

**Town of Underhill
ARPA Funds Use Proposal [-Phase 1**

Committee/Group/Individual Requesting Funding: Energy committee

Contact Name: Jerry Adams

Phone Number: 802 343 5950

Email: adamseng3@comcast.net

Date: 1/24/2023

Proposal Name/Brief Description: Generator for Town Hall.

Proposal for Kohler 20 KW propane generator, RXT automatic transfer switch, RDC2 control panel, complete site, and electrical work. Engine is a Kohler CH1000 4 cycle, V2 air cooled 3,600 RPM.

Optional Adders:

Annual maintenance	\$435
Semi annual maintenance	\$720
Surge protector	\$195 Recommended
Internet monitoring service	\$600
Extended warranty > 7 Yrs.	\$650
Snow stand Pic.	\$385

Brookfield Electric contact: Jim Brochhausen, Email: jim@brookfieldservice.com

Estimated Cost/Description of Estimate Process (use the space here and attach additional pages and any supporting documents): \$11,049.00 15,000 IF GENERAC .

Town of Underhill

ARPA Funds Use Proposal – PHASE 1

Please Answer the following questions by marking the answer in the space provided.

Benefit to Town of Underhill *Town Hall Generator 1/24/2023*

Does this proposal

YES NO Not Sure

Invest in the town without creating a need for additional or ongoing revenue or expenses? Is this a one-time expense?		<input checked="" type="checkbox"/>	
Benefit a population that was disproportionately impacted by the pandemic?		<input checked="" type="checkbox"/>	
Benefit a population underserved prior to the pandemic?		<input checked="" type="checkbox"/>	
Mitigate and/or help the Town adapt to the effects of climate change?	<input checked="" type="checkbox"/>		
Improve or create infrastructure for Underhill? Ex. Natural resources, pedestrian access, transportation but not limited to	<input checked="" type="checkbox"/>		
Align with or impact the goals and priorities of the Town Plan? LINK			<input checked="" type="checkbox"/>

Comments:

Feasibility of Project

Can this proposal

YES NO Not Sure

Be fully planned, estimated and obligated to the Town by December 31, 2024?	<input checked="" type="checkbox"/>		
Be fully completed and paid for by the end of 2026?	<input checked="" type="checkbox"/>		
Be used to leverage or match other grants, funds or projects?			<input checked="" type="checkbox"/>

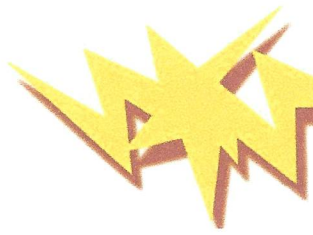
Please attach estimates, quotes, drawings, or supporting documents or elaborate in any way you would like. Please note that the ARPA Advisory Committee only recommends projects to the Selectboard and the Selectboard has the ultimate authority to allocate the funds. 17 V.S.A. § 2664

Links and More Information:

Final Rule – Overview at <https://home.treasury.gov/system/files/136/SLFRF-Final-Rule-Overview.pdf>

Final Rule – FAQ's at <https://home.treasury.gov/system/files/136/SLFRF-Final-Rule-FAQ.pdf>

Specific Information for Town of Underhill at [https://www.underhillvt.gov/vertical/sites/%7B4E962BB9-B4BB-4504-A3EE-ED54521A1BCE%7D/uploads/Coronavirus Local Fiscal Recovery Fund Overview Presentation 06092022.pdf](https://www.underhillvt.gov/vertical/sites/%7B4E962BB9-B4BB-4504-A3EE-ED54521A1BCE%7D/uploads/Coronavirus%20Local%20Fiscal%20Recovery%20Fund%20Overview%20Presentation%2006092022.pdf)



Brook Field Service

Providing Shelter from the Storm

PO Box 47 Northfield, VT 05663 – Toll Free: 866-POWER-97

January 22, 2023

Jennifer Silpe-Katz
Town of Underhill
PO Box 120
Underhill, VT 05489
Jsilpe-katz@underhillvt.gov

Subject: Underhill Town Office Generator Project

Dear Jennifer,

Thanks for the opportunity to quote your project.

We are pleased to offer the following for your consideration.

- Kohler Propane Generator Model 20RCA rated at ~~3~~20KW standby, 120/240 single phase with the following accessories:
 - Electronic Isochronous governor
 - RDC2 Control Panel
 - Program and upload generator controller software
 - 5-year warranty for parts, 5 years for service
 - 100-amp main circuit breaker
 - Aluminum Sound Attenuated Outdoor Generator Enclosure
 - Dealer prep and testing at our shop
 - Configure gas system for LP Vapor
 - Cold Climate Model
 - Configure engine for cold weather operation.
 - Install Oil pan heater.
 - Install breather heater tube.
 - Install alternator cover.
 - Install 12 Volt Heavy Duty Interstate Battery
 - Kohler 2000 amp Nema 3r Service Entrance Rated Automatic Transfer Switch, model rXT
 - Complete mechanical and electrical installation of the system per National Electric Code.
 - Site work/trenching/generator cement pad.
 - Gas connection by Propane Company
 - VT Electrical permit and inspection

Equipment and Services as detailed - \$11,049.00

Terms: 30% down upon acceptance of order balance due upon project completion

Optional Adders: Please check yes or no for the following:

- ☐ YES ☐ NO - Annual Maintenance program Plan 1 \$435.00 (details attached)
- ☐ YES ☐ NO - Annual Maintenance Program Plan 2 \$720.00 (details attached)
- ☐ YES ☐ NO - Surge Protection installed to the transfer switch (recommended) \$195.00.
- ☐ YES ☐ NO - Kohler On Cue internet monitoring system - \$600.00
- ☐ YES ☐ NO - Kohler extended warranty; service warranty extended from 2-year to 7-years \$650.00
- ☐ YES ☐ NO - Angle iron snow stand, recommended (see below) \$385.00

Other Notes:

- We are factory authorized/trained for service for the generators that we sell
- We are local.
 - Utility charges, if any, are not included in this quote and would be extra.
- Fuel tanks to be provided and connected by your supplier and is directly billed by them and is not part of this quote.
- Kohler is the #1 rated brand by Consumer Reports Magazine
- Delivery & installation within 80 business days from order.
- Brook Field Service provides 24 hour 7 day a week emergency service for our customers. We have the largest generator tech team in Vermont.
- We are Kohler's largest Vermont Dealer
- Techs are factory trained and TQP certified by the State of VT for generators

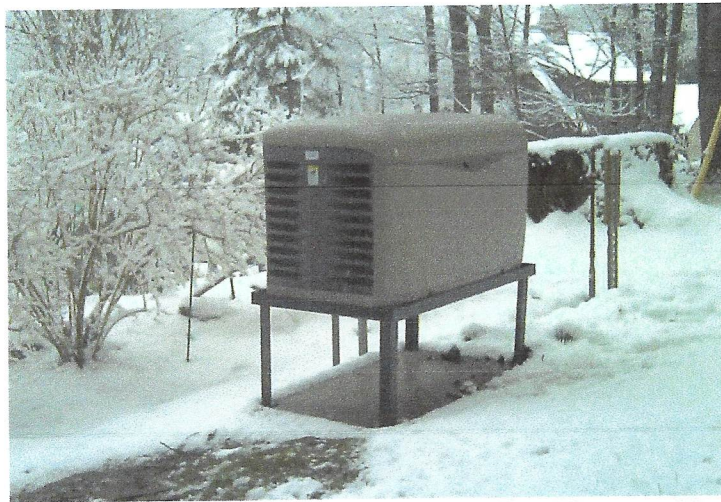
Best regards,

Joe Torro

Customers Name: _____

Accept Proposal: _____ Date: _____

We provide Factory Trained Service, for what we Sell!



Generator on a snow-stand.

CONFIDENTIALITY:

This quote contains information that is privileged and confidential. Unless you are authorized, by Brook Field Service, you may not use, copy, or disclose this quote to anyone. Thank you.



The Kohler® Advantage

- **High Quality Power**
Kohler home generators provide advanced voltage and frequency regulation along with ultra-low levels of harmonic distortion for excellent generator power quality to protect your valuable electronics.
- **Extraordinary Reliability**
Kohler is known for extraordinary reliability and performance and backs that up with a premium 5-year or 2000 hour limited warranty.
- **Powerful Performance**
Exclusive Powerboost™ technology provides excellent starting power. §
- **Aluminum Enclosure**
 - Attractive aluminum enclosure allows installation as close as 18 inches from your home or small business. †
 - Enclosure panels can be removed without tools to allow easy access for maintenance and service.

Standard Features

- **RDC2 Controller**
 - One digital controller manages both the generator set and transfer switch functions (with optional Model RXT).
 - Electronic speed control responds quickly to varying demand.
 - OnCue® Plus Generator Management System for remote monitoring is included with the generator.
- **Kohler Command PRO Engine Features**
 - Kohler Command PRO® OHV engine with hydraulic valve lifters for reliable performance without routine valve adjustment or lengthy break-in requirements.
- **Designed for Easy Installation**
 - Sturdy aluminum base can be mounted on gravel or a concrete mounting pad.
 - Fuel and electrical connections through the enclosure wall eliminate the need for stub-ups through the base.
 - Customer connection terminal block located near the controller allows easy access for field wiring.
 - Designed for outdoor installation only.
- **Certifications**
 - Meets emission regulations for U.S. Environmental Protection Agency (EPA) with both natural gas and LPG.
 - UL 2200/cUL listed (60 Hz model).
 - CSA certification available (60 Hz model).
 - Accepted by the Massachusetts Board of Registration of Plumbers and Gas Fitters.
 - Meets 181 mph wind rating.
- **Approved for stationary standby applications in locations served by a reliable utility source.**
- **20RCAL models packaged with a Model RXT automatic transfer switch are available. See page 4 and the Model RXT ATS specification sheet.**
- **Warranty**
 - 5-year/2000 hour limited warranty for on-grid (standby) applications in locations served by a reliable utility source.

Generator Ratings

Alternator	Voltage	Phase	Hz	Standby Ratings				Line Circuit Breaker	
				Natural Gas	LPG			Amps	Poles
				kW/kVA	Amps	kW/kVA	Amps		
2F7	120/240	1	60	18/18	75	20/20	83	100	2
	120/208	3	60	17/21	58	17/21	58	70	3
2G7	120/240	3	60	17/21	51	17/21	51	60	3
	277/480	3	60	17/21	26	17/21	26	30	3

Note: The line circuit breaker is automatically selected based on the generator set model and voltage configuration.

RATINGS: Standby ratings apply to installations served by a reliable utility source. All single-phase units are rated at 1.0 power factor. The standby rating is applicable to variable loads with an average load factor of 80% for the duration of the power outage. No overload capacity is specified at this rating. Ratings are in accordance with ISO-3046/1, BS5514, AS2789, and DIN 6271. **GENERAL GUIDELINES FOR DERATING:** ALTITUDE: Derate 4% per 305 m (1000 ft.) elevation above 153 m (500 ft.). TEMPERATURE: Derate 2% per 5.5°C (10°F) temperature increase above 16°C (60°F). Availability is subject to change without notice. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler Co. generator distributor for availability.

§ Check the appliance manufacturer's specifications for actual power requirements. Consult a Kohler® Power Systems professional to calculate your exact residential power system requirements.
 † Meets NFPA guidelines for 18 inch clearance to combustible materials. Check state and local codes for minimum distance required from a structure.

Alternator Specifications

Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Type	2-Pole, Rotating Field
Leads, quantity	
2F7	4
2G7	12
Voltage regulator	Digital
Insulation:	NEMA MG1-1.66
Material	Class H
Temperature rise	130°C Standby
Bearing: quantity, type	1, Sealed
Coupling	Direct
Amortisseur windings	Full
Voltage regulation, no-load to full-load RMS	± 1.0%
One-step load acceptance	100% of Rating
Peak motor starting kVA: (35% dip for voltages below)	
240 V, 1 ph	2F7 (4 lead) 41 (60 Hz)
240 or 480 V, 3 ph	2G7 (12 lead) 69 (60 Hz)

Alternator Features

- Compliance with NEMA, IEEE, and ANSI standards for temperature rise.
- Self-ventilated and dripproof construction.
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life.
- Superior voltage waveform and minimum harmonic distortion from skewed alternator construction.
- Digital voltage regulator with ±1.0% no-load to full-load RMS regulation.
- Rotating-field alternator with static exciter for excellent load response.
- Total harmonic distortion (THD) from no load to full load with a linear load is less than 5%.

Application Data

Engine

Engine Specifications	
Manufacturer	Kohler
Engine: model, type	CH1000 4-Cycle
Cylinder arrangement	V-2
Displacement, cm ³ (cu. in.)	999 (61)
Bore and stroke, mm (in.)	90 x 78.5 (3.54 x 3.1)
Compression ratio	8.8:1
Main bearings: quantity, type	2, Heavy-Duty Sleeve Bearings
Rated RPM	
60 Hz	3600
Max. engine power at rated rpm, kW (HP)	
LPG, 60 Hz	23.0 (30.9)
Natural gas, 60 Hz	20.2 (27.1)
Cylinder head material	Aluminum
Valve material	Steel/Stellite®
Piston type and material	Aluminum Alloy
Crankshaft material	Heat Treated, Ductile Iron
Governor: type	Electronic
Frequency regulation, no load to full load	Isochronous
Frequency regulation, steady state	±0.5%
Air cleaner type	Dry

Exhaust

Exhaust System	
Exhaust temperature exiting the enclosure at rated kW, dry, °C (°F)	260 (500)

Lubrication

Lubricating System	
Type	Full Pressure
Oil capacity (with filter), L (qt.) §	1.9 (2.0)
Oil filter: quantity, type §	1, Cartridge
Oil cooler	Integral
§ Kohler recommends the use of Kohler Genuine oil and filters.	

Fuel Pipe Size

Minimum Gas Pipe Size Recommendation, in. NPT		
Pipe Length, m (ft.)	Natural Gas 281,000 Btu/hr.	LPG 340,000 Btu/hr.
8 (25)	1	3/4
15 (50)	1	1
30 (100)	1 1/4	1
46 (150)	1 1/4	1 1/4
61 (200)	1 1/4	1 1/4

Engine Electrical

Engine Electrical System	
Ignition system	Electronic, Capacitive Discharge
Starter motor rated voltage (DC)	12
Battery (purchased separately):	
Ground	Negative
Volts (DC)	12
Battery quantity	1
Recommended cold cranking amps: (CCA) rating for -18°C (0°F)	500
Group size	51

Fuel Requirements

Fuel System	
Fuel types	Natural Gas or LPG
Fuel supply inlet	1/2 NPT
Fuel supply pressure, kPa (in. H ₂ O):	
Natural gas	0.9-2.7 (3.5-11)
LP	1.7-2.7 (7-11)

Fuel Composition Limits *	Nat. Gas	LPG
Methane, % by volume (minimum)	90 min.	—
Ethane, % by volume (maximum)	4.0 max.	—
Propane, % by volume	1.0 max.	85 min.
Propene, % by volume (maximum)	0.1 max.	5.0 max.
C ₄ and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass (maximum)	25 max.	
Lower heating value, MJ/m ³ (Btu/ft ³), (minimum)	33.2 (890)	84.2 (2260)

* Contact your local distributor for suitability and rating derates based on fuel compositions outside these limits.

Operation Requirements

Fuel Consumption, m³/hr. (cfh) @ 60Hz

% Load	Natural Gas		LPG	
100	8.0	(281)	3.9	(136)
75	6.9	(243)	3.1	(109)
50	4.6	(161)	2.3	(82)
25	3.6	(127)	1.7	(59)
Exercise	2.0	(71)	1.0	(35)

Nominal fuel rating: Natural gas: 37 MJ/m³ (1000 Btu/ft.³)
LPG: 93 MJ/m³ (2500 Btu/ft.³)

LPG conversion factors: 8.58 ft.³ = 1 lb.
0.535 m³ = 1 kg
36.39 ft.³ = 1 gal.

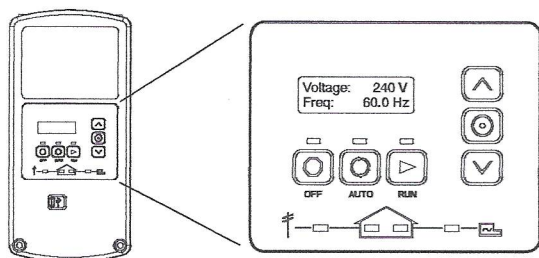
Generator Set Sound Data

Model 20RCA 8 point logarithmic average sound levels are 66 dB(A) during weekly engine exercise and 70 dB(A) during full-speed generator diagnostics and normal operation.*

All sound levels are measured at 7 meters with no load.

* Lowest of 8 points measured around the generator. Sound levels at other points around generator may vary depending on installation parameters.

RDC2 Controller



The RDC2 controller provides integrated control for the generator set, Kohler® Model RXT transfer switch, programmable interface module (PIM), and load shed kit.

RDC2 Controller Features

- Membrane keypad:
 - OFF, AUTO, and RUN pushbuttons
 - Select and arrow buttons for access to system configuration and adjustment menus
- LED indicators for OFF, AUTO, and RUN modes

RDC2 Controller Features, Continued

- LED indicators for utility power and generator set source availability and ATS position (Model RXT transfer switch required)
- LCD display:
 - Two lines x 16 characters per line
 - Backlit display with adjustable contrast for excellent visibility in all lighting conditions
- Scrolling system status display:
 - Generator set status
 - Voltage and frequency
 - Engine temperature
 - Oil pressure
 - Battery voltage
 - Engine runtime hours
- Date and time displays
- Smart engine cooldown senses engine temperature
- Digital isochronous governor maintains steady-state speed at all loads
- Digital voltage regulation: ± 1.0% RMS no-load to full-load
- Automatic start with programmed cranking cycle
- Programmable exerciser can be set to start automatically on any future day and time, and run every week or every two weeks
- Exercise modes:
 - Unloaded weekly exercise with complete system diagnostics
 - Unloaded full-speed exercise
 - Loaded full-speed exercise (Model RXT ATS required)
- Front-access mini USB connector for SiteTech™ or USB Utility connection
- Integral Ethernet connector for Kohler® OnCue® Plus
- Built-in 2.5 amp battery charger
- Remote two-wire start/stop capability for optional connection of a Model RDT transfer switch
- Diagnostic messages: Displays diagnostic messages for the engine, generator, Model RXT transfer switch, programmable interface module (PIM), and load management device.
- Maintenance reminders
- System settings:
 - System voltage, frequency, and phase
 - Voltage adjustment
 - Measurement system, English or metric
- ATS status (Model RXT ATS required):
 - Source availability
 - ATS position (normal/utility or emergency/generator)
 - Source voltage and frequency
- ATS control (Model RXT ATS required):
 - Source voltage and frequency settings
 - Engine start time delay
 - Transfer time delays
 - Voltage calibration
 - Fixed pickup and dropout settings
- Programmable Interface Module (PIM) status displays:
 - Input status (active/inactive)
 - Output status (active/inactive)
- Load control menus:
 - Load status
 - Test function

Generator Set Standard Features

- Battery cables
- EPA certified fuel system
- Aluminum sound enclosure
- Critical silencer
- Field-connection terminal block
- Fuel solenoid valve and secondary regulator
- Line circuit breaker
- Multi-fuel system, LPG/natural gas, field-convertible
- Oil drain extension with shutoff valve
- OnCue® Plus Generator Management System
- Premium 5-year limited warranty
- RDC2 generator set/ATS controller
- Rodent-resistant construction
- Sound-deadening, flame-retardant foam per UL 94, class HF-1

Available Options

Approvals and Listings

- ☐ CSA approval

Concrete Mounting Pads

- ☐ Concrete mounting pad, 3 in. thick
- ☐ Concrete mounting pad, 4 in. thick (recommended for storm-prone areas)

Electrical Accessories

- ☐ Battery
- ☐ Battery heater, 120VAC
- ☐ Battery heater, 240VAC
- ☐ Cold weather package, 120VAC
- ☐ Cold weather package, 240VAC
- ☐ Emergency stop kit
- ☐ PowerSync® Automatic Paralleling Module (APM) (single phase only; parallel two 20kW residential generator sets with the RDC2 controller)
- ☐ Programmable interface module (PIM) (provides 2 digital inputs and 6 relay outputs)

Fuel System Accessories

- ☐ Flexible fuel line (included on QS models)
 - ☐ Carburetor heater, 120 VAC
 - ☐ Carburetor heater, 240 VAC
- Carburetor heater is recommended for reliable starting at temperatures below 0°C (32°F)

Literature

- ☐ General maintenance literature kit
- ☐ Overhaul literature kit
- ☐ Production literature kit

Maintenance

- ☐ Maintenance kit (includes air filter, oil, oil filter, and spark plugs)

Automatic Transfer Switches and Accessories

- ☐ Model RDT ATS
- ☐ Model RXT ATS
- ☐ Model RXT ATS with combined interface/load management board
- ☐ Load shed kit for RXT or RDT
- ☐ Power relay modules (use up to 4 relay modules for each load management device)
- ☐ Other Kohler® ATS

20RCAL Model Packages

- ☐ 20RCAL with 100 amp RXT with 16-space load center and NEMA 1 steel enclosure for indoor installation
- ☐ 20RCAL with 200 amp service entrance-rated Model RXT with combined interface/load management board and corrosion-resistant NEMA 3R aluminum enclosure

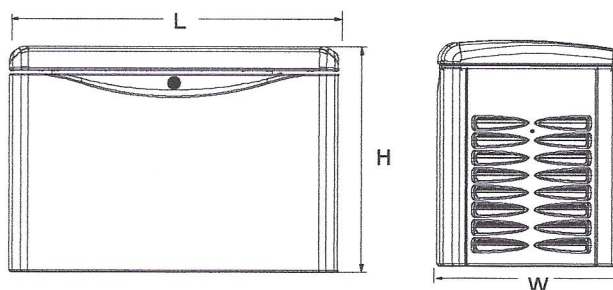
Warranty

- ☐ 5- Year Comprehensive Limited Warranty
- ☐ 10- Year Comprehensive Limited Warranty

Generator Set Dimensions and Weights

Generator Set Size, L x W x H: 1193 x 666 x 817 mm
(47 x 26.2 x 32.2 in.)

Shipping Weights:
20RCA Generator Set: 252 kg (555 lb.)
20RCAL with 100 A RXT ATS w/LC: 277 kg (611 lbs.)
20RCAL with 200 A RXT SE ATS: 272 kg (600 lb.)



NOTE: Dimensions are provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

DISTRIBUTED BY:



Town of Underhill town Offices Proposal

Prepared on: 01/23/2023

Prepared by: Art Bennett

art@reliantelectric.biz

Town of Underhill town Offices

12 Pleasant Valley Road

Underhill, VT, 05489

Phone: (802) 899-4434

jsilpe-katz@underhill.gov

RELIANT ELECTRIC WORKS

89C ETHAN ALLAN DR

SOUTH BURLINGTON, VT, 05403

(802) 863-5513

ART@RELIANTELECTRIC.BIZ

QTY	Generac items
1	<p>24kW Air-Cooled Standby Generator with Wi-Fi, Aluminum Enclosure</p> <p>Introducing the largest air-cooled generator on the market - Generac's 24kW is a big deal in a small package. Generac's commitment to continuous improvement, innovation and technology is giving us the ability to bring more power to you. With Generac's new 24kW you can save up to \$8,000 in product and installation costs, when compared to competitive output products, while powering what is most important for your home or small business. The new 24kW Guardian unit packs the most power into a small package, taking up to 70% less space when compared to similar output products.</p> <p style="text-align: right;">\$6,814.87</p>
1	<p>Generac Smart Switch, Service Rated, 200 amps, 120/240, 1Ø, NEMA 3R</p> <p>Generac's service rated automatic transfer switches offer whole-house coverage for your back-up power needs. Featuring a NEMA 3R enclosure, this 200 amp open transition switch can be installed either indoors or outdoors.</p> <p>Generac Automatic Transfer Switches are designed for use with single phase generators that utilize an Evolution™ or Nexus™ Controller. Includes Smart AC Module standard, which gives the capability of managing up to four HVAC loads no additional hardware.</p> <p>Loads can be managed using a smart management system. The system can accommodate up to eight individual Smart Management Modules (SMM). The SMM modules are self-contained and have individual built-in controllers.</p> <p>*SMM modules sold separately.</p> <p style="text-align: right;">\$963.89</p>
1	<p>Battery, Group 26R, Wet Service</p> <p style="text-align: right;">\$130.05</p>
1	<p>Surge Protection Device (SPD) 120/240 VAC Single Split Phase</p> <p>Generac's whole-house Surge Protection Device (SPD) is NEC 2020 compliant and protect sensitive electronics and smart appliances from voltage spikes caused by lightning strikes, downed power lines, and routine utility switching activity.</p>
1	<p>9-24kW Air Cooled Battery Heater Kit</p> <p>The pad warmer rests under the battery (not necessary for use with AGM-style batteries). NOTE: Only compatible on units manufactured 2008 to present.</p> <p>When installing any cold weather kit item, it is required that the oil be replaced with 5W-30 synthetic. If replacing old cold weather kit components, remove the old component before installing the new. All products come with a one year limited warranty.</p> <p style="text-align: right;">\$317.94</p>
1	<p>9-24kW Air Cooled Oil Heater Kit</p> <p>The oil warmer slips directly over the oil filter. NOTE: Only compatible on units manufactured 2008 to present.</p> <p>When installing any cold weather kit item, it is required that the oil be replaced with 5W-30 synthetic. If replacing old cold weather kit components, remove the old component before installing the new. All products come with a one year limited warranty.</p> <p style="text-align: right;">\$317.94</p>
QTY	Wire
150	<p>18-24kw Composite cable</p> <p>Generac Direct Burial Composite Cable</p>
QTY	Gen Pad

7 Pea Gravel
 Pea Gravel

QTY	Gen Pad
-----	---------

1	Gen Pad	\$318.00
	Generac Composite concrete pad	

QTY	General
-----	---------

26	Generator Technician
----	----------------------

QTY	Travel
-----	--------

1	Mileage Reimbursement
	Mileage Reimbursement

QTY	Shop Materials
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4	General Materials Adder
	General Materials Adder

QTY	Shop Materials
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3	General Add
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Sub-Total:	\$16,290.60
Discount:	\$0.00
No Charge:	\$0.00
Sales Tax:	\$0.00
Total:	\$16,290.60
Down Payment:	\$0.00
Balance Due:	\$16,290.60