PLEASE DO NOT REMOVE ANY SHEETS FROM THIS DOCUMENT

Request for Proposals

Talcottville Pump Station Emergency Generator Replacement

CONTRACT # 2028 – 05/07/2018

LATE PROPOSALS WILL NOT BE ACCEPTED

LEGAL NOTICE

TOWN OF VERNON

REQUEST FOR PROPOSALS
TALCOTTVILLE PUMP STATION EMERGENCY GENERATOR REPLACEMENT
CONTRACT # 2028-05/07/2018

INVITATION TO BID

The Town of Vernon, Connecticut is seeking a qualified contractor to provide and install an emergency generator for the Talcottville Pump Station. A firm must have demonstrated experience in providing such service and adhere to standards and requirements typical for such service.

A mandatory walk-through is scheduled for 10:00 am on April 23, 2018 at the pump station located at 25 Hartford Turnpike, Vernon, CT.

A certified check or bid bond in the amount of five percent (5%) of the total bid must accompany each proposal. Copies of the RFP are available online at the Town of Vernon website at www.vernon-ct.gov/legal-notices with reference to Contract #2028-05/07/2018 and at the Department of Administrative Services website at www.das.ct.gov.

All questions about the proposals should be directed to Robert Grasis, Director, Vernon Water Pollution Control Facility by e-mail at rgrasis@vernon-ct.gov, with copy to Stephen Boske, Assistant Director at sboske@vernon-ct.gov, no later than 5:00 PM on Thursday, April 26, 2018. Answers to all questions will be posted by Monday, April 30, 2018 on the Town's website under the bid section at http://www.vernon-ct.gov/legal-notices referencing Contract # 2028.

Three (3) copies of all proposals should be submitted in a sealed envelope, with "BID DOCUMENT – DO NOT OPEN – CONTRACT #2028-05/07/2018" clearly marked on the outside of the envelope, to: Michael Purcaro, Town Administrator, Town of Vernon, Memorial Building, 14 Park Place, 3rd Floor, Vernon, Connecticut 06066 by 2:00 PM on May 7, 2018; at which time proposals shall be opened and read aloud publicly. **E-mailed, faxed or late bids will not be accepted.**

The selected firm must meet all municipal, state and federal AA and EEO practices and requirements. MBEs/WBEs/SBEs are encouraged to apply. The Town reserves the right to reject any or all proposals in whole or part, to award any one service or group of services or all services, to negotiate with any or all companies submitting proposals, and to enter into an agreement with any company for any services mentioned in this RFP; if it is deemed to be in the best interest of the Town.

Confidentiality: If Respondent believes that any information in its proposal should be treated as confidential, that material shall be clearly marked. The Town shall endeavor to protect confidential materials from disclosure to non-Town employees to the extent required by State or Federal law. In no event will the Town be responsible for the inadvertent disclosure of your response to this RFP.

Michael Purcaro, Town Administrator

REQUEST FOR PROPOSALS
TALCOTTVILLE PUMP STATION EMERGENCY GENERATOR REPLACEMENT
CONTRACT # 2028-05/07/2018

STANDARD INSTRUCTIONS TO BIDDERS

These instructions are standard for all proposals issued by the Town of Vernon, Connecticut for the purchase of all supplies, materials, equipment, and the furnishing of certain services. The Town may delete, supersede, or modify any of these standard instructions for a particular proposal by indicating such change in a section entitled "Special Instructions To Bidders".

1. The attached proposal is signed by the bidder with full knowledge of, and agreement with, the general specifications, conditions, and requirements of this bid.

2. Proposals must be submitted on the enclosed form with any required bid security.

3. Bids shall be submitted in sealed envelopes, which shall be addressed to the Town Administrator, 14 Park Place, Vernon, Connecticut 06066 and shall be clearly marked "**BID DOCUMENT - DO NOT OPEN**". The bid envelope shall indicate the contract number as shown on the "Invitation To Bid".

4. Bids received later than the time and date specified in the "Invitation To Bid" will not be considered. Withdrawals of bids, received later than the time and date set for the bid opening, will not be considered.

5. All deliveries of commodities hereunder shall comply in every respect with all applicable laws of the Federal Government and the State of Connecticut.

6. The bidder shall insert the price per stated unit and extend a total price for each item. IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THE UNIT PRICE AND THE TOTAL PRICE EXTENSION, THE UNIT PRICE WILL GOVERN.

7. In accordance with the provisions of Section 12-412(a) of the Connecticut General Statutes, the Town of Vernon is exempt from the payment of Federal or State tax and such tax or taxes shall not be included in bid prices.

8. Unless otherwise stated herein, all deliveries made under this contract must consist of new merchandise.

9. The Town reserves the right to reject any and all bids, wholly or in part; to waive technical defects, and to make awards in the manner deemed to be in the best interests of the Town.

10. The Town will not accept any additional charges for freight or shipping.

11. **Insurance Requirements:**

Commercial General Liability (Town of Vernon added as additional insured):

Each Occurrence:	$1,000,000
Personal/Advertising Injury per Occurrence:	$1,000,000
General Aggregate:	$2,000,000
Product/Completed Operations Aggregate:	$2,000,000
Fire Damage Legal Liability	$100,000

Automobile Liability (Town of Vernon added as additional insured):

Each Accident:	$1,000,000
Hired/Non-owned Auto Liability:	$1,000,000

Workers' Compensation/Employers Liability

Workers' Compensation	Statutory Requirement set forth by State of CT
Employers Liability	
Each Accident	$100,000
Disease-Policy Limit	$500,000
Disease-Each employee	$100,000

Umbrella/Excess Liability (following form of general liability, auto liability and employer liability):

Each Occurrence:	$1,000,000
General Aggregate:	$2,000,000
Product/Completed Operations Aggregate:	$2,000,000

Professional Liability (where required)

Each Claim:	$1,000,000
Annual Aggregate	$1,000,000

12. **Bid Bonds**: All bids must be accompanied by bid security in the sum of not less than five percent (5%) of the total bid and shall be in the form of a bid bond, a certified check, a treasurer's or cashier's check drawn on a National or State bank or trust company and shall be made payable to the "Town of Vernon".

    The bid security shall secure the execution of the contract by the successful bidder.

    Should any bidder to whom an award is made fail to enter into a contract within ten (10) days, exclusive of Saturdays, Sundays and legal holidays, after notice of the award has been mailed to the bidder, the amount so received from the bidder through his/her bond shall become the property of the Town of Vernon, Connecticut as liquidated damages for failure.

    The bid security, exclusive of the successful bidder, will be returned upon execution of the contract, but in no case later than forty-five (45) days after the opening of the bids.

    The bid security of the successful bidder shall be held until such time as all conditions of the proposal have been met.

13. **Independent Contractor:** The selected firm is an independent contractor and is not an employee, partner, or co-venturer of, or in any other service relationship with the Town of Vernon. The firm

is not authorized to speak for, represent, or obligate the Town of Vernon in any manner without the prior expressed written authorization from the Town of Vernon.

14. **Indemnification/Hold Harmless:** The selected firm agrees to defend, indemnify and hold harmless the Town of Vernon, its respective officers, employees, elected officials, agents, servants and volunteers from and against any and all claims, liabilities, obligations, causes of action of whatsoever kind and nature for damages, including but not limited to damage to the premises or other property, and costs of every kind and description arising from its entry upon the premises, or arising from work or other activities conducted thereon, alleging but not limited to bodily injury, personal injury, medical malpractice, property damage caused by the firm and its employees, contractor, sub-contractors and agents, this indemnification includes the firm's duty to defend the Town of Vernon from any such claims except that the firm shall not be responsible or obligated for claims arising out of the sole negligence of the Town of Vernon, its elected officials, officers, department heads, employees or agents, or its predecessors in interest in the premises.

15. **Waiver of Subrogation Requirement:** The selected firm will require all insurance policies in any way related to the work and secured and maintained by the firm to include clauses stating each carrier will waive all rights of recovery, under subrogation and otherwise, against the Town of Vernon, and its respective officers, employees, agents, servants, elected officials, and volunteers. The selected firm shall require of subcontractors, by appropriate written agreements, similar waivers each in favor of the Town of Vernon.

REQUEST FOR PROPOSALS

TALCOTTVILLE PUMP STATION EMERGENCY GENERATOR REPLACEMENT

CONTRACT # 2028-05/07/2018

SPECIAL INSTRUCTIONS TO BIDDERS

1. **PURPOSE:** The intent and purpose of this invitation for bids is to solicit pricing from qualified contractors who can provide and install an emergency power generator for the Talcottville Pump Station.

2. **BACKGROUND:** The Talcottville Pump Station is the largest of the seven pump stations in Vernon and conveys flow from the Talcottville section of Town and surrounding area through a one mile long force main to a gravity sewer. The station was built in the 1960's and the current 350KW emergency power generator has been in service since 1970. Although the generator has minimal hours, parts are no longer available and it is oversized for the pumps in use today.

3. **DUE DATE:** Sealed bids are due on or before 2:00 pm Tuesday, May 7, 2018 at the office of the Town Administrator, Memorial Building, 3rd Floor, 14 Park Place, Vernon, CT 06066 at which time proposals will be opened and read aloud publicly.

4. **PRE-BID MEETING:** A mandatory, pre-bid meeting and walk through shall be held on site, 10:00am April 23, 2018 at 25 Hartford Turnpike, Vernon, CT 06066. Any Contractor that does not attend the pre-bid meeting will not be considered for this contract.

5. **BID BOND:** All bids must be accompanied by bid security in the sum of not less than five percent (5%) of the total bid and shall be in the form of a bid bond, a certified check, a treasurer's or cashier's check drawn on a National or State bank or trust company and shall be made payable to the "Town of Vernon".

6. **CONTRACT TERM:** This contract expires when the work has been completed to the satisfaction of the Vernon WPCA.

7. **CONTACT INFORMATION:** Information or questions concerning this contract should be directed to Robert Grasis, Director, Vernon Water Pollution Control Facility at rgrasis@vernon-ct.gov .

REQUEST FOR PROPOSALS

TALCOTTVILLE PUMP STATION EMERGENCY GENERATOR REPLACEMENT

CONTRACT # 2028-05/07/2018

SPECIFICATIONS

SECTION 1.0 – GENERAL REQUIREMENTS

1.1 – Scope:

A. Provide, install, and acceptance test a complete and operable Emergency/Standby electric generating system, including all devices and equipment specified herein, as shown on the drawings, or required for the service. Equipment shall be new, factory tested, and delivered ready for installation

1.2 – Approved Manufacturers:

A. Equipment, documentation, and services described in this specification are provided by Cummins Power Generation, Minneapolis, Minnesota.

B. Proposed substitutions shall include complete submittal data, as specified herein, clearly denoting any and all deviations and/or exceptions to the equipment specified. The complete proposal must be submitted to the Town of Vernon for approval / disapproval not less than 10 days prior to the scheduled bid date. If approved, the Contractor is responsible for the charges for all necessary revisions.

C. Submit the following information with the proposal package for review and evaluation 10 days prior to scheduled bid date:

- A paragraph by paragraph specification compliance statement, describing the differences between the specified and the proposed equipment.
- Dimensions of the generator sets, transfer switches and accessory hardware, including plan and elevation drawings.
- Sequence of the operations if required to enhance the description included in this specifications.
- Indication of the nearest field service office staffed with factory trained technicians. Provide service organization data and manpower. Indicate typical response time for emergency calls. Provide typical scenario for an emergency service call.

1.3 – Submittals:

A. Within 10 days after award of contract, provide six sets of the following information for review:

- Manufacturer's product literature and performance data, sufficient to verify compliance to specification requirements.
- A paragraph by paragraph specification compliance statement, describing the differences between the specified and the proposed equipment.
- Manufacturer's certification of prototype testing.
- Manufacturer's published warranty documents.
- Shop drawings showing plan and elevation views with certified overall dimensions, as well as wiring interconnection details.
- Interconnection wiring diagrams showing all external connections required; with field wiring terminals marked in a consistent point to point manner.

1.4 – Warranty:

A. Shall be provided for all products against defects in materials and workmanship for five (5) years period from the start-up date. Warranty must cover parts, labor and travel time. Warranty deductibles for are not allowed.

1.5 – Single Supplier:

A. The installer/supplier shall be the manufacturer's authorized distributor, who shall provide initial start-up services, conduct field acceptance testing, and warranty services. The supplier shall have 24 hours/365 days a year service availability and factory trained service technicians authorized to perform warranty service on all products provided.

1.6 – Operator Manuals:

A. Three (3) sets of operators and spare parts manuals shall be provided for all system equipment. The manuals shall include outline, interconnection, wiring, and control drawings accurately describing the equipment provided. Provide ladder logic for all programmable logic controllers in the system.

1.7 – Site Conditions:

A. Ambient temperature: 0 deg. C (32 deg. F) to 52 deg. C (126 deg. F)
B. Relative humidity: 0 to 95 percent (%)
C. Altitude: sea level to 1000 feet (304 m)

SECTION 2.0 – GENERATOR SYSTEM

2.1 – Diesel Generator Set:

A. 4-cycle, 1800 rpm, diesel engine generator set. Generator set ratings: 230 kW / 288 kVA at 0.8 PF, stand-by rating, based on site conditions noted above. System voltage of: 277/480 Volts AC, three-phase, four-wire, and 60 hertz.

Generator set shall be the Cummins model 230DSHAD

The engine, alternator, generator controls, enclosure and all other associated generator set equipment shall be manufactured by the generator set supplier.

2.2 – Prototype Test and Evaluation:

A. Prototype tests shall have been performed on a complete and functional unit, component level type tests will not substitute for this requirement. Prototype testing shall comply with the requirements of NFPA-110 for level 1 systems.

2.3 – Performance Tests and Evaluation:

A. Voltage regulation shall be plus/minus (+/-) 1.0 percent for any constant load between no load and rated load.

B. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 5 seconds. On application of a 100% load step the generator set shall recover to stable voltage within 10 seconds.

C. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.

D. Transient Frequency Performance: Not more than 15 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within 5 seconds. On application of a 100% load step the generator set shall recover to stable frequency within 10 seconds.

E. Output Waveform: At full load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for any single harmonic. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50.

F. Frequency regulation shall be isochronous from steady state no load to steady state rated load. Random frequency variation with any steady load from no load to full load shall not exceed plus or minus 0.25%.

G. The diesel engine generator set shall be capable of single step load pick up of 100% nameplate kW and power factor, less applicable derating factors, with the engine generator set at operating temperature.

H. Motor starting capability shall be a minimum of 920 kVA. The generator set shall be capable of sustaining a minimum of 90% of rated no load voltage with the specified kVA load at near zero power factor applied to the generator set.

I. Start Time: Comply with NFPA 110, Level 1, Type 10, system requirements.

J. Ambient Condition Performance: Engine generator shall be designed to allow operation at full rated load in an ambient temperature under site conditions, based on highest ambient condition.

2.4 – Engine:

A. The engine shall be equal to the QSL9-G2 as manufactured by Cummins Engine Company and designed specifically for generator set duty. The diesel engine shall be 4-cycle, diesel fueled, direct injection, 1800 RPM with forged steel crankshaft and connecting rods. Minimum engine displacement shall be 543 cubic inches. Engine shall have a minimum of 6 cylinders. The cylinder block shall be cast iron with replaceable wet cylinder liners and have four valves per cylinder. The engine shall be turbo charged and after cooled.

B. Skid mounted radiator and cooling system rated for full load operation in 126 degrees F (52 degrees C) ambient as measured at the generator air inlet. Radiator shall be provided with a duct adapter flange. The cooling system shall be filled with 50/50 ethylene glycol/water mixture by the equipment supplier. Rotating parts shall be guarded against accidental contact per OSHA requirements.

C. Governor: Adjustable isochronous, with speed sensing. The governing system dynamic capabilities shall be controlled as a function of engine coolant temperature to provide fast, stable operation at varying engine operating temperature conditions. The control system shall actively control the fuel rate as appropriate to the state of the engine generator. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed, accelerating to rated speed, and operating in various isochronous states.

D. Engine starting system: 12 volts DC, electric motor starter capable of three complete cranking cycles without overheating.

E. Positive displacement, mechanical, full pressure, lubrication oil pump.

F. Full flow lubrication oil filters with replaceable spin on canister elements and dipstick oil level indicator.

G. Replaceable dry element air cleaner with restriction indicator.

H. Flexible supply fuel line.

I. Engine mounted battery charging alternator, 100 ampere minimum, and solid state voltage regulator.

J. Provide a crankcase emission control system that shall remove a minimum of 99% of crankcase emissions. The crankcase emission control system shall reduce NOx, hydrocarbon and oil from the crankcase emissions.

2.5 – AC Generator:

A. The AC generator shall be synchronous, four pole, 2/3 pitch, revolving field, single pre-lubricated sealed bearing, air cooled by a direct drive centrifugal blower fan, and directly connected to the engine with flexible drive disc rotating integrally with generator rotor

B. Comply with NEMA MG 1

C. Enclosure: Drip-proof

D. Electrical Insulation: Class H

E. Temperature rise measured by resistance method at full load shall not exceed 125 degrees

F. Construction shall prevent mechanical, electrical and thermal damage due to vibration, overspeed, up to 125 percent of rating, and head during operation at 110 percent of rated capacity.

G. Voltage regulator: solid-state type, separate from exciter, providing performance as specified. The voltage regulation system shall be microprocessor controlled, 3-phase true RMS sensing, full wave rectified, and provide a pulse-width modulated signal to the exciter. No exceptions or deviations of these requirements will be permitted.

H. The generator shall be capable of delivering rated output (kVA) at rated frequency and power factor, at any voltage not more than 5 percent above or below rated voltage.

I. AC Generator shall provide the full output rating of the generator set.

2.6 – Generator Set Control:

A. The generator set shall be provided with a microprocessor-based control system that is designed to provide automatic starting, monitoring, and control functions for the generator set. The control system shall also be designed to allow local monitoring and control of the generator set, and remote monitoring and control as described in this specification.

B. The control shall be mounted on the generator set. The control shall be vibration isolated and prototype tested to verify the durability of all components in the system under the vibration conditions encountered.

C. The generator set mounted control shall include the following features and functions:

1. Control Switches:

a. Mode Select Switch: The mode select switch shall initiate the following control modes. When in the RUN or Manual position the generator set shall start, and accelerate to rated speed and voltage as directed by the operator. In the OFF position the generator set shall immediately stop, bypassing all time delays. In the AUTO position the generator set shall be ready to accept a signal from a remote device to start and accelerate to rated speed and voltage.

b. Mounting Location: The generator set control panel shall be mounted on the left side of the generator for customer access. There will not be right side access.

c. EMERGENCY STOP Switch: Switch shall be Red "mushroom-head" push button. Depressing the emergency stop switch shall cause the generator set to immediately shut down, and be locked out from automatic restarting.

d. RESET Switch: The RESET switch shall be used to clear a fault and allow restarting the generator set after it has shut down for any fault condition.

e. PANEL LAMP Switch: Depressing the panel lamp switch shall cause the entire panel to be lighted with DC control power. The panel lamps shall automatically be switched off 10 minutes after the switch is depressed, or after the switch is depressed a second time.

2. Generator Set AC Output Metering: The generator set shall be provided with a metering set including the following features and functions:

a. Both digital and analog metering are required, 0.5% accuracy, to indicate generator RMS voltage and current, frequency, output current, output KW, KW hours, and Power Factor. Generator output voltage shall be available in line to line and line to neutral voltages, and shall display all three-phase voltages (line-to-neutral or line-to-line) simultaneously.

b. The control system shall monitor the total load on the generator set, and maintain data logs of total operating hours at specific load levels ranging from 0 to 110% of rated load, in 10% increments. The control shall display hours of operation at less than 30% load and total hours of operation at more than 90% of rated load.

c. The control system shall log total number of operating hours, total kW-H, and total control on hours, as well as total values since reset.

3. Generator Set Alarm and Status Display

a. The generator set control shall include LED alarm and status indication lamps. The lamps shall be high intensity LED type. The lamp condition shall be clearly apparent under bright room lighting conditions. Functions indicated by the lamps shall include:

- The control shall include five configurable alarm-indicating lamps. The lamps shall be field adjustable for function, color, and control action (status, warning, or shutdown).
- The control shall include green lamps to indicate that the generator set is running at rated frequency and voltage, and that a remote start signal has been received at the generator set. The running signal shall be based on actual sensed voltage and frequency on the output terminals of the generator set.
- The control shall include a flashing red lamp to indicate that the control is not in automatic state, and red common shutdown lamp.
- The control shall include an amber common warning indication lamp.

b. The generator set control shall indicate the existence of the following alarms and shutdown conditions on an alphanumeric digital display panel:

- low oil pressure (alarm)
- low oil pressure (shutdown)
- oil pressure sender failure (alarm)
- low coolant temperature (alarm)
- high coolant temperature (alarm)
- high coolant temperature (shutdown)
- high oil temperature (warning)
- engine temperature sender failure (alarm)
- low coolant level (alarm or shutdown selectable)
- fail to crank (shutdown)
- fail to start/overcrank (shutdown)
- overspeed (shutdown)
- low DC voltage (alarm)
- high DC voltage (alarm)
- weak battery (alarm)
- high AC voltage (shutdown)
- low AC voltage (shutdown)
- under frequency (shutdown)
- over current (warning)
- over current (shutdown)
- short circuit (shutdown)
- over load (alarm)
- emergency stop (shutdown)

c. Provisions shall be made for indication of four customer specified alarm or shutdown conditions. Labeling of the customer-specified alarm or shutdown conditions shall be of the same type and quality as the above-specified conditions. The non-automatic indicating lamp shall be red, and shall flash to indicate that the generator set is not able to automatically respond to a command to start from a remote location.

d. The control shutdown fault conditions shall be configurable for fault bypass

4. Engine Status Monitoring

a. The following information shall be available from a digital status panel on the generator set control:

- engine oil pressure (psi or kPA)
- engine coolant temperature (degrees F or C)
- engine oil temperature (degrees F or C)
- engine speed (rpm)
- number of hours of operation (hours)
- number of start attempts
- battery voltage (DC volts)

b. The control system shall also incorporate a data logging and display provision to allow logging of the last 10 warning or shutdown indications on the generator set, as well as total time of operation at various loads, as a percent of the standby rating of the generator set.

5. Engine Control Functions:

a. The control system provided shall include a cycle cranking system, which allows for user selected crank time, rest time, and # of cycles. Initial settings shall be for 3 cranking periods of 15 seconds each, with 15-second rest period between cranking periods.
b. The control system shall include an idle mode control, which allows the engine to run in idle mode in the RUN position only. In this mode, the alternator excitation system shall be disabled.
c. The control system shall include an engine governor control, which functions to provide steady state frequency regulation as noted elsewhere in this specification. The governor control shall include adjustments for gain, damping, and a ramping function to control engine speed and limit exhaust smoke while the unit is starting.
d. The control system shall include time delay start (adjustable 0 - 300 seconds) and time delay stop (adjustable 0 - 600 seconds) functions.
e. The control system shall include sender failure monitoring logic for speed sensing, oil pressure, and engine temperature which is capable of discriminating between failed sender or wiring components, and an actual failure conditions.

6. Alternator Control Functions:

a. The generator set shall include a full wave rectified automatic digital voltage regulation system that is matched and prototype tested by the engine manufacturer with the

governing system provided. It shall be immune from miss operation due to load induced voltage waveform distortion and provide a pulse width modulated output to the alternator exciter. The voltage regulation system shall be equipped with three phase RMS sensing and shall control buildup of AC generator voltage to provide a linear rise and limit overshoot. The system shall include a torque matching characteristic, which shall reduce output voltage in proportion to frequency below an adjustable frequency threshold. Torque matching characteristic shall be adjustable for roll-off frequency and rate, and be capable of being curve-matched to the engine torque curve with adjustments in the field. The voltage regulator shall include adjustments for gain, damping, and frequency roll off. Adjustments shall be broad range, and made via digital raise-lower switches, with an alphanumeric LED readout to indicate setting level. Rotary potentiometers for system adjustments are not acceptable.

b. Controls shall be provided to monitor the output current of the generator set and initiate an alarm (over current warning) when load current exceeds 110% of the rated current of the generator set on any phase for more than 60 seconds. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator (over current shutdown). The protective functions provided shall be in compliance to the requirements of NFPA70 article 445.

c. Controls shall be provided to individually monitor all three phases of the output current for short circuit conditions. The control/protection system shall monitor the current level and voltage. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator (short circuit shutdown). The protective functions provided shall be in compliance to the requirements of NFPA70 article 445.

d. Controls shall be provided to monitor the KW load on the generator set, and initiate an alarm condition (over load) when total load on the generator set exceeds the generator set rating for in excess of 5 seconds. Controls shall include a load shed control, to operate a set of dry contacts (for use in shedding customer load devices) when the generator set is overloaded.

e. An AC over/under voltage monitoring system that responds only to true RMS voltage conditions shall be provided. The system shall initiate shutdown of the generator set when alternator output voltage exceeds 110% of the operator-set voltage level for more than 10 seconds, or with no intentional delay when voltage exceeds 130%. Under voltage shutdown shall occur when the output voltage of the alternator is less than 85% for more than 10 seconds.

7. Other Control Functions:

a. The generator set shall be provided with a network communication module to allow LonMark compliant communication with the generator set control by remote devices.

The control shall communicate all engine and alternator data, and allow starting and stopping of the generator set via the network in both test and emergency modes.

b. A battery monitoring system shall be provided which initiates alarms when the DC control and starting voltage is less than 13 Volts DC or more than 17 Volts DC. During engine cranking (starter engaged), the low voltage limit shall be disabled, and DC voltage shall be monitored as load is applied to the battery, to detect impending battery failure or deteriorated battery condition.

8. Control Interfaces for Remote Monitoring:

a. The control system shall provide two programmable output relays. These relay outputs shall be configurable for any alarm, shutdown, or status condition monitored by the control. The relays shall be configured to indicate: generator set operating at rated voltage and frequency and common shutdown.

b. A fused 10 amp switched 12VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit whenever the generator set is running.

c. A fused 10 amp 12VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit at all times from the engine starting/control batteries.

d. The control shall be provided with a direct serial communication link for the ModBus communication network interface.

2.7 – Base:

A. The engine-generator set shall be mounted on a heavy duty steel base to maintain alignment between components. The base shall incorporate a battery tray with hold-down clamps within the rails.

2.8 – Exhaust System:

A. A critical grade exhaust silencer shall be provided for the generator set. The silencer shall be critical grade type and attenuated to a minimum of 25 dB(A).

B. All exterior fittings, accessories and bolts shall be type 304 stainless steel. Provide heat resistant gaskets between all flanged connections to serve as dielectric protectors.

C. Maximum gas flow shall not exceed 1176 cfm. The exhaust gas temperature shall not exceed 1110 degrees F. The maximum back pressure shall not exceed 41 inches of water. The design of the entire exhaust system is based on the above data. If a substitution of a model specified is made, all costs incurred to redesign as well as costs to other trades to modify the layout shall be the complete responsibility of the electrical contractor.

D. Provide a stainless steel flexible exhaust connection for the engine as required for connection between the engine exhaust manifold and the exhaust lines in compliance with acceptable codes.

E. Provide an exhaust system condensation trap with manual drain valve to trap and drain off exhaust condensation and to prevent condensation from entering the engine.

F. Provide suitable weather cap and stack outlet with all necessary flanges and fittings for proper installation of the complete exhaust system to the exterior of the building. The weather cap shall have the proper counter weights attached to prevent banging while the generator is unloaded.

G. Thermal jacket for interior exhaust lines and silencer shall be provided. Jacket thickness shall be sufficient to maintain a surface temperature of less than 200 degrees F.

H. The exhaust muffler shall be installed by the contractor and in a way so that their weight is not supported by the engine.

2.9 – Generator Set Auxiliary Equipment and Accessories:

A. Water Jacket Heater: Engine mounted, thermostatically controlled, water jacket heater for each engine. The heater shall be sized as recommended by the generator set manufacturer environment conditions as specified in herein. Heater voltage shall be 120 VAC, 1500 Watts. Provide proper power supply circuits for the heater as required for the voltage and load of the heater, connected to a normally served distribution circuit.

B. Vibration Isolators: Factory installed between the generator set and the frame rails.

C. Starting and Control Batteries: Two (2) 12 volts starting batteries, lead acid type, 12 volts DC, sized as recommended by the generator set manufacturer, shall be supplied for each generator set with battery cables and connectors.

D. Battery Charger: A 10 amp voltage regulated battery charger shall be provided loose and installed indoors near the generator set. Input AC voltage and DC output voltage shall be as required. Charger shall be equipped with float, taper and charger settings. Operational monitors shall provide visual output analog with individual form C contacts rated at 4 amp, 120 Volts AC, 30 volts DC for remote indication of:

1. Loss of AC power – red light
2. Low battery voltage – red light
3. High battery voltage – red light
4. Power On – green light (no relay contact)

E. Generator main circuit breaker: One (1) generator mounted and wired output circuit breaker, UL listed, molded case type, electronic-trip, rated at 400 amps, 3-Pole, 600 volts class. Submittals shall demonstrate that the circuit breaker provides proper protection for the alternator by a comparison of the trip characteristic of the breaker with the thermal damage

characteristic of the alternator. Field circuit breakers shall not be acceptable for generator overcurrent protection.

F. Generator Housing: Not required. Generator will be installed indoors.

2.10 – Sub-Base Tank:

A. Provide a U.L.142 listed sub-base fuel tank with a minimum capacity of 500 U.S. gallons. The tank shall be of a double-wall construction, and must have a rupture basin that is 110% of nominal capacity.

B. Fuel tank shall include low level switch, leak detection switch, two 4" emergency vents, one 2" mushroom vent, fittings for fuel suction and return lines, 2" lockable fuel fill, mechanical fuel gauge and 1/2" NPT drain in the rupture basin.

C. Tank shall include a 5 gallon spill containment bucket with an overfill prevention valve (OFPV) to avoid accidental oil spills during refueling.

D. Sub-base diesel fuel tank shall be painted to match the color of the generator manufacturer.

E. Fuel tank dimensions and generator set package must fit in the location of the genset being removed while still allowing required spacing for maintenance access. Contractor must verify tank and generator package dimensions prior to ordering.

2.11 – Portable Generator Connection Box:

A. Provide a U.L. listed portable generation docking station, 400amp, 277/480Vac, 3-phase, 4-wire, 65,000 AIC rated and to be mounted in a NEMA 3R outdoor rated enclosure with padlock-able swinging front door.

B. Docking station shall have a 5 year comprehensive warranty to match the generator set.

C. Shall include mechanical lugs per phase and neutral plus ground to connect permanent loads/ATS conductor.

D. Shall include camlok panel mounts for portable generator connection. Panel mounts shall be color coded per phase, neutral and ground, and include protective caps on to prevent accidental contact.

E. Shall include phase rotation monitor

SECTION 3.0 – AUTOMATIC TRANSFER SWITCH

3.1 – Power Transfer Switch:

A. Ratings:

1. The automatic transfer switch shall be a Cummins Power Generation OTPCC-600Amp, 3-pole, 277/480 volts AC, 3-phase, 4-wire and furnished as an open style unit, no enclosure, to replace existing Cummins automatic transfer switch in the existing switchgear.

2. Transfer switch shall have a 5 year comprehensive warranty to match the generator set.

3. Main contacts shall be rated for 600 volts AC
4. Transfer switches shall be rated to carry 100 percent (%) of rated current continuously in the enclosure supplied, in ambient temperatures of 40 to +60 degrees C, relative humidity up to 95% (non-condensing), and altitudes up to 10,000 feet (3,000 Meters).

5. Transfer switch equipment shall have withstand and closing ratings (WCR) in RMS symmetrical amperes greater than the available fault currents shown on the drawings. The transfer switch and its upstream protection shall be coordinated. The transfer switch shall be third party listed and labeled for use with the specific protective device(s) installed in the application. The automatic transfer switch shall have a minimum withstand and close-on rating of 30,000 amps @ 600 volts AC.

B. Construction:
1. Transfer switches shall be double throw, electrically and mechanically interlocked, and mechanically held in the source 1 and source 2 positions. The transfer switch shall be specifically designed to transfer to the best available source if it inadvertently stops in a neutral position.

2. Transfer switches rated through 1000 amperes shall be equipped with permanently attached manual operating handles and quick break, quick make over center contact mechanisms. Transfer switches over 1000 amperes shall be equipped with manual operators for service use only under de energized conditions.

3. Main switch contacts shall be high pressure silver alloy. Contact assemblies shall have arc chutes for positive arc extinguishing. Arc chutes shall have insulating covers to prevent inter-phase flashover.

4. Transfer switch internal wiring shall be composed of pre-manufactured harnesses that are permanently marked for source and destination. Harnesses shall be connected to the control system by means of locking disconnect plug(s), to allow the control system to be easily disconnected and serviced without disconnecting power from the transfer switch mechanism.

5. Provide a 4 foot harness extension to allow for ease of installation. The harness shall be connected by means of disconnecting plugs to allow the harness to be easily disconnected without disconnecting power to the transfer switch mechanism

6. Transfer switch shall be provided with flame retardant transparent covers to allow viewing of switch contact operation but prevent direct contact with line voltage components.

7. Transfer switches shall be 3-pole shall be provided with a neutral bus and lugs. The neutral bus shall be sized to carry 100% of the current designated on the switch rating.

C. Connections:
   1. Field control connections shall be made on a common terminal block that is clearly and permanently labeled.

   2. Transfer switch shall be provided with AL/CU mechanical lugs sized to accept the full output rating of the generator set.

3.2 – Enclosure: (Not Required)

3.3 – Transfer Switch Control:

A. Solid state under voltage sensors shall simultaneously monitor both sources. Pick up and drop out settings shall be adjustable.

B. Automatic controls shall signal the engine generator set to start upon signal from normal source sensor. Solid state time delay start, adjustable from 0 to 10 seconds (factory set at 3 seconds) shall avoid nuisance startups. Battery voltage starting contacts shall be gold-flashed dry type contacts, factory wired to a field wiring terminal block.

C. The switch shall transfer when the emergency source reaches the set point. Provide a solid state time delay on transfer, adjustable from 0 to 300 seconds, factory set at 5 seconds.

D. The switch shall retransfer the load to the normal source after a time delay retransfer, adjustable from 0 to 30 minutes, factory set at 10 minutes. Retransfer time delay shall be immediately bypassed if the emergency power source fails.

E. Controls shall signal the engine generator set to stop after a time delay, adjustable from 0 to 10 minutes, and factory set at 5 minutes, beginning on return to the normal source.

F. The control system shall include field adjustable provisions to control the speed of operation of the transfer switch power contacts. In addition, the control shall include a field-configurable in-phase monitor function that causes the transfer to be initiated only when the sources are in phase. When in-phase transfer is enabled and transfer does not occur within 120 seconds, the control shall automatically transfer the load using delayed transfer.

G. Provide a field-configurable exerciser clock with provisions for operating the generator set for a test period at 7, 14, 21, or 28-day intervals in either with-load or without-load configuration.

Operation time of the generator set shall be field configurable. Exerciser clock functions that require setting the test time by pressing an exercise button at the desired time of exercise (only) shall not be acceptable.

H. Power for the transfer switch operation shall be derived from the source to which the load is being transferred.

I. The transfer switch shall be provided with a battery charger for the generator set starting batteries. The battery charger shall be a float type charger rated 2 amps. The battery charger shall include an ammeter for display of charging current and shall have fused DC outputs.

3.4 – Front Panel Devices:

Provide control switches mounted and indicating lights mounted on the cabinet front for:

A. TEST: Simulates normal power loss to control for testing of generator set. Controls shall provide for a test with or without load transfer.

B. OVERRIDE: Momentary position to override retransfer time delay and cause immediate return to normal source, if available.

C. Provide LED-type switch position and source available indicator lamps on the front of the transfer switch cabinet.

3.5 – Control Interfaces:

A. The transfer switch will provide an isolated relay contact for starting of a generator set. The relay shall be normally held open, and close to start the generator set.

B. Provide one set Form C auxiliary contacts, operated by transfer switch position, for remote indication of transfer switch position. Contacts shall be rated 10 amps at 250 VAC.

3.6 – Sequence of Operation (Open Transition):

A. Transfer switch normally connects an energized utility power source (source 1) to loads and a generator set (source 2) to the loads when normal source fails. The normal position of the transfer switch is source 1 (connected to the utility), and no start signal is supplied to the genset.

B. Generator Set Exercise (Test) With Load Mode. The control system shall be configurable to test the generator set under load. In this mode, the transfer switch shall control the generator set in the following sequence:

C. Transfer switch control shall initiate the exercise sequence at a time indicated in the exercise timer program, or when manually initiated by the operator (test).

1. When the control systems senses the generator set at rated voltage and frequency, it shall operate to connect the loads to the generator set by opening the normal source contacts,

and closing the alternate source contacts a predetermined time period later. The timing sequence for the contact operation shall be programmable in the controller.

2. The generator set shall operate connected to the load for the duration of the exercise period. If the generator set fails during this period, the transfer switch shall automatically reconnect the generator set to the normal service.

3. On completion of the exercise period, the transfer switch control shall operate to connect the loads to the normal source by opening the alternate source contacts, and closing the normal source contacts a predetermined time period later. The timing sequence for the contact operation shall be programmable in the controller.

4. The transfer switch shall operate the generator set unloaded for a cooldown period, and then remove the start signal from the generator set. If the normal power fails at any time when the generator set is running, the transfer switch shall immediately connect the system loads to the generator set.

D. Generator Set Exercise (Test) Without Load Mode. The control system shall be configurable to test the generator set without transfer switch load connected. In this mode, the transfer switch shall control the generator set in the following sequence:
   1. Transfer switch control shall initiate the exercise sequence at a time indicated in the exercise timer program, or when manually initiated by the operator.

   2. The control system shall operate the generator set unloaded for the duration of the exercise period.

   3. At the completion of the exercise period, the transfer switch control shall remove the start signal from the generator set. If the normal power fails at any time when the generator set is running, the transfer switch shall immediately connect the system loads to the generator set.

SECTION 4.0 – MANUAL TRANSFER SWITCH

4.1 – Power Transfer Switch:

A. Ratings:
   1. The manual transfer switch shall be a Cummins Power Generation OTIII -400amp, 3-pole, 277/480 volts AC, 3-phase, 4-wire and furnished in a NEMA 1 indoor rated enclosure.

   2. Transfer switch shall have a 5 year comprehensive warranty to match the generator set.

   3. Main contacts shall be rated for 600 volts AC

4. Transfer switches shall be rated to carry 100 percent (%) of rated current continuously in the enclosure supplied, in ambient temperatures of 40 to +60 degrees C, relative humidity up to 95% (non-condensing), and altitudes up to 10,000 feet (3,000 Meters).

5. Transfer switch equipment shall have withstand and closing ratings (WCR) in RMS symmetrical amperes greater than the available fault currents shown on the drawings. The transfer switch and its upstream protection shall be coordinated. The transfer switch shall be third party listed and labeled for use with the specific protective device(s) installed in the application. The automatic transfer switch shall have a minimum withstand and close-on rating of 30,000 amps @ 600 volts AC.

B. Construction:
1. Transfer switches shall be double throw, electrically and mechanically interlocked, and mechanically held in the source 1 and source 2 positions. The transfer switch shall be specifically designed to transfer to the best available source if it inadvertently stops in a neutral position.

2. Transfer switches rated through 1000 amperes shall be equipped with permanently attached manual operating handles and quick break, quick make over center contact mechanisms. Transfer switches over 1000 amperes shall be equipped with manual operators for service use only under de energized conditions.

3. Main switch contacts shall be high pressure silver alloy. Contact assemblies shall have arc chutes for positive arc extinguishing. Arc chutes shall have insulating covers to prevent inter-phase flashover.

4. Transfer switch internal wiring shall be composed of pre-manufactured harnesses that are permanently marked for source and destination. Harnesses shall be connected to the control system by means of locking disconnect plug(s), to allow the control system to be easily disconnected and serviced without disconnecting power from the transfer switch mechanism.

5. Transfer switch shall be provided with flame retardant transparent covers to allow viewing of switch contact operation but prevent direct contact with line voltage components.

6. Transfer switches shall be 3-pole shall be provided with a neutral bus and lugs. The neutral bus shall be sized to carry 100% of the current designated on the switch rating.

C. Connections:
1. Field control connections shall be made on a common terminal block that is clearly and permanently labeled.

2. Transfer switch shall be provided with AL/CU mechanical lugs sized to accept the full output rating of the generator set.

4.2 – Enclosure:

A. Enclosures shall be UL listed. The enclosure shall provide NEC wire bend space. The cabinet door shall be key locking.

B. Transfer switches shall be mounted in NEMA Type 1 indoor rated enclosure. Manual operating handles and all control switches (other than key operated switches) shall be accessible to authorized personnel only by opening the key locking cabinet door. Transfer switches with manual operating handles located on outside of cabinet do not meet this specification and are not acceptable

4.3 – Transfer Switch Control:

A. The control system shall include field adjustable provisions to control the speed of operation of the transfer switch power contacts, adjustable from 0.5 to 7.5 seconds. In addition, the control shall include a field-configurable in-phase monitor function that causes the transfer to be initiated only when the sources are in phase. When in-phase transfer is enabled and transfer does not occur within 120 seconds, the control shall automatically transfer the load using delayed transfer.

B. Power for the transfer switch operation shall be derived from the source to which the load is being transferred.

4.4 – Front Panel Devices:

Provide control switches mounted and indicating lights mounted on the cabinet front for:

A. Shall include lights to indicate whether the transfer switch to source A or B

B. Shall include lights to indicate source availability of source A or B

C. Shall include key operated transfer controls to allow the operator to manually transfer to and from emergency.

D. Shall include AC meters to sense load voltage, current and frequency. To be mounted together and provided with a selector switch in the transfer switch cabinet door.

4.5 – Control Interfaces:

A. Shall include a contact at the switch terminal which allows the operator to remotely transfer the switch in both directions.

B. Shall include contacts wired to the terminal block to indicate switch position for remote annunciation by the customer

C. Shall include a load-shed relay to transfer the switch from source B to either neural positon or source A, when initiated by a remote contact closure. The load is transferred back to source B

when the remote contact re-opens. Re-transfer to source A is immediate when the preferred source is re-established.

4.6 – Sequence of Operation (Open Delayed Transition):

A. Non-automatic transfer switch normally connects power from either the stationary emergency generator power (source 1) to loads or a portable generator (source 2) to the loads when the emergency generator is unavailable. The normal position of the transfer switch is source 1 (connected to the stationary emergency generator).

B. Transfer switch control shall is manual, and only operated by the operator when a portable generator is connected and power is available.

SECTION 5.0 – FACTORY TESTING:

5.1 – Factory Testing:

A. The generator set and transfer switch shall be factory tested shall perform a complete operational test prior to shipping from the factory.

B. A certified factory test report shall be required. The process shall include calibration of voltage sensors.

SECTION 6.0 – INSTALLATION, ON-SITE ACCEPTANCE TESTS AND OWNER TRAINING:

6.1 – Installation:

A. A mandatory site walk-though will be required prior to bids. Contractor shall verify all dimensions of the existing and ensure fitment of the new equipment. A site walk-through and time to be coordinated with the owner.

B. The equipment shall be installed by the contractor in accordance with final submittals and contract documents. Installation shall comply with applicable state and local codes as required by the authority having jurisdiction (AHJ). Install equipment in accordance with manufacturer's instructions and instructions included in the listing or labeling of UL listed products.

C. Installation of equipment shall include furnishing and installing all interconnecting wiring between all major equipment provided for the on-site power system. The contractor shall also perform interconnecting wiring between equipment sections (when required), under the supervision of the equipment supplier.

D. Equipment shall be installed on concrete housekeeping pads. Equipment shall be permanently fastened to the pad in accordance with manufacturer’s instructions and seismic requirements of the site.

E. Equipment shall be initially started and operated by representatives of the manufacturer.

F. All equipment shall be physically inspected for damage. Scratches and other installation damage shall be repaired prior to final system testing. Equipment shall be thoroughly cleaned to remove all dirt and construction debris prior to final testing of the system.

G. Installer must provide temporary power during complete installation.

H. Complete installation shall include, but not limited to:

1. Contractor must secure City of Vernon, CT Permits & Inspections.
2. Contractor must generate stamped engineering drawings as required by the city of Vernon, CT.
3. Work time frame and liquidating damages:
   a. ALL work shall be completed within ninety (90) calendars days from the agreed to start date. The start date will be based on lead time for all equipment.
   b. Non-compliance with the scheduled completion date of the Contract shall result in charges as follows - The Contractor shall pay liquidated damages of $250.00 per day for each calendar day after the agreed contract completion date up to, and including, the actual date of completion.
4. Provide temporary power during complete installation.
5. Disconnect existing generator including:
6. Complete exhaust system
7. Radiator discharge louver
8. All electrical including:
   a. Breaker disconnect and main feeder
   b. Wiring for fresh air and discharge louvers
   c. Battery charger and block heater wiring
   d. Day tank pump system
   e. DC control wiring and annunciation
9. All supply and return fuel lines from day tank to generator.
10. All supply and return fuel lines from storage tanks to day tank.
11. Pump out all fuel from storage tanks and day tank and dispose of properly.
12. Rig out existing storage tanks and dispose of properly.
13. Unbolt generator from base.
14. Rig out, remove generator and dispose of properly.
15. Clean out area around & under generator.
16. Rig in new sub base fuel tank and bolt in place.
17. Rig in new generator, set on subbase tank and bolt together.

18. Fabricate new radiator discharge ductwork louver to existing motorized louver with flex boot connection.

19. Fabricate and install new exhaust system including:
    a. Critical grade exhaust silencer
    b. Stainless steel exhaust flex
    c. All new black iron exhaust piping

20. Connect supply and return fuel lines from subbase tank to generator.

21. Install new 400amp generator feeders back to transfer switch to match mainline circuit breaker including flex connection.

22. Install new DC control wiring from generator to transfer switch including flex connection.

23. Install battery charger and DC wiring on a dedicated circuit.

24. Wire block heater on a dedicated circuit.

25. Wire radiator discharge motorized louver and two fresh air intake motorized louvers back to generator controller on a dedicated circuit.

26. Wire and set up louvers for powered closed operation. (Loss of power opens louvers).

27. Install DC remote start from generator to transfer switch including flex connection.

28. Automatic Transfer switch installation:
    a. Bypass temporary power around transfer switch during transfer switch replacement.
    b. Provide the ability to provide backup power to power the entire pump station in the event of loss of power during transfer switch installation.
    c. Remove existing transfer switch.
    d. Fabricate all necessary mounting hardware assembly to support transfer mechanism inside the existing switchgear.
    e. Mechanically bolt transfer switch mechanism to support hardware
    f. Wire all Utility, Load and Generator connections from main distribution and load sections of switchgear .
    g. Fabricate new front panel of switchgear and integrate transfer switch controller into front panel of transfer switch section.

29. Manual Transfer Switch Installation:
    a. Extend two (2) generator feeder conduits to open wall.
    b. Install 600Vac rated, heavy duty rated, manual transfer switch (MTS) on the wall.
    c. Extend two (2) generator feeder conduits from the MTS to the generator for source 1.
    d. Extend two (2) generator feeder conduits from the MTS to the generator docking station located outside the building for source 2.
    e. Connect the load side of the MTS to source 2 of the new automatic transfer switch (ATS) located inside of the existing switchgear.

30. Portable Generation Docking Station:
    a. Install portable generator docking station outside the building.
    b. Connect the two (2) generator feeders from source 2 of the MTS located inside the building.

31. Wire all DC control wiring received from generator to the automatic transfer switch

32. Wire remote common fault and run relay from generator to customers SCADA panel

33. Perform equipment start-up by an authorized manufacturer representative.

34. Perform a 2 hour load bank test as indicated on section 6.2 of this specification.

35. All wiring to be copper.

36. Patch all holes

37. All water heater plumbing pipes must be properly insulated with commercial grade insulation and both fresh air louvers must be wired so as to not void the warranty.

6.2 – On-Site Acceptance Test:

A. The complete installation shall be tested for compliance with the specification following completion of all site work. Testing shall be conducted by representatives of the manufacturer, with required fuel supplied by Contractor.

B. Installation acceptance tests to be conducted on site shall include 2 hour load bank test at full load. Data shall be recorded every 15 minutes. After the load bank test a pull the plug test and a transfer test using the building load shall be performed to test the system's integrity.

6.3 – Owner Training

A. Provide owner training at a time convenient to the owner.

1. The contractor shall provide all labor, materials, parts, tools, devices and test equipment necessary to construct and install support structure. No labor is to be subcontracted under any circumstance.

2. The contractor shall provide temporary emergency backup power for the duration of the job before the current generator is taken out of service and until such time as the new generator has been installed and passed all performance tests.

3. The contractor shall perform normal service between the hours of 7:00 a.m. and 4:30 p.m., Monday through Friday.

REQUEST FOR PROPOSALS

TALCOTTVILLE PUMP STATION EMERGENCY GENERATOR REPLACEMENT

CONTRACT # 2028-05/07/2018

BID PROPOSAL

TO: Town of Vernon
14 Park Place
Vernon, CT 06066

THE UNDERSIGNED HEREBY DECLARES that:

A. No person or persons other than those named herein are interested in this Proposal or in the Contract proposed to be taken; that it is made without any connection with any other person or persons making any proposal for the same work, and is in all respects fair and without collusion or fraud; that no person acting for or employed by the Town of Vernon (the Town) is now or will hereafter be directly or indirectly interested therein, or in any portion of the profits thereof in any manner which is unethical or contrary to law;

B. He has read the information contained herein relating to the work;

C. That in the event a Contract, as contemplated by this Proposal, is awarded to him, he will enter into a written Contract with the Town, and agrees that in case he fails to do so, the Town may determine that the bidder has abandoned the Contract, and thereupon the acceptance of this Proposal and the award shall be null and void, and that the proposal guarantee may be forfeited in whole or in part to the Town as the Town may determine, and he will, by such Contract, agree to furnish all materials herein required, within the time stipulated by the Town, will perform all services and will assume all liabilities and obligations connected therewith, all in accordance with the Contract, Specifications, and Instructions to Bidders, all of which are made a part hereof, and will accept in full payment therefore the following sums, to wit:

The undersigned representative of _____hereby submits the following bid proposal for labor as specified:

1. For completion of all work for the construction and placement of the support structure per the attached specifications in the amount of: $_____ _____DOLLARS

2. DELIVERY TO BE (60) CALENDAR DAYS FROM CONTRACT AWARD. EXTENSION SUBJECT TO WRITTEN APPROVAL BY TOWN ADMINISTRATOR OR HIS DESGNEE

3. BID BOND ATTACHED: YES_____ NO_____

4. Bidder shall submit the name, address, responsible party and phone number of three or more references (preferably municipalities) where similar work has been done.. If none, state so.

   1)_____

   2)_____

   3)_____

5. The undersigned declares that the signer of this proposal is:

   (a) INDIVIDUAL doing business as

   (b) PARTNERSHIP doing business as

   (c) CORPORATION entitled

organized under the laws of the State of _____ and having its principal offices at

_____

The names of all partners of a partnership or the principal offices of a corporation will be submitted upon request.

_____
Signature of Authorized Representative

_____
Print Name and Title

_____
Print Firm Name

_____
Print Street Address

_____
Print City, State and Zip Code

_____
Contact Name

_____
Area Code and Telephone Number

_____
Area Code and Telecopier (Fax) Number

I, _____, hereby certify that I do not hold any executive or appointive office in the government of the Town of Vernon; furthermore, I do not anticipate holding or seeking office in the Town of Vernon for the duration of this contract. I further certify that the firm, which I represent, as named above, is an Equal Opportunity Employer.

_____ _____
Date Signature

REQUEST FOR PROPOSALS

TALCOTTVILLE PUMP STATION EMERGENCY GENERATOR REPLACEMENT

CONTRACT # 2028-05/07/2018

CONTRACT

This agreement, made and concluded by and between the Town of Vernon, a Municipal corporation organized and existing under the laws of the State of Connecticut, acting herein by its Town Administrator duly authorized, hereinafter designated the 'Town' and _____ (being the party named in the attached copy of the proposal) hereinafter designated the 'Contractor.'

A. **WITNESSETH,** That said Contractor has agreed, and by these presents does for his, their, or its heirs, executors, administrators, successors, and assigns covenant, promise and agree to and with the said Town, for the consideration hereinafter mentioned and contained, and under the penalty expressed in bonds hereunto annexed, that the said Contractor shall and will, at his, its, or their own proper charge, cost and expense furnish all materials in accordance with this contract and the specifications which are a part hereof, viz.;all to be in accordance with the terms of the proposal for said material submitted to the Town Administrator of the Town, and made part of this contract.

B. **TOWN ADMINISTRATOR TO BE JUDGE.** The Town Administrator of the Town and his duly authorized representatives, hereinafter referred to as the 'Administrator' shall be judge of the character, nature and fitness of all the materials furnished under this contract.

C. **(1) CONTRACTOR RESPONSIBLE FOR WHOLE WORK.** The Contractor shall be responsible for the entire work until its final acceptance, and any unfaithful or imperfect work or defective material that may be discovered at any time before said final acceptance shall be immediately corrected or removed by said Contractor on requirement of the Administrator.

(2) DEFECTS IN MATERIAL. In the case the nature of the defects is such that it is not expedient to have them corrected, the Administrator shall have the right to deduct from the amount due the Contractor on the final settlement of the accounts such sum of money as he considers a proper equivalent for the difference between the value of the materials specified and that furnished, or a proper equivalent for the damage.

(3) PARTIAL PAYMENT NOT ACCEPTANCE. It is also agreed that this is an entire contract for one whole and complete work, and that no partial payments on account by the Town, nor the presence of the Administrator or inspectors, or their supervision or inspection of work or materials, shall constitute an acceptance of any part of the work before its entire completion and final acceptance.

D. **(1) COMMENCEMENT AND COMPLETION OF WORK.** The Contractor shall furnish the material contracted for within the time stated therefore in the specifications for this work.

(2) EXTENSION OF TIME. If the Contractor is delayed in the prosecution or completion of the work by or on account of any act or omission of the Town, or by strikes or causes beyond control of the Contractor, he shall be entitled to such reasonable extension of time for the completion of the work as may be decided upon by the Administrator, provided, however, that no claim for an extension of time for any reason shall be allowed unless, within three days after such delay occurs, notice in writing of the fact of said delay, its causes, and the extension claimed, shall be given by the Contractor to the Administrator.

(3) TIME LIMITS. All time limits stated in the Contract Documents are of the essence of the Contract.

E. **(1) CONTRACTOR'S DUTIES AND LIABILITIES.** The Contractor shall comply with all local, state and national laws and regulations, and with all Town ordinances in the prosecution of the work, and shall secure all necessary permits and licenses.

(2) CONTRACTOR LIABLE FOR DAMAGES.
(a). The Contractor shall indemnify and save harmless the Town, its officer, agents and servants against and from all damages, costs and expenses which they or any of them may suffer by, from or out of any and all claims for payment for materials or labor used or employed in the execution of this contract, and also for injuries or damages received or sustained to person or property, or both, in consequence of or resulting from any work performed by said Contractor, or of or from any negligence in guarding said work, or of or from any act or omission of said Contractor, and said Contractor shall also indemnify and save harmless said Town from all claims under the Workmen's Compensation Act arising under or out of this contract.

(b). Employees' Compensation Insurance shall be as provided by Connecticut law and custom.

(c). See specifications for required types of insurance.

Commercial General Liability (Town of Vernon added as additional insured):

Each Occurrence:	$1,000,000
Personal/Advertising Injury per Occurrence:	$1,000,000
General Aggregate:	$2,000,000
Product/Completed Operations Aggregate:	$2,000,000
Fire Damage Legal Liability	$100,000

Automobile Liability (Town of Vernon added as additional insured):

Each Accident:	$1,000,000
Hired/Non-owned Auto Liability:	$1,000,000

Workers' Compensation/Employers Liability

Workers' Compensation	Statutory Requirement set forth by State of CT
Employers Liability	
Each Accident	$100,000
Disease-Policy Limit	$500,000
Disease-Each employee	$100,000

Umbrella/Excess Liability (following form of general liability, auto liability and employer liability):

Each Occurrence:	$1,000,000
General Aggregate:	$2,000,000
Product/Completed Operations Aggregate:	$2,000,000

Professional Liability (where required)

Each Claim:	$1,000,000
Annual Aggregate	$1,000,000

Waiver of Subrogation Requirement. Contractor will require all insurance policies in any way related to the work and secured and maintained by the Contractor to include clauses stating each carrier will waive all rights of recovery, under subrogation and otherwise, against the Town of Vernon, and its respective officers, employees, agents, servants, elected officials, and volunteers. Contractor shall require of subcontractors, by appropriate written agreements, similar waivers each in favor of the Town of Vernon.

(d). Sub-contractors must be protected by insurance the same as the principal contractor.

(e). It is agreed between the parties hereto that the amount of insurance set forth above does not in any way limit the liability of the Contractor to the Town by virtue of his promise to hold the Town harmless so that in the event that any claim results in a settlement or judgment in any amount above said limits, the Contractor shall be personally liable to the Town for the difference.

(f). Certificates of the insurance company or companies must be submitted to the Administrator before the Contractor starts work. Should any insurance expire or be terminated during the period in which the same is required by this contract, the Administrator shall be notified thirty (30) days in advance and such expired or terminated insurance must be replaced with new insurance and a new certificate furnished to the Administrator.

(g). Failure to provide the required insurance and certificates may, at the option of the Town, be held to be a willful violation of this Contract.

(3) PATENTS. The Contractor shall defend any suits or proceedings brought against the Town for alleged infringements of patents by or by reason of any material furnished under this contract, and shall pay any damages or costs that may be awarded against the Town as a result of such suits, free of all expense to the Town.

F. AVOIDANCE OF CONTRACT. If this Contract shall be assigned without the written consent of the Administrator, or if at any time the Administrator shall be of the opinion that the work on said material is necessarily or unreasonably delayed, or that the Contractor is willfully violating any of the conditions or agreements of this contract, or that the progress of the work is, in his opinion, being so delayed that said material cannot be supplied within the required time, the Administrator may give written notice, postage prepaid, to the Contractor, at his business address, to that effect. If the Contractor shall not, within ten days after the mailing of such notice, take measures as will, in the judgment of the Administrator, insure the satisfactory completion of the work, he may notify the Contractor in writing, to discontinue all work on said material under this

contract; and it is hereby agreed that the Contractor shall thereupon at once stop work and cease to have the right or claim to possession of the material; and the Town may, by means of such other agents or contractors as shall to it seem advisable, complete the work herein described, or such part thereof as it may deem necessary, and may take possession of and use such materials, except as otherwise provided. The Contractor shall not remove any portion of the materials, except as otherwise provided. The Contractor shall not remove any portion of the materials after receiving such notice as aforesaid. And said Town is hereby authorized and empowered to apply sums of money due or to become due to said Contractor under this Contract by way of reduction in damages, and as part payment of such additional expense incurred by the Town as aforesaid.

G. **PAYMENT SCHEDULE**. The Town will pay and the Contractor will receive, as full compensation for furnishing such materials, the amount stated in the proposal, or the sums of money computed at the several unit prices stated in the proposal submitted by the Contractor to the Administrator. A copy of the proposal is made a part of this Contract. The Town may make such deductions from these sums as are provided for in this Contract.

(1) FINAL COMPLETION AND FINAL PAYMENT. Upon receipt of written notice that the work is ready for final inspection and acceptance and upon receipt of final Application for Payment, The Administrator will promptly make such inspection and, when he finds the work acceptable under the Contract Documents and the contract fully performed, he will promptly issue a final Certificate of Payment stating that to the best of his knowledge, information and belief, and on the basis of his observations and inspections, the work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor, and noted in said final Certificate, is due and payable. The Administrator's final Certificate for payment will constitute a further representation that the conditions precedent to the Contractor's is entitled to final payment as set forth herein had been fulfilled.

The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final Application for Payment.

(2) CONTINGENT UPON AVAILABILITY OF FUNDS. TOV's obligation under this Agreement is contingent upon the availability of appropriated funds from which payment for Agreement purposes can be made. No legal liability on the part of TOV for any payment may arise until funds are made available and approved for this Agreement and until a Purchase Order has been issued.

(3) NO INTEREST TO BE PAID. No interest is to be allowed or paid by the Town upon any monies retained under the provisions of this contract.

H. **CONTENTS OF CONTRACT**. The information for bidders, the proposal, the specifications, together with special provisions following herewith, and the bond and any and all additions which may be inserted or attached to any, or all of the sections as listed above, together with the drawings named in the information for bidders are made a part of this Contract.

I. **AUTHORITY AND DUTIES OF INSPECTOR**. An Inspector is a representative (but not a duly authorized representative as referred to in Article B of this Contract) of the Administrator assigned to make any and all necessary inspections of the work performed and materials furnished by the Contractor. Inspectors shall be authorized to inspect all work done on materials furnished. Such inspection may extend to all or any part of the work and to the preparation of the materials to be used. In case of dispute arising between the Contractor and the Inspector as to materials furnished or the manner of performing the work, the Inspector shall have the authority to reject material or suspend the work until the question at issue can be referred to and decided by the Administrator. The Inspector shall not be authorized to revoke, alter, enlarge, relax or release any requirements of the specifications nor to approve or accept any portion of the work, or to issue instruction contrary to the plans and specifications. The Inspector shall not act as foreman or perform other duties of the Contractor nor interfere with the management of the work by the Contractor. Any advice which the Inspector may give the Contractor shall in no way be construed as binding the Administrator of the Town in any way nor releasing the Contractor from the fulfillment of the terms of the Contract.

J. **FAIR EMPLOYMENT PRACTICES.** The Contractor hereby agrees that neither he nor his subcontractors will refuse to hire or employ or to bar or to discharge from employment an individual or to discriminate against him in compensation or in terms, condition or privilege of employment because of race, color, religious creed, age, sax, national origin or ancestry, except in the case of bona fide occupational qualification or need.

The Contractor further agrees that neither he nor his subcontractors will discharge, expel or otherwise discriminate against any per son because he has opposed any unfair employment practice or because he has filed a complaint or testify or assisted in any proceeding under Section 31-127 of the Connecticut General Statutes. The advertisement of employment opportunities will be carried out in such manner as not to restrict such employment so as to discriminate against individuals because of their race, color, religious creed, age, sex, national origin or ancestry, except in the case of a bona fide occupational qualification or need.
The terms stated above are taken from Section 31-126 of the Connecticut General Statutes, "Unfair Employment Practices."

K. **LAWS AND JURISDICTION.** The parties hereto agree that this contract is subject to the laws and jurisdiction of the State of Connecticut.

L. **COMPLIANCE WITH THE IMMIGRATION REFORM AND CONTROL ACT OF 1986.** The contractor hereby agrees that he is aware of and has complied with the hiring and documentation requirements of the Immigration Reform and Control Act of 1986.

The contractor agrees that it has asked for and examined documentation in order to verify the legal employability of its employees and has executed the appropriate forms attesting thereto pursuant to the Act.

The contractor further agrees to indemnify and hold the Town harmless from any costs and/or penalties incurred, including but not limited to fines, attorney’s fees and costs arising from a claim of violation of said Act.

M. **DISPUTES.** The parties agree that any dispute will be submitted to the Superior Court, Judicial District of Tolland, at Rockville, Connecticut.

N. **ANTI-TRUST PROVISION.** The Contractor or Subcontractor offers and agrees to assign to the Town all right, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act, 15 O.K. Section 15, or under Chapter 624 of the General Statutes of Connecticut, arising out of the purchase of services, property or intangibles of any kind pursuant to a public purchase contract or subcontract. This assignment shall be made and become effective at the time the Town awards or accepts such contract, without further acknowledgment by the parties.

IN WITNESS WHEREOF, The parties hereto set their hands and seal this _____day of_____2018.

Signed in the presence of:

_____
Witness

_____
Witness

For the **TOWN OF VERNON**

By:_____
Michael J. Purcaro
Town Administrator

IN WITNESS WHEREOF, The parties hereto set their hands and seal this _____day of_____2018.

Signed in the presence of:
_____

_____
Witness

_____
Witness

For the Vendor:

By:_____
Duly Authorized

Name:_____

Title_____