

	Invitation For Bid (IFB)10-443 Arc Flash Analysis and Protection Study Public Works Department Issued: October 21, 2010	City of Tulsa, Oklahoma Page 1 of 31
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ADDENDUM

No.	Date	Description
2	11-11-2010	1. Project is temporarily on hold. When the project comes off hold, there will be a prebid with the opportunity to ask your questions at that time.
1	10-25-2010	1. Page 3 Pre-Bid Conference: There will not be a prebid
Submit your bid using the latest addendum.		

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NOTICE is hereby given that the CITY OF TULSA, OKLAHOMA will receive sealed Bids for the following:

BID # **10-443**

DESCRIPTION: Arc Flash Analysis and Protection Study

(Commodity Code(s): **992-40, 918-42, 918-97, 936-25**)

You are invited to submit a Bid to supply the Goods and/or Services specified above. Invitations for Bid (IFB) will be posted on the City's website at www.cityoftulsapurchasing.org or a hardcopy may be obtained at:

City of Tulsa-Purchasing Department
 175 East 2nd Street, Suite 865
 Tulsa Oklahoma 74103

Bids must be received no later than 5:00 PM (CST) on ON HOLD, and delivered to:

City Clerk's Office
175 East 2nd Street, Suite 260
Tulsa Oklahoma 74103

Bids must be sealed and either mailed or delivered. No faxed or emailed Bids will be considered. Bids received after the stated date and time **will not be accepted and will be returned to the Bidder unopened.**

The Bid Packet consists of (1) this Notice of Invitation for Bid, (2) the Summary Sheet, (3) Form #1, (4) Form #2, (5) Form #3, (6) Form #4, (7) Form #5, (8) Form #6, (9) the Instructions, Terms and Conditions for Bidders, (10) Special Requirements, (11) Technical Specifications and (12) Exhibit A.

Use this checklist to ensure you have properly read and completed all Forms.

- Notice of Invitation for Bid
- Summary Sheet
- Form #1: Bidder Information Sheet. Must be completed.
- Form #2: Purchase Agreement. Complete legal name in first paragraph and Notice provision in Section 17.i. Original signature required.
- Form #3: Interest Affidavit. Original signature and notarization required.
- Form #4: Non-Collusion Affidavit. Original signature and notarization required.
- Form #5: Affidavit of Claimant. Original signature and notarization required.
- Form #6: Acknowledgment of Receipt of Addenda/Amendments. Must be completed and signed.
- Instructions, Terms and Conditions for Bidders
- Special Requirements (Offer Period; Insurance and Bonding; References)
- Technical Specifications
- Exhibit A: Bid Form including Delivery and Pricing. This is your Bid. It must be completed or your Bid will be rejected.

IMPORTANT NOTE: Write the Bid Number, Bid Description (as listed above), and Bid Opening Date on the lower left corner of the outside of your Bid envelope. You must return the complete Bid Packet with your Bid.

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SUMMARY SHEET

Project Buyer

If you have any questions or need additional information, contact the assigned Project Buyer:

Bill Youngblood, CPM Senior Buyer
byoungblood@cityoftulsa.org
 Include **IFB 10-443** on the subject line

Bidder’s Notice of Intent to Submit a Bid

Email the Project Buyer indicating your intent to Bid. Include IFB 10-443 on the subject line of the email. You will receive an email response verifying your notice of intent to bid was received. This same procedure should be followed to request clarification, in writing, of any point in the IFB.

Bidders are encouraged to contact the Project Buyer by email if there is anything in these specifications that prevents you from submitting a Bid, or completing the Bid Packet. Questions and concerns must be received no later than seven (7) days prior to the Bid Packet due date.

Issuing of Addenda

If you received the notice of this IFB from the City as a result of being registered to sell the commodity code(s) on this Bid, you should also receive notice of any addenda issued. If you are not registered with the City to sell the commodities listed herein, you must register as a supplier on the City of Tulsa Purchasing website (www.cityoftulsapurchasing.org) to receive notice of any addenda.

Pre-Bid Conference

If a pre-Bid conference will be held for this IFB, information on that conference will be inserted below:

Date: NA Time: NA

Location: City Hall; 175 E. 2nd Street, Ste 08-026 (Information Exchange); Tulsa, Ok 74103

___ Attendance at the Pre-Bid Conference is required to submit a Bid; however Bidders may make arrangements to attend via teleconference in some cases (contact the Project Buyer for details).

___ Attendance is not required to submit a Bid.

Bid Packet Submission

The City requires two completed Bid packets: 1 Original and 1 Copy. Each must be clearly labeled on the front sheet indicating “Original” or “Copy”. If a copy on electronic media is also required, the line below will be checked.

___ Electronic Copy also required.

Responses to this Invitation for Bid must be on the forms listed on page 1. The entire Bid Packet must be returned or your Bid may be rejected. Do not take exception to any portion of this Bid Packet. Do not make any entries except where required. Do not insert any other documents into the Bid Packet.

Bid Opening

All Bid openings are public and take place at 8:30 a.m. Thursday, the day after Bids are due. The Bid openings are held in the City of Tulsa Council Meeting Room, 175 East 2nd Street, 2nd Floor, Tulsa, Oklahoma.

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BIDDER INFORMATION SHEET
Form #1

Bidder's Exact Legal Name: _____
 (Must be Bidder's company name as reflected on its organizational documents, i.e., not a DBA)

State of Organization: _____

Bidder's Type of Legal Entity: (check one)

- | | |
|--|--|
| <input type="checkbox"/> Sole Proprietorship | <input type="checkbox"/> Limited Liability Company |
| <input type="checkbox"/> Partnership | <input type="checkbox"/> Limited Liability Partnership |
| <input type="checkbox"/> Corporation | |
| <input type="checkbox"/> Limited Partnership | <input type="checkbox"/> Other: _____ |

Bidder's Address: _____
Street
City
State
Zip Code

Bidder's Website Address: _____ **Email Address:** _____

Sales contact:

Name: _____
 Street: _____
 City: _____
 State: _____
 Phone: _____
 Fax: _____
 Email: _____

Alternate sales contact:

Name: _____
 Street: _____
 City: _____
 State: _____
 Phone: _____
 Fax: _____
 Email: _____

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FORM #2 (Page 1 of 4)
PURCHASE AGREEMENT

INSTRUCTIONS: This document **must** be properly signed and returned or your Bid will be **rejected**. This form constitutes your offer and if accepted by the City of Tulsa will constitute the Purchase Agreement under which you are obligated to perform. Your signature on this document indicates you have read and understand these terms and agree to be bound by them.

THIS PURCHASE AGREEMENT is between the CITY OF TULSA, OKLAHOMA, a municipal corporation, 175 East 2nd Street, Tulsa, Oklahoma, 74103-3827 (the "City") and:

(Company name – **Must** be the **exact** legal name as shown in organizational documents (i.e., not a DBA) (the "Seller").

WITNESSETH:

WHEREAS, the City has approved certain specifications and advertised for or solicited Bids on the following goods or services:

10-443: Arc Flash Analysis and Protection Study

(the "Goods and/or Services"); and

WHEREAS, Seller desires to provide such Goods and/or Services to City, acknowledges that this document constitutes Seller's offer to provide the Goods and/or Services specified below, and further acknowledges that if executed by the City's Mayor, this document will become the Purchase Agreement for such Goods and/or Services.

NOW, THEREFORE, for and in consideration of the terms, covenants and conditions hereinafter set forth, the parties hereto agree as follows:

1. **Documents Comprising the Agreement.** The Bid Packet includes the Notice of Invitation to Bid, the Summary Sheet, Form #1, Form #2, Form #3, Form #4, Form #5, Form #6, the Instructions, Terms and Conditions for Bidders, the Special Requirements, the Technical Specifications, Exhibit A and any addenda or amendments to the Bid Packet. The Bid Packet is incorporated herein by this reference. In the event of conflicting or ambiguous language between this Purchase Agreement and any of the other Bid Packet documents, the parties shall be governed first according to this Purchase Agreement and second according to the remainder of the documents included in the Bid Packet. Seller may submit as part of its Bid additional materials or information to support the Bid. Additional materials or information submitted by Seller which are not ambiguous and which do not conflict with this Purchase Agreement or the other Bid Packet documents are incorporated herein by this reference.
2. **Purchase and Sale.** Seller agrees to sell City the Goods and/or Services for the price and upon the delivery terms set forth in Exhibit A hereto. City agrees to pay Seller the price as set forth in Exhibit A based on (a) the quantity actually purchased in the case of goods or services priced by unit, or (b) the total price for a stated quantity of goods or services, upon (i) delivery of the Goods and/or Services to the City, (ii) the City's Acceptance thereof, and (iii) Seller's submission and City's approval of a verified claim for the amount due. City shall not pay any late charges or fees.
3. **Irrevocable Offer.** Seller understands and acknowledges that its signature on this Agreement constitutes an irrevocable offer to provide the Goods and/or Services. There is no contract unless and until City's Mayor/Mayor Pro Tem executes this Agreement accepting Seller's Bid. No City officer, employee or agent except the Mayor (or Mayor Pro Tem) has the authority to award contracts or legally obligate the City to any contract. Seller shall not provide any Goods and/or Services to City pursuant to this Agreement before this Agreement is executed by City. If Seller provides any Goods and/or Services to City pursuant to this Agreement before this Agreement is executed by City, such Goods and/or Services are provided at Seller's risk and City shall have no obligation to pay for any such Goods and/or Services.
4. **Term.** The term of this Agreement shall be effective commencing on the date of execution of this Agreement by the Mayor/Mayor Pro Tem of the City of Tulsa and terminating one year from that date, **or shall be effective on [month][day], 20__ and continuing to [month][day], 20__ at the discretion of City.** City in its sole discretion may offer Seller an opportunity to renew this Agreement for an **additional** _ () one (1) year term(s). Seller understands and acknowledges that any future contracts or renewals are neither automatic nor implied by this Agreement. The continuing purchase by City of the Goods and/or Services set forth in this Agreement is subject to City's needs and to City's annual appropriation of sufficient funds in City's fiscal year (July 1st to June 30th) in which such Goods and/or Services are purchased. In the event City does not appropriate or budget sufficient funds to perform this Agreement, this Agreement shall be null and void without further action by City.
5. **Warranties.** Seller shall assure that the Goods and/or Services purchased hereunder are covered by all available and applicable manufacturers' warranties for such Goods and/or Services. Seller expressly agrees that it will be responsible for performing all warranty obligations set forth in the Special Requirements for the Goods and/or Services covered in this Agreement. Seller also warrants that the Goods and/or Services will conform to the Technical Specifications and Special Requirements, and further warrants that the Goods and/or Services shall be of good materials and workmanship and free from defects for either a minimum of one (1) year from the date of Acceptance or installation by City, whichever is later, or as **specified in the Special Requirements**, whichever is later. In no event shall Seller be allowed to disclaim or otherwise limit the express warranties set forth herein.
6. **Warranty Remedies.** City shall notify Seller if any of the Goods and/or Services fails to meet the warranties set forth above, and Seller shall promptly correct, repair or replace such Goods and/or Services at Seller's sole expense. Notwithstanding the foregoing, if such Goods and/or Services shall be determined by City to be defective or non-conforming within the first thirty (30) days after the date of Acceptance by City, then City at its option shall be entitled to a complete refund of the purchase price and, in the case of Goods, shall promptly return such Goods to Seller. Seller shall pay all expenses related to the return of such Goods to Seller.
7. **Seller Bears Risk.** The risk of loss or damage shall be borne by Seller at all times until the Acceptance of the Goods or Services by City.

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PURCHASE AGREEMENT

8. **No Indemnification by City.** Seller understands and acknowledges that City is a municipal corporation that is funded by its taxpayers to operate for the benefit of its citizens. Accordingly, and pursuant to Oklahoma law, City shall not indemnify nor hold Seller harmless for loss, damage, expense or liability arising from or related to this Agreement, including any attorneys' fees and costs. In addition, Seller shall not limit its liability to City for actual loss or direct damages for any claim based on a material breach of this Agreement and the documents incorporated herein. City reserves the right to pursue all legal and equitable remedies to which it may be entitled.
9. **Indemnification by Seller.** Seller agrees to indemnify, defend, and save harmless City and its officers, employees and agents from all suits and actions of any nature brought against them due to the use of patented appliances, products or processes provided by Seller hereunder. Seller shall pay all royalties and charges incident to such patents.
10. **No Insurance by City.** If City is leasing Goods herein, City shall not be required to obtain insurance for Seller's property. Seller shall be solely responsible for any insurance it deems necessary. City is self-insured for its own negligence, subject to the limits of the Governmental Tort Claims Act (51 O.S. § 151 et seq.).
11. **No Confidentiality.** Seller understands and acknowledges that City is subject to the Oklahoma Open Records Act (51 O.S. §24A.1 et seq.) and therefore cannot assure the confidentiality of contract terms or other information provided by Seller pursuant to this Agreement that would be inconsistent with City's compliance with its statutory requirements thereunder.
12. **Non-Responsive Bids.** Seller understands and acknowledges that if it adds terms and conditions to its Bid that are different from the terms set forth herein that its Bid may be rejected as non-responsive. Furthermore, if City accepts Seller's Bid and awards a contract to Seller based on such Bid, City shall not be bound to any exceptions, changes or additions made by Seller, and any terms and conditions added by Seller which are not expressly agreed to by City in writing will be void and of no force and effect and the parties will be governed according to the document precedence set forth in Section 1 above.
13. **Compliance with Laws.** Seller shall be responsible for complying with all applicable federal, state and local laws, regulations and standards. Seller is responsible for any costs of such compliance. Seller certifies that it and all of its subcontractors to be used in the performance of this Purchase Agreement are in compliance with 25 O.S. Sec. 1313 and participate in the Status Verification System. The Status Verification System is defined in 25 O.S. Sec. 1312 and includes but is not limited to the free Employee Verification Program (E-Verify) available at www.dhs.gov/E-Verify.
14. **Termination.** City, by written notice, may terminate this Agreement, in whole or in part, when such action is in the best interest of City. If this Agreement is so terminated, City shall be liable only for payment for Goods accepted and Services rendered prior to the effective date of termination. City's right to terminate this Agreement is cumulative to any other rights and remedies provided by law or by this Agreement.
15. **Price Changes.** The parties understand and agree that the variables in Seller's cost of performance may fluctuate, but any change in Seller's cost of performance will not alter its obligations under this Agreement, nor excuse performance or delay on Seller's part. If the IFB provides that Seller may include a price escalation provision in its Bid, Seller's price escalation provision will be evaluated by City as part of Seller's Bid price when awarding the Bid.
16. **Right to Audit.** The parties agree that Seller's books, records, documents, accounting procedures, practices, price lists or any other items related to the Goods and/or Services provided hereunder are subject to inspection, examination, and copying by City or its designees. Seller is required to retain all records related to this Agreement for the duration of the term of this Agreement and a period of three years following completion and/or termination of the Agreement. If an audit, litigation or other action involving such records begins before the end of the three year period, the records shall be maintained for three years after the date that all issues arising out of the action are resolved or until the end of the three year retention period, whichever is later.
17. **Notice.** Any notice, demand, or request required by or made pursuant to this Agreement shall be deemed properly made if personally delivered in writing or deposited in the United States mail, postage prepaid, to the addresses specified below.
 - i. To Seller: _____

 - ii. To CITY: City Clerk
CITY OF TULSA, OKLAHOMA
175 E. 2nd Street, Suite 260
Tulsa, Oklahoma 74103

With a copy to: Bill Youngblood, CPM Senior Buyer _____
CITY OF TULSA, OKLAHOMA
175 E. 2nd Street, Suite 865
Tulsa, Oklahoma 74103
18. **Relationship of Parties.** The Seller is, and shall remain at all times, an independent contractor with respect to activities and conduct while engaged in the performance of services for the City under this Agreement. No employees, subcontractors or agents of the Seller shall be deemed to be employees of the City for any purpose whatsoever, and none shall be eligible to participate in any benefit program provided

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PURCHASE AGREEMENT**

by the City for its employees. The Seller shall be solely responsible for the payment of all employee wages and salaries, taxes, withholding payments, fringe benefits, insurance premiums, continuing education courses, materials or related expenses on behalf of its employees, subcontractors, and agents. Nothing in this Agreement shall be construed to create a partnership, joint venture, or agency relationship among the parties. No party shall have any right, power or authority to act as a legal representative of another party, and no party shall have any power to obligate or bind another party, or to make any representations, express or implied, on behalf of or in the name of the other in any manner or for any purpose whatsoever.

19. **Third Parties.** This Agreement is between City and Seller and creates no right unto or duties to any other person. No person is or shall be deemed a third party beneficiary of this Agreement.
20. **Time of Essence.** City and Seller agree that time is deemed to be of the essence with respect to this Agreement.
21. **Binding Effect.** This Agreement shall be binding upon City and Seller and their respective successors, heirs, legal representatives and permitted assigns.
22. **Headings.** The headings used herein are for convenience only and shall not be used in interpreting this Agreement
23. **Severability Provision.** If any term or provision herein is determined to be illegal or unenforceable, the remainder of this Agreement will not be affected thereby. It is the intention of the parties that if any provision is held to be illegal, invalid or unenforceable, there will be added in lieu thereof a provision as similar in terms to such provision as is possible to be legal, valid and enforceable.
24. **Governing Law And Venue.** This Agreement is executed in and shall be governed by and construed in accordance with the laws of the State of Oklahoma without regard to its choice of law principles, which shall be the forum for any lawsuits arising under this Agreement or incident thereto. The parties stipulate that venue is proper in a court of competent jurisdiction in Tulsa County, Oklahoma and each party waives any objection to such venue. City does not and will not agree to binding arbitration of any disputes.
25. **No Waiver.** A waiver of any breach of any provision of this Agreement shall not constitute or operate as a waiver of any other provision, nor shall any failure to enforce any provision hereof operate as a waiver of the enforcement of such provision or any other provision.
26. **Entire Agreement/No Assignment.** This Agreement and any documents incorporated herein constitute the entire agreement of the parties and supersede any and all prior agreements, oral or otherwise. This Agreement may only be modified or amended in a writing signed by both parties. Notwithstanding anything to the contrary stated herein or in the attachments to this Agreement, no future agreements, revisions or modifications that may be required under this Agreement are effective or enforceable unless such terms, revisions or modifications have been reduced to writing and signed by City and Seller. Seller may not assign this Agreement or use subcontractors to provide the Goods and/or Services without City's prior written consent. Seller shall not be entitled to any claim for extras of any kind or nature.
27. **Multiple Counterparts.** This Agreement may be executed in several counterparts, each of which shall be deemed an original, but which together shall constitute one and the same instrument.
28. **Interpretive Matters and Definitions.** The following interpretive matters shall be applicable to this Agreement:
 - 28.1 Unless the context otherwise requires: (a) all references to Sections are to Sections of or to this Agreement; (b) each term defined in this Agreement has the meaning assigned to it; (c) "or" is disjunctive but not necessarily exclusive; (d) words in a singular include the plural and vice versa. All references to "\$" or to dollar amounts shall be in lawful currency of the United States of America;
 - 28.2 No provision of this Agreement will be interpreted in favor of, or against, any of the parties hereto by reason of the extent to which such party or its counsel participated in the drafting thereof or by reason of the extent to which any such provision is inconsistent with any prior draft hereof or thereof;
 - 28.3 Any reference to any applicable laws shall be deemed to refer to all rules and regulations promulgated thereunder and judicial interpretations thereof, unless the context requires otherwise;
 - 28.4 The word "including" means "including, without limitation" and does not limit the preceding words or terms; and
 - 28.5 All words used in this Agreement shall be construed to be of such gender, number or tense as circumstances require.
29. **Authority to Bind.** The undersigned individual states that s/he has authority to bind Seller to this Agreement, that s/he has read and understands the terms of this Agreement, and that Seller agrees to be bound by this Agreement and its incorporated documents.

REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK

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FORM #2 (Page 4 of 4)
PURCHASE AGREEMENT

IMPORTANT NOTE: This document must be signed by the proper person as set forth in Instructions, Terms and Conditions for Bidders, paragraph 2D. FAILURE TO SUBMIT PROPERLY AUTHORIZED SIGNATURE MAY RESULT IN YOUR BID BEING REJECTED AS NONRESPONSIVE.

IN WITNESS WHEREOF, this Agreement has been executed in multiple copies on the dates set forth below to be effective during the period recited above.

Seller Name: _____

Sign Here ► _____

ATTEST:

Printed Name: _____

Title: _____

Corporate Secretary

Date: _____

Company Name/Address [Please Print]	Address	City	State	Zip Code
-------------------------------------	---------	------	-------	----------

() - Telephone Number	() - Fax Number	Email Address
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CITY OF TULSA, OKLAHOMA,
a municipal corporation,

ATTEST:

By: _____
Mayor

City Clerk

Date: _____

APPROVED:

Assistant City Attorney

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FORM #3 (Page 1 of 1)

INTEREST AFFIDAVIT

STATE OF _____)
)ss.
 COUNTY OF _____)

I, _____, of lawful age, being first duly sworn, state that I am the agent authorized by Seller to submit the attached Bid. Affiant further states that no officer or employee of the City of Tulsa either directly or indirectly owns a five percent (5%) interest or more in the Bidder's business or such a percentage that constitutes a controlling interest. Affiant further states that the following officers and/or employees of the City of Tulsa own an interest in the Bidder's business which is less than a controlling interest, either direct or indirect.

By: _____
 Signature

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20____.

 Notary Public

My Commission Expires: _____

Notary Commission Number: _____

County & State Where Notarized: _____

The Affidavit must be signed by an authorized agent and notarized

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FORM #4 (Page 1 of 1)

NON-COLLUSION AFFIDAVIT

(Required by Oklahoma law, 74 O.S. §85.22-85.25)

STATE OF _____)
)ss.
 COUNTY OF _____)

I, _____, of lawful age, being first duly sworn, state that:
 (Seller's Authorized Agent)

1. I am the authorized agent of Seller herein for the purposes of certifying facts pertaining to the existence of collusion between and among Bidders and municipal officials or employees, as well as facts pertaining to the giving or offering of things of value to government personnel in return for special consideration in the letting of any contract pursuant to the Bid to which this statement is attached.
2. I am fully aware of the facts and circumstances surrounding the making of Seller's Bid to which this statement is attached, and I have been personally and directly involved in the proceedings leading to the submission of such Bid; and
3. Neither the Seller nor anyone subject to the Seller's direction or control has been a party:
 - a. to any collusion among Bidders in restraint of freedom of competition by agreement to Bid at a fixed price or to refrain from Bidding,
 - b. to any collusion with any municipal official or employee as to quantity, quality, or price in the prospective contract, or as to any other terms of such prospective contract, nor
 - c. in any discussions between Bidders and any municipal official concerning exchange of money or other thing of value for special consideration in the letting of a contract.

By: _____
 Signature

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20_____.

 Notary Public

My Commission Expires: _____

Notary Commission Number: _____

County & State Where Notarized: _____

The Affidavit must be signed by an authorized agent and notarized

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FORM #5 (Page 1 of 1)

AFFIDAVIT OF CLAIMANT

STATE OF _____)
)ss.
 COUNTY OF _____)

The undersigned person, of lawful age, being first duly sworn on oath, says that all invoices to be submitted pursuant to this agreement with the City of Tulsa will be true and correct. Affiant further states that the work, services or material furnished will be completed or supplied in accordance with the plans, specifications, orders, requests and/or contract furnished or executed by the affiant. Affiant further states that (s)he has made no payment directly or indirectly to any elected official, officer or employee of the City of Tulsa or of any public trust where the City of Tulsa is a beneficiary, of money or any other thing of value to obtain payment of the invoice or procure the contract or purchase order pursuant to which an invoice is submitted. Affiant further certifies that (s)he has complied with all applicable laws regarding equal employment opportunity.

Company: _____

Remit to
 Address: _____

City, State
 Zip: _____

Phone: _____

Name (print): _____

Signature: _____

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20____.

 Notary Public

My commission expires: _____
 My commission number: _____
 County and State where notarized: _____

The Affidavit must be signed by an authorized agent and notarized

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FORM #6 (PAGE 1 OF 1)
ACKNOWLEDGMENT OF RECEIPT OF ADDENDA/AMENDMENTS

I hereby acknowledge receipt of the following addenda or amendments, and understand that such addenda or amendments are incorporated into the Bid Packet and will become a part of any resulting contract.

List Date and Title/Number of all addenda or amendments: (Write "None" if applicable).

Sign Here ► _____

Printed Name: _____

Title: _____

Date: _____

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INSTRUCTIONS, TERMS AND CONDITIONS FOR BIDDERS
(Page 1 of 4)

1. **PURCHASING AUTHORITY.** City issues this Invitation For Bid pursuant to Tulsa City Charter, Art. XII, §14 and Tulsa Revised Ordinances, Title 6, Ch. 4, the provisions of which are incorporated herein.
2. **DEFINITIONS.** The following terms have the following meanings when used in the documents comprising this Bid Packet.
 - A. **“Acceptance”** with respect to a Bid shall mean the City’s selection of a Bid, and award of a contract to the Bidder/Seller.
 - B. **“Acceptance”** with respect to delivery of Goods and/or Services provided under a Purchase Agreement shall mean City’s written acknowledgement that Seller has satisfactorily provided such Goods and/or Services as required.
 - C. **“Addenda” “Addendum” or “Amendment(s)”** shall mean a clarification, revision, addition, or deletion to this Invitation For Bid by City which shall become a part of the agreement between the parties.
 - D. **“Authorized Agent”** means an agent who is legally authorized to bind the Seller under the law of the State in which the Seller is legally organized. An Authorized Agent must sign all documents in the Bid Packet on behalf of the Seller. Under Oklahoma law, the Authorized Agent for each of the following types of entities is as stated below:
 - o **Corporations** – the president, vice president, board chair or board vice chair can sign; others can sign if they have and provide the City with (i) a corporate resolution giving them authority to bind the Seller, and (ii) a recent corporate secretary’s certificate indicating the authority is still valid.
 - o **General Partnerships** – any partner can sign to bind all partners.
 - o **Limited Partnerships** – the general partner must sign.
 - o **Individuals** – no additional authorization is required, but signatures must be witnessed and notarized.
 - o **Sole Proprietorship** – the owner can sign. Any other person can sign if s/he provides a recent Power of Attorney, signed by the owner, authorizing him/her to bind the sole proprietorship.
 - o **Limited Liability Company (LLC)** – The manager as named in the Operating Agreement can sign. Any person authorized by the Operating Agreement or a member can sign providing the person submits a copy of the authorization with a certificate of the members indicating the authorization is still valid.
 Entities organized in States other than Oklahoma must follow the law of the State in which they are organized.
 - E. **“Bid”** means the Seller’s offer to provide the requested Goods and/or Services set forth in Exhibit A and any additional materials or information the Seller chooses to submit to support the Bid.
 - F. **“Bidder ”** means the legal entity which submits a Bid for consideration by City in accordance with the Invitation For Bid.
 - G. **“Bid Packet”** consists of the following documents (1) the Notice of Invitation for Bid, (2) the Summary Sheet, (3) Form #1, (4) Form #2, (5) Form #3, (6) Form #4, (7) Form #5, (8) Form #6, (9) the Instructions, Terms and Conditions for Bidders, (10) Special Requirements, (11) Technical Specifications, and (12) Exhibit A.
 - H. **“Bid Submission Date”** shall mean the last date by which the City will accept Bids for an Invitation For Bid.
 - I. **“City”** shall mean the City of Tulsa, Oklahoma.
 - J. **“Days”** shall mean calendar days unless specified otherwise.
 - K. **“Primary Seller”** shall mean the Seller whose Bid City selected as the principal supplier of the Goods and/or Services required under this Agreement.
 - L. **“Project Buyer”** shall mean the City’s employee assigned to serve as the contact person for Bidders/Sellers responding to Invitations For Bid or completing contracts herein.
 - M. **“Purchasing Division or Office”** shall mean the City of Tulsa’s Purchasing Division, located at 175 East 2nd Street, Suite 865, Tulsa, Oklahoma 74103
 - N. **“Secondary Seller”** shall mean the Seller whose Bid City selected as a back-up supplier in the event the Primary Seller is unable to provide all the Goods and/or Services required.

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- O. **"Seller"** shall mean the Bidder whose Bid City selected and awarded a contract.
- P. **"You" or "Your"** shall mean the Bidder responding to this Invitation For Bid or the Seller whose Bid the City selected and awarded a contract.
- Q. **"Website"** shall mean the City of Tulsa's website for the Purchasing Division: www.cityoftulsapurchasing.org.

- 3. **QUESTIONS REGARDING INVITATION FOR BID.** Questions regarding any portion of this Invitation For Bid must be submitted in writing (sent by mail, fax or email) to the Project Buyer indicated on the Summary Sheet herein. You should submit questions as early as possible and preferably before the pre-Bid conference. Questions and concerns must be received no later than seven (7) days prior to the Bid Packet due date. Any oral responses to questions before the contract is awarded are not binding on City. At City's discretion, any information or clarification made to you may be communicated to other Bidders that notified City of their intent to Bid if appropriate to ensure fairness in the process for all Bidders. You must not discuss questions regarding the Invitation For Bid with anyone other than the Project Buyer or other Purchasing Division staff or your Bid may be disqualified, any contract recommendation or Acceptance may be rescinded, or any contract may be terminated and delivered Goods returned at your expense and City refunded any payments made.
- 4. **ORAL STATEMENTS.** No oral statements by any person shall modify or otherwise affect the provisions of this Invitation For Bid and/or any contract resulting therefrom. All modifications, addenda or amendments must be made in writing by City's Purchasing Division.
- 5. **EXAMINATION BY BIDDERS.** You must examine the specifications, drawings, schedules, special instructions and the documents in this Bid Packet prior to submitting any Bid. Failure to examine such documents and any errors made in the preparation of such Bid are at your own risk.
- 6. **ADDENDA OR AMENDMENTS TO INVITATIONS FOR BID.** City may addend or amend its Invitation For Bid at any time before the Bid Submission Date, and any such addenda or amendments shall become a part of this Agreement. City will attempt to send a notification (by fax or email) of any addenda or amendments to those Bidders who have responded to the City's Project Buyer of their intent to respond to the Invitation For Bid. However, it is your responsibility to inquire about any addenda or amendments, which will be available from the City's Purchasing Division and its website. You must acknowledge receipt of any addenda or amendments by signing and returning the Acknowledgment of Receipt of Addenda/Amendments form and attaching it to this Invitation For Bid with your Bid. City may reject any Bid that fails to acknowledge any addenda or amendments.
- 7. **SPECIFICATIONS/DESCRIPTIVE TERMS/SUBSTITUTIONS.** Unless the term "no substitute" is used, the City's references to a brand name, manufacturer, make, or catalogue designation in describing an item in this Bid Packet does not restrict you to that brand or model, etc. The City may make such references to indicate the type, character, quality and/or performance equivalent of the item desired. However, you are required to furnish the exact item described in your Bid unless a proposed substitution is clearly noted and described in the Bid.

The parties recognize that technology may change during the period Bids are solicited and subsequent contracts are performed. Therefore, City may at its option accept changes or substitutions to the specifications for Goods of equal or better capabilities at no additional cost to City. In the case of existing contracts, you shall give City 30 days advance notice in writing of any such proposed changes or substitutions. City shall determine whether such items are acceptable as well as any proposed substitute.

All Goods shall be new unless otherwise so stated in the Bid. Any unsolicited alternate Bid, or any changes, insertions, or omissions to the terms and conditions, specifications, or any other requirements of this Bid, may be considered non-responsive and the Bid rejected.

- 8. **PRICES/DISCOUNTS.** Prices shall be stated in the units and quantity specified in the Bid Packet documents. In case of discrepancy in computing the Bid amount, you guarantee unit prices to be correct and such unit prices will govern. Prices shall include transportation, delivery, packing and container charges, prepaid by you to the destination specified in the Specifications. Discounts for prompt payment will not be considered in Bid evaluations, unless otherwise specified. However, offered discounts for prompt payment will be taken if payment is made within the discount period. With respect to some Invitations for Bid the City may request price adjustment Bids for renewal periods. If price adjustments Bids are requested the specifics of that request will be set forth on the Bid
- 9. **DELIVERY.** All prices quoted shall be based on delivery F.O.B. Tulsa, Oklahoma or to any other points as may be designated in the Technical Specifications, with all charges prepaid by Seller to the actual point of delivery. Bids must state the number of days required for delivery under normal conditions.

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10. **TAXES.** City is exempt from federal excise and state sales taxes and such taxes shall not be included in the Bid prices.
11. **BID SUBMISSION.** The Bid Packet forms must be prepared in the name of Bidder and properly executed by an Authorized Agent with full knowledge and acceptance of all provisions, in ink and notarized. Bids may not be changed or withdrawn after the deadline for submitting Bids (the "Bid Submission Date"). A Bid is an irrevocable offer and when accepted by City (as evidenced by City's execution of the Purchase Agreement) shall constitute a firm contract.
- A. BIDS MUST BE SUBMITTED ONLY ON THE BID PACKET FORMS AND SIGNED BY AN AUTHORIZED AGENT. THE ENTIRE BID PACKET MUST BE RETURNED AS RECEIVED WITH ALL FORMS COMPLETED. YOU MAY ATTACH, AFTER EXHIBIT A, ANY DOCUMENTS NECESSARY TO COMPLETELY AND ACCURATELY RESPOND TO THE REQUEST. BIDS MUST BE IN STRICT CONFORMANCE WITH ALL INSTRUCTIONS, FORMS, AND SPECIFICATIONS CONTAINED IN THIS BID PACKET.**
- B.** Sealed Bids may be either mailed or delivered, but must be received at:
City of Tulsa – Office of City Clerk
175 East 2nd Street, Suite 260
Tulsa, Oklahoma 74103
- C.** Bids will be accepted at the above address from 8:00 a.m. to 5:00 p.m., Monday thru Friday except for City holidays. City is not responsible for the failure of Bids to be received by the City Clerk's Office prior to the due date and time.
- D.** Late Bids will be **rejected**. The Purchasing Agent, in his sole discretion, may make exceptions only for the following reasons:
1. City Hall closed for business for part or all of the day on the date the response was due;
 2. If the City deems it appropriate due to large-scale disruptions in the transportation industry that may have prevented delivery as required.
 3. If documented weather conditions caused the late delivery. You must provide documentation of such weather to the satisfaction of the Purchasing Agent.
- E.** **City will not accept faxed Bids**, nor will City accept Bids faxed to the City Clerk, Purchasing Division or Office, or any other City office or employee.
- F.** City is not responsible for any of your costs in preparing the Bid response, attending a pre-Bid conference, or any other costs you incur, regardless of whether the Bid is submitted, accepted or rejected.
- G.** All Bids must be securely sealed and plainly marked with the Bid Number, Bid Title, and Bid Opening Date on the lower left corner of the outside of the Bid envelope. Your name and address must also be clearly indicated on the envelope.
- H.** If submitting multiple options ("Option(s)") to the Invitation for Bid, each will be considered separately requiring each response to be complete and accurate. Each Option must be clearly marked as Option 1 of 3, Option 2 of 3, etc.
- I.** The number of copies you must submit is listed on the Summary Sheet in the front of the Bid Packet. However, at a minimum, there will be (1) an original, clearly labeled as such in 1" red letters on the Bid Packet cover page, and (2) a copy for City's Purchasing Division, clearly labeled as such in 1" red letters on the Bid Packet cover page. If binders are used, they must also be labeled.
- J.** Multiple boxes or envelopes are permissible, but must not weigh more than 50 pounds. Each box must be labeled as instructed herein and numbered (i.e., Box 1 of 3; Box 2 of 3). **The original must be in Box #1.**
- K.** The original and all copies (either paper or electronic) must be identical in all respects. Bids must be completed and submitted in ink or typewritten. Bids written in pencil will be rejected. Any corrections to the Bids must be initialed in ink.
12. **BID REJECTION OR WITHDRAWL.**
- A. City may reject any or all Bids, in whole or in part.
 - B. **A Bid may be rejected if it contains additional terms, conditions, or agreements that modify the requirements of this Invitation For Bid or attempts to limit Bidder's liability to the City.**
 - C. A Bid may be rejected if Bidder is currently in default to City on any other contract or has an outstanding indebtedness of any kind to City.
 - D. City reserves the right to waive any formalities or minor irregularities, defects, or errors in Bids.
 - E. Bid withdrawal may only be accomplished by an Authorized Agent requesting the withdrawal in person at the City Clerk's office before the City's close of business on the Bid Submission Date.
13. **BID RESULTS.** A tabulation of Bids received will be made available on the City's Purchasing Division website generally within 5 working days after the Bid Opening Date. After a contract award is recommended to the Mayor, a copy of the Bid summary will be available in the City Clerk's Office. Bid results are not provided in response to telephone or email inquiries.
14. **PURCHASE ORDER.** In the event that the successful Bid is for an amount less than One Hundred Thousand Dollars (\$100,000), and it is determined by the City to be in the best interests of the City, the City, in its sole discretion, may issue a Purchase Order rather than execute the Purchase Agreement to purchase the Goods. If a Purchase Order is issued, however, the terms of the Bid

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Packet documents, including the Purchase Agreement, will govern the transaction and be enforceable by the City and Bidder/Seller.

15. **CONTRACT AWARD.** If a contract is awarded, it will be awarded to the Bidder that City determines is the lowest secure Bidder meeting specifications. Such Bid analysis will consider price and other factors, such as Bidder qualifications and financial ability to perform the contract, as well as operating costs, delivery time, maintenance requirements, performance data, history of contract relations with City, and guarantees of materials and equipment, as applicable. A complete list of the factors that are considered is set forth in Tulsa Revised Ordinances, Title 6, Ch. 4, §406E. Unless otherwise noted, City reserves the right to award a contract by item, one or more groups of items, or all the items in the Bid, whichever is in City's best interest.
16. **IRS FORM W-9.** If City selects your Bid and awards a contract to you, you will have ten (10) days from notification of the award to provide City with your complete IRS Form W-9.
17. **NOTICE TO PROCEED.** If City accepts your Bid and executes the Purchase Agreement, you shall not commence work until authorized to do so by the Purchasing Agent or his representative. Receipt of a Purchase Order from the City is notice to proceed.
18. **PAYMENTS.** Invoices should be mailed to: City of Tulsa – Accounts Payable
175 East 2nd Street, 8th floor
Tulsa, Oklahoma 74103

Payment will be made Net 30 days after receipt of a properly submitted invoice or the City's Acceptance of the Goods and/or Services, whichever is later, unless City decides to take advantage of any prompt payment discount included in the Bid.

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SPECIAL REQUIREMENTS

1. Irrevocable Offer Period. You understand and acknowledge that the offer submitted as your Bid is firm and irrevocable from the City's close of business on the Bid Submission Date until 365 days after the Bid Opening Date.

2. General Liability/Indemnification. You shall hold City harmless for any loss, damage or claims arising from or related to your performance of the Purchase Agreement. You must exercise all reasonable and customary precautions to prevent any harm or loss to all persons and property related to the Purchase Agreement. You agree to indemnify and hold the City harmless from all claims, demands, causes of action or suits of whatever nature arising out of the Goods, Services, labor, or materials furnished by you or your subcontractors under the provisions of the Bid Packet documents.

3. Liens. Pursuant to City's Charter (Art. XII, §5), no lien of any kind shall exist against any property of City. Bidder shall deliver all goods to City free and clear of liens. Delivery by Seller to City of goods which are subject to liens under the Purchase Agreement shall be a material breach of the Purchase Agreement and all damages and costs incurred by City as a result of the existence of such liens shall be paid to City by Seller. At City's option, City may return such goods to Seller and Seller shall pay the cost of returning such goods and reimburse City for any payments made for such goods.

4. Insurance. If checked "Yes," the following insurance is required: Yes: X

Seller and its subcontractors must obtain at Seller's expense and keep in effect during the term of the Purchase Agreement, including any renewal periods, policies of General Liability insurance in the minimum amounts set forth below and Workers' Compensation insurance in the statutory limits required by law.

Personal injury, each person	\$ 175,000.00
Property damage, each person	\$ 25,000.00
Personal injury and property damage, each occurrence	\$ 1,000,000.00
Workers' Compensation	(Statutory limits)

SELLER'S INSURER MUST BE AUTHORIZED TO TRANSACT BUSINESS IN THE STATE OF OKLAHOMA.

Seller's insurance policy and all certificates of insurance must state that the insurer cannot change or cancel coverage without the insurer first giving 30 days written notice to City of such change, cancellation or termination. You will have 10 days after notification that your Bid was selected for contract award by City to provide proof of such coverage. The Certificate of Insurance must be completed with the following information:

- A. Your name
- B. Insurer's name and address;
- C. Policy number;
- D. Liability coverage and amounts;
- E. Commencement and expiration dates;
- F. Signature of authorized agent of insurer;
- G. Invitation For Bid number.

The completed Certificate of Insurance form should be sent to the assigned Project Buyer reflected on the Summary Sheet of this Bid Packet. An endorsement from the insurer must be obtained by Seller which adds City as an Additional Insured to the policy and states that the insurer will provide City with notice thirty days in advance of termination, cancellation or change in the coverage of the policy. The cancellation clause on your certificate must conform to the endorsement. Any conflict between the endorsement and the certificate is a material breach of the Purchase Agreement and can result in the retraction by City of the award of the Bid to Seller

5. Bonding.

A. Bid Bond. If the box is checked "Yes," the Bid Bond is required:

Yes: No: X

B. Performance Bond. If the box is checked "Yes," the Performance Bond is required:

Yes: No: X

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6. **References.** If the box is checked "Yes," References are **required**:

Yes: X **No:** 3

Provide customer references as using the format below:

- Location
- Description of work performed
- Description of application
- Date of work
- Contact name and phone number

ATTACH REFERENCES TO IFB RESPONSE

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TECHNICAL SPECIFICATIONS

Project Specification for Sludge Valve Replace for Sludge Station #2 at A.B. Jewell Water Treatment Plant

Definition:

“Contractor” shall mean “Seller” for the purposes of these technical specifications

Bid Specification for Arc Flash Analysis and Protection Study for City of Tulsa’s Water Supply Systems

1.1 Description

The City of Tulsa Water Supply Systems desires the professional services of a qualified professional/engineering firm to develop and implement an arc flash hazard program to supplement/enhance our existing electrical safety program including lock out tag out, provide additional safety measures for our employees and Contractors, and provide compliance with OSHA, Oklahoma PEOSH, and recognized industry standards of NFPA 70E and IEEE 1584. The successful firm will provide the following:

1. An electrical arc flash hazard analysis, including:
 - a. The development of an up-to-date electrical system one-line diagram and model with an accurate representation of the installed electrical system performed and stamped by a professional electrical engineer (PE). Electricians at Water Supply will review the document prior to any work on the project. Impedance diagrams are not acceptable.
 - b. Determination of all possible system operating modes and conditions that can impact short circuit currents and arc flash hazard energy levels.
 - c. Short circuit and equipment duty study to verify that equipment is rated to safely handle short circuit currents without creating hazardous conditions.
 - d. Protective device coordination study and analysis to help ensure proper electrical system reliability and to determine if arc flash hazard energy levels can be reduced.
 - e. Arc flash hazard assessment for locations and/or equipment where workers are exposed to the risk. Provide Arc flash hazard analysis study to determine incident energies, hazard/risk categories for all equipment and Personal Protective Equipment (PPE).
 - f. Recommendations and modifications to reduce incident energies. Recalculate values as required.
 - g. A copy of the power system model and electronic file that is fully compatible with arc flash and electrical safety program implementation software.

2. The firm shall provide the following services to implement the arc flash analysis:
 - a. The completed engineered power system model, one-line diagrams, arc flash analysis and protection coordination study.
 - b. The reports will be delivered in word document format. The data will be delivered in excel format and the drawings in PDF format and CAD.
 - c. Field data collection will be required.
 - d. Arc flash hazard labeling is required.
 - e. Arc flash and electrical safety training shall be conducted by the Contractor. Training shall be done first then followed by a refresher after the labeling and study are complete.

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f. The Contractor shall include training on exposure to shock hazards, release of victims in contact with energized parts, and Personal Protective Equipment (PPE).

3. An electrical arc flash hazard analysis shall be performed to determine incident energy, arc flash protection boundaries, and required PPE for all electrical equipment. For a list of electrical equipment to assist project pricing estimates for the RFP please contact Kerry Rowland at 918-596-9847. All calculations shall comply with NFPA-70E 2009, and IEEE-1584 except as noted and performed and stamped by a professional electrical engineer (PE). This arc flash model will serve as an integral part of an ongoing safety program by providing integral work permits and arc flash calculations in compliance with NFPA-70E 2009 Article 130.1 and 130.3 for each piece of electrical equipment. The purpose of this study is to comply with the following standards and requirements:

- NFPA 70, National Electric Code 2008 (110.16).
- NEC 2008 Handbook.
- OSHA 29 CFR 1910.269; OSHA 1910.132(d)(1).
- IEEE Std 1584-2002, IEEE Guide for Performing Arc-Flash Hazard Calculations and IEEE Std. 1584a-2004 (Amendment 1).
- NFPA 70E, Standard for Electrical Safety In the Workplace 2009 Edition.

NFPA-70E (2009 Edition) Article 205.2, 120.2(F)(1): Updated and verified one-line diagram for all electrical distribution voltages including all sources for lockout and tag out procedures.

NFPA-70E (2009 Edition) Article 210.3, 210.5: Updated short circuit and equipment duty verification study showing all electrical equipment is properly rated to withstand and interrupt the available short circuit duty per ANSI Standards and NEMA/UL/NEC requirements.

NFPA-70E (2004) Article 400.5, 400.6, 410.9: *(Removed in 70E 2009 but should be referenced for a complete specification).* Updated protective device coordination study showing the system protective devices are properly set to coordinate and clear a fault without extensive equipment damage or personnel risk.

NFPA-70E (2009 Edition) Article 130.3, 110.8(B)(1)(b): Updated arc flash study providing maximum incident energies, arc flash boundaries, and PPE requirements for each equipment in the system.

NFPA-70E (2009 Edition) Article 130.3(C): Updated labeling displaying the worst-case arc hazard values for all equipment.

4. The Engineering Analysis shall consist of the following:

- Field data collection of existing systems and verification study using circuit tracing and identifying proper label methods by qualified personnel (as defined by NFPA 70E).
- Data entry and system one-line modeling which are true electrical prints of Water Supply System in commercially available power system software such as SKM PowerTools.
- Model verification.
- Protective device coordination study.
- Arc flash hazard study.

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- Detailed report and findings of the analysis.
- Electronic copies of the project report and the system modeling file.
- Review of a draft copy of the report and presentation of the final copy of the report in person.

5. The analysis and procedures shall comply with the following standards and recommended practices for power system studies.

- a. NFPA-70E, 2009 Standard for Electrical Safety in the Workplace
- b. IEEE-1584-2002
- c. IEEE-242 “Buff Book” Protection and Coordination of Industrial Power Systems
- d. IEEE-399 “Brown Book” Power System Analysis
- e. IEEE-141 “Red Book” Electric Power Distribution for Industrial Plants

1.2 DATA COLLECTION

1. Field data collection shall be performed by a qualified person, as defined by NFPA 70E – 2009.
2. Consultant/Contractor field personnel shall have up-to-date training in electrical safety and shall supply and utilize their own Personal Protective Equipment for electrical shock hazards and arc flash hazards. Consultant/Contractor shall provide an Energized Work Permit or job safety analysis for all field work where live parts are exposed.
3. Consultant/Contractor shall obtain all City of Tulsa safety requirements, permits and reviews, and shall comply with all City of Tulsa and Oklahoma PEOSH work permits, work procedures, and safety protocols.
4. Field data collection shall be based on the system represented by the AutoCAD one-line drawings provided by Water Supply.
5. Equipment shall be visually inspected to collect the necessary nameplate and setting data used in the analysis. Consultant/Contractor is responsible for visual verification of this data, including transformers, switchgear and breakers, relays (over-current and ground-fault), direct-acting trip units, feeder conductor sizes and lengths, etc. Data that may not be readily accessible or may not have nameplate data such as conductors, bus way, etc. can be taken from drawings when available.
6. City of Tulsa Water Supply will provide personnel to escort the consultant/Contractor throughout the facilities. However, it is expected that the consultant/Contractor’s qualified personnel (or sub-contracted qualified personnel) shall be licensed tradesmen capable of identifying equipment location and opening/closing all equipment doors, locks, interlocks etc. necessary to collect nameplate data.
7. Any and all outages required to gather field data will be prearranged with the superintendent at each plant prior to any work being done.
8. Where equipment data is available from the plant/facility on updated drawings, the consultant/Contractor may use this data in building the model, but shall field verify information by physical tracing of electric circuits.
9. The Contractor shall submit the total number of field hours performed to collect and verify equipment.
10. Data collection shall include the step down transformer from the utility service (including primary relaying) to distribution level. The distribution level equipment includes service mains, large motor contributions, panel boards, bus ducts, and main transformers and other MCC type distribution loads, and 120/208 volt panel for all systems including those served by transformers rated less than 125 kVA as per IEEE-1584-2002.

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11. Consultant/Contractor shall obtain from the utility the minimum, normal, and maximum operating service voltage levels, three-phase short circuit MVA and X/R ratio, as well as line-to-ground short circuit MVA and X/R ratio at the point of connection as shown on the drawings.
12. The City of Tulsa shall not be responsible for development of consultant/Contractor safety program or safety procedures utilized during the data gathering and verification process. A minimum of HRC #2 PPE rated 8 cal/cm² or greater shall be worn by field data collection personnel at all times when exposed to energized electrical equipment.
13. During the data collection process, the Contractor shall report any electrical problems to Water Supply staff. Examples include improper over-current protection, grounding concerns, broken latches, broken disconnects and similar concerns.

1.3 SYSTEM MODELING

1. The system model shall be developed using SKM software package or equivalent that meets the performance specifications developed in this Section. To ensure compliance with NFPA-70E 2009, ANSI, and IEEE Standards, and OSHA mandates, no exceptions or substitutions to the performance specification are allowed.
2. The system model shall be laid out in a manner that provides for easy viewing of all analysis results. The one drawing requirement ensures that problem areas found and highlighted by the program are easily seen and not hidden or buried in multiple drawings, eliminating potential human errors where multiple drawings verification is required.
3. All one-line symbols shall be spaced properly to facilitate viewing results.
4. Equipment names used in the modeling software shall be identical to the equipment and naming convention shown on the existing facility drawings and equipment. Consultant/Contractor shall bring all naming convention conflicts or deficiencies to the attention of Water Supply staff for clarification.
5. Water Supply Systems has multiple operating conditions, including, but not limited to, generation on/off, shutdown, bus-ties, start-up, emergency operation, etc. With Water Supply Staff assistance the consultant/Contractor shall determine all the various operating modes of the system. Each of the operating modes shall be documented and modeled in the software in order to determine the worst-case arc flash hazard and associated parameters for the electrical equipment.
6. The software shall model each operating mode to represent a different scenario from the base operating mode.
7. The file shall be self-contained and have all necessary information to describe the one-line, system data, settings, and analysis information.
8. Lumped low voltage motor groups for MCC's shall be modeled per IEEE standards using groups less than 50 HP. Low voltage motors rated more than 50HP shall be modeled individually. Where motor list data is not available, single lumped groups may be modeled per IEEE-141 "Red Book".
9. Medium voltage motors greater than 1.0 kV shall be modeled individually on their respective buses including all protective phase and ground overcurrent relays and fuses. This model will provide individual work permits for each starter/motor on the one-line.
10. All low voltage power circuit breaker (LVPCB), insulated case (ICCB), molded case (MCCB) and fuse data shall be modeled based on the actual nameplate data including manufacturer, type, style, trip device, and actual settings. Generic substitutions or assumptions shall not be allowed unless data cannot be field verified. All assumptions shall be documented in the report.

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11. All relay data shall be modeled based on the actual nameplate data including manufacturer, type, style, trip device, and actual settings. Generic substitutions or assumptions shall not be allowed unless data cannot be field verified. All assumptions shall be documented in the report.
12. All relay types for the distribution system shall be modeled on the one-line diagram including phase and ground overcurrent, differential, residual, ground neutral, etc. The purpose is to establish a complete and detailed system model where protective device data can be easily updated and used for a comprehensive protective device coordination study if required in the future.
13. Relay models shall depict the actual connection requirements. Programs using generic CT and overcurrent symbols are not acceptable since they do not depict the actual protective system and can lead to confusion in determining arc flash results and proper protective device modeling.
14. All equipment modeling must have a corresponding one-line diagram symbol. This means that there can be no hidden models.
15. All system modeling shall conform to the accepted modeling practices as outlined in IEEE-399 “Brown Book”. Contractor/consultant may provide more advanced modeling techniques where compliance with the specification is maintained.

1.4 MODEL VERIFICATION

The system model shall be verified by reviewing the results of short circuit current flows for all buses/equipment in the system. The results shall be viewed on each branch and total flow into a bus/equipment on the system one-line diagram. The purpose is to visually check all buses/equipment with the expected amount of short circuit current, then identify and correct any problem areas.

1.5 SHORT CIRCUIT STUDY

1. A short circuit study shall be performed to verify all equipment duties in the system. The calculations shall comply with ANSI C37.010, C37.13, C37.5, IEEE-141, and IEEE-399. The short circuit study shall verify the system electrical equipment is properly rated to withstand and interrupt the expected bolted and arcing faults in the system. Improperly rated and applied equipment may not protect personnel against arc flash hazards even if properly applied PPE is used. An analysis of short circuit current at each buss will be evaluated.
2. The equipment duty verification shall determine both the line side and load side fault current through each equipment and use the highest current to verify equipment ratings. Standard bus faults are not acceptable for protective devices because that they do not accurately model the current through the device; consequently, they provide erroneous results. For solidly grounded systems, both three-phase and single-line-to-ground faults should be modeled. For other grounding configurations only a three-phase fault is required.
3. Equipment duty results shall be graphically displayed on the electrical one-line as well as tabular report format.
4. The results of the equipment duty verification tabular format report shall provide the following data:
 - f. Equipment name and kV.
 - g. Manufacture, type, style, and ratings of the device.
 - h. Actual line or load side currents through the device and percent over/under duty.
 - i. Flag any devices showing VIOLATION or WARNING level for visual identification on the report.

5. The report will identify problems and make recommendations where equipment does not have adequate interrupting ratings. Devices without the proper rating pose a serious safety and fire risk to personnel and equipment. The consultant/Contractor shall notify the plant electrician immediately of all problems found in the system before proceeding in the study. A recommended action list shall be provided for all underrated equipment in the system.

1.6 PROTECTIVE DEVICE COORDINATION (PDC) STUDY

1. A PDC study shall be performed to determine if the system protection characteristics are sufficient to provide reliable power. The PDC study will also determine if the existing settings entered in the software will provide proper personnel protection in the arc flash portion of this study. For facilities/buildings where the main distribution is low voltage (under 600 volts) and only instantaneous breakers or fuses are used, this section may not apply.
2. The PDC study shall consist of selecting major system feeders and plotting the time current curves (TCC's) to verify proper selective operation of the protective devices. The study should also determine if the settings can be enhanced to provide increased personnel/equipment protection without sacrificing selective coordination. It is expected that the protective device coordination include all substation/building distribution equipment and major feeders.
3. The consultant/Contractor shall notify Water Supply staff of any potential problems in the protective device settings that affect either selective operation and reliability or personnel protection and shall provide recommendations for changes to the settings in writing before continuing with the study. Water Supply personnel may then opt to utilize existing settings or to change the settings before continuing on with the arc flash study.
4. As specified in the data collection and modeling sections, all PDC data shall be modeled on the one-line diagram and in the equipment database.
5. The consultant/Contractor shall contact the serving utility and obtain protective device settings for all service entrance over current devices in series with the facility and affecting coordination with facilities distribution system.
6. The TCC's shall graphically illustrate on log-log paper that adequate time separation exists between series devices. The specific time current characteristics of each protective device shall be plotted in such a manner that sufficient upstream devices will be clearly depicted on one sheet to prove selective coordination.
7. TCC's shall include a system one-line diagram and protective device coordination curves for each device in the selected area. The TCC shall be printed in color on 8 ½ x 11" paper – full size portrait mode, using a log-log scale. The one-line diagram shall be part of the TCC and include all protective devices, equipment names, and short circuit currents calculated from the main one-line. The purpose of this requirement is to provide all necessary information on one sheet, in a format easily readable and standard to the industry.
8. For low voltage systems, TCC's shall be developed for both phase and ground protective devices. One phase and one ground TCC should be developed for each system. The TCC should show the largest feeder/motor protective device in the MCC or panel up through the switchgear/switchboard feeder breaker, transformer secondary main, substation primary fuse, and medium voltage feeder breaker. For secondary switchboards serving large loads or a wide variety of loads that may affect upstream coordination, additional TCC's may be required.
9. For medium voltage systems, TCC's shall be developed for both phase and ground protective devices. The TCC should show the largest feeder/motor protective device in the lineup up through the switchgear/transformer secondary main, substation primary fuse, and medium voltage feeder breaker.
10. The following specific information shall also be shown on the coordination curves:

- j. Device identification.
- k. Voltage and current ratio for curves.
- l. Transformer three phase and single-line-to-ground ANSI damage curves.
- m. Transformer inrush points.
- n. Minimum melting, and clearing curves for fuses, and if available the no damage curve.
- o. Cable damage curves.
- p. Motor starting locked rotor curves, and if available the motor locked rotor damage point.
- q. Maximum short circuit cut-off point.
- r. Clearly marked short circuit current levels through each protective device/branch, which should be based on the appropriate current through the device, i.e. Momentary, Interrupting or 30 Cycle current.
- s. Protective device one-line diagram clearly showing all protective devices on the time-current curve, labels for each device, open breakers, faulted buses, and the short circuit current flowing in each branch.
- t. Each TCC sheet shall have appropriate identification and a one-line diagram that applies to the specific portion of the system associated with time-current curves on that sheet.
- u. Each protective device curve shall be terminated at a point reflecting maximum symmetrical or asymmetrical fault current through the device.
- v. Identify the device associated with each curve by manufacturer type, function, and setting – i.e. tap, time delay, and instantaneous, pickup, etc.
- w. Primary Protective Device Settings for Delta-Wye Connected Transformer:
 - a) Secondary Line-To-Ground Fault Protection: Provide primary protective device operating band within the transformer's characteristics curve, including a point equal to 58 percent of ANSI C57.12.00 withstand point.
 - b) Secondary Line-To-Line Faults: Provide 16 percent current margin between primary protective device and associated secondary device characteristic curves.
- x. Typical time separations for curves: Consultant/Contractor shall discuss the advantages and disadvantages of various time separation settings between device curves with Water Supply personnel to help determine how the system settings shall be optimized for selectivity and arc flash hazard reduction.
- 11. A setting table shall be developed to summarize the settings selected/existing for the protective devices. The table shall include the following:
 - y. Device identification.
 - z. For low voltage breakers, the circuit breaker manufacturer, type, and style, sensor rating, long-time, short time, instantaneous settings, and time bands. For breakers with ground fault capability, the pickup and time delay.
 - aa. Fuse manufacturer, type, style, and rating.
 - bb. Protective relay manufacturer, type, style, function (51, 50, 67, etc.) pickup, current multiplier, time dial, and delay for multi-function units, list all devices being used. Include the CT and/or PT ratios for each function H. The software shall provide complete integration of the one-line, database, short circuit, protective device coordination and arc flash analysis functions to provide accurate calculations and avoid errors and inefficiencies associated with multiple data entry programs. Programs using separate PDC or TCC plotting packages are not allowed.

1.7 ARC FLASH STUDY

- 1. A detailed arc flash study shall be performed to determine potential arc flash incident energies, arc flash boundaries, shock hazard boundaries and proper personal protective equipment (PPE) for all energized electrical system equipment tasks for the electrical systems studied. The calculations shall comply with

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NFPA-70E 2009, and IEEE-1584. Bolted short circuit calculations used in the above standards shall comply with ANSI C37.010, C37.13, C37.5, IEEE-141, and IEEE-399. The purpose of this study is to determine arc flash hazards in conformance with NFPA-70E and Water Supply's safety program, and to provide a comprehensive software model of the electrical distribution system, which provides integral work permits and arc flash calculations in compliance with NFPA 70E Articles 130.1 and 130.3 for all equipment in the facility. The software program used in this study shall comply with the above standards. No substitutions in calculation methods will be allowed.

2. The arc flash study shall determine the following results for each system mode of operation developed in Section 1.3E (Modeling). The results shall be provided in spreadsheet format for each mode and electrical system location to provide easy viewing and comparison. Worst-case arc flash energy levels shall be flagged and the spreadsheet comparison table shall be capable of providing its output directly to high quality vinyl labels. The calculations shall, as a minimum, include a comparison of both 100% and 85% arcing currents for low voltage equipment for each electrical system configuration or operating mode, indicating worst-case arc flash hazards. The spreadsheet results shall include:
 - Equipment name and voltage.
 - Upstream equipment device name and ANSI function, i.e. 51/50, etc.
 - Equipment type, i.e. switchgear, MCC, Panel, VFD, etc.
 - Equipment arc gap.
 - Bolted and estimated arcing fault current at the fault point (equipment) in symmetrical amperes. The estimated arcing current should be based on the arcing current equations used.
 - Trip time, opening time, and total clearing time (total Arc time) of the protective device.
 - Worst-case arc flash boundary for each bus/equipment in the model.
 - Worst-case arc flash hazard incident energy in cal/cm² for each bus/equipment in the model.
 - Worst-case personal protective equipment (PPE) for each bus/equipment in the model.
 - Working distances for up to five different distances showing items g, h, and i for each distance.
 - Indicate "Danger/Hazardous" areas where incident energy is greater than 40 cal/cm² and provide recommendations to reduced arc flash energy levels for these areas.
 - Flag results where 85% arcing current provided worst-case results.
3. Each mode of operation shall include a detailed write-up indicating areas where incident energy calculations and PPE requirements are higher than calculated in the normal operating mode.
4. Consultant/Contractor shall provide a detailed arc flash analysis report including as a minimum:
 - Introduction.
 - Methodology.
 - Information sources.
 - Assumptions including generic substitutions when data cannot be field verified. This type of assumptions shall be documented in the report.
 - Arc flash energy and other consideration for various system modes of operation (maintenance mode, bus-tie, co-gen on/off, etc).
 - Arc energy at 100% and reduced currents.
 - IEEE 1584-2002 Considerations.
 - Overcurrent protective device changes, replacements or setting changes implemented in study to reduce arc flash hazard exposure.
 - Explanation of data in Arc Flash Hazard Report Tables.
 - NFPA 70E Information:

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- a) Shock hazards with covers removed.
 - b) Shock hazard approach boundaries.
 - i. Limited Approach Boundary.
 - ii. Restricted Approach Boundary.
 - iii. Prohibited Approach Boundary.
 - c) Arc Flash Hazard Boundaries.
- Results of Arc Flash Hazard Analysis for high voltage, medium voltage and low voltage systems, including:
 - a) Working distances.
 - b) Energy levels.
 - c) PPE requirements.
 - d) Recommendations to reduce arc flash hazard energy and exposure.
 - Arc Flash Hazard Report:
 - a) 3 Hard Copies.
 - b) 1 Electronic Copy in Word or Excel format and PDF.
 - c) 1 Electronic copy in latest version of SKM format or its native software.
 - Electronic file for power system modeling software as developed and utilized for this analysis.
5. Contractor shall provide print labels for all equipment in the system from the project study file. Assume two (2) labels per equipment/bus using 4" x 6" labels. The labels shall be UV resistant vinyl labels (white with orange warning strip and black letters) conforming to ANSI-Z 535. The labels shall be printable directly from the power system software utilized for the study.
6. The software shall provide complete integration of the one-line, database, short circuit and PDC and arc flash functions. Software using separate short circuit, PDC, TCC or arc flash programs is not allowed. Spreadsheet calculations are not allowed. The purpose of this section is to ensure that the arc flash hazard calculations comply with NFPA-70E and IEEE-1584, and that the calculations are programmed with necessary requirements to help eliminate possible errors in the arc flash calculations. The additional purpose is to establish a detailed software model of the electrical systems, which will document compliance with the OSHA requirements and NFPA 70E mandates. This model will serve as an integral part of Water Supply's safety program by providing integral work permits and arc flash calculations in compliance with NFPA-70E Article 130.1(A)(2) for each electrical equipment in the facility.
7. Arc flash calculations shall be performed with enhanced IEEE-1584 equations, which eliminate voltage discontinuities and the non-conservative/average results of the standard equations. The purpose of this requirement is to ensure that the calculated incident energies are closer to actual test results insuring a conservative calculation minimizing personnel risk.
8. Arc flash calculations shall be based on the fastest clearing upstream protective device protecting the equipment for single sources and the slowest upstream protective device for multiple sources. The calculations shall automatically compare all series and parallel upstream protective devices in the system to determine the fastest series device or a conservative parallel clearing time.
9. The arc flash calculations shall include arc flash boundary, incident energy, PPE requirements, and working distances.
10. The arc flash calculations shall include calculations for all operating modes to ensure the worst arc flash magnitude.
11. The arc flash calculations shall provide integral "Work Tasks" for the listed equipment types. The tasks shall be derived from 70E Table 130.7(C)(9)(a) and be specific to the equipment type. Listed equipment types shall include:

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- Switchgear, Switchboards, Panelboards, MCC, VFD, UPS, ATS, Interrupting Switch, NEMA E2 Contactor, Conductor, Open Air for 100-200 volt equipment.
 - Switchgear, Switchboards, Panelboards, MCC, VFD, UPS, ATS, Interrupting Switch, NEMA E2 Contactor, Conductor, Open Air for 200-1000 volt equipment.
 - Switchgear, MCC, VFD, UPS, ATS, Interrupting Switch, NEMA E2 Contactor, Conductor, Open Air for 1.0-5.0 kV equipment.
 - Switchgear, MCC, VFD, ATS, Interrupting Switch, NEMA E2 Contactor, Conductor, Open Air for 5.0-15.0 kV equipment.
 - Interrupting Switch, Conductor, and Open Air for 138 kV equipment.
12. Work Tasks shall have a user-defined library that provides the following customizable features for each work task:
- Work Tasks for each specific equipment type and voltage range.
 - Working distance units English or Metric.
 - Work distance for each task.
 - V-rated gloves and tool requirements.
 - Job description and procedures.
 - Safe work practices description.
 - Hazard Risk Category (HRC) reduction - HRC reduction can only be used based on a documented risk assessment as an integral part of a safety program.

1.8 REPORTING AND ANALYSIS SUMMARY

Provide a detailed written report that includes the following:

1. Executive Summary: The executive summary shall cover, at an executive level, the findings of the study, recommendations, and requirements for maintaining NFPA 70E compliance.
2. Identify all assumptions regarding data collection and modeling including generic substitutions when data cannot be field verified. All assumptions must also be verified with Water Supply personnel for approval prior to final calculations/analysis.
3. A statement of the scope that shall provide details of what actions were intended to be performed for each aspect of the study, including short circuit, protective device coordination, and arc flash.
4. Description of system and explanation of bus and branch numbering system.
5. A statement of the modes of operation that were studied and each scenario/plant operating condition shall be thoroughly documented.
6. Detailed report and results of short circuit, coordination, and arc flash studies including:
 - Recommendations and additions to equipment rating and/or PDC characteristics.
 - Recommendations to reduce arc flash hazards for equipment with incident energies over 40 cal/cm².
7. The report shall document all identified problem areas. A recommended action list shall be provided for all underrated equipment in the system. The report also documents any potential problems, which have already been notified and discussed with Water Supply personnel, regarding protective device settings that affect either selective operation and reliability or personnel protection. The recommended changes to the settings are also documented in this report to provide increased personnel/equipment protection without sacrificing selective coordination.
8. Prioritized recommendations for all studies.
9. Action list and check off column for all recommendations.

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1.9 QUALITY ASSURANCE

1. The studies shall be in conformance with the NFPA and ANSI Standards, and IEEE recommended practices detailed in this section. No substitutions in study methods or software conformance will be allowed.
2. Consultant/Contractor shall attach brochures, resumes, references and other information indicating how your firm is qualified to provide the services outlined in this document.
3. The consultant/Contractor is responsible for compliance with all performance specifications in this proposal. Any deviation from complete compliance must be noted on the consultant/Contractor's proposal and the performance specification submitted for review and approved before work begins. All work not in compliance with the performance specification will be deemed unacceptable and payment withheld or work terminated without pay.
4. Contractors must provide a copy of their current electrical safety policies along with training records for any on site personnel they designate to perform the field verification stage of the audit.
5. Chosen Contractors must provide field staff capable of opening and closing all equipment without support from any Water Supply employees.
6. Contractors shall submit current safety records information including current MOD rates.
7. The Contractor must submit with the proposal three references of work performed for similar projects. The reference must contain the business name, contact person, contact information, scope and timeline of completed the project.
8. The Contractor must submit a list of staff names with a description of qualifications (such as education and/or years of experience implementing tasks contained in this specification) and contact information (name, title, phone, and email).

1.10 PROJECT TIMELINE

Provide a proposed project timeline with the bid proposal. Timeline shall include on-site data collection timeframe, system model development and analysis timeframe, draft report presentation, labeling of equipment, and final report presentation.

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EXHIBIT A
BID FORM INCLUDING DELIVERY AND PRICING

1. Delivery. If your Bid is accepted and a contract is executed, state the number of days you need to deliver the Goods and/or to begin providing Services:

You must be able to deliver the Goods and/or Services as specified in your Bid. Failure to do so may result in City terminating your contract or canceling the Purchase Order, pursuing collection under any performance bond, as well as seeking any other damages to which it may be entitled in law or in equity.

2. Pricing

ITEM	DESCRIPTION (Or Equal)			TOTAL PROJECT COST
1	Project described herein (All costs must be included)			
Total Delivered Cost:				

Bidder's Company Name _____

Authorized Signature Here ► _____

Printed Name: _____

RETURN THIS ENTIRE BID PACKET