IOWA STATE UNIVERSITY
REQUEST FOR QUOTE NO. 63327

SECTION I
QUOTE INSTRUCTIONS AND CONDITIONS

1.0 Introduction:

1.01 Iowa State University, herein also referred to as owner or ISU, is requesting quotes to provide five (5) switchgear, three (3) pad-mounted transformers, and other high voltage electrical equipment to be utilized by our Facilities Planning & Management Department. By submitting a quote, the vendor agrees to all the terms and conditions in this Request for Quote (RFQ) unless specified in the exceptions on Attachment A. Iowa State University does not imply or guarantee any quantity or frequency of business as a result of this quote.

1.02 Questions and comments with reference to this quote may be directed to:

   Matt Linder
   Iowa State University
   1340 Administrative Services Building
   2221 Wanda Daley Drive
   Ames, Iowa 50011-1004
   (515) 294-2834
   mjlinder@iastate.edu

1.03 Questions and comments with reference to the technical specifications may be directed to:

   Mike Olson
   Iowa State University
   200 Power Plant
   616 Beach Road
   Ames, Iowa 50011-1402
   (515) 294-6312
   mjolson@iastate.edu

1.1 Bidder's Responsibility: Each Bidder by submitting a quote acknowledges its representative has:

1.1.1 Read and completely understands the quote documents, including the Instructions to Bidders, Specifications, and the Form of Quote.

1.1.2 Based the quote upon the materials described.

1.1.3 Failure of the selected vendor to fulfill the provision of Section 1.1 shall in no way relieve the obligation of the vendor to furnish all material, labor and equipment necessary to carry out the provision of the contract, nor shall such failure constitute grounds for extra compensation over the price stated in the accepted quote.

1.2 Receipt and Opening of Quotes

1.2.1 Quotes are to be submitted via email to quotedsk@iastate.edu, via fax to (515) 294-9606 or by mail and labeled “RFQ 63327: 2016 High Voltage Electrical Equipment”. Quotes must be received in the ISU Purchasing Department, 1340 Administrative Services Building, 2221 Wanda Daley Drive, Ames, Iowa 50011-1004 by 4:00 P.M. CST on March
23, 2016. Any quotes received after the time specified for the receipt of quotes may not be considered and may be returned unopened.

Quotes which are delivered personally are to be brought to the Purchasing Department receptionist's desk located at the South entrance of the 1st floor of the Administrative Services Building (ASB). The ASB building is located at the northwest corner of the intersection of Stange Road and Wanda Daley Drive.

1.2.2 Accept/Reject Quotes

A. ISU reserves the right to accept or reject any or all quotes and to waive any irregularities or informalities in price quotes if such waiver does not substantially change the offer or provide a competitive advantage to any Company. Owner reserves the right to negotiate with any offeror(s) considered qualified, to make award without discussions and to accept any quote deemed to be in Owner's best interest.

B. Quotes may be rejected because of faulty specifications, abandonment of the project, insufficient funds, evidence of unfair procedures, failure to provide quote security when required, evidence of Company's financial instability, or by the Assoc. VP of Business Services or his designee if, in their opinion, the best interests of the University will be served.

1.2.3 No quotes submitted by use of oral, telephonic, telegraphic, or facsimile methods, nor any modifications to previously submitted quotes made by any of these methods, will be considered. If a quote is sent by mail, Company should make allowance for the time required for such transmission.

1.2.4 Company's legally authorized representative (Company Officer) shall sign the quote. The official name, address, telephone, and fax number are to be stated on the quote form. E-mail addresses are to be included if applicable.

1.2.5 No responsibility will be attached to any person for premature opening of a quote not properly identified.

1.2.6 The laws of the State of Iowa require the contents of all quotes be placed in the public domain and be open to inspection by interested parties. Trade secrets or proprietary information that are recognized as such and are protected by law may be withheld, if clearly identified as such in the quote. Quotes marked entirely confidential or proprietary may be rejected. Pricing information, financial arrangements, and other offers cannot be considered proprietary information.

Failure to list all proprietary sections of the submitted quote in the space provided on the Form of Quote, shall relieve ISU personnel from any responsibility, should such information be viewed by the public, a competitor, or be in any way accidentally released.

1.2.7 All opened quotes become property of ISU and will not be returned to the offeror.

1.2.8 Prior to the date and time designated for receipt of quotes, quotes submitted early shall be withdrawn only by written notice to ISU. Such notice shall be received by ISU prior to the designated date and time for receipt of quotes.

1.2.9 Withdrawn quotes may be resubmitted up to the time designated for receipt of quotes provided that they are then fully in conformance with these Quote Instructions and Conditions.
1.2.10 No quote may be modified or withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receipt of quotes.

1.2.11 All erasures or corrections are to be initialed by the person(s) signing the quote.

1.2.12 Failure to comply with the requirements of this RFQ or evidence of unfair procedures is cause for rejection of the quote. Failure to supply information requested is cause for rejection of the RFQ as being non-responsive.

1.2.13 Non-acceptance of a quote will mean that one or more quotes were deemed more advantageous to ISU or that all quotes were rejected. Firms whose quotes are not accepted will be notified after an agreement between ISU and selected Company(s) exist, or after ISU has rejected all quotes.

1.2.14 Unnecessarily elaborate brochures and other presentations beyond that sufficient to present a complete and effective quote are not desired and may be construed as an indication of the offerors lack of cost consciousness. Elaborate artwork or expensive paper and bindings, are neither necessary nor desired.

1.2.15 This Request for Quote does not commit ISU to make an award, nor will ISU pay any costs incurred in the preparation and submission of quotes.

1.2.16 Failure of the selected Company to fulfill the provisions of this quote shall in no way relieve the obligation of Company to furnish all material, labor and equipment necessary to carry out the provisions of the contract, nor shall such failure constitute grounds for extra compensation over the price stated in the accepted quote.

1.2.17 Furnish (1) one original and (2) two copies of your quote. Also provide (1) electronic copy.

1.3 Addenda: Any and all interpretations, corrections, revisions and amendments shall be issued by the ISU Purchasing Department to all holders of proposed Contract Documents in the form of written addenda. Except for addenda modifying the quote due date or canceling the RFQ, such addenda shall be issued so as to be received at least three (3) days prior to the time set for receipt of quotes. All addenda so issued shall become part of the Contract Documents and shall be acknowledged in the Form of Quote.

1.4 Qualifications of Bidder:

1.4.1 ISU shall make such investigations as deemed necessary to determine the ability of Bidder to provide the expected services.

1.4.2 ISU reserves the right to reject any quote if the evidence submitted by or investigation of such Bidder fails to satisfy ISU that said Bidder is properly qualified to carry out the obligations specified herein.

1.5 Formation of Contract: At its option, ISU may take either one of the following actions in order to form an agreement between ISU and the selected Vendor.

1.5.1 Accept a quote as written by issuing a written “Notice of Award” to the selected Vendor, which refers to this RFQ and accepts the quote as submitted. This “Notice of Award” will be in the form of an ISU Purchase Order.

1.5.2 Enter into negotiations with one or more Vendors in an effort to reach a mutually satisfactory agreement, which will be executed by both parties and will be based on this
1.5.3 ISU reserves the right to award a contract not based on cost alone but on the product which best meets the user’s requirements.

1.6 Preference Laws: ISU shall give preference to purchasing from Iowa based businesses if the offers submitted are comparable in price to those submitted by other Companies and meet the required specifications, according to Iowa Code 73.1.

1.7 Taxes – Federal, State and Local: ISU is exempt from Federal Excise Taxes, State and Local Sales and Use Taxes. A Tax Exemption Certificate will be furnished upon request.

1.8 Exceptions: Bidders wishing to take exception to any terms and conditions of the RFQ should do so on Attachment A of the RFQ. Exceptions must be taken point-by-point. Taking blanket exception to the terms and conditions may cause ISU to consider your quote as non-responsive and not eligible for award.

1.9 Vendor Database: Bidders must have a current vendor application on file in order to receive an award resulting from RFQ. Please visit the vendor application website (shown below) for instructions on the vendor application process.

http://www.purchasing.iastate.edu/vendors/process.html

1.10 Electronic Copies of the Quote: Vendors may request electronic copies of the RFQ by contacting Matt Linder at mjlinder@iastate.edu or by accessing ISU’s bid website at:

http://www.purchasing.iastate.edu/vendors/

1.11 Evaluation: ISU reserves the right to award a contract based not only on cost, but on the criteria which best meets the University’s requirements and goals. The University does not guarantee that an actual Agreement will ensue as a result of this RFQ and is evaluation process.

Evaluation of quotes will be based on, but not limited to, the following criteria which are not listed in any particular order of importance:

1.11.1 Ability of the proposed product to meet the technical specifications listed in Section II.
1.11.2 Total evaluated cost; including materials, freight, payment terms and operating cost at full load and no-load conditions on the three phase transformers.
1.11.3 Proposed delivery schedule (see Technical Specifications, subsection 2.6).
1.11.4 All noted material exceptions to state requirements.
1.11.5 Qualifications of Vendor.
1.11.6 Warranty.
1.11.7 Product submittals.
SECTION II
TECHNICAL SPECIFICATIONS

2.0 General Information

2.1 Approval Drawings must be submitted to Iowa State University for approval prior to release for manufacture for all equipment. Submit drawing electronically in a PDF format to Mike Olson, Iowa State University (mjolson@iastate.edu). Submittals shall include but not be limited to equipment outlines, nameplate details, one line diagrams, wiring diagrams, interconnection diagrams, catalog cuts and any other required documentation to show conformance to the requirements of the specifications and drawings. The drawings must include the Iowa State University ISU Designations for Identification. ISU will review and return the electronic copies of the drawings within ten (10) working days after receipt. Rejected drawings shall be corrected and resubmitted for approval. Manufacture of equipment shall not proceed until drawings are approved.

2.2 As Built drawings and operation and installation manuals shall be provided as follows on all equipment:

2.2.1 Paper copies shall be sent to Mike Olson, Iowa State University, Facilities Planning and Management-Utilities, General Services Building, 700 Wallace Road, Ames, IA 50011-4013. Electronic copies (in an Adobe pdf format) will be emailed to Mike Olson at mjolson@iastate.edu.

2.2.2 One paper copy of the drawings, operation and installation manuals and any other applicable information or field installed warning labels required on the job site shall be attached to the equipment at time of shipment.

2.2.3 One electronic copy of all as-built drawings, operation and installation manuals and any other applicable information to the equipment shall be provided to ISU.

2.2.4 Additionally if any of the full size drawings are larger than 11 by 17 inches, vendor shall provide three (3) full size paper copies of applicable drawing to ISU in addition to the electronic copies.

2.3 Delivery of equipment shall staggered to match planned construction activities, but be no later than the dates listed below. (Early delivery of any or all items is acceptable with prior approval of ISU.) Twenty-four (24) hour notification to Mike Olson at 515-294-6312 or 515-689-3448 prior to delivery is required on any item with a total shipping weight of 5,000 pounds or less. If the weight exceeds 5,000 pounds, notification shall be a minimum of forty-eight (48) hours prior to delivery.

2.4 Bidder shall submit with quote a copy of the Equipment Delivery Schedule with manufacturer provided shipment dates assuming that a Purchase Order will be issued within seven (7) calendar days of quote date.

2.5 Quote Evaluations

2.5.1 The evaluation of quotes submitted on items 1 through 6 will be based upon compliance with the requirement of the specifications and the initial quote cost dollars.

2.5.2 The evaluation of quotes submitted on the oil filled three phase transformers (items 7, 8, and 9) will be based upon compliance with the requirements of the specifications, and the total dollars of the three requirements below for each of the listed items as applicable:

A. Initial quote cost.

B. Transformer Losses (operating cost) will be evaluated at full load losses at 55 degree C rating at 1.0 power factor and on the no load core losses at 100% rated voltage per watt as follows:

1. No load core losses at 100% rated voltage $4.75 per watt.
2. Full load losses at 55 degree C rating $1.30 per watt.
2.6 Equipment Delivery Schedule

<table>
<thead>
<tr>
<th>Item #</th>
<th>Qty</th>
<th>Description</th>
<th>Required Delivery Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>G&amp;W Electric, Inc. (no exceptions), RAC55 Switchgear</td>
<td>August 1, 2016</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>G&amp;W Electric, Inc. (no exceptions), Portable Motor Operator</td>
<td>August 1, 2016</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>S&amp;C Electric Company (no exceptions), Vista SD Portable Motor Operator and Control Pendant</td>
<td>August 1, 2016</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>S&amp;C Electric Company (no exceptions), Vista SD 422 Switchgear</td>
<td>August 1, 2016</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>S&amp;C Electric Company (no exceptions), Vista SD 431 Switchgear</td>
<td>August 1, 2016</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>S&amp;C Electric Company (no exceptions), PMH-5 Switchgear</td>
<td>August 1, 2016</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1500kVA, 4160: 480/277V, Oil Filled Pad-Mounted Transformer</td>
<td>August 1, 2016</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>1000kVA, 4160: 208/120V, Oil Filled Pad-Mounted Transformer</td>
<td>August 1, 2016</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>750kVA, 4160: 480/277V, Oil Filled Pad-Mounted Transformer</td>
<td>August 1, 2016</td>
</tr>
</tbody>
</table>

2.7 Detailed Specifications

2.7.1 Item #1. Provide 2 each G&W Electric, Inc. (no exceptions), SF-6 gas RAC55 switchgear with 5 each three phase operators and associated hardware in the sizes listed below per the following specifications:

A. Model number of RAC55-376F-40SF.
B. Switchgear shall be similar to G&W drawing #D9680-3405-J00.
C. Subsurface vault installation.
D. Operating voltage: 15.5 kV with BIL of 110 kV.
E. Withstand: 34 kV AC 1 minute and 53 kV DC 15 minute.
F. Continuous current rating: 630 Amp.
G. Momentary current withstand: 40 kA.
H. All copper current carrying components.
I. Tank shall be 11 gauge, 304 stainless steel with standard factory ASA 70 gray paint finish.
J. Cable entrances shall be on the front side.
K. Switch to have 5 (five) separate 3-phase entrance ways, each with 600A deadbreak apparatus bushings.
L. Switch operators shall be the following load break switch type:
   1. Way 1: 2 position (Close-Open)
   2. Ways 2, 3, 4, 5: 3 position (Close-Open-Close)
M. Switch operation shall be manually with removable breakaway handles.
N. Mounting frame to be open type, stainless steel, with 42 inch minimum bushing height.
O.  Total switch height with frame and lifting lugs shall not be more than 78 inches tall.

P.  Switch to be shipped prefilled with SF-6 gas.

2.7.2 **Item #2. Provide 2 each** G&W Electric, Inc. (*no exceptions*), Portable Motor Operators per the following specifications:

A.  Model number of PMC120-P/B-25.

B.  Three position, Close/Open/Close, push button control for three position motor operators.

C.  3 position portable motor operator.

D.  120VAC operating voltage.

E.  25 foot control cable.

F.  Programming cable.

2.7.3 **Item #3. Provide 1 each** S&C Electric Company (*no exceptions*), Vista SD Portable Motor Operator and Portable Remote Control Pendant per the following specifications:


B.  Three position Open/Close/Enable push buttons, position indicating lamps, and lamp test button.

C.  25 foot control cable.

D.  120VAC operating voltage.

E.  Operator and pendant are fully submersible.

2.7.4 **Item #4. Provide 1 each** S&C Electric Company (*no exceptions*), pad-mounted, vacuum interrupter, Vista solid dielectric (SD) distribution switchgear model #422 and enclosure. Switchgear shall contain two (2) each 16 kA symmetrical load interrupter switch ways and two (2) each 16 kA symmetrical fault interrupter switch ways constructed in a pad mount switchgear assembly. Equipment shall be equivalent to part #924222-L2-O-P1 and shown on drawing #924222-DIM and the following Vista SD specifications:

A.  Load Interrupter Switch Ways (at Ways #1 and 2):

1.  Rated 15 kV, 95 kV BIL.

2.  Three phase, two-position (open and closed) 600 amps, vacuum interrupter in series with an isolated disconnect, using solid dielectric insulation system. Manual switch operations shall open or close all three phases simultaneously.

3.  600 amp continuous and load break.

4.  Momentary and close into fault rating as specified above.

5.  Potential Indication, with low-voltage phasing provisions, to indicate presence of voltage on each phase.

6.  600 amp Apparatus Bushings with copper studs; elbows by Iowa State University.

7.  Load Interrupter switch ratings per IEEE 1247.

B.  Fault Interrupter Switch Ways (at Way #3 and 4):

1.  Rated 15 kV, 95 kV BIL.
2. Three phase, two-position (open and closed), 600 amps, vacuum interrupter in series with an isolated disconnect, using solid dielectric insulation system. Manual or electronic switch operation shall open all three phases. Manual operation required to place the switch in the closed position.

3. Momentary and close into fault rating as specified above.

4. Potential Indication, with low-voltage phasing provisions, to indicate presence of voltage on each phase.

5. 600 amp Apparatus Bushings with copper studs; elbows by Iowa State University.

6. Microprocessor based overcurrent control programmable via personal computer.

7. Overcurrent curves shall match at a minimum S&C standard speed SM refill units, E curves, type TCC 153-4 for minimum melting time and TCC 153-4-2 for total clearing time.

8. Overcurrent controls shall be mounted in an accessible NEMA 1 cabinet.

9. Fault Interrupter ratings per IEEE C37.60.

C. Pad-mounted switchgear assembly shall be as follows:

1. Assembly ratings per IEEE C37.20.3, C37.74, and C57.12.28.

2. Enclosure to be 14-gauge steel, painted olive green, no. 7GY3.29/1.5.

3. The enclosure shall be tamper-resistant and include front access hinged doors.

4. Enclosure shall include a hinged roof with latches at each end, with pentthead bolt and provisions for padlocking.

5. Provide lifting provisions for switchgear enclosure.

6. Maximum height shall not exceed 54 inches with covers closed.

D. Included are the following standard components:

1. All copper current carrying components.

2. Operating handle.

3. Corrosion resistant external fittings and hardware.

4. Stainless steel one-line diagram and corrosion resistant nameplates.

5. Continuous ground bus, with short-circuit rating that equals switchgear assembly.

6. Padlockable load and fault interrupter switch operating mechanisms with position indicating open or closed.

7. One viewing window per switch way.

2.7.5 Item #5. Provide 1 each S&C Electric Company (no exceptions), pad-mounted, vacuum interrupter, Vista solid dielectric (SD) distribution switchgear model #431 and enclosure. Switchgear shall contain three (3) each 16 kA symmetrical load interrupter switch ways and one (1) each 16 kA symmetrical fault interrupter switch way constructed in a pad mount switchgear assembly. Equipment shall be equivalent to part #924312-L2-O-P1 and shown on drawing #924312-DIM and the following Vista SD specifications:

A. Load Interrupter Switch Ways (at Ways #1, 2, and 3):

1. Rated 15 kV, 95 kV BIL.

2. Three phase, two-position (open and closed) 600 amps, vacuum interrupter in series with an isolated disconnect, using solid dielectric insulation system. Manual switch operation shall open or close all three phase simultaneously.

3. 600 amp continuous and load break.

4. Momentary and close into fault rating as specified above.
5. Potential Indication, with low-voltage phasing provisions, to indicate presence of voltage on each phase.
6. 600 amp Apparatus Bushings with copper studs; elbow by Iowa State University.
7. Load Interrupter switch ratings per IEEE1247.

B. Fault Interrupter Switch Way (at Way #4):
1. Rated 15 kV, 95 kV BIL.
2. Three phase, two-position (open and closed), 600 amps, vacuum interrupter in series with an isolated disconnect, using solid dielectric insulation system. Manual or electronic switch operation shall open all three phases. Manual operation required to place the switch in the closed position.
3. Momentary and close into fault rating as specified above.
4. Potential Indication, with low-voltage phasing provisions, to indicate presence of voltage on each phase.
5. 600 amp Apparatus Bushings with copper studs; elbows by Iowa State University.
6. Microprocessor based overcurrent control programmable via personal computer.
7. Overcurrent curves shall match at a minimum S&C standard speed SM refill units, E curves, type TCC 153-4 for minimum melting time and TCC 153-4-2 for total clearing time.
8. Overcurrent controls shall be mounted in an accessible NEMA 1 cabinet.
9. Fault Interrupter ratings per IEEE C37.60.

C. Pad-mounted switchgear assembly shall be as follows:
1. Assembly ratings per IEEE C37.20.3, C37.74, and C57.12.28.
2. Enclosure to be 14-gauge steel, painted olive green, no. 7GY3.29/1.5.
3. The enclosure shall be tamper-resistant and include front access hinged doors.
4. Enclosure shall include a hinged roof with latches at each end, with pentahead bolt and provisions for padlocking.
5. Provide lifting provisions for switchgear enclosure.
6. Maximum height shall not exceed 54 inches with covers closed.

D. Included are the following standard components:
1. All copper current carrying components.
2. Operating handle.
3. Corrosion resistant external fittings and hardware.
4. Stainless steel one line diagram and corrosion resistant nameplates.
5. Continuous ground bus, with short-circuit rating that equals switchgear assembly.
6. Padlockable load and fault interrupter switch operating mechanisms with position indicating open or closed.
7. One viewing window per switch way.

2.7.6 Item #6. Provide 1 each S&C Electric Company (no exceptions), manual pad-mounted PMH-5 switchgear and required fuse holders and fuses:

A. Model number to be similar to part #55312R3-E1-K9, per the following specifications.
1. Model type: PHH-5.
2. Nominal rating of 14.4 kV.
3. BIL of 95KV.
4. Switch and bus continuous rating of 600 amp.
5. Mini-rupter switches: 600 amp, 3 phase in compartment number 1.
6. Loadbreak fusing capability in compartment number 2 utilizing the SML-4Z, 200 amp fuse holders.
7. Short circuit current rating of 12,500A, RMS, symmetrical (310MVA at rated voltage).
8. Color to be ANSI green.
9. Dual purpose front barriers which can be inserted into the open switch gap.
10. Ground stud for each switch and ground pad.
11. Ground stud for each fuse terminal and ground pad.
12. Fuse storage for three spare fuse assemblies in compartment 1.
13. Base spacer, carbon steel, non-compartmented, 18 inch, exterior finish same as switchgear.

B. Provide three (3) each S&C Company SML-4Z fuse holders for the above PMH switchgear, rated 14.4 KV, 200 amps maximum, catalog #92352 (no exceptions).

C. Provide six (6) each 175E fuses, part number #122275R4 S&C Electric Company SM-4 fuse refill units for the SML-4Z holders for the above PMH switchgear, rated 14.4 KV, standard speed TCC 153-4 (no exceptions).

2.7.7 Item #7. Provide 1 each pad-mounted transformer and required accessories per the following specifications:

A. Outdoor, biodegradable dielectric insulating Cargill Envirotrend FR3 fluid filled, sealed tank, self-cooled, distribution class, pad-mounted, paint color to be ANSI green.

B. 1500 kVA, all winding will be copper. Aluminum windings will not be allowed.

C. Voltage: 4160 volts delta to 480/277 volts grounded wye, 3 phase, 4 wire, 60 Hz.

D. Transformer shall have a 55/65 degree C temperature rise rating. Windings shall not exceed 55 degree C temperature rise at 1500 kVA and shall be capable of 1680 kVA at 65 degree C temperature rise.

E. Insulation level, high voltage winding, 60 KV BIL.

F. Insulation level, low voltage winding, 30 KV BIL.

G. Impedance: minimum of 5.75%.

H. No-load voltage taps: four (4) 2-1/2%; two (2) above and two (2) below rated primary voltage.

I. Primary fusing: none required.

J. High-voltage cable terminations: live-front arranged for radial feed. Three sidewall-mounted externally clamped porcelain bushings with blade terminals, NEMA 2 hole spacing.

K. Low-voltage cable terminations: sidewall-mounted externally clamped epoxy or porcelain bushings with blade terminals, NEMA 10 hole spacing minimum. Neutral bushing shall be fully insulated with removable ground strap connected to transformer tank. Provide bushing supports.

L. Terminal compartment shall be bolt-on, minimum of 24” deep, with hinged lift-off doors and HV/LV compartment barrier. High-voltage compartment door shall have a pentahead bolt fastening device accessible only through the low-voltage door. Terminal compartment door shall be 3-point latching with dual function padlock provisions. Dual function padlocking shall consist of a combination of a retained pentahead bolt that must be fully engaged before padlock shackle can be inserted. The padlock will secure the door through-point latching handle and block access to the door release pentahead bolt.

M. Provide three (3) each Distribution Class Metal Oxide Surge Arrestors, heavy duty, nominally rated 3 kV, with a 2.55 kV MCOV-mounted in high voltage compartment below primary bushings. Arrestors shall be connected to the respective primary bushing with 5 kV unshielded and insulated copper conductors.

N. Provide all accessories and testing per the Additional Specifications for Items #7, 8, and 9 as noted below.
2.7.8 **Item #8. Provide 1 each** pad-mounted transformer and required accessories per the following specifications:

A. Outdoor, biodegradable dielectric insulating Cargill Envirotemp FR3 fluid filled, sealed tank, self-cooled, distribution class, pad-mounted, paint color to be ANSI green.
B. 1000 kVA, all winding will be copper. **Aluminum windings will not be allowed.**
C. Voltage: 4160 volts delta to 208/120 volts grounded wye, 3 phase, 4 wire, 60 Hz.
D. Transformer shall have a 55/65 degree C temperature rise rating. Windings shall not exceed 55 degree C temperature rise at 1000 kVA and shall be capable of 1120 kVA at 65 degree C temperature rise.
E. Insulation level, high voltage winding, 60 KV BIL.
F. Insulation level, low voltage winding, 30 KV BIL.
G. Impedance: minimum of 5.75%.
H. No-load voltage taps: four (4) 2-1/2%; two (2) above and two (2) below rated primary voltage.
I. Primary fusing: none required.
J. High-voltage cable terminations: live-front arranged for radial feed. Three sidewall-mounted externally clamped porcelain bushings with blade terminals, NEMA 2 hole spacing.
K. Low-voltage cable terminations: sidewall-mounted externally clamped epoxy or porcelain bushings with blade terminals, NEMA 12 hole spacing minimum. Neutral bushing shall be fully insulated with removable ground strap connected to transformer tank. Provide bushing supports.
L. Terminal compartment shall be bolt-on, minimum of 30" deep, with hinged lift-off doors and HV/LV compartment barrier. High-voltage compartment door shall have a pentahead bolt fastening device accessible only through the low-voltage door. Terminal compartment door shall be 3-point latching with dual function padlock provisions. Dual function padlocking shall consist of a combination of a retained pentahead bolt that must be fully engaged before padlock shackle can be inserted. The padlock will secure the door through-point latching handle and block access to the door release pentahead bolt.
M. Provide three (3) each Distribution Class Metal Oxide Surge Arrestors, heavy duty, nominally rated 3 kV, with a 2.55 kV MCOV-mounted in high voltage compartment below primary bushings. Arrestors shall be connected to the respective primary bushing with 5 kV unshielded and insulated copper conductors.
N. Provide all accessories and testing per the Additional Specifications for Items #7, 8, and 9 as noted below.

2.7.9 **Item #9. Provide 1 each** pad-mounted transformer and required accessories per the following specifications:

A. Outdoor, biodegradable dielectric insulating Cargill Envirotemp FR3 fluid filled, sealed tank, self-cooled, distribution class, pad-mounted, paint color to be ANSI green.
B. 750 kVA, all winding will be copper. **Aluminum windings will not be allowed.**
C. Voltage: 4160 volts delta to 480/277 volts grounded wye, 3 phase, 4 wire, 60 Hz.
D. Transformer shall have a 55/65 degree C temperature rise rating. Windings shall not exceed 55 degree C temperature rise at 750 kVA and shall be capable of 840 kVA at 65 degree C temperature rise.
E. Insulation level, high voltage winding, 60 KV BIL.
F. Insulation level, low voltage winding, 30 KV BIL.
G. Impedance: minimum of 5.75%.
H. No-load voltage taps: four (4) 2-1/2%; two (2) above and two (2) below rated primary voltage.
I. Primary fusing: none required.

J. High-voltage cable terminations: live-front arranged for radial feed. Three sidewall-mounted externally clamped porcelain bushings with blade terminals, NEMA 2 hole spacing.

K. Low-voltage cable terminations: sidewall-mounted externally clamped epoxy or porcelain bushings with blade terminals, NEMA 6 hole spacing minimum. Neutral bushing shall be fully insulated with removable ground strap connected to transformer tank. Provide bushing supports.

L. Terminal compartment shall be bolt-on, minimum of 24” deep, with hinged lift-off doors and HV/LV compartment barrier. High-voltage compartment door shall have a pentahead bolt fastening device accessible only through the low-voltage door. Terminal compartment door shall be 3-point latching with dual function padlock provisions. Dual function padlocking shall consist of a combination of a retained pentahead bolt that must be fully engaged before padlock shackle can be inserted. The padlock will secure the door through-point latching handle and block access to the door release pentahead bolt.

M. Provide three (3) each Distribution Class Metal Oxide Surge Arrestors, heavy duty, nominally rated 3 kV, with a 2.55 kV MCOV-mounted in high voltage compartment below primary bushings. Arrestors shall be connected to the respective primary bushing with 5 kV unshielded and insulated copper conductors.

N. Provide all accessories and testing per the Additional Specifications for Items #7, 8, and 9 as noted below.

2.7.10 Additional Specifications for Three Phase Transformers-Items #7, 8, and 9

A. Fill plug, drain plug, self-activating pressure relief device, grounding pads, lifting lugs, and jacking pads shall be supplied.

B. A bolted, tamper-resistant handhole shall be provided in the tank cover for access to internal connectors.

C. Dial-type thermometer, liquid level gauge, pressure gauge, and 1” drain valve and sample device shall be provided.

D. Average sound level: meet NEMA TR1 standards.

E. Transformer oil shall be certified to be free from PCB content.

F. Provide a transformer nameplate in the low voltage side of the transformer.

G. Power cables will enter unit from below.

H. Transformer and associated terminal compartments shall be designed and constructed to be tamperproof, with no fastening devices externally removable, exceeding NEMA NOSPTR-P9-1977 requirements.

I. Standards: ANSI C57.12.00 and C57.12.22, NEMA TR1 and TR11, latest issue.

J. Transformer design shall be high efficiency, low loss designed with a minimum efficiency of >99 percent at any OA loading. The attached Data Sheet (Attachment B) must be submitted with the bid indicating the guaranteed losses. Efficiencies shall be certified on transformers through factory testing as specified before shipment. A transformer not meeting the stated guaranteed efficiencies shall result in a contract price deduct adjustment based on no load and full load at 55 degree C rating guarantees at 1.0 power factor. These contract adjustments shall be administered after manufacturer certified test results are evaluated. Dollar assessments shall be $4.75 per watt of no load core losses at 100% voltage and $1.30 per watt of load losses at 55 degree C rating above guaranteed value. The load and no load losses will be evaluated independent of each other. If only one of the loss guaranteed values is not met, only it will be evaluated for assessment. If one of the loss factors meets or is below the guaranteed losses, the resultant evaluation assessment will be zero and no credit will be added to the other loss evaluation assessment. No increase in the
contract price will be given for meeting or being below either or both of the guaranteed losses.

K. The following tests shall be made on the transformer before shipment. Certified results shall be submitted to the Owner.
1. Winding resistance measurements
2. Ratio test
3. Polarity and phase-relation tests
4. No-load core loss
5. Excitation current
6. Percent impedance at rated current
7. Total load loss at rated current
8. Full wave and reduced wave impulse test
9. Induced potential test
10. Percent regulation at 1.0 and 0.8 of loading
11. Percent efficiency at 100 percent, 75 percent, 50 percent, and 25 percent load
12. The transformers shall receive standard commercial tests in accordance with ANSI C57.12.90-1980

L. Acceptable manufacturers:
1. ABB
2. CG Power Systems
3. Cooper Power Systems
4. Eaton (Cutler Hammer)
5. ERMCO
6. General Electric
7. Howard Industries
8. Square D

M. Failure to return the Data Sheet and Equipment Delivery Schedule with the quote, will result in quote being deemed non-compliant and returned.
SECTION III
TERMS AND CONDITIONS

3.1 Assignment: Contract may not be assigned or transferred by either party without the prior written consent of the other party.

3.2 Termination of the Contract:

3.2.1 In any case the Company has failed to provide equipment of has provided non-conforming equipment, or any time that the Company fails to carry out its provisions or to make substantial progress under the terms specified, ISU shall provide a Cure Notice. If after notice, Company continues to be in default, ISU may terminate the contract without penalty to ISU.

3.2.2 If Company is adjudged bankrupt of makes a general assignment for the benefit of creditors, if a receiver is appointed on account of Company's insolvency, ISU may terminate the contract after giving Company notice, without penalty to ISU.

3.2.3 Non-appropriation of Funds: Notwithstanding any other provision of this contract, if funds anticipated for the continued fulfillment of this contract are at any time not forthcoming or insufficient, either through the failure of the Iowa Legislature of the Federal Government to provide funds or the program under which funds were provided is altered, then ISU shall have the right to terminate this contract without penalty by giving not less than thirty (30) days written notice documenting the lack of funding or program change.

3.3 Indemnification: The Company shall indemnify and hold harmless ISU, the State of Iowa and the Board of Regents-State of Iowa from and against any and all loss, costs, damages, expenses and claims incurred by any of them arising from or in connection with injury or death of any person or loss or damage to property owned by a third party cause by the acts or omissions of Company or its employees, agents or subcontractors.

3.4 Laws: Terms and provisions of this contract shall be construed in accordance with the laws of the State of Iowa, and any and all litigation or actions commenced in connection with the contact shall be instituted in the appropriate courts in the State of Iowa.

3.5 Code of Fair Practice:

3.5.1 The Company shall not discriminate against any employee or applicant for employment because of race, creed, color, religion, national origin, sex, age, or physical or mental disability. The Company shall take affirmative action to ensure that applicants are employed and that the employees are treated during employment without regard to their race, creed, color, religion, national origin, sex, age, or physical or mental disability except where it relates to a bona fide occupational qualification.

3.5.2 In the event of the Company's noncompliance with nondiscrimination clause of this contract or with any of the aforesaid regulations, this contract may be canceled, terminated or suspended in whole in part and Bidder may be declared ineligible for further contracts with the Board of Regents. In addition the Board of Regents or ISU may take such further action, and such other sanctions may be imposed and remedies invoked, as provided by the Code of Iowa.

3.6 Contract Changes: This agreement shall not be changed, modified, altered or amended in any respect without the mutual consent of the parties hereto, which consent shall be evidence by a written amendment to the agreement executed by both parties.
3.7 **Severability of the Contact**: In the event any one or more of the provisions contained in this contract shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision of this contract, but this contract shall be construed as if such invalid or unenforceable provision had never been contained. Further, in the event that any provision of this contract shall be held to be unenforceable by virtue of its scope, but may be made enforceable by a limitation thereof, such provision shall be deemed to be amended to the minimum extent necessary to render it enforceable under the laws of the jurisdiction in which enforcement is sought.

3.8 **Commercial Advertising**: The Company agrees not to use the results of the RFQ, the RFQ process or this contract as part of any commercial advertising without prior written approval of ISU.

3.9 **Remedies Upon Default**: In any case where the Company has failed to deliver services or has delivered nonconforming services, ISU shall provide a Cure notice. If after the Company continues to be in default, ISU may procure substitute services from another source and charge the difference between the contracted price and the market price to the defaulting Company.

3.10 **Force Majeure**: Neither party shall be held responsible for any losses resulting if the fulfillment of any terms provision of this contract are delayed or prevented by a cause not within the control of the party whose performance is interfered with and which by the exercise of reasonable diligence said party is unable to prevent.
All prices should include shipping and handling fees. The price you quote will be your **delivered** price and will be shipped F.O.B. Destination, Freight Allowed.

### 4.1 Pricing

<table>
<thead>
<tr>
<th>Item #</th>
<th>Qty</th>
<th>Description</th>
<th>Required Delivery Date</th>
<th>Expected Delivery Date</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>G&amp;W Electric, Inc. <em>(no exceptions)</em> RAC55 Switchgear</td>
<td>August 1, 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>G&amp;W Electric, Inc. <em>(no exceptions)</em> Portable Motor Operator</td>
<td>August 1, 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>S&amp;C Electric Company <em>(no exceptions)</em> Vista SD Portable Motor Operator and Control Pendant</td>
<td>August 1, 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>S&amp;C Electric Company <em>(no exceptions)</em> Vista SD 422 Switchgear</td>
<td>August 1, 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>S&amp;C Electric Company <em>(no exceptions)</em> Vista SD 431 Switchgear</td>
<td>August 1, 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>S&amp;C Electric Company <em>(no exceptions)</em> PMH-5 Switchgear</td>
<td>August 1, 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1500kVA, 4160: 480/277V, Oil Filled Pad-Mounted Transformer</td>
<td>August 1, 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000kVA, 4160: 208/120V, Oil Filled Pad-Mounted Transformer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manufacturer __________________</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Model # ______________________</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warranty _____________________</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>August 1, 2016</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>750kVA, 4160: 480/277V, Oil Filled Pad-Mounted Transformer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Manufacturer __________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Model # ______________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warranty _____________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td>August 1, 2016</td>
</tr>
</tbody>
</table>

4.2 Payment Terms:  
Be certain to state your terms of payment. Failure to indicate your terms will mean that if your quote is accepted, Iowa State University will apply a five percent (5%) cash discount for payments made within 15 days of receipt of your invoice in the Purchasing Department or completion of inspection services, whichever is later.

4.3 The sections of this quote listed below represent trade secrets or proprietary information.

<table>
<thead>
<tr>
<th>Section</th>
<th>Page No.</th>
<th>Section</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section</th>
<th>Page No.</th>
<th>Section</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.4 I hereby acknowledge receipt and acceptance of Addenda No(s). ______ & _______

Legal Business Name: ____________________________________________

Company’s Official Business Address: ________________________________

Federal Employment Identification Number (FEIN) ________________________

Authorized Signature: ____________________________________________

Name Printed or Typed: ____________________________________________

Title: ___________________________ Date: ____________________________

Telephone No.: __________________ Fax No.: ________________________

E-mail Address: ________________________________________________
SECTION V
QUOTE COMPLIANCE FORM

Please note: Your quote will be considered incomplete unless the following are included with your offer. Indicate compliance by placing a check mark in the space provided: All documents should be included in the order provided below.

Compliance

[ ] Form of Quote (pages 16 and 17) completed and signed by your company’s authorized official.
[ ] Equipment drawings
[ ] Quote Compliance Form (this page)
[ ] Attachment A (Exceptions)
[ ] Attachment B (Transformer Data Sheets)
ATTACHMENT A

EXCEPTIONS

Please list any and all exceptions to this RFQ in this section. Include page number, section and reason for exception: (Make additional pages if necessary)

*Please check one of the following:*

[ ] We have no exceptions to this RFQ  
[ ] We have the following exceptions to this RFQ

<table>
<thead>
<tr>
<th>Page Number</th>
<th>Section</th>
<th>Exception</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>2.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>3.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>4.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>5.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>6.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>7.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>8.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>9.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>10.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>11.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>12.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>13.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
<tr>
<td>14.</td>
<td>_______</td>
<td>____________________________</td>
</tr>
</tbody>
</table>
A. Item 7-Transformer Data **1500 kVA (1 each)**, 4160 delta to 480/277 wye volts

1. Transformer Manufacturer ________________

2. Transformer Guarantees - Bidder shall state the following guarantee for the transformer.
   
   a. Efficiencies as follows at 1.0 and 0.8 power factor

      | Transformer Load | 1.0 PF | 0.8 PF |
      |------------------|--------|--------|
      | 25% load (55 degree C Rating) | ___ | ___ |
      | 50% load (55 degree C Rating) | ___ | ___ |
      | 75% load (55 degree C Rating) | ___ | ___ |
      | 100% load (55 degree C Rating) | ___ | ___ |

   b. No Load core losses at 100% voltage ________watts
      (guaranteed losses)

   c. Load losses at 55 degree C rating _________watts
      (guaranteed losses)

   d. Total losses at 55 degree C rating (b+c above) _________watts

   e. Percent exciting current __________

   f. Full load regulation at 1.0 and 0.8 power factor

      1.0 PF _________

      0.8 PF _________
A. Item 8-Transformer Data **1000 kVA (1 each)**, 4160 delta to 208/120 wye volts

1. Transformer Manufacturer ________________

2. Transformer Guarantees - Bidder shall state the following guarantee for the transformer.
   a. Efficiencies as follows at 1.0 and 0.8 power factor

<table>
<thead>
<tr>
<th>Transformer Load</th>
<th>1.0 PF</th>
<th>0.8 PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>25% load (55 degree C Rating)</td>
<td>____</td>
<td>____</td>
</tr>
<tr>
<td>50% load (55 degree C Rating)</td>
<td>____</td>
<td>____</td>
</tr>
<tr>
<td>75% load (55 degree C Rating)</td>
<td>____</td>
<td>____</td>
</tr>
<tr>
<td>100% load (55 degree C Rating)</td>
<td>____</td>
<td>____</td>
</tr>
</tbody>
</table>

   b. No Load core losses at 100% voltage _________ watts (guaranteed losses)

   c. Load losses at 55 degree C rating _________ watts (guaranteed losses)

   d. Total losses at 55 degree C rating (b+c above)_________ watts

   e. Percent exciting current ____________

   f. Full load regulation at 1.0 and 0.8 power factor

   1.0 PF ______________

   0.8 PF ______________
ATTACHMENT B
TRANSFORMER DATA SHEET
To be submitted with bid

A. Item 9-Transformer Data **750 kVA, (1 each)** 4160 delta to 480/277 wye volts

1. Transformer Manufacturer ________________

2. Transformer Guarantees - Bidder shall state the following guarantee for the transformer.
   a. Efficiencies as follows at 1.0 and 0.8 power factor

<table>
<thead>
<tr>
<th>Transformer Load</th>
<th>1.0 PF</th>
<th>0.8 PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>25% load (55 degree C Rating)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50% load (55 degree C Rating)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75% load (55 degree C Rating)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% load (55 degree C Rating)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   b. No Load core losses at 100% voltage ___________ watts
      (Bid evaluation and guaranteed losses)

   c. Load losses at 55 degree C rating ___________ watts
      (Bid evaluated and guaranteed losses)

   d. Total losses at 55 degree C rating (b+c above) ___________ watts

   e. Percent exciting current ___________

   f. Full load regulation at 1.0 and 0.8 power factor
      1.0 PF ___________
      0.8 PF ___________