SA&I 1-4040 (2000)

Canadian County, Oklahoma
COUNTY PURCHASING OFFICE
Canadian County Court House
El Reno , Oklahoma
Phone: (405) 422-2441

INVITATION TO BID

DATE ISSUED
Feb. 8, 2016

PLEASE REVIEW TERMS AND CONDITIONS ON REVERSE SIDE RELATING TO SUBMISSION OF THIS BID.
Notarized Affidavit completions and signature required on reverse side.

BID NUMBER	BID CLOSING DATE AND HOUR	REQUIRED DELIVERY DATE
#2016-#12 UPS and SPD / County Commissioners	Feb. 26, 2016 at 4:00pm	SEE SPECIFICATIONS _____ Days after award of Purchase Order

TERMS
Net, FOB this bid will open Feb. 29, 2016 at 9:30am

DATE OF DELIVERY:

ITEM	QUANTITY	UNIT OF ISSUE	DESCRIPTION	UNIT PRICE	TOTAL
1 or more			Canadian County Commissioners are seeking bids for UPS and SPD. See Specifications Attached: The Board of Canadian County Commissioners reserves the right to reject any and all bids or to award all or any portion of the items bid. *The reverse of this sheet must be completed and returned or the bid will be rejected.* Contact person: John Johnson, Chief of Staff 201 North Choctaw El Reno, OK 73036 (405) 295-6201		$_____ Total

APPROVED
Date: 2-4-2016
David Anderson
Officer or Department Head

STATE OF OKLAHOMA
CANADIAN COUNTY
FILED OR RECORDED
FEB 08 2016
SHELLEY DICKERSON
COUNTY CLERK
160049

TERMS AND CONDITIONS

1. Sealed bids will be opened in the Commissioner's Conference Room, Canadian County Courthouse, 201 N Choctaw Avenue, El Reno, Oklahoma, at the time and date shown on the invitation to bid form.

2. Late bids will not be considered. Bids must be received in sealed envelopes (one to an envelope) with bid number and closing date written on the outside of the envelope.

3. Unit prices will be guaranteed correct by the bidder.

4. Firm prices will be F.O.B. destination.

5. Purchases by Canadian County, Oklahoma, are not subject to state or federal taxes.

6. This bid is submitted as a legal offer and any bid when accepted by the County constitutes a firm contract.

7. Oklahoma laws require each bidder submitting a bid to a county for goods or services to furnish a notarized sworn statement of non-collusion. A form is supplied below.

8. Bids will be firm until 03/29/2016 (DATE)

AFFIDAVIT: I, the undersigned, of lawful age, being first duly sworn on oath say that he (she) is the agent authorized by the bidder to submit the above bid. Affiant further states that the bidder has not been a party to any collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding; or with any state official or employee as to quantity; quality or price in the prospective contract or any other terms of said prospective contract; or in any discussions between bidders and any state official concerning exchange of money or other thing of value for special consideration in the letting of a contract; that the bidder/contractor has not paid, given or donated or agreed to pay, give or donate to any officer or employee of the State of Oklahoma (or other entity) any money or other thing of value, either directly or indirectly in the procuring of the award of a contract pursuant to this bid.

Subscribed and sworn before this _____ day

of _____, 20____

(SEAL)

Firm: _____

My commission expires _____

Signed by: _____ Title: _____
(Manual Signature of Undersigned)

_____
NOTARY PUBLIC (CLERK OR JUDGE)

Address: _____ Phone: _____

City: _____ State: _____

Zip: _____

Please mail sealed bids to:
Canadian County Clerk's Office
Attn: Purchasing
PO Box 458
El Reno, OK 73036

Street Address:
201 N Choctaw Avenue
El Reno, OK 73036

NOTE: Other terms and conditions can be added at the discretion of the county officers

Canadian County
Purchasing

Bid Specifications

Date Issued: February 8, 2016
Bid Number: **2016-#12**
Closing Date: February 26, 2016 at 4:00pm
PO Box 458, 201 N. Choctaw Ave., El Reno, OK 73036
Opening Date: February 29, 2016 at 9:30am
Commissioner's Meeting Room, 201 N. Choctaw Ave., El Reno, OK 73036

~ SPECIFICATIONS~

UPS and SPD / County Commissioners

Canadian County Commissioners' are seeking bids for UPS and SPD for the purpose of providing reliable and stable electrical power to the existing IT/Phone rooms.

Specifications: See Attachment

For Information Contact:

John Johnson, Chief of Staff

Phone: (405) 295-6201

Hours: Monday – Friday 8:00am to 4:00pm

Address: 201 North Choctaw, El Reno, OK 73036

If you have any questions or need additional information, please contact:
Sherry Murray, Purchasing Agent, 405.295.6125 or 405.422.2441
smurray@okcana.cogov.net

Canadian County
UPS SPECIFICATIONS
120 V/208 V/240 V, 1.5 kVA to 3.0 kVA models

SOLID STATE UNINTERRUPTIBLE POWER SUPPLY (UPS)

PART 1 - GENERAL

1.1 SUMMARY

A. **Scope:** This specification describes the operation and functionality of **continuous duty**, single-phase input and output power (1:1) and split-phase (two models), solid-state, static Uninterruptible Power Supply model, hereafter referred to as UPSs.

B. **Bid Requirements:** The UPS shall be designed in accordance from the following sections. Statements in this specification shall govern the requirements and minimum expected services to Canadian County. If an exception is not stated, your bid is stating the proposed product(s) meets or exceeds each and every requirement.

C. **Included Features of the UPS:**

1. The UPS utilizes **double conversion** online topology designed to protect electronic equipment by supplying reliable, network-grade power featuring extremely tight voltage and frequency regulation.
2. The UPS features internal bypass and input power factor correction.
3. The primary sections of the UPS are: input disconnect and filter stage, input PFC power stage, energy storage stage (DC bus capacitor bank), output power stage (inverter), bypass and a battery charger. The control of power module and fault detection logic is microcontroller-based.
   a. The input disconnect and filter stage contains an input back-feed relay (in models with an input wire plug), input filter, transient suppression, and battery select switches (mechanical relay or solid-state).
   b. The input PFC power stage contains non-isolated power factor correcting AC/DC converters. This converter is capable of full power operation over a very wide input voltage range or from a nominal DC battery voltage.
   c. The energy storage stage is a split DC bus capacitor handling seamless transitions from battery to line and vice versa, as well as the low and high frequency power stages ripple.
   d. The output power (inverter) stage operates directly from the DC bus and produces a configurable AC output voltage of 120 V, 208 V, or 120 V/208 V output (depending on model) The output of the UPS is connected either to the inverter or through a bypass relay, contactor, or static switch to the filtered input line..
4. The UPS contains a battery charger, which operates from the DC bus.
5. The system also includes field-replaceable battery modules

D. **Performance, Design, and Configurations:** The UPS and associated equipment operates in conjunction with a primary power supply and an output distribution system to provide quality uninterrupted power for mission-critical, electronic equipment load.

1. This specification describes the performance, functionality, and design of the UPS, the external Battery Systems, and connectivity solutions.
2. All programming and miscellaneous components for a fully operational system as described in this section are available as part of the UPS.

E. **STANDARDS:**

120 and 208V Nominal Units

ISO 9001:2008

ISO 14001

1.2 SYSTEM DESCRIPTION

A. **Mechanical Design**

1. The UPS is contained in one or two rugged steel cabinets.
2. The UPS and battery cabinets are configured for stack and rack-mount configurations.
3. The cabinet dimensions including terminations are listed below for tower, stack or rack-mount configurations. The side rack-mounting brackets increase the overall width to 19 in (482 mm).

B. **System Characteristics**

1. **System Capacity:**
   a. 1.5 kVA or 1050 W whichever limit is reached first
   b. 3 kVA or 2100 W, whichever limit is reached first

2. **Efficiency:** The UPS efficiency stated here is at full load and without degradation of output regulation as specified:
   a. Efficiency is at least 89% for the 1.5 kVA and 2.2 kVA models.
   b. Efficiency is at least 92% for the 3 kVA models with 120 V, 208 V Output / 208

3. **Input:**
   a. **AC Input Nominal Voltage:**
      1) 120 Vac, single-phase 5-15P for 1.0/1.5 kVA model.
      2) 208/240 Vac, single-phase, L6-30P for 3 kVA model. An input/output hardwire kit is optional for this model.
   b. **AC Input Voltage Window:**
      1) For 1000/1500Vac (L-N) models, while providing nominal charging to the battery system:
         a) 90 – 140 Vac (L-N) at full load.
         b) 50 – 140 Vac (L-N) at 50% load.
      2) For 3 kVA single phase models, while providing nominal charging to the battery system:
         a) 160 – 280 Vac (L1-L2) at full load.
         b) 100 – 280 Vac (L1-L2) at 50% load.
   c. **Input Frequency Range:** 45-65 Hz, auto-selecting, for 1.0 kVA to 3 kVA
   d. **Input Power Factor:** >0.95 @ 100% load

4. **UPS Output:**
   a. **Output Connectors**:
      1) For 1.0 kVA: 3 NEMA 5-15R
      2) For 1.5 kVA: 6 NEMA 5-15R.
      3) For 3 kVA, (2) NEMA L6-15/20R and (1) NEMA L6-20/30R
   b. **AC output voltage distortion:**
      1) Maximum 3% @ 100% linear load; maximum 8% @ 100% non-linear 1.5 KVA model.
      2) Maximum 3% @ 100% linear load; Maximum 5% @ 100% non-linear load 3 kVA models.
   c. **AC output static voltage regulation:** +/-2% for 1.5 kVA and; +/-1% for models of 3 kVA and higher.
   d. **AC output dynamic voltage regulation:**
      1) +/- 8% maximum for 100% load step at <10 ms recovery time:
         a) For 1.5 kVA and 2.2kA models
         b) For 3 kVA models.
   e. **Output Voltage Harmonic Distortion:**
      1) <3% THD maximum for a 100% linear load
      2) <5% THD maximum for a 100% non-linear load
   f. **Overload Rating:**
      1) **Normal Operation (Online):**
         a) 150% for 30 seconds
         b) 125% for 1 minute
         c) 105% continuous
      2) **Output Power Factor Rating:**
         a) For 1.0 kVA and 3 kVA models.
            (i) 0.2 –1.0 lagging

g. **Output Frequency:**
   1) For 1.0 kVA and 3 kVA, models: 50/60 +/- 3 Hz tracking or 50/60 +/- 0.1 Hz tracking
h. **Crest Factor:** 3:1

1.5 SUBMITTALS

A. **Proposal Submittals at time of providing this bid:**
   1. Provide a bill of materials that make up the bid to associated cost (equipment & labor) per site requirements, then at the end a cost for Freight.
      a) All cost are to be inclusive on the bill of materials for a complete install and warranty of the product(s) bid.
   2. Provide product catalog sheets and/or equipment brochures that demonstrate your bid meets or exceeds bid requirements.
   3. Provide a copy of the 2 Year Warranty that is to cover this equipment.

B. **Delivery Submittals at time of installation:**
   1. The specified UPS system shall be supplied with a Safety Instruction & Warning Sheet. The specified UPS system shall be supplied with quick start guides for ease of installation and UPS start up. Each UPS will also contain a full user manual. The user manual shall include installation instructions, a functional description of the equipment with block diagrams, safety precautions, illustrations, step-by-step operating procedures and general maintenance guidelines.

1.6 PROJECT CONDITIONS

1. **Environmental Requirements:** The UPS is capable of withstanding any combination of the following environmental conditions in which it must operate without mechanical or electrical damage, or degradation of operating characteristics.

   a. **Operating Ambient Temperature:** 32°F to +104°F (0°C to +40°C). 77°F (25°C) is ideal for most battery types.
   b. **Relative Humidity:** 0% to 95% non-condensing.

   c. **Audible Noise:**
      1) For 1.0 kVA to 10 kVA models: <55 dBA at 100% load at 3 ft (1 m).

1.7 WARRANTY

A. **Limited Warranty:** The UPS manufacturer shall warrant the UPS against defects in materials and workmanship for two (2) years from the date of installation. The replacement warranty shall include shipping costs to the customer site for the new replacement unit and shipping costs from the customer site for the return of the failed unit. *The vendor will assist Canadian County in making sure purchased and installed equipment is registered for a warranty.*

PART 2 - PRODUCTS

2.1 MODES OF OPERATION

a) **Normal:** The UPS output power stage (inverter) constantly recreates the UPS output voltage waveform by converting the DC bus voltage to AC voltage through a set of IGBT switches. In both online operation and battery operation, the output power stage (inverter) creates an output voltage waveform independent of the mains input voltage waveform. Input voltage anomalies such as brown-outs, spikes, surges, sags, and outages do not affect the amplitude or sinusoidal nature of the recreated output voltage sine wave of the output power stage (inverter). The input Power Factor Correction (PFC) power stage and the output power stage (inverter) operate in an on-line manner to continuously regulate power to the critical load. The input PFC stage is capable of full

battery recharge while simultaneously providing regulated power to the load for all line and load conditions within the range of the UPS specifications.

i) **Overload Capability:** The output power stage (inverter) is capable of withstanding 150% overload for 30 seconds or 125% overload for 1 minute or 105% overload for an indefinite length of time.

ii) **Output Contactor:** The output power stage (inverter) is equipped with an output mechanical relay to provide physical isolation of the inverter from the critical bus. With this feature a failed inverter will be removed from the critical bus.

iii) **Battery Protection:** The inverter is provided with monitoring and control circuits to limit the level of discharge on the battery system.

b) **Battery:** Upon failure of the AC input source, the critical load continues being supplied by the output inverter, which derives its power from the battery system. There is no interruption in power to the critical load during both transfers to battery operation and retransfers from battery to normal operation. The UPS battery system consists of user-replaceable cartridges.

i) The batteries of the UPS models in this specification are maintenance-free, leak-proof, valve-regulated lead-acid (VRLA) batteries with suspended electrolyte.

ii) The UPS incorporates the Intelligent Battery Management system to continuously monitor the health of each removable battery module as well as external battery modules installed in extended run battery cabinets. This system notifies the user in the event that a failed or weak battery module is found.

iii) You can add additional battery packs to increase runtime. These packs and the modules within them are hot-pluggable, allowing for easy and quick installation or replacement without the need for electrical wiring, electrician services or powering down of the UPS. Each UPS Battery Module has a means of DC disconnect for transportation and to disconnect the battery module completely from the internal bus while the battery is installed in the UPS system.

c) **Charging:** Upon restoration of the AC input source, the UPS simultaneously recharges the battery and provides regulated power to the critical load.

i) The intelligent battery management system contains a temperature monitoring circuit and compensation algorithm that regulates the battery charging voltage and current so as to optimize battery life. The UPS shall monitor the temperature of all battery packs and use the highest one as a reference to adjust the battery float voltage.

ii) The battery charging circuit remains active when in bypass or online states.

2.2 INPUT PFC POWER STAGE

A. **General:** The input Power Factor Correction (PFC) power stage of the UPS constantly rectifies the power imported from the mains input of the system, converting input mains AC power to DC power for precise regulation of the DC bus voltage, battery charging, and output power stage (inverter) regulated output power

B. **Input Current Total Harmonic Distortion:** The input current THD_I at full system load will be held to the following percentages while providing conditioned power to the critical load bus, and charging the batteries under steady-state operating conditions. This is true while supporting loads of both a linear or nonlinear type. This will be accomplished with no additional filters, magnetic devices, or other components.

1. 8% or less for 1.5 kVA model.
2. 6% or less for 3 kVA model.

C. **Input Current Limit:**

1. The input converter shall control and limit the input current drawn from the utility supply to:
   a. 125% of the UPS output for the 1.5 kVA, and 3 kVA units.
2. During conditions where input current limit is active, the UPS shall be able to support 100% load, charge batteries and provide voltage regulation with mains deviation of up to +/-15% of the nominal input voltage.
3. In cases where the source voltage to the UPS is nominal and the applied UPS load is equal to or less than 100% of UPS capacity, input current shall not exceed 130%

of UPS output current, while providing full battery recharge power and importing necessary power for system losses.

D. **Charging:**

1. The battery charging circuit contains a temperature monitoring circuit or fully charged control circuitry, which regulates the battery charging current to optimize battery life.
2. The battery charging circuit remains active when the UPS is in automatic bypass and in normal operation.
3. The battery charging system adjusts the charging current according to the number of battery modules and by monitoring the individual battery current.

2.3 OUTPUT POWER STAGE (INVERTER)

A. **General:** The UPS output power stage (inverter) constantly recreates the UPS output voltage waveform by converting the DC bus voltage to AC voltage through a set of power converters. In both normal operation and battery operation, the output power stage (inverter) creates an output voltage independent of the mains input voltage. Input voltage anomalies such as brown-outs, spikes, surges, sags, and outages, shall not affect the amplitude or sinusoidal nature of the recreated output voltage sine wave of the output power stage (inverter).

B. **Battery Protection:** The inverter is provided with monitoring and control circuits to limit the level of discharge on the battery system.

2.4 DISPLAY AND CONTROLS

A. **Control Logic:** The UPS performs the following functions:

1. Monitoring the quality of the output voltage
2. Monitoring vital parameters of the UPS
3. Executing the state machine
4. Intelligent battery management
5. Controlling the input and output power stage
6. Remaining runtime calculation
7. Self-diagnostics, self-test, and proactive fault detection
8. Communication to the host server via a serial port
9. Communication to the Network Management Card or another Smart Slot accessory card, **if** the UPS is equipped with such a card

B. Display/Control Unit: Located on the front of the UPS is a display/control unit.

C. Control Functions for All Models: The following controls functions can be accomplished by use of the pushbutton switches or LCD display:

1. Turn the UPS on
2. Turn the UPS off
3. Initiate a self-test to test the battery condition
4. Silence an audible alarm
5. Display the input RMS voltage

D. Data displayed on the Display/Control Unit 1.5 kVA and 3KVA models: The following indicators are available on the Display/Control Unit:

1. The UPS load bar
2. The UPS is online
3. The UPS is on battery
4. The UPS is in bypass
5. The UPS is overloaded
6. The UPS is in fault state
7. The battery needs to be replaced
8. The battery capacity/utility voltage LED/LCD bar

E. Communication Interface: The following are available and contained within the UPS for remote communications with a network via web browser or SNMP.

1. For 1/1.5 kVA models, a DB-9 serial interface or USB or RJ45 port.
2. For 208 V 3 kVA models, a DB-9 serial interface or USB or RJ-45 serial interface port.

F. Audible Alarms: Using audio signal, the UPS will notify the user about important events. The following is the list of desired alarms:

1. The UPS is on battery
2. The UPS is on battery and the remaining battery capacity is low
3. The UPS has shut down due to low battery capacity
4. The battery needs to be replaced
5. The UPS is overloaded
6. The UPS is in fault state

2.5 BATTERY

A. The UPS battery is of modular construction made up of owner-replaceable, hot-swappable, fused, battery modules. Each battery module is monitored to determine the highest battery unit temperature for use by the UPS battery diagnostic, and temperature compensated charger circuitry.

B. The batteries are of the valve regulated lead acid (VRLA) type.

2.6 ACCESSORIES

A. **Remote UPS Monitoring:** The following methods of remote UPS monitoring **are available**:

1. **Web Monitoring:** Remote monitoring is available via a web browser such as Internet Explorer.

B. **Software Compatibility:**

1. **Manufacturer provided web based monitoring software:**
   This software **is** **included** with the 1.0 kVA to 3 kVA models and supports graceful shutdown and remote monitoring for the following systems and releases of software as a minimum. (For more detailed information on Operating System compatibility, see Microsoft Windows® Server 2008
   a. Microsoft Windows® Server 2003
   b. Microsoft Windows® Storage Server 2008
   c. Microsoft Windows HPC Server 2008
   d. Microsoft Windows® 7
   e. Microsoft Windows® Vista
   f. Microsoft Windows® XP
   g. Red Hat® Enterprise Linux®
   h. SuSE® Linux®.Enterprise Server 11
   i. Solaris™ 10

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

1. **Replacement Parts:** Parts are available 24 hours a day, 7 days a week, and 365 days a year. The organization is capable of shipping parts within eight working hours or on the next available flight, so that the parts may be delivered to the customer site between 12-72 hours.

3.2 MAINTENANCE

A. What offerings are available to provide preventive and full service maintenance contracts for the UPS system and battery system?

END OF GUIDE SPECIFICATION

Site specific Requirements

Canadian County Main services Building:

Main MDF closet

(1) 3kVA on line double conversion ups with (1) extended run battery, both should be rack mounted.
(2) Provide the cost of an additional battery and how much run time this will add to the system.
(3) How many batteries can be added and how much run time does each give when added?

Basement

(1) 3kVA on line double conversion rack mounted ups.

Land Records

(1) 3kVA on line double conversion rack mounted ups.

Treasurer's office

(1) 1.5kVA on line double conversion **tower**/rack mounted ups.

Other County Offices:

District Attorney's Office (County Courthouse):

(1) 3kVA on line double conversion rack mounted ups.

County Assessors building:

(1) 3kVA on line double conversion rack mounted ups.

Election board:

(1) 1.5kVA on line double conversion **tower**/rack mounted UPS.

Free Fair:

1) 1.0kVA on line double conversion **tower**/rack mounted UPS.

Extension Office:

1) 1.0kVA on line double conversion **tower**/rack mounted UPS.

Freight Cost (*all UPS's*):

Any other cost for a complete install of system:

Question:

- *From once the contract is approved by Canadian County, how long will it take to get this equipment ordered and installed?*

CANADIAN COUNTY OKLAHOMA SPECIFICATIONS

SURGE PROTECTIVE DEVICE (SPD)
FOR
SERVICE ENTRANCE

Part 1—General

1.1 Bid Requirements

A. The SPD shall be designed in accordance from the following sections. Statements in this specification shall govern the requirements and minimum expected services to Canadian County. If an exception is not stated, your bid is stating the proposed product(s) meets or exceeds each and every requirement.

B. Provide bill of materials of items that make up the bid to associated cost (equipment & labor) per site requirements, then at the end a cost for Freight.

1. All cost are to be inclusive (excluding blue prints) on the bill of materials for a complete install and warranty of the Surge Protection Device (SPD) product(s) bid.

C. Provide product catalog sheets, technical information, unit dimensions and specifications and/or equipment brochures that demonstrate your bid meets or exceeds bid requirements.

1.2 Description/Scope

A. The Surge Protective Device (SPD) covered under this section includes all service entrance type surge protective devices suitable for use as Type 1 or Type 2 devices per UL1449 4th Edition, applied to the line or load side of the utility feed inside the facility.

B. A SPD will be located at service entrance.

1.3 Quality Assurance

A. Reference Standard: Comply with the latest edition of the applicable provisions and recommendations of the following, except as otherwise stated in this document:

1. UL 1449 4th Edition 2014 Revision (effective 3/26/2015).
2. UL 1283.
3. ANSI/IEEE C62.41, Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits.
4. ANSI/IEEE C62.45, Guide for Surge Testing for equipment connected to Low-Voltage AC Power Circuits.
5. UL96A
6. IEEE 1100 Emerald Book.
7. National Fire Protection Association (NFPA 70: National Electrical Code).

1.4 Submittals/Quality Assurance – Provide the following as a part of this bid:

A. Voltage data for both ANSI/IEEE C62.41 Category C3 (combination wave) and B3 (Ring wave) tested in accordance with ANSI/IEEE C6245.

B. Data showing your product meets the 200kA surge current waveforms, verifying the suppressor components can survive published surge current rating on a per mode basis using the ANSI/IEEE C62.41 impulse waveform C3 (8 x 20 microsecond, 20kV/10kA).

C. Copy of a warranty statement/document that clearly establishes the terms and conditions to the building/facility owner/operator.

1. 50kA - 20 Year warranty with no labor.
2. 250kA – 20 Year warranty with a 5 year labor.

Part 2—Products

2.1 Approved SPD type:

A. 50kA per mode surge rating. (208v Y)

1. Independently fused MOV

B. 250kA per mode surge rating. (208v Y)

1. Selenium based, independently fused MOV equipment.

2.2 Manufactured Units/Electrical Requirements

A. Declared Maximum Continuous Operating Voltage (MCOV) shall be greater than 115 percent of the nominal system operating voltage and in compliance with test and evaluation procedures outlined in the nominal discharge surge current test of UL1449, section 37.7.3. MCOV values claimed based on the component's value or on the 30-minute 115% operational voltage test, section 38 in UL1449 will not be accepted.

B. 250kA unit shall have no more than 10% deterioration or degradation of the UL1449 4th Edition Voltage Protection Rating (VPR) when exposed to a minimum of 14,000 repeated category C3 (20kV/10kA) surges. Provide information on number of repeated surges your devices have been tested for.

C. Protection Modes UL1449 4th Edition VPR (6kV, 3kA) for grounded WYE/delta 3-Phase outlined in UL1449, section 37.6:

System Voltage	Mode	MCOV	B3 Ringwave 6kV, 500A	C3 Comb. Wave 20kV, 10kA	UL 1449 Fourth Edition VPR Rating
120/240 120/208	L-N	150	490	980	700
	L-G	150	570	980	700
	N-G	150	640	1170	700
	L-L	300	500	1600	1200
277/480	L-N	320	450	1420	1200
	L-G	320	540	1540	1200
	N-G	320	570	1600	1000
	L-L	552	530	2600	2000

D. Electrical Noise Filter: each unit shall include a high performance EMI/RFI noise rejection filter with a maximum attenuation of 63dB from 10KHz to 100MHz.
   1. SPD shall include an EMI/RFI noise rejection filter for all L-N modes as well as a removable filter in the N-G mode.

E. The unit shall be able to prevent common temporary overvoltage's and high impedance faults from damaging the MOVs, increasing their longevity and ability to protect the critical load. Limited and intermediate current TOVs (as specified in UL 1449 article 39.3 and 39.4) can be caused by a loss of the neutral conductor in a split phase or three phase power system. The available fault current will be determined by the impedance of the loads connected to the phases opposite the SPD and are typically in the range of 30A to 1000A. The Selenium elements must limit voltage to the MOV as a percent of nominal as outlined below:

Overvoltage seen by MOVs as % of Nominal				
	Available current			
Time	30A	100A	500A	1000A
1 cycle	120%	130%	150%	160%
10 cycles	130%	150%	160%	160%
30 cycles	140%	150%	160%	160%

F. The unit shall be able to withstand multiple TOVs without damage to the MOVs by shunting current away from the MOVs during the overvoltage. SPD must have the ability to withstand >100 TOVs with a source current of 30A, duration of 30 cycles, with10s between TOV events.
G. The service entrance protector (type 1 SPD) shall incorporate combination of TPMOV and Selenium technology allowing for transient surge and temporary over voltage protection.
H. Shall be housed in metal housing capable of NEMA 4/12 exposure.
I. Integral Disconnect Switch.
   1. The device shall have an optional NEMA compliant safety interlocked integral disconnect switch with an externally mounted metal manual operator.
   2. The switch shall disconnect all ungrounded circuit conductors from the distribution system to enable testing and maintenance without interruption to the facility's distribution system.
   3. The SPD device shall be tested to UL1449 4th Edition listed with the integral disconnect switch and the UL1449 VPR ratings shall be provided.
   4. The integral disconnect switch shall be capable of withstanding, without failure, the published maximum surge current magnitude without failure or damage to the switch.
   5. The line side of the integral disconnect shall be blocked off so that when the SPD is opened there is no direct access to the voltage present on the line side of the disconnect.
J. The UL1449 Voltage Protective Rating (VPR) shall be permanently affixed to the SPD unit.
K. The UL1449 Nominal Discharge Surge Current Rating shall be 20kA
L. The SCCR rating of the SPD shall be 200kAIC without the need for upstream over current protection.
M. The SPD shall be listed as Type1 SPD, suitable for use in Type1 or Type2 applications.
N. The SPD shall have some or all the following monitoring and/or alarm capabilities (***access and features requested as an option***).
   1. Time/Date stamp, duration and magnitude for the following power quality events (sags, swells, surges, dropouts, outages, THD, frequency, Volts RMS per phase)
   2. SPD monitoring shall track surge protection and display it as a percentage of remaining protection.
   3. SPD shall provide a surge counter with three categories IEEE C, B, A.
   4. Remote communications via some of the following methods: Ethernet, RS-485, MODBUS, SNMP, other
   5. Web-based monitoring
   6. Audible alarm
   7. Red and green LED's

Part 3—Execution/Installation

3.1 Provide at time of installation appropriate test results of each of the devices supplied validating the unit's integrity to specs and for the initiation of the warranty. The test might include but not necessarily be inclusive of:

A. Verify voltage clamping levels utilizing a diagnostic test kit, comparing factory readings to installed readings.
B. Verify N-G connection.
C. Record information to a product signature card for each product installed.

3.2 Our desire is to have the unit installed on the line side of the main service disconnect. If installed on the line side unit shall be installed with an integral disconnect. If for some reason this is not possible, and it is installed on the load side the unit shall be installed with a breaker of appropriate size. If installed lead length exceeds 5' installer shall use a low impedance (HPI) cable to reduce the lead lengths effect on the installed performance of the SPD.

Part 4— Product Warranty

4.1 Warranty on defective material and workmanship shall be for 20 years including 5 years of labor.
4.2 Copy of warranty to be sent with this bid submittal.

Sites requiring Selenium based, independently fused MOV equipment 250kA SPD Devices

Canadian County Main County services building.
Canadian County Courthouse.
Canadian County Assessor.
Canadian County Election Board.
Optional Cost:
Cost to add Monitoring on an individual SPD basis.

Sites requiring 50KA Independently Fused MOV SPD Devices

Free Fair
Extension Center

Freight Cost (*all SPD's*):

Any other cost for a complete install of system:

Question:
From once the contract is approved by Canadian County, how long will it take to get the equipment ordered and installed?

Canadian County
Purchasing

Affidavit / Proof of Mailing

Date Issued: February 8, 2016
Bid Number: **2016-#12**
Closing Date: February 26, 2016 at 4:00pm
PO Box 458, 201 N. Choctaw Ave., El Reno, OK 73036
Opening Date: February 29, 2016 at 9:30am
Commissioner's Meeting Room, 201 N. Choctaw Ave., El Reno, OK 73036

~ AFFIDAVIT~
UPS and SPD / County Commissioners

State of Oklahoma)
County of Canadian) §

I, Sherry Murray, Purchasing Agent, in and for said County and State, do hereby certify that "Invitations to Bid" were sent to the following:

Acoustic Designs, Inc
PO Box 851040
Yukon, OK 73085-1040

ACRO Service Corporation
39209 W Six Mile Road, Suite 250
Livonia, Michigan 48152

Alinc Technologies
Attn: Daniel Venson
2112 Rutland Drive, Suite 180
Austin, TX 78758

Bid Clerk
govbids@bidclerk.com

Bid News
project@bidnews.com

Cnet Security and Cable Inc
Attn: Derek Shaw
143 N Cedar Branch Way, Suite 101
Mustang, OK 73064

Communications Supply Corporation
Attn: Dianna Allen
500 North Pennsylvania
Oklahoma City, OK 73107

Eales Electronics Corp
PO Box 721140
Oklahoma City, OK 73172-1140

Elite Innovative Technology LLC
PO Box 734
Mustang, OK 73064

ePlan
4115 South Providence, Suite 105
Columbia, MO 65203

Francis Tuttle Vo-Tech Center
Attn: Bid Assistance – Judy Robbins
12777 N Rockwell
Oklahoma City, OK 73142

Global Government
6690 US-36
Fletcher, OH 45326

Graybar Electric, Telecom
Attn: Tim Mortimer
103 NE 44th Street
Oklahoma City, OK 73105

Hi Tech Security Solutions
608 Pala Verde Court
Yukon, OK 73099

Hi Tech Security Solutions
Attn: Ray Dunn
PO Box 53874
Lubbock, TX 79453

Howard Technology Solution
36 Howard Technology
Ellisville, MS 39437

Insight Public Sector Inc
6820 S Harl Avenue
Tempe, AZ 85283

My Computer Bytes
Attn: Bill
PO Box 850957
Yukon, OK 73099

Nobel Systems
3013 NW 59th Street
Oklahoma City, OK 73112

NTT Data
Attn: Kelli Tolzman
kelli.tolzman@nttdat.com

Online Data Services
3295 River Exchange Dr Suite 213
Norcross, GA 30092

Orion Security Solutions
12330 St Andrews Dr
Oklahoma City, OK 73120

Patriot Technologies Inc
Attn: Kim Hunter
5108 Pegasus Ct., Suite F
Frederick, MD 21704

PC Mall Government Inc
shaufung.tang@pcmg.com

Peak Uptime
13431 North Broadway
Oklahoma City, OK 73013

Plante & Moran PLLC
27400 NW Highway
PO Box 307
Southfield, MI 48037-0307

Primus Electronics Corporation
Attn: Dana Cronin
4180 E Sand Ridge Road
Morris, IL 60450

Ricoh Americas Corporation
Attn: Spencer Adams
3030 NW Expressway, Suite 1404
Oklahoma City, OK 73112

RK Black
4111 Perimeter Center Place
Oklahoma City, OK 73112

Sawatski
Secure Solutions LLC
105 Darwin Road
Edmond, OK 73034

SecureNet, Inc
Attn: John Brothers
1117 Cornell Parkway
Oklahoma City, OK 73108

Security Solutions US
1640 W Hwy 152
Mustang, OK 73064

Signature Technology Group
Attn: Jared Brimhall
2424 W Desert Cove Avenue
Phoenix, AZ 85029

SMTi
40 W Littleton Blvd, Suite 210
Littleton, CO 80120-2400

Witness my hand and seal this 8th day of February, 2016.

Sherry Murray, Purchasing Agent
(SEAL)

CANADIAN COUNTY CLERK
OFFICIAL SEAL
EL RENO, OKLAHOMA

Canadian County
Purchasing

BID CHECKLIST

Date Issued: February 8, 2016
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TO HELP PREVENT BIDS FROM BEING REJECTED FOR LACK OF COMPLETION
PLEASE CHECK FOR THE FOLLOWING:

Is the Invitation to Bid Signed and Notarized?_____

Are all applicable spaces filled in?_____

Are all necessary papers enclosed?_____

Is the Bid # and Closing Date on outside of return sealed envelope?_____

Thank You,

Sherry Murray, Purchasing Agent

201 N. Choctaw Avenue, El Reno, OK 73036
405.295.6125 ~ Fax 405.422.2411
www.canadiancounty.org