this equipment shall be of the highest quality consistent with the current standards for like equipment, the equipment shall be manufactured in such a manner so as to conform to the latest applicable IEEE, ANSI, ISA, NEMA, and EEIA Standards.

Genset shall be powered by a Perkins, Caterpillar, KMC/Generac, or equal liquid cooled compression ignition diesel engine. Engine shall be a minimum EPA tier III compliant, in-line four cylinder, turbocharged, four stroke, direct injected, and electronically governed. Engine shall be fitted by the engine manufacturer with a radiator with coolant overflow bottle, heavy duty dry type air cleaner, 12-volt starter and 70-amp belt driven battery charging alternator. Engine shall be rated to provide full power at an ambient temperature of 40°C with no loss of power. The engine shall be fitted with drain lines for engine oil and coolant, both extended to the exterior of the enclosure, with ball valves for ease of maintenance. The engine shall be equipped with a thermostatically controlled jacket water heater rated for 1500watts, 120vac, and 1ph. Each heater hose shall have a ball valve installed to allow service to the jacket water heater without draining of all of engine coolant.

The alternator shall be of the latest commercial type and be manufactured by Marathon Electric, Caterpillar, Generac or equal. Design configuration shall be four pole, 12-lead reconnectable, brushless, single bearing and include PMG excitation with a DVR 2000E automatic solid state voltage regulator or approved equal that is true RMS 3 phase sensing, , Soft-Start Ramp on Initial Start-up, Engine Unloading, Overvoltage Shutdown, VAR/PF Controller, Encapsulated Design, Auto/manual Mode. Alternator shall have class 'H' insulation and be rated to provide full output at 40°C at a temperature rise of 130°C. Standby duty rated at 56kW, 70 kVA @ 1800 RPM, Prime duty rated at 51 kW, 64 kVA @ 1800 RPM, and 0.8 power factor.

Engine and alternator assembly shall be mounted on heavy duty vibration isolators and cross-members which are to be mounted directly to the trailer bed as described below. The engine radiator must be filled to full capacity with engine manufacturers recommend 50/50 mix coolant.

Owner's manuals for all primary components must be provided in a plastic box mounted inside the weather-proof enclosure. One additional copy of the O & M manuals will be included and furnished to the owner upon delivery of unit. Manuals to include manufactures operating and maintenance instructions, unit electrical wiring schematics (AC and DC), make, model, serial numbers of both the engine and the generator set. Include information such as fuel, air, and oil filter part numbers, recommended spare parts, etc.

The entire generator set package, including the trailer shall be covered by a two-year 1,500 hour warranty provided through the genset manufacturer. No warranties through multiple manufacturers will be accepted. Generator to be transported by and to the authorized serving dealer for warranty repairs during normal business hours.

Control panel shall be a solid state microprocessor based open protocol generator set controller with a large LCD display and event recording. The operational functions to be displayed are: oil pressure, coolant temperature, AC volts, AC amps per phase, hertz, DC volts, fuel level and run-time. The controller shall be programmed to provide safety shutdown for over & under voltage, over & under speed, low oil pressure, high coolant temperature, and low-fuel level. The controller is to be equipped with a manual emergency/lockout pushbutton shut down switch. The controller shall be J1939 canbus communication capable and NFPA110 stage one compliant. Control panel shall have available seven (7) inputs and four (4) outputs for additional communication. The controller is to be mounted internally in the enclosure with weather proof lockable access door. A voltage adjustment shall be provided in the panel to adjust voltage in all voltage positions.

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Generator set must have a 200-amp mainline circuit breaker mounted to the side of the alternator in an aluminum box and shall contain a 12vdc shunt trip to trip on any common fault.

Complete diesel engine generator set including control panel, engine starting batteries and charger shall be mounted within the factory assembled weather-proof aluminum enclosure. The enclosure must be constructed of .090 marine grade aluminum and have a white powder coat finish applied by the manufacture of the aluminum on both the exterior and interior walls. The enclosure shall be insulated with sound attenuation foam manufactured by Polymer Technologies, type PAFD-XXX BU black urethane or equal. The insulation shall be resistant to high temperatures, fuel, and oil. The enclosure is to have hinged, removable, keyed alike doors. The sound attenuated enclosure noise level is not to exceed 73-75dba @ 21 feet.

The exhaust plenum chamber shall be insulated with melamine foam manufactured by Polymer Technologies, type PF-050-RAF or equal with foil face. All insulation foam is to be flame retardant and recognized by Underwriters Laboratory.

The interior of the enclosure shall be fitted with an 8-watt 12-volt DC fluorescent lamp controlled with a 60-minute timer switch that shuts off the lights after 60 minutes.

The generator set critical grade exhaust silencer shall be a residential quality and mounted within the confines of the enclosure assembly. The flexible exhaust connection from the engine to the exhaust silencer must be stainless steel. All cooling and exhaust must exit vertically from the enclosure. The exhaust silencer outlet stack pipe shall be fitted with an aluminum rain cap.

A two-wire connection shall be provided on the exterior rear of the enclosure in a weather protective box for connection to an automatic transfer switch.

The generator assembly shall be fitted with an electronic current limiting battery charge rated at 6-amp 12 VDC output to automatically charge batteries. The charger shall be dual charge rate with automatic switching to boost rate when required. Shall be so designed that it shall not be damaged and shall not trip its circuit protective device during engine cranking period. The cord of the battery charger and the jacket water heater shall not be cut but shall be long enough to reach a standard, NEMA 3R, duplex receptacle and box that is mounted on the interior of the package. The duplex receptacle shall be powered through a 120-volt, single phase, 15 amp male connector extend to the exterior of the rear enclosure or approved equal, with weather-proof cover. The generator set shall be provided with a group 24/12-volt sealed wet cell battery(s) of not less than 135 AH with sufficient capacity to provide 90 seconds total cranking time without recharging. It shall be mounted in a rack with J-Bolt hold down bolts. The battery shall be rated at a minimum of 48 month replacement life cycle. Battery(s) shall be located for easy removal and servicing.

The generator set shall have safety labels applied in accordance with the requirements of UL2200.

All AC output shall be routed through a voltage selection switch configured to provide:

- 56kW at 120/240, 3-phase
- 54.7kW at 120/208, 3-phase
- 56kW at 277/480, 3-phase
- 45kW at 120/240, 1-phase

Power output connectors shall be provided on the rear exterior face of the generator set enclosure. The connectors shall be of a Cam-Lok style with a total rating of 400-amps.

A 125-amp load center will be mounted within the enclosure providing breakers for protection for the following additional receptacles to be provided:

- 4 Duplex x 20 amp, 120-volt (2 Duplex x 20-amp single phase GFCI receptacles and 2 x 20-amp breaker protected receptacles).*
- 1 x 30-amp, 120-volt*
- 1 x 30-amp, 250-volt*
- 1 x 50-amp, 250-volt*

*All power outlets shall have weather-protective covers.

A 5 wire, 200amp free air rated, 1C, 600/2000V 90 degree C, SO Cable shall be provided with a Russellstoll type plug model JPS 2044 FR. No exceptions. The cable shall be 30 feet from the storage box in length as measured from the storage box to the end of the Russellstoll plug. Conduit shall be ran from the cable storage box to the rear of the machine where Five (5) Male twist lock, 400amp rated connectors shall be applied. Additional cable length shall be supplied to provide connection to the rear connection points without any strain or binding of the male cable twist lock connectors to the power outlet connectors of the machine. The male connectors shall match the power outlet connectors of the machine and if not used stored in a tray at rear of machine.

The generator set shall be mounted on a DOT approved dual-axle 7,000# trailer. The trailer shall have:

- A 4' x 12 'diamond plate top deck.
- Shall be DOT approved with proper serial number data plate indicating weight capacity.
- Electric activated brakes with vehicular plug connector. Include all required devices and a vehicular connector receptacle to provide operation of the hydraulic brake system. The hydraulic brakes shall have a dump valve that engages when the vehicle is put into reverse.
- A pintle ring towing connection shall be provided (no exceptions). Trailer will have all necessary safety equipment to include but not limited to 30" safety chains, fenders, and DOT lighting package with standard round 7pin flat blade wired hitch receiver, and a cable storage box adequately sized to store 30+ feet of cable with connector as indicated above with the lid shut and locked. Cable storage box shall also be modified to allow for the cable to come out of the storage box on the driver side and have the lid shut and be locked. Special attention needs to be given to where the cable comes out of the storage box to ensure no damage is made to the cable.
- An integral approx. 210 gallon fuel tank and sized for minimum 24 hour fuel supply. Tank will be finished painted a U-Pol's top-class super-tough durable 2-pack urethane coating or equal. Paint is to protect against surface rust, corrosion, salt, damp and extreme temperatures. Finish paint is to be stain-proof, U.V. resistant, waterproof, and carry same two (2) year warranty. The final finish shall not only be applied to the tanks sides and top but also be applied to the tank's underside. The sub base fuel tank shall also include but not be limited to suction, return, tank drain, fittings with key lockable Fuel filler cap. Tank to include a manual fuel level gauge and fuel level sender to annunciate panel of a low fuel level alarm when the fuel level reaches 10% of tank capacity.
- Tires shall be minimum load range D – 8 Ply.
- One hand cranked gear operated jack stand fitted to the trailer tongue and two hand cranked gear operated stands on the rear of the trailer for leveling and stabilization of unit. All stands to be equipped with sand shoes. A two (2) way plane leveling bubble shall be mounted permanently to the tongue of the trailer to ensure proper leveling.
- The generator set / trailer package <u>shall not</u> be set up for single point lifting.

Start up and commissioning:

- Four (4) hours start-up including operational test of equipment showing proper connection of cables with safety issues performed by factory trained technician. The start-up technician will instruct personnel how to operate and maintain the equipment in accordance with the manufacturer's requirements.

Conditions:

- All product shall be new and of current design.
- Initial filling of oil and antifreeze. (diesel fuel by others)
- In addition to equipment specified, the unit shall be equipped with all standard equipment, features, and accessories as specified by the manufacture for this model and shall comply with all EPA Emission Standards and all Motor Vehicle Safety Standards as established by the U.S. Department of Transportation.
- The successful bidder shall be responsible for delivering the generators that are properly serviced, clean, and ready for operation.
- Equipment shall be completely assembled and tested at the factory prior to shipment.

Addendum 1

Three (3) ea 30kW Mobile Generator Set

The complete self-contained portable diesel engine generator electric system shall be furnished and delivered with fuel tank, powder coated aluminum enclosure, direct mounted alternator to engine, generator set control panel, and all accessories necessary for a complete and operable trailer mounted Generator set. All materials and parts shall be new. Each component shall be of current design from the manufacture regularly engaged in the production of such equipment. The set shall be of a standard model in regular production at the manufacturer's place of business. The set shall be of a type that complies with the latest edition of the National Electrical Code, all applicable state, local, and federal codes and be approved by Underwriters Laboratories.

The material and workmanship used in the manufacture of this equipment shall be of the highest quality consistent with the current standards for like equipment, the equipment shall be manufactured in such a manner so as to conform to the latest applicable IEEE, ANSI, ISA, NEMA, and EEIA Standards.

Genset shall be powered by a John Deere, Perkins, Caterpillar, KMC/Generac, or equal liquid cooled compression ignition diesel engine. Engine shall be a minimum EPA tier III compliant, in-line four cylinder, turbocharged four stroke, direct injected, and electronically governed. Engine shall be fitted by the engine manufacturer with a radiator with overflow bottle, heavy duty dry type air cleaner, 12-volt starter and 70-amp belt driven battery charging alternator. Engine shall be rated to provide full power at an ambient temperature of 40°C with no loss of power. The engine shall be fitted with drain lines for engine oil and coolant, both extended to the exterior of the enclosure, with ball valves for ease of maintenance. The engine shall be equipped with a thermostatically controlled jacket water heater rated for 1500watts, 120vac, and 1ph. Each heater hose shall have a ball valve installed to allow service to the jacket water heater without draining of all of engine coolant.

The alternator shall be of the latest commercial type and manufactured by Marathon Electric, Caterpillar, Generac, or equal. Design configuration shall be four-pole, 12-lead reconnectable, brushless, single bearing and include a PMG excitation with a DVR 2000E automatic solid state voltage regulator or approved equal that is true RMS 3 phase sensing, , Soft-Start Ramp on Initial Start-up, Engine Unloading, Overvoltage Shutdown, VAR/PF Controller, Encapsulated Design, Auto/manual Mode, . Alternator shall have class 'H' insulation and be rated to provide full output at 40°C at a temperature rise of 130°C. Standby duty rated at 30kW, 38 kVA @ 1800 RPM. Prime duty rated at 27 kW, 34 kVA @ 1800 RPM, and 0.8 power factor.

Engine and alternator assembly shall be mounted on heavy duty vibration isolators and cross-members which are to be mounted directly to the trailer bed as described below. The engine radiator must be filled to full capacity with the engine manufacturers recommend 50/50 mix coolant.

Owner's manuals for all primary components must be provided in a plastic box mounted inside the weather-proof enclosure. One additional copy of the O & M manuals will be included and furnished to the owner upon delivery of unit. Manuals to include manufacture's operating and maintenance instructions, unit electrical wiring schematics (AC and DC), make, model, serial numbers of both the engine and the generator set. Include information such as fuel, air, and oil filter part numbers, recommended spare parts, etc.

The entire generator set package, including the trailer shall be covered by a two (2) year or 1,500 hour warranty provided through the genset manufacturer. No warranties through multiple manufacturers will be accepted. Generator to be transported by and to the authorized serving dealer for warranty repairs during normal business hours.

Control panel shall be a solid state microprocessor based open protocol generator set controller with a large LCD display and event recording. The operational functions to be displayed are: oil pressure, coolant temperature, AC volts, AC amps per phase, hertz, DC volts, fuel level and run-time. The controller shall be programmed to provide safety shutdown for over & under voltage, over & under speed, low oil pressure, high coolant temperature, and low-fuel level. The controller is to be equipped with a manual emergency/lockout pushbutton shut down switch. The controller shall be J1939 canbus communication capable and NFPA110 stage one compliant. Control panel shall have available seven (7) inputs and four (4) outputs for additional communication. The controller is to be mounted internally in the enclosure with weather proof lockable access door. A voltage adjustment shall be provided in the panel to adjust voltage in all voltage positions.

The controller is to be mounted internally in the enclosure with weather proof lockable access door. A voltage adjustment shall be provided on the panel to adjust voltage in all voltage positions.

Generator set must have a 150-amp mainline circuit breaker mounted to the side of the alternator in an aluminum box and shall contain a 12vdc shunt trip to trip on any common fault.

Complete diesel engine generator set including control panel, engine starting batteries and charger shall be mounted within the factory assembled weather-proof aluminum enclosure. The enclosure must be constructed of .080 marine grade aluminum and have a white powder coat finish applied by the manufacturer of the aluminum on both the exterior and interior walls. The enclosure shall be insulated with sound attenuation foam manufactured by Polymer Technologies, type PAFD-XXX BU black urethane or equal. The insulation shall be resistant to high temperatures, fuel, and oil. The enclosure is to have hinged, removable, keyed alike doors. The sound attenuated enclosure noise level is not to exceed 73-75dba @ 21 feet.

The exhaust plenum chamber shall be insulated with melamine foam manufactured by Polymer Technologies, type PF-050-RAF or equal with foil face. All insulation foam is to be flame retardant and recognized by Underwriters Laboratory.

The interior of the enclosure shall be fitted with an 8-watt 12-volt DC fluorescent lamp controlled with a 60-minute timer switch that shuts off the lights after 60 minutes.

The generator set critical grade exhaust silencer shall be a residential quality and mounted within the confines of the enclosure assembly. The flexible exhaust connection from the engine to the exhaust silencer must be stainless steel. All cooling and exhaust must exit vertically from the enclosure. The exhaust silencer outlet stack pipe shall be fitted with an aluminum rain cap.

A two-wire connection shall be provided on the exterior rear of the enclosure in a weather protective box for connection to an automatic transfer switch.

The generator assembly shall be fitted with an electronic current limiting battery charge rated at 6-amp 12 VDC output to automatically charge batteries. The charger shall be dual charge rate with automatic switching to boost rate when required. Shall be so designed that it shall not be damaged and shall not trip its circuit protective device during engine cranking period. The cord of the battery charger and the jacket water heater shall not be cut but shall be long enough to reach a standard, NEMA 3R, duplex receptacle and box that is mounted on the interior of the package. The duplex receptacle shall be powered through a 120-volt, single phase, 15 amp male connector extend to the exterior of the rear enclosure or approved equal, with weather-proof cover. The generator set shall be provided with a group 24/12-volt sealed wet cell battery(s) of not less than 135 AH with sufficient capacity to provide 90 seconds total cranking time without recharging. It shall be mounted in a rack with J-Bolt hold down bolts. The battery shall be rated at a minimum of 48 month full replacement life cycle. Battery(s) shall be located for easy removal and servicing.

The generator set shall have safety labels applied in accordance with the requirements of UL2200.

All AC output shall be routed through a manual voltage selection switch configured to provide:

- 30kW at 120/240, 3-phase
- 30kW at 120/208, 3-phase
- 30kW at 277/480, 3-phase
- 29.5kW at 120/240, 1-phase

Power output connectors shall be provided on the rear exterior face of the generator set enclosure. The connectors shall be of a Cam-Lok style with a total rating of 400-amps.

A 125-amp load center will be mounted within the enclosure providing breakers for protection for the following additional receptacles to be provided:

- 4 Duplex x 20 amp, 120-volt (2 Duplex x 20-amp single phase GFCI receptacles and 2 x 20-amp breaker protected receptacles).*
- 1 x 30-amp, 120-volt*
- 1 x 30-amp, 250-volt*
- 1 x 50-amp, 250-volt*

*All power outlets shall have weather-protective covers.

A 5 wire, 200amp free air rated, 1C, 600/2000V 90 degree C, SO Cable shall be provided with a Russellstoll type plug model JPS 2044 FR. No exceptions. The cable shall be 30 feet from the storage box in length as measured from the storage box to the end of the Russellstoll plug. Conduit shall be ran from the cable storage box to the rear of the machine where Five (5) Male twist lock, 400amp rated connectors shall be applied. Additional cable length shall be supplied to provide connection to the rear connection points without any strain or binding of the male cable twist lock connectors to the power outlet connectors of the machine. The male connectors shall match the power outlet connectors of the machine and if not used stored in a tray at rear of machine.

The generator set shall be mounted on a DOT approved single-axle 3,500# trailer. The trailer shall have:

- A 4' x 8 'diamond plate bed plate.
- Shall be DOT approved with proper serial number data plate indicating weight capacity.
- A pintle ring towing connection shall be provided (no exceptions). Trailer will have all necessary safety equipment to include but not limited to 30" safety chains, fenders, and DOT lighting package with standard round 7 pin flat blade wired hitch receiver, and a cable storage box adequately sized to store 30+ feet of cable with connector as indicated above with the lid shut and locked. Cable storage box shall also be modified to allow for the cable to come out of the storage box on the driver side and have the lid shut and be locked. Special attention needs to be given to where the cable comes out of the storage box to ensure no damage is made to the cable.
- An integral minimum 75 gallon fuel tank sized for minimum 24 hour fuel supply. Tank will be finished painted with a U-Pol's top-class super-tough durable 2-pack urethane coating or equal. Paint is to protect against surface rust, corrosion, salt, damp and extreme temperatures. Finish paint is to be stain-proof, U.V. resistant, waterproof, and carry same two (2) year warranty. The final finish shall not only be applied to the tanks sides and top but also be applied to the tank's underside. The subbase fuel tank shall also include but not be limited to suction, return, tank drain, fittings with key lockable Fuel filler cap. Tank to include a manual fuel level gauge and fuel level sender to annunciate panel of a low fuel level alarm when the fuel level reaches 10% of tank capacity.
- Tires shall be minimum load range C – 6 Ply.
- One hand cranked gear operated jack stand fitted to the trailer tongue and two hand cranked gear operated stands on the rear of the trailer for leveling and stabilization of unit. All stands to be equipped with sand shoes. A two (2) way plane leveling bubble shall be mounted permanently to the front of the trailer to ensure proper leveling.
- The generator set / trailer package <u>shall not</u> be set up for single point lifting.

Start up and commissioning:

- Four (4) hours start-up including operational test of equipment showing proper connection of cables with safety issues performed by factory trained technician. The start-up technician will instruct personnel how to operate and maintain the equipment in accordance with the manufacturer's requirements.

Conditions:

- All product shall be new and of current design.
- Initial filling of oil and antifreeze. (diesel fuel by others)
- In addition to equipment specified, the unit shall be equipped with all standard equipment, features, and accessories as specified by the manufacture for this model and shall comply with all EPA Emission Standards and all Motor Vehicle Safety Standards as established by the U.S. Department of Transportation.
- The successful bidder shall be responsible for delivering the generators that are properly serviced, clean, and ready for operation.
- Equipment shall be completely assembled and tested at the factory prior to shipment.