



LEGAL NOTICE

AND

INVITATION TO COMPETITIVE SEALED PROPOSAL

P074-24

The Brownsville Public Utilities Board (BPUB) is requesting Competitive Sealed Proposals (hereon styled "RFP") for a 15/20/25/28 MVA Substation Power Transformers **until 5:00 PM, October 2, 2024** in the Brownsville PUB Purchasing Office, 1155 FM 511, Olmito, Texas. **RFP's received after this time will not be considered.**

RFP's will be acknowledged by BPUB on October 3, 2024 at 10:30 AM. Firms can call in at 10:30 AM, October 3, 2024 to (956) 214-6020 to listen to the proposal opening.

Detailed specifications may be obtained at the following website: https://www.brownsville-pub.com/rfp_status/open/.

Each proposal shall be enclosed in a sealed envelope and shall be plainly marked on the outside of the envelope and on any carrier's envelope: **"PROPOSAL P074-24, 15/20/25//28 MVA SUBSTATION POWER TRANSFORMERS OCTOBER 2, 2024, 5:00 PM"**. This envelope shall be addressed to Diane Solitaire; Brownsville Public Utilities Board; Purchasing Department; 1155 FM 511, Olmito, Texas 78575.

Each proposal shall constitute an offer to the Board, as outlined therein, and shall be irrevocable for at least ninety (90) days after the time announced for the opening thereof. Firm is required to execute a contract and furnish a **Material Supply Bond**. The supply bond shall be valid from the notice of award until the acceptance of the 15/20/25/28 MVA Substation Power Transformers. Additionally, in lieu of supply bond, a letter of credit (LOC) from a Texas institution is acceptable. If the successful firm fails to execute the contract and to furnish a satisfactory Supply Bond within 10 days from the date on which he is notified that his proposal has been accepted, the amount of his check or supply bond shall be forfeited to the Brownsville PUB as mutually agreed to liquidated damages, and not as a penalty.

The Brownsville Public Utilities Board will not be responsible in the event that the U.S. Postal Service or any other courier system fails to deliver the sealed proposals to the Brownsville Public Utilities Board, Purchasing Office by the given deadline above. **Electronic transmission or facsimile of RFP will not be acceptable.**

The Brownsville PUB reserves the right to reject any or all bids and to waive irregularities contained therein and to accept any proposal deemed most advantageous to the Brownsville PUB.

Domestic Preference Requirements for Federal Financial Assistance to Non-Federal Entities. Federal Financial Assistance to Non-Federal Entities, defined pursuant to 2 CFR 200.1 as any State, local government, Indian tribe, Institution of Higher Education, or nonprofit organization, shall be governed by the requirements of Section 70914 of the Build America, Buy America Act (BABAA), under Title IX of the Infrastructure Investment and Jobs Act, Pub. L. 117-58. Any requests for waiver of these requirements must be submitted pursuant to USDA's guidance available online at [USDA Buy America Waivers for Federal Financial Assistance | USDA](#).

RFP Respondent's representation section: Respondent is familiar with all laws and regulations that may affect cost, progress, and performance of the work, including BABAA requirements.

The equipment/service related to a project that is subject to the Build America, Buy America Act (BABAA) requirements under Title IX of the Infrastructure Investment and Jobs Act ("IIJA"), Pub. L. 117-58. Absent an approved waiver, all iron, steel, manufactured products, and construction materials used in this project must be produced in the United States, as further outlined by the Office of Management and Budget's Memorandum M-22-11, Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure, April 18, 2022.

Build America, Buy America Act (BABAA) – Requirements instituted by the Bipartisan Infrastructure Law of 2021 mandating domestic preference that all iron and steel, manufactured products, and construction materials are produced in the United States.

Construction Materials – Those articles, materials, or supply – other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives – that are or consist primarily of: non-ferrous metals, plastic and polymer-based products, glass, lumber or drywall.

Manufactured Product – Items assembled out of components, or otherwise made or processed from raw materials into finished products. Manufactured products must be manufactured (assembled) in the United States, and the cost of components that were mined, produced, or manufactured in the United States must be greater than 55 percent of the total cost of all components of the project.

Manufacturer's Certification – Documentation provided by a Manufacturer, certifying that the items provided by Manufacturer meet the domestic preference requirements of BABAA

All products must meet BABAA requirements. Contractor shall include Manufacturer's Certification for BABAA requirements with all applicable submittals. If a specific manufacture is used in the bidding, a statement that Manufacturer will comply with BABAA must be included with the bid submission. Contractor shall comply with BABAA requirements, including coordination with manufacturers, distributors, and suppliers to correct deficiencies in any BABAA documentation.

Engineer/Architect approval of shop drawings or samples shall include review of BABAA documentation.

Contractor shall certify upon completion that all work and materials have complied with BABAA requirements.

For any change orders, Contractor shall provide BABAA documentation for any new products or materials required by the change.

Installation of materials or products that are not compliant with BABAA requirements shall be considered defective work. Contractor should ensure that Engineer/Architect has an approved Manufacturer's Certification or waiver prior to items being delivered to the project site.

By submitting an application for payment, based in whole or in part on furnishing equipment or materials, Contractor certifies that such equipment and materials, to contractor's knowledge, are compliant with BABAA requirements

BY: *Diane Solitaire*
Purchasing
(956) 983-6366 - Phone

Please submit this page upon receipt.

ACKNOWLEDGEMENT FORM

P074-24 15/20/25/28 MVA Substation Power Transformers

For any clarifications, please contact Hugo E. Lopez at the Brownsville Public Utilities Board, Purchasing Department at (956) 983-6375 e-mail: hlopez@brownsville-pub.com

Please e-mail this page upon receipt of legal notice. If you only received the legal notice and you want the proposal package mailed, please provide a method of shipment with account number in the space designated below.

Check one:

☐ **Yes, I will be able to send a RFP; obtained RFP package from website.**

☐ **Yes, I will be able to send a RFP; please email the RFP package.**

Email: _____

☐ **Yes, I will be able to send a RFP; please mail the RFP package using the carrier & account number listed below:**

Carrier: _____

Account: _____

☐ **No, I will not be able to send a RFP for the following reason:**

If you are unable to send your bid, kindly indicate your reason for "No bid" above and return this form via email to hlopez@brownsville-pub.com or dsolitaire@brownsville-pub.com. This will ensure you remain active on our vendor list.

Company Name

Authorized Signature

Address

Type Signatory's Name and Title

Telephone Number / Fax Number

Date

Signatory's Email Address

IF SPECIFICATIONS ARE DOWNLOADED FROM WEBSITE PLEASE EMAIL THIS PAGE TO E-MAIL ADDRESS LISTED ABOVE

Special Instructions

Contract Information

- **Interpretation**

Questions concerning terms, conditions, and technical specifications should be directed to:

Hugo E. Lopez, Purchasing
(956) 983-6375

or Diane Solitaire, Materials/Warehouse Manager
(956) 983-6366

- **Tentative Time Line**

1. September 16, 2024 through October 2, 2024 - Vendors work on proposal.
2. October 2, 2024 at 5:00 PM CST - **Vendor must submit 2 sets of sealed proposal documents in an envelope to:**

Diane Solitaire, Purchasing
1155 FM 511
Olmito, TX 78575

Proposal P074-24, 15/20/25/28 MVA Substation Power Transformers
Due on October 2, 2024 at 5:00 PM CST

*The above noted information must be included on bid envelope and on any carrier's envelope/package. The **Brownsville Public Utilities Board will not be held responsible for missing, lost or late mail.** Brownsville Public Utilities Board will not accept facsimile or electronic transmission of sealed proposals.*

3. September 27, 2024 – Last day to submit questions
4. October 3, 2024 – Proposal Acknowledgement at 10:30 AM CST
5. October 4 - 25, 2024 - Evaluate proposal documents
6. October 28, 2024 - Provide Final Recommendations
7. November 12, 2024 - Send to Utilities Board for approval

MINIMUM QUALIFICATIONS

The proposing Firm must:

1. Have demonstrated experience in the following:
 - a. Firm will be evaluated with respect to its experience and their personnel
 - (1) Provide a description of your agency and resume on the personnel who would be assigned to the project.
 - (2) Demonstrate sufficient capacity, resources and experience to build the unit as required in the RFP.

2. Have been in business for a minimum of five (5) years providing the scope of services consistent with those sought in this RFP.
3. Have experience providing similar work to at least three (3) other similar type and size entities.
4. Not be in bankruptcy or previously filed for bankruptcy, conservatorship, receivership, or in the possession of a regulatory agency.
5. Disclose any legal and/or regulatory inquiries and/or sanctions against the Firm or any individuals employed by the Firm.

INSTRUCTIONS TO RFP RESPONDENTS

Firms must submit a signed one (1) paper original and one (1) paper copy (entire document) of the proposal in a sealed package. Proposals shall be submitted to the BPUB Purchasing Office, 1155 FM 511, Olmito, Texas, no later than **5:00 PM on October 2, 2024**.

Sealed envelope must be clearly labeled as follows:

Brownsville Public Utilities Board
Attention: Diane Solitaire
1155 FM 511
Olmito, TX 78575
“P074-24 15/20/25/28 MVA Substation Power Transformers
October 2, 2024, at 5:00 PM”

OR EQUAL

Any request for substitute or “or equal” shall include the Manufacturer’s Certification of compliance with the **Build America, Buy America Act (BABAA) requirements** mandated by Title IX of the Infrastructure Investment and Jobs Act (“IIJA”), Pub. L. 117-58.

CONTRACT WITH FIRM/ENTITY INDEBTED TO BPUB

It is a policy of the BPUB to refuse to enter into a contract or other transaction with an individual, sole proprietorship, joint venture, Limited Liability Company or other entity indebted to BPUB.

FIRM REPRESENTATIVE

The successful Firm agrees to send a personal representative with binding authority for the company to the BPUB upon request to make adjustments and/or assist with coordination of all transactions as needed.

VENDOR ACH (DIRECT DEPOSIT) SERVICES

The Brownsville PUB has implemented a payment service for vendors by depositing the payment directly to the vendor’s bank account. Successful vendor(s) will be required to receive payments directly through Automated Clearing House (ACH) in lieu of a paper check. **The awarded vendor must agree to receive payments via ACH (Direct Deposit).**

TAX IDENTIFICATION NUMBER (TIN)

In accordance with IRS Publication 1220, a W9 form, or a W8 form in cases of a foreign vendor, will be required of all vendors doing business with the Brownsville PUB. If a W9 or W8 form is not made available to Brownsville PUB, the first payment will be subject to income tax withholding at a rate depending on the U.S. status and the source of income as per IRS Publication 1220. **The W9 or W8 form must be included with proposal response.** Attached are sample forms.

TAXES

The BPUB is exempt from Federal Excise Tax, State Sales Tax and Local taxes. Do not include tax in the proposal. If it is determined that tax was included in the proposal, it will not be included in the tabulation or any awards. Tax exemption certificates will be furnished upon request.

SIGNING OF PROPOSAL

Failure to sign proposal will disqualify it. Person signing proposal should show title or authority to bind their firm to a contract.

EEOC GUIDELINES

During the performance of this contract, the Firm agrees not to discriminate against any employee or applicant for employment because of race, national origin, age, religion, gender, marital or veteran status or physically challenging condition.

CONTRACT AND TERM

The 15/20/25/28 MVA Substation Power Transformers shall be delivered FOB to (2 ea) 500 W. Morrison Road, Brownsville, Tx 78526; (2 ea) 1000 Chemical Road, Brownsville, Tx 78521; and (1 ea) 1495 Robinhood Dr, Brownsville, Tx 78521. An equipment contract for power transformers will be placed into effect after evaluation and final approval by BPUB Board of Directors.

DELIVERY

Delivery of the equipment will only be accepted during normal working hours, **Monday thru Friday, 8 AM to 4 PM CST.** A delivery ticket must be furnished with each delivery by the carrier. The delivery ticket must show the BPUB's Purchase Order, number of crates, packages, etc. being delivered to BPUB. A packing list must be furnished with each delivery by the carrier. The packing list must include the BPUB's Purchase Order number, a brief description of materials and the total number of crates, size, etc. being delivered to BPUB.

Firms must provide a timeline showing milestones and proposed delivery schedule.

BROWNSVILLE PUB RIGHTS

1. If only one or no proposal is received by "submission date", the BPUB has the right to reject, re-advertise, accept and/or extend the proposal by up to an additional two (2) weeks from original submission date.
2. The right to reject any/or all proposals and to make award as they may appear to be advantageous to the Brownsville Public Utilities Board.
3. The right to hold proposal for up to 90 days from submission date without action, and to waive all formalities in proposal.

4. The right to extend the total proposal beyond the original 90-day period prior to an award, if agreed upon in writing by all parties (BPUB and Firm/contractor) and if proposer/Firm holds original proposal prices firm.
5. The right to terminate for cause or convenience all or any part of the unfinished portion of the Project resulting from this solicitation within thirty (30) calendar days written notice; for cause: upon default by the Firm/contractor, for delay or non-performance by the Firm/contractor; or if it is deemed in the best interest of the BPUB for BPUB's convenience.
6. The right to increase or decrease services. In proposal, stipulate whether an increase or decrease in services will affect proposal price.
7. BPUB reserves the right to award multiple contractors to perform this work.

CORRECTIONS

Any interpretation, correction, or change to the RFP will be made by ADDENDUM. Changes or corrections will be issued by the BPUB Purchasing Department. **Addenda will be emailed to all who have returned the Proposal Acknowledgement form.** Addenda will be issued as expeditiously as possible. It is the responsibility of the Firms to determine whether all addenda have been received. It will be the responsibility of all respondents to contact the BPUB prior to submitting a response to the RFP to ascertain if any addenda have been issued, and to obtain any all addenda, execute them, and return addenda with the response to the RFP. Addenda may also be posted on the BPUB website.

PROJECTED PROJECT TIMELINE

The BPUB has established the following timeline relating to the selection process. Dates are estimates only and are subject to change.

RFP Issued:	September 16, 2024
Last day to submit questions:	September 27, 2024
Proposals due:	October 2, 2024 by 5:00 PM CST
Proposals Acknowledgment:	October 3, 2024 at 10:30 AM
Proposals evaluated:	October 4-25, 2024
Board approval of contract award:	November 12, 2024
Contract Executed:	TBD
Project Start Date:	TBD

REFERENCE CHECKS

The BPUB will contact prospective firm's references by email or telephone. Provide company name, address, email address, telephone number and contact name for **three (3) references**. Complete the attached "**Previous Customer Reference Worksheet**" for each reference provided.

RFP IS NOT A BASIS FOR OBLIGATIONS

This request for competitive sealed proposals does not constitute an offer to contract and does not commit the BPUB to the award of a contract to anyone or to pay any costs incurred in the preparation and submission of proposals. The BPUB reserves the right to reject any or all

proposals that do not conform to the requirements stated in this document. The BPUB also reserves the right to cancel all or part of this request for proposals for any reason determined by the BPUB to be in the best interest of the rate payers.

RIGHTS TO SUBMITTED MATERIALS

All proposals and material submitted to the BPUB by a firm, in response to this RFP, shall become the property of the BPUB after the proposal submission deadline. The BPUB's return of the proposals/material will be subject to the requirements of the laws of the State of Texas.

UNAUTHORIZED COMMUNICATIONS

After release of this solicitation, Proposer's contact regarding this RFP with members of the RFP evaluation, interview or selection panels, and employees of the BPUB or officials of the BPUB other than the Purchasing Manager or Purchasing Staff is prohibited and may result in disqualification from this procurement process. No officer, employee, agent or representative of the Proposer shall have any contact or discussion, verbal or written, with any members of the BPUB Board of Directors, members of the RFP evaluation, interview, or selection panels, BPUB staff, or directly or indirectly through others, seek to influence any BPUB Board member, BPUB staff regarding any matters pertaining to this solicitation, except as herein provided. If a representative of any Proposer violates the foregoing prohibition by contacting any of the above listed parties with whom contact is not authorized, such contact may result in the Proposer being disqualified from the procurement process.

PROPOSAL INFORMATION

All proposal envelopes shall contain **one (1) signed original and one (1) copy** (entire document). The original proposals will be opened and only the Firm's name read aloud at the BPUB Purchasing Office located at 1155 FM 511, Olmito, Texas. All proposals will be managed by BPUB in a manner that avoids disclosure of the contents to competing firms and keeps the proposals confidential during any negotiations. All proposals will be open for public inspection as stated in the public information act, after the contract is awarded; however, trade secrets and confidential commercial or financial information in the proposals specifically identified by the firms will not be open for public inspection. Accordingly, all pages in the proposal that the Firm considers to be proprietary and confidential should be appropriately marked.

Direct any questions to Hugo E. Lopez, Purchasing Department, by phone at (956) 983-6375 or by email at hlopez@brownsville-pub.com or to dsolitaire@brownsville-pub.com.

Candidates must guarantee their Original Proposal or subsequently clarified proposal for at least ninety (90) days from the Original Proposal opening date. To obtain the best and final offers, the BPUB may require written clarifications and explanations of Firm proposals after Original Proposal submissions when certain candidates have been selected for interviews. The BPUB will not be liable for any of the Firm's costs or expenses incurred in preparation or presentation of the Proposal(s). The BPUB also reserves the right to conduct a pre-award survey, or to require other evidence of technical, production, managerial, financial, or other abilities prior to the award of the contract.

The BPUB will follow Texas Local Government Code procurement procedures found at: Sections 252.021(b)(c); 252.041(b); 252.042; 252.043(h); 252.049(b).

To ensure that the award is made to the Firm whose proposal best meets the needs of the BPUB, discussion may be conducted with the top three (3) rated Firms at BPUB's discretion. After the meeting(s), five (5) working days will be allowed for the Firms to submit all requested additional information and explanations in writing, which shall be deemed a part of their final offer. The Firm shall submit with such clarifications and explanations any revised projected schedule. The Firms shall be treated fairly and equally with respect to any and all opportunities for discussion, clarification, and explanation of proposals.

EVALUATION PROCEDURE AND CRITERIA

All proposals must be completed and convey all of the information requested in order to be considered responsive. If the proposal fails to conform to the essential requirements of the RFP, the Brownsville PUB alone will determine whether the variance is significant enough to consider the proposal susceptible to being made acceptable and therefore a candidate for further consideration, or not susceptible to being made acceptable and therefore not considered for award. Only the information provided with the proposal, subsequent discussions and clarifications provided in writing, and the proposer's written Best and Final Offer, is used in the evaluation process and award determination. Only these criteria will be considered on the award determination.

A BPUB committee will review the proposals submitted in response to this request and will make recommendations. The BPUB committee will review all proposals in light of the following major evaluation criteria with corresponding weights.

Evaluation Criteria	Possible Points
Proposal Net Price on bid items	25
Stock availability	20
Reputation of brand names offered	15
Reputation of the Firm/Respondent	15
Time and conditions of delivery	15
References	10
Total Points	100

PROPOSAL COST SHEET
P 074-24

To: Public Utilities Board, Brownsville, Texas (hereinafter called the “Owner”).

Attention: Diane Solitaire
Purchasing Department
1155 FM 511
Olmito, TX 78575

1. The undersigned (hereinafter called the “Bidder”) hereby proposes to furnish and deliver Five (5) 15/20/25/28 MVA Substation Power Transformers. All units are 138 kV high sides. (Hereinafter called the “Equipment”) described in the Plans and Specifications attached hereto and made a part hereof for the following prices:

Five (5) 15/20/25/28 MVA Power Transformer

Item	Description	Quantity	Unit Cost	Extended Cost
1	15/20/25/28 MVA Substation Power Transformer	5		
Bid Total				\$

Item	Transformer Losses	KW	\$/KW	Extended Cost
1	No Load Losses (KW)		7,660	
3	Load Losses (KW)		1,403	
4	Aux Losses – Stage One (KW)		587	
5	Aux Losses – Stage Two (KW)		483	
Total Transformer Losses Cost				\$
Power Transformer Unit Cost + Total Transformer Losses Cost				\$

Recommended Spare Parts for all units

Item	Description	Qty.	Unit Cost
1	HV Arrester	3	\$
2	LV Arrester	3	\$
3	Transformer Gasket	3	\$
4	Cooling Fan	3	\$
Lot Total Cost			\$

Vendor shall provide an optional cost line item for the following field services:

- 1.) Unloading of the transformer to a designated location appointed by BPUB staff.
- 2.) Installation of Transformer accessories (Bushings, Surge Arresters, Radiators, etc.).

Optional

Item	Description	Cost
1	Field Service (Off-Loading)	
2	Field Service (Dress-out, Assembly, oil filling, and field testing)	

Please circle your response:

Is witness testing as noted in section 21.0 TESTING (21.6) included in the bid cost?

Yes / No

Preferred Delivery Schedule:

Two (2 ea) units with high priority shall be delivered for the Ocelot Substation, 500 W. Morrison Rd., Brownsville, TX 78521. These two (2 ea) Power Transformers should be at this locations within a timeframe October 1st, 2024 to October 1st, 2025.

Estimated Delivery Schedule from the remain units:

These units shall be delivered between _____ to _____.

Notes:

1. The Owner is exempt from Texas sales tax on materials. The prices quoted shall exclude such sales and use tax.
2. The prices of Equipment set forth herein shall include the cost of delivery to the (3) locations noted in the page 7.
3. This Proposal is made pursuant to the provisions of the Notice and Instructions to Respondents and the Respondent agrees to the terms and conditions thereof.
4. The Respondent warrants the accuracy of all statements contained in the Respondent's Qualifications, if any shall be submitted, and agrees that the Owner shall rely upon such accuracy as a condition of the Contract in the event that this Proposal is accepted.
5. The Respondent warrants that this Proposal is made in good faith and without collusion or connection with any other person or persons responding for the same work.
6. The Respondent agrees that, in the event this Proposal is accepted, it will execute a Contract in the form attached hereto and will furnish a Material Supply Bond in the amount of the bid.
7. The Respondent warrants that the Equipment will conform to the performance data and guarantees which are attached hereto and by this reference made a part hereof.
8. If, in submitting this Proposal, the Respondent has made any change in the form of Proposal or Contract furnished by the Owner, the Respondent understands that the Owner may evaluate the effect of such change as they see fit or they may exclude the Bid from consideration in determining the award of the Contract.
9. This proposal is void unless an equipment contract based on this proposal is entered into by the Owner and the Respondent within ninety (90) days after the date hereof.

Transformer Manufacturer

Name of Respondent

Address of Respondent

By

Signature (Must be signed to be considered)

Date

Title of Officer

Respondent's contact person for additional information on this Bid:

Name: _____ Email: _____

Telephone: _____

Address: _____

Left in Blank Intentionally

SUBSTATION POWER TRANSFORMER SPECIFICATION

and

CONTRACT FORM

for

BROWNSVILLE PUBLIC UTILITIES BOARD

1425 ROBINHOOD DRIVE

BROWNSVILLE, TEXAS 78521

BID DUE: October 2nd, 2024, 5:00 P.M. CST

REV - D

ELLETT & GAYNOR, LLC

Professional Engineers

5706 SW 45th Avenue

Amarillo, Texas 79109-5284

Phone: (806) 376-9678

Fax: (806) 376-1931

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SUBSTATION POWER TRANSFORMER SPECIFICATION

1.0 SCOPE

This specification covers the furnishing of one or more two winding power transformers, rated ONAN/ONAF/ONAF, 60 Hertz, three-phase. The transformer will be connected to a system that has an effectively grounded neutral. The transformer is to be operated at elevations less than 500 feet, in ambient temperatures ranging from -20°C to +40°C.

This transformer shall be designed, built, rated, and tested in accordance with these specifications: the standards and guidelines of the American National Standards Institute (ANSI), Institute of Electrical and Electronics Engineers (IEEE), National Electrical Manufacturers Association (NEMA), Insulated Power Cable Engineers Association (IPCEA), the American Society of Testing and Machinery (ASTM) and NIST Technical note 1204. Where a conflict exists between any of these documents, the requirements shall prevail in the order in which they are stated in this paragraph.

All materials shall be high quality and all manufacture, fabrication and assembly shall be performed in a workmanlike manner. All fasteners shall be ASA standard; metric hardware is not permitted (except where it may be furnished by the OEM supplier in the LTC switch.)

2.0 RATING

2.1 Thermal capacity as measured by temperature rise by resistance shall be:

2.1.1 15/20/25//28 MVA, ONAN/ONAF/ONAF 55/65 Degrees Celsius Rise

2.1.2 No component of the transformer, including, but not limited to, the LTC switch, the no-load tap changer switch, or the high, or low, voltage bushings shall limit the overload capabilities of the transformer to a value less than the requirements of ANSI C57.91.

2.2 The High Voltage ratings shall be 138 kV Delta. The transformer shall be provided with four high voltage taps, two each at 2.5% and 5% above the nominal voltage(s) and two each at 2.5% and 5% below the nominal voltage(s). These shall be operated manually by an externally operated no-load tap changer (ABB type DTU or equivalent). The operating handle shall be located on one end of the tank. The tap changer handle shall have provisions for padlocking, consisting of 3/8" minimum diameter hole and shall provide visible indication of the tap position without unlocking.

2.3 Low voltage ratings shall be 12.47/7.2 kV WYE. This voltage shall be regulated by plus or minus 10 percent by automatic load tap changing equipment. Please see **Section 9.0** for detailed requirements.

- 2.4 Tertiary Winding: No tertiary winding is required or permitted.
- 2.5 Impedance – The transformer shall be constructed with a nominal impedance of 9.5% (+/- 2%). BPUB prefers to have a transformer with a nameplate impedance in between 9.3% and 9.7%. The transformer quoted impedance shall meet applicable ANSI and IEEE specifications. The tested impedance must match that quoted within the normal limits of ANSI requirements. The transformer impedance shall not change more than 2% after short-circuit testing. Barrel and sheet windings are not acceptable.
- 2.6 Basic insulation levels shall be:

A. ITEM	B. WINDINGS	C. BUSHINGS
138 KV, high voltage	550 kV	650 kV
Low voltage	110 kV	150kV
Neutral	110 kV	150 kV

- 2.7 Usual service conditions as described in ANSI C57.12.00 approximate expected field conditions.
- 2.8 The nameplate shall be in accordance with ANSI C57.12.00-2000; nameplate C shall be used.
- 2.9 The owner will load these transformers per ANSI C57.91.
- 2.10 This transformer shall be designed and guaranteed to have an average sound level not exceeding the levels listed in the latest revision of NEMA Pub. No. TR1. Audible sound testing is required unless an essentially duplicate transformer has been tested. In that case, the Manufacturer shall furnish test results to the Owner. Certified test results are required.

3.0 OWNER FURNISHED ITEMS

The following items of material, equipment and services will be provided by the Brownsville Public Utilities Board (BPUB):

- 3.1 Foundation

- 3.2 Field erection of bushings, radiators, fans, and surge arresters as required. This item will be determined after bid review. If the “Field Service” option is selected, this is not necessary.
- 3.3 External control wiring
- 3.4 External power wiring including connections to all bushings.
- 3.5 Voltage supply for LTC control relay.
- 3.6 Voltage supply for LTC motor and cooling fans as follows:

Lights & Receptacles	120 volts, single-phase
LTC Motor	240/120 volts, single-phase
Fan motors	240/120 volts, single-phase
DC Circuits	125 volts, DC

4.0 LOSSES

- 4.1 Core losses shall be quoted at room temperature (25°C +/- 5°C), 100% rated voltage and shall be the average of the losses at the following five LTC positions with the high side taps on neutral: neutral, 15 raise and 16 raise, 15 lower, and 16 lower.
- 4.2 Winding losses shall be quoted at 100% of the 55°C self-cooled rating corrected to 85°C average winding temperature and shall be the average of the losses at neutral, 15 raise and 16 raise, 15 lower, and 16 lower.
- 4.3 Auxiliary losses shall be quoted with all auxiliary equipment operating.
- 4.4 No-load (core) losses will be evaluated at \$7,660 per kW.
- 4.5 Load (winding) losses will be evaluated at \$1,403 per kW at base kVA loading.
- 4.6 Auxiliary losses will be evaluated at \$587 per kW (1st stage) and \$483 per kW (2nd stage).
- 4.7 In evaluating the bids, the total owning cost of the transformer will be calculated as the sum of the quoted price, plus the evaluated cost of no-load losses, plus the evaluated cost of load losses, plus the evaluated cost of the total auxiliary losses. All losses shall be guaranteed maximum.
- 4.8 The manufacturer in their quotation shall indicate their maximum measurement error for the losses as described in NIST Technical Note 1204 and traceable to the NIST. This error will be used in calculating the total owning cost.

- 4.9 A transformer, which upon factory test, does not have losses equal to or less than the guaranteed losses stated in the manufacturer's bid, shall have its selling price reduced. The price reduction will be 150% of the difference between the value of the guaranteed losses and the actual losses as determined by the tests for each unit purchased. The total selling price shall not be increased because of this calculation.

5.0 CORE & COIL ASSEMBLY

- 5.1 The core assembly shall have laminations made of "non-aging", cold rolled, grain oriented, highly permeable silicon alloy steel. The assembly shall be braced or bolted adequately to prevent displacement and distortion under all normal handling and rail shipment, and during operation under maximum short circuit conditions.
- 5.2 All coils, prior to loading onto the core legs shall be stabilized by a vapor phase process; similarly, the completed core/coil assembly shall also be fully stabilized and impregnated with a similar vapor phase process.
- 5.3 This vapor phase process shall consist of an impregnation cycle as follows in a vacuum chamber:
- 5.3.1 Pull high vacuum and allow "soaking" to remove moisture.
 - 5.3.2 Apply hot kerosene vapor to thoroughly dry out the insulation.
 - 5.3.3 Allow to drip "dry" while under heat and vacuum.
 - 5.3.4 Then flood the chamber with transformer mineral oil while maintaining vacuum and heat.
 - 5.3.5 This entire cycle shall be maintained until 0.5% moisture and 0.5% power factor are achieved.
- 5.4 All bolted connections shall have locking provisions. Split lock washers are not acceptable.
- 5.5 Core bolts through the core steel will not be permitted.
- 5.6 All winding conductors shall be EC grade copper strip, insulated with thermally upgraded kraft paper.
- 5.7 All joints in the winding shall be brazed.

- 5.8 The insulation material shall be of the thermally upgraded type. The insulating material, varnishes and other associated compounds shall not contaminate the insulating oil, nor shall these items be affected by the oil. Core insulation shall be of high temperature resistant material.
- 5.9 The windings shall be supported top and bottom by a full size (at least the coil's diameter) coil clamping system using insulating coil clamping rings and/or plates which are solid (no slots or holes). These insulating devices, in turn, shall be fully supported by solid steel plates. The clamping system must be of sufficient size and strength to restrain the full short circuit and static pressures and to give full radial spacer support for even clamping pressure to all areas of the coils.
- 5.10 The Manufacturer shall furnish two sets of five 8"x10" glossy photographs of the assembled core and coils. One photograph of each side and each end of the assembly as well as a top view. The manufacturer, at their option, may furnish the photos electronically on a photo-disc format.

6.0 TRANSFORMER TANK

- 6.1 The transformer tank shall be of welded plate construction with a welded-on cover.
- 6.2 The transformer tank and all auxiliary tanks shall be designed for full vacuum filling.
- 6.3 Four (4) NEMA 4-hole tank grounding pads, drilled and tapped (2-1/2" x 13 thread holes on 1-3/4" centers) welded near the base at each corner of the transformer case, shall be provided. Each pad shall be supplied with bronze heavy-duty terminals, Anderson Electric type SWH, or equivalent; complete for connecting 4/0 AWG stranded copper to the grounding pads. A fifth pad shall be welded on the cover near the neutral bushing as shown on Drawing XFRD-1 attached hereto.
- 6.4 Provisions shall be provided for installation of a continuous loop ground wire (#4/0 Cu) around the transformer tank from one corner of the base through each set of lightning arresters returning to the base. Clamp mounting points shall be provided at each corner of the transformer case no more than 36" apart as shown on Drawing XFRD-1 attached hereto. The clamp mounting points shall be provided to support the #4/0 Cu ground wire without the ground wire coming in contact with the transformer tank.
- 6.5 The transformer outline shall conform to standards set forth herein, except the minimum height to any part energized above 600 volts shall not be less than 9' above the base of the transformer. Manufacturer to provide standard shipping

dimensions. The height from the ground to the base of any bushing shall not be less than 8'.

- 6.6 The base shall be designed for jacking, towing, rolling and shipping in the direction of the centerlines of all segments. The design shall be such that the base shall not be permitted to maintain contact with surface of the transformer pad; air flow must be permitted between the tank bottom and the base.
- 6.7 The tank brace bands must remain sealed to the atmosphere; they can contain no conduit or wiring, but they may be used for gas space expansion.
- 6.8 The transformer shall be equipped with lifting lugs for lifting the entire transformer (**with oil**) and lifting hooks shall also be installed on the tank cover.
- 6.9 The transformer shall be equipped with jacking bosses suitable for raising the entire transformer hydraulically. There shall be no obstructions underneath the bosses to impair the operation of the jacks; the bottom surfaces shall be 17" high.
- 6.10 The LTC tank shall have a gasket cover which shall be bolted in place and shall be hinged for access with the bolts removed. The gaskets shall not be exposed.
- 6.11 The main tank and the LTC tank shall each have a mechanical pressure relief device with alarm contacts wired through a test switch (for isolation and test purposes) to the SEL-2414 transformer monitor, in the control cabinet, per drawing XFRD-2, and a visual indicator.
- 6.12 All mounting hardware shall use stainless steel fasteners.
- 6.13 The tank and all auxiliary tanks and compartments shall be coated externally with a high-grade protective coating of ANSI 70 gray. The coating shall be a minimum of **10 mils** thick and shall meet the requirements of ANSI C57.12.28, except that impact resistance shall be met only for a coatings thickness of 3 mils or less.
- 6.14 The interior surfaces of the main tank, LTC tank and the control cabinet shall be painted a bright white color. The paint shall be one which will neither be harmed by, nor harm, the transformer's oil.
- 6.15 The main transformer tank and any attached compartment that is subjected to operating pressures shall be designed to withstand, without permanent deformation, pressure 25% greater than the maximum operating pressures resulting from the oil preservation system. The maximum operating pressures (positive and negative) which the transformer tank is designed to withstand shall be on the nameplate. The minimum design pressure shall be 10 psi.

- 6.16 Two round manholes shall be provided in the cover, minimum of 24 inches diameter. Manholes shall be constructed with flush handles to reduce tripping hazard when working on the transformer cover.
- 6.17 Appropriate mounting brackets shall be welded or bolted to the main tank for high voltage and low voltage arresters as specified in **Section 15**.
- 6.18 The centerline of the tank shall be permanently and plainly marked near the base on all four sides of the tank and shown on the outline drawing.
- 6.19 The shipping centers of gravity and the centers of gravity of the completely equipped and oil filled transformer shall be plainly indicated and dimensioned on the outline drawing and marked on the transformer tank sides.
- 6.20 Drain and Filter Valves:
 - 6.20.1 One (1) 2" globe type drain valve shall be located in the bottom of each oil filled compartment to provide drainage within 1" or less of the bottom of the oil filled compartment. Drain valves shall be equipped with a built in 3/8" sampling device located between the main valve seal and end plug. This device shall have 5/16" x32 male thread and equipped with a cap.
 - 6.20.2 Two (2) 1" globe type drain valves with filler plugs shall be provided and located in the top of each oil filled compartment. Plugs shall be solid brass with square head and national pipe threads (one for oil filling and one for vacuum connection). Manufacturer is to provide baffling or other means to prevent excessive aeration of the transformer during oil filling. These means shall be identified in a detail on the approval drawings.
- 6.21 All tank seams shall be double welded (inside and outside) and shall be a minimum of six (6) inches from the corner. Corner welds are not acceptable.
- 6.22 The cover shall be domed to shed water and welded to the tank. During welding of the transformer cover, an inorganic gasket shall be permanently located between the cover and the tank flange to prevent the entrance of weld spatter into the tank.
- 6.23 All gasket openings shall be designed with means to provide controlled compression of the gasket, utilizing metal-to-metal stops, and re-usable gasket of oil resistant material. All gasket joints on top of the transformer shall utilize flanges, which are raised at 3/4-inch above the cover surface.
- 6.24 Internal surge arrestors or non-linear resistors shall not be included as part of the internal insulation system, unless written authorization is first obtained from the engineer.

- 6.25 The paint for the tank shall have a minimum of five (5) years warranty.
- 6.26 The no-load tap changer shall be installed without the necessity of a separate installation or inspection cover in the main tank.

7.0 INSULATING OIL

- 7.1 All transformers shall be separately supplied with the necessary quantity of high-quality Type II naphthenic insulating oil.
- 7.2 All oil filled devices shall be certified as free of all polychlorinated biphenyl compounds.
- 7.3 The insulating oil shall have dielectric strength, low viscosity and freedom from inorganic acids, alkali and corrosive sulfur.
- 7.4 The oil shall meet the requirements of ANSI/ASTM D3487-1979.
- 7.5 The oil shall have the characteristics specified per IEEE C57.106 Table 1 as a minimum.
- 7.6 The transformer is to be shipped with oil. In case transformer is shipped without oil, the oil shall be furnished by the manufacturer after erection, bulk-shipped separately by truck.

8.0 OIL PRESERVATION SYSTEM

- 8.1 An automatic nitrogen pressure oil preservation system shall be supplied with a nitrogen cylinder, transformer tank pressure gauge with high and low-pressure alarm contacts, a nitrogen cylinder pressure gauge with low pressure alarm contacts and all gas pressure regulating equipment. All equipment must be weatherproof or installed in a suitable cabinet.
- 8.2 The primary gas regulator shall be a two-stage type with Buna-N diaphragm. The pressure gauges shall be provided for both the high side and low side of the regulator. The connection fitting to the nitrogen cylinder shall fit a CGA #580 valve. Valves shall be provided to permit purging the gas space and testing the seal on the transformer tank by admitting dry nitrogen under pressure. A device shall be provided at ground level for sampling the gas.

9.0 LOAD TAP CHANGER

- 9.1 The load tap changing switch shall be a Reinhausen type RMV-II.

- 9.2 Full MVA rating is required on all taps above neutral and reduced capacity (100 % nominal current) is acceptable on all taps below neutral. Sixteen (16) 5/8% taps above neutral and sixteen (16) 5/8% taps below neutral are required.
- 9.3 The tap changing mechanism shall be located in a separate tank from the main tank and the oil between the two shall not be permitted to mix. The LTC switch tank shall be capable of accepting full vacuum (with no pressure on the main tank) with no bypass tubing required when vacuum filling the main tank.
- 9.4 Motor Drive Mechanism. The motor shall be suitable for operation from a single-phase 240/120-volt source and it shall not incorporate a centrifugal switch.
- 9.5 A detachable hand crank for manual operation of the driving mechanism shall be provided which shall be electrically interlocked to prevent operation of the motor while the crank is engaged. A storage place for the hand crank shall be provided.
- 9.6 Manual and electric operated switches to raise and lower the LTC motor. Operated raise and lower electric limit switches and mechanical stops shall be provided on the drive mechanism to prevent over-travel beyond the maximum raise and lower positions. Each electric limit switch shall have one non-grounded Form C contact wired to a terminal block for Owner's alarm.
- 9.7 Control devices shall be housed in a weatherproof cabinet which is equipped with a breather and hinged doors. The doors shall provide access to the control devices and shall have provisions for padlocking, consisting of 3/8" minimum diameter matching holes.
- 9.8 The voltage measuring circuit and the tap changer motor circuit shall be provided with independent protective devices. The protective device for both circuits shall be thermal breakers and shall be located in a conspicuous location in the control cabinet. No unrelated equipment shall be connected to these protective devices.
- 9.9 The voltage regulating relay (VRR) shall be the Beckwith Electric Company model M-2001D digital tap-changer control with the Adapter Pane Model M-2067B.
- 9.10 The BPUB will provide a nominal 120-volt rms. sensing potential for the VRR.
- 9.11 A mechanical position indicator shall be provided, easily visible from ground level.

- 9.12 A mechanical and electrical operation counter shall register the accumulated number of tap change operations performed. The electrical counter will send pulse to the RTU.
- 9.13 Provisions for an external INCON Model 1250A/1250B tap changer position indicator system shall be provided.
- 9.14 A manual and electric (SCADA) operated switch shall be provided to select both automatic/manual and local/remote modes of operation. All control switches shall be located in the control cabinet.
- 9.15 All manual and electric switches shall operate at 125 VDC and shall be Electro Switch 24 CSR with 3 decks model 8858DB/18B-2C22 for raise/lower and the model 920 3DD/10D – 2x5A for automatic/manual and local/remote control.
 - 9.15.1 LTC Manual Control: The CSR raise/lower switch shall allow for operation of the LTC control when the automatic/manual switch is set to “manual”.
 - 9.15.2 LTC SCADA Control: The CSR raise/lower switch shall allow for operation of the LTC control when both the automatic/manual switch and local/remote switches are to “manual” and “remote” respectively. The SEL-2414 transformer monitor output contacts shall be wired through a test switch (for isolation and test purpose) to the CSR raise/lower switch.
 - 9.15.3 Automatic/Manual SCADA Control: The LSR automatic/manual switch shall be remotely toggled when the local/remote switch is set to “remote”. The SEL-2414 transformer monitor output contacts shall be wired through a test switch (for isolation and test purpose) to the LSR automatic/manual switch.
- 9.16 The LTC automatic/manual switch shall have a “manual” status contact wired to the SEL-2414 transformer monitor.
- 9.17 The LTC local/remote switch shall have a “remote” status contact wired to the SEL-2414 transformer monitor.

10.0 CURRENT TRANSFORMERS

Multi-ratio, C400 relaying accuracy and single ratio metering accuracy bushing current transformers shall be furnished as follows: 920 3DD / 10D-2X5A for automatic – manual and local-remote.

<u>Bushing</u>	<u>Quantity</u>	<u>Ratio</u>	<u>Accuracy</u>
H	3 sets of 3	1200:5	C400
X	2 sets of 3	2000:5	C400
X0	1 set of 1	1200:5	C400

- 10.1 All taps of each current transformer shall be terminated on individual wall mounted shorting type terminal blocks (Penn Union 6006-SCS or Engineered approved equal). One terminal block per current transformer shall be utilized. Terminal blocks shall be mounted and pre-wired in the transformer control cabinet as shown in Drawing XFRD-2 attached.
- 10.2 Additional bushing-type CT's shall be provided for hot spot winding temperature and line drop compensation.

11.0 BUSHINGS

- 11.1 All H and X bushings shall be top cover mounted.
- 11.2 All bushings shall be either ABB type O plus C or approved equivalent.
- 11.3 The 12.47 kV bushings shall have a minimum of 24" spacing between live parts.
- 11.4 The spacing between the 138 kV bushings shall be the maximum allowed by standard tank design.
- 11.5 Oil-filled bushings shall be free of oil leakage and shall have a suitable leak proof sight gauge and a convenient means for sampling oil and draining the bushings at the mounting flange location.
- 11.6 Each 138 kV bushing shall have a shielded tap brought out for making ungrounded power factor tests.
- 11.7 All bushings shall be designed such that impulse voltage flashover occurs outside the tank before flashover occurs on the bushing inside the transformer.
- 11.8 The ampere rating shall provide adequate capacity through the maximum 65°C rating and shall not be less than 400 amperes at 138 kV and 2000 amperes at 12.47 kV. The X₀ bushing shall be brought out on the same type bushing as the other low voltage bushings.

- 11.9 Each spare bushing shall have the bottom portion suitably covered with an easily removable weatherproof coating to permit outdoor storage.
- 11.10 All bushings shall be manufactured and tested in accordance with the latest revision of IEEE C57.19.00. Tests shall be certified.
- 11.11 The H, X and X₀ bushings shall be furnished with tin-plated NEMA 4-hole terminal pads of size to accommodate the bushing stud size. Anderson Type HDSF-TP or equivalent.
- 11.12 All bushings shall be porcelain or silicon rubber.
- 11.13 Bushings shall be suitable for Environmental Pollution Level III (Heavy) per IEEE C37.100.1.

12.0 CORE GROUNDING

- 12.1 The core ground shall be brought out of the tank through an appropriate low voltage bushing mounted near the top of the tank on one end of the tank. It shall be mounted in a well for mechanical protection and shall be provided with a removable, ground strap. It shall allow simplified core megger testing without disturbing the tank's seal integrity. The well shall have a removable cover and it shall be clearly identified on the tank and on the outline drawing(s).

13.0 COOLING EQUIPMENT

13.1 Radiators

- 13.1.1 The radiator connections shall be made with bolted flange type oil tight fittings with retained gaskets. Valves shall be provided so that individual radiators (**radiator banks and common headers are not allowed**) may be removed without lowering the oil level in the main transformer tank. Provisions for one extra radiator shall be provided. All radiators shall be interchangeable.
- 13.1.2 Each removable radiator shall be provided with a drain plug at its lowest point and an air inlet plug at the top. Plugs shall be solid brass with a square head and national (S.A.E) pipe threads. These fittings will be used to drain each entire radiator assembly.
- 13.1.3 No more than five (5) radiators shall be mounted in succession upon any one side.
- 13.1.4 All radiators shipping with the unit shall be bolted onto the transformer during the required heat run test.

13.1.5 The radiator shall be made of **galvanized steel**.

13.1.6 The radiators shall be unpainted Hot dipped galvanized.

13.2 Fans and Fan Motors

13.2.1 Cooling fans shall have their rotating shafts in the horizontal position.

13.2.2 All fan motors shall be totally enclosed, non-ventilated, with sealed, pre-lubricated ball bearings and rated for all-weather outdoor operation.

13.2.3 Each fan motor shall be provided with thermal overload devices.

13.2.4 Fans shall be rated single phase, 240 volts AC, 60Hz power with each cooling group protected by its own molded case circuit breaker located in the transformer control cabinet.

13.2.5 Fans shall be of slow speed, high volume design for quiet operation.

13.2.6 Fan blades shall be of a non-corrosive material which is also not degraded by UV radiation; fiberglass blades are not acceptable.

13.2.7 All fans shall be connected with a flexible, plug-connected cable designed for outdoor use.

13.2.8 Fans shall be fully accessible and designed so any one fan can be easily removed without disturbing the operation of other fans.

13.2.9 Fans shall be dynamically balanced and operate without vibration.

13.2.10 The transformer shall have fan control hardware, located in the control cabinet, with the following features:

- (1) One 'Hand-Off-Auto' rotary, three-position oiltight switch for manual control of fans. This switch shall have an alarm contact wired through a terminal block to the SEL-2414 transformer monitor, per drawing XFRD-2.
- (2) 'Off-On' rotary, two-position oiltight switches for each of the two stages of cooling equipment. Each switch shall have an alarm contact wired through a terminal block to the SEL-2414 transformer monitor, per drawing XFRD-2.
- (3) 'Local/Remote' rotary, two-position oiltight switch for enabling and disabling remote control of transformer fans from the SEL-2414

transformer monitor, per drawing XFRD-2. Local/Remote control is not to affect operation of the fans in response to temperature switch settings when the fan control switch is set in the 'Auto' position. This switch shall have one spare contact wired to terminal blocks for remote indication of position. This switch shall have an alarm contact wired through a terminal block to the SEL-2414 transformer monitor, per drawing XFRD-2. This switch is to be separate from the OLTC 'Local/Remote' switch.

- (4) Each stage of fan cooling shall have an alarm contact for remote indication of Cooling Fan status wired through a test switch (for isolation and test purposes) to the SEL-2414 transformer monitor, per drawing XFRD-2.
- (5) Each stage of cooling fans shall independently be capable of being turned on or off by SCADA activation via commands issued by SCADA to the SEL-2414 transformer monitor, per drawing XFRD-2. Wiring from transformer monitor to fan control system shall be wired through a test switch for isolation and test purposes.
- (6) Oil tight switches shall be Westinghouse PB1, Square D, or approved equivalent with a swing knob handle.

14.0 TRANSFORMER ACCESSORIES

- 14.1 One dial type top oil thermometer shall be supplied for each separate oil compartment containing heat producing components (i.e. main tank, LTC tank, etc.). Each thermometer shall have at least two (2) non-grounded Form C contacts. For the main tank the two (2) Form C contacts shall be used for the following: one (1) for trip status and one (1) for alarm status. For the LTC tank the two (2) Form C contact shall be used for the following: one (1) for trip status and one (1) for alarm status. All Form C contact shall be wired through a test switch (for isolation and test purpose) to the SEL-2414 transformer monitor for Owner's alarm, per drawing XFRD-2. Contacts shall be adjustable between 65°C and 110°C.

One top oil temperature indicator for the main tank shall be located at eye level with contacts for operating fan equipment and alarms shall be provided. The operating points of the contacts are to be customer adjustable. Each set point is to have two sets of independent contacts wired to terminal blocks in the control cabinet. The contacts for each set point of the main tank top oil indicator shall be connected as follows.

14.1.1 Contacts for temperature Set Point #1:

- (1) Contact #1 to control the first stage of supplemental cooling equipment.
- (2) Contact #2 shall be wired through a terminal block to the SEL-2414 transformer monitor in the control cabinet, per drawing XFRD-2.

14.1.2 Contacts for temperature Set Point #2:

- (1) Contact #1 to control the second stage of supplemental cooling equipment.
- (2) Contact #2 shall be wired through a terminal block to the SEL-2414 transformer monitor in the control cabinet, per drawing XFRD-2.

14.2 Thermometers shall be mounted near the tops of the tanks.

14.3 One dial type hot spot thermometer shall be supplied, representing the hottest part of the transformer winding. Temperature alarm and trip contacts for SCADA monitoring are to be wired through a test switch (for isolation and test purposes) to the SEL-2414 transformer monitor in the control cabinet, per drawing XFRD-2. Extra contacts (if available) shall be wired to customer accessible terminal blocks in the control cabinet. Temperature transducer outputs for SCADA monitoring shall be wired using appropriately shielded wire and wired through a test switch (for isolation and test purposes) to the SEL-2414 transformer monitor in the control cabinet, per drawing XFRD-2. Terminating resistors or jumpers shall be provided if called for by the transducer manufacturer and or required by the SEL-2414 transformer monitor. The thermometer shall have a temperature transducer 0-1 mA in order to send the signal to SCADA. Contacts shall be adjustable between 65°C and 110°C.

14.4 One liquid level gauge shall be supplied for each separate oil compartment. Each gauge shall have two (2) non-grounded Form "C" contacts wired through a test switch, one (1) for alarm status and one (1) for trip status, (for isolation and test purposes) to the SEL-2414 transformer monitor for Owner's alarm, per drawing XFRD-2. Liquid level gauges shall be mounted at oil level heights.

14.5 The transformer shall have a self-resealing pressure-relief device on the cover of the main tank and LTC tank. Each device shall have a mechanical indicator which is visible from the base of the transformer and shall have one non-grounded Form C contact wired through a test switch (for isolation and test purposes) to the SEL-2414 transformer monitor for Owner's alarm, per drawing XFRD-2.

14.6 The transformer main tank shall be provided with a rate-of-rise fault pressure relay that operates an electrically resettable Seal-In-Relay (such as a Qualitrol #909-200-1) located in the control cabinet. The Seal-In-Relay is intended to

operate a remote lockout relay and shall be capable of operating on 125-volt DC. Two (2) contact from the Seal-In-Relay shall be wired through a test switch (for isolation and test purposes) to a status point in the SEL-2414 transformer monitor in the control cabinet, per drawing XFRD-2.

- 14.7 The rapid pressure rise relays shall be installed on the side of the main tank.
- 14.8 A pressure-vacuum gauge, with 2 adjustable alarm contacts for high tank pressure, 2 adjustable alarm contacts for low tank pressure, and one adjustable alarm contact for low bottle pressure shall be installed in the nitrogen control cabinet. All available alarm contacts shall be connected to terminal blocks in the nitrogen control cabinet and then routed through conduit and connected to a clearly marked terminal block located in the transformer enclosure. The low bottle pressure contact shall be routed to a test switch (for isolation and test purpose) to the SEL-2414 transformer monitor for Owner's alarm in the transformer control cabinet, per drawing XFRD-2.
- 14.9 All alarm and relay contacts shall be rated for use at 125 volts DC. Alarm contacts, as detailed in attached Drawing XFRD-2, shall be wired to a test switch mounted in the control cabinet. Trip contacts, as detailed in attached Drawing XFRD-2, shall be wired to a test switch mounted in the control cabinet.
- 14.10 All control devices shall be housed in a weatherproof control cabinet(s) equipped with sufficient heaters and breather vents to prevent moisture condensation and ensure satisfactory operation of the apparatus to a minimum of 15°F. Cabinets shall have a NEMA 4X rating.
- 14.11 Heaters shall be equipped with an adjustable thermostat and a manual switch for disconnecting purposes. When heaters are located such that they may be hazardous to operating personnel, they shall be provided with protective screens.
- 14.12 Each cabinet shall be equipped with single-handle, 3-point latched door(s) which shall open to the side. A single or double door is acceptable. The handle shall have a 3/8" minimum diameter hole for locking. Control components shall not be located on any exterior door.
- 14.13 All Owner connections in other cabinets shall be terminated on terminal blocks located in the auxiliary control cabinet.
- 14.14 The exterior doors of the auxiliary control cabinet must be mounted so that the centerline is no higher than 4' above the transformer base line.
- 14.15 The auxiliary control cabinet shall have adequate space for receiving conduits from below (room for a minimum of 1-6" rigid metallic conduit with appropriate nuts and bushings is required).

- 14.16 The minimum clearance from the transformer base line to the bottom of the auxiliary control cabinet shall be 2'.
- 14.17 A lamp operated by a door switch shall be provided and also a GFI protected receptacle.
- 14.18 Storage space shall be provided in the door for instruction books and folded drawings.
- 14.19 All ground pads shall be equipped with parallel groove type tin-plated connectors for 1/0 to 300 MCM copper conductors.
- 14.20 The manufacturer shall furnish the connection from the X0 bushing to the nearest ground pad, minimum conductor size to be ¼ x 1" copper bus bar or 1/0 stranded conductor.

15.0 SURGE ARRESTER

- 15.1 High Voltage arresters shall be station class, MOV, 108 kV rated, 84 kV, Cooper Power Systems VariSTAR Type AZE or approved equal.
- 15.2 Low Voltage arresters shall be 15 kV duty cycle rated, housed in gray porcelain, having at least 16" creep distance. Respondent shall specify the manufacturer of arresters they propose to supply.

16.0 STATION POWER

The owner is to furnish the AC and DC station power supplies. The manufacturer will provide adequate termination points in the control cabinets, clearly labeled for these cables.

17.0 ACCESSORY INTERCHANGEABILITY

All like transformer parts and accessories including bushings, fans, oil pumps, gaskets, control accessories, current transformers, radiators, etc., shall be interchangeable between all transformers supplied under this specification and contract.

18.0 CONTROL WIRING

- 18.1 Each current and potential transformer secondary circuit shall be a completely self-contained metallic circuit insulated from ground except at one point in the circuit.
- 18.2 All control wiring shall be terminated with ring tongue type compression terminals.

- 18.3 All control wiring terminal blocks shall have no more than two wires under each screw.
- 18.4 All control wiring in control cabinet(s) shall be terminated on 30 ampere terminal blocks, GE Type EB-25 or equal, having washer head binding screw-type terminals.
- 18.5 All current transformer leads and wiring shall be #12 AWG. All current transformer leads shall terminate on six point shorting type terminal blocks. The sixth point shall not connect to the current transformer except by a shorting screw and shall be connected to the cabinet ground.
- 18.6 Splices or parallel connectors shall not be made in transformer tank braces or in other non-accessible locations. Such connections shall be made at terminal blocks or readily accessible splice boxes.
- 18.7 All control and alarm fuses shall be of the NEC single element, non-renewable, cartridge type.
- 18.8 Circuit breakers shall have thermal-magnetic trip, ambient compensated elements in all phases.
- 18.9 All current test switches, potential test lines and alarm disabling switches shall be Westinghouse Type FT or equal.
- 18.10 Control wiring shall not be smaller than No. 14 AWG. The control wire shall be stranded copper conductor, Teflon coated type TFE with 600 volt insulation.
- 18.11 All wiring designations shall be plainly and permanently marked at the terminal blocks or studs in the cabinet(s).
- 18.12 All alternating current devices shall be guaranteed to operate satisfactorily under the voltage and ambient conditions previously specified. The manufacturer shall guarantee satisfactory operation when the equipment is continuously energized at any voltage within plus or minus 10% of the nominal specified voltage. The dropout voltage shall be less than 75 volts for relays and 90 volts for contactors and starters, assuming 120V nominal.
- 18.13 Control cabinet shall house an AC voltage-controlled relay. This relay shall provide an alarm contact wired through a test switch to the SEL-2414 transformer monitor indicating the presence or absence of 120V ac power in the control cabinet, per drawing XFRD-2. The presence of AC voltage shall result in a closed alarm contact.
- 18.14 Control cabinet shall house a DC voltage-controlled relay. This relay shall provide an alarm contact wired through a test switch to the SEL-2414

transformer monitor indicating the presence or absence of 125V DC power in the control cabinet, per drawing XFRD-2. The presence of DC voltage shall result in a closed alarm contact.

- 18.15 Nameplates shall be installed on or near each device, in each control cabinet, describing the function of the device and bearing the same device number of the schematic and wiring diagrams. Passive devices such as terminal blocks shall be identified with nameplates. This identification shall be the same as that used on the schematic and wiring diagrams. Nameplates shall be made of laminated black and white phenolic plastic with the black on the outside. The lettering shall be engraved through the black outside layer so the letters appear white.
- 18.16 An SEL-2414 Transformer Monitor (PN: 2414A1A1A9X3A3A1130) shall be included. An SEL-2812 Transmitter (2812MRX1, KEY: 2394) and Receiver (2812MTX0, KEY 2398) shall be included.
- 18.17 All wiring shall be installed in rigid metallic conduit except for up to five feet of flexible conduit or cable needed to connect to individual fans or gages.

19.0 SHORT CIRCUIT REQUIREMENTS

- 19.1 Three phase system fault capacity shall be assumed at 160 kA, 38,200 MVA (Table 14, ANSI C57.12.00, 145.0 kV Maximum System Voltage). System X0/X1 ratio is assumed to be 0.6 and the system X/R ratio is assumed to be at least 50:1.
- 19.2 The transformer shall meet the Short-Circuit Qualification Requirements given in IEEE Standard 262A, latest revision, entitled Distribution and Power Transformer Short-Circuit Test Code.
- 19.3 The manufacturer shall provide, with their bid, satisfactory evidence that the transformer design will meet all the short circuit requirements of the ANSI / IEEE test code.

20.0 DESIGN REVIEW

- 20.1 Within two weeks after receipt of a purchase order from the owner, the manufacturer shall submit a list of questions to the owner, which shall be answered in a face-to-face meeting between the manufacturer's representative and the owner within the following week. It is the intent of these answers to clear up any confusion which might exist regarding the manufacturer's interpretation of the owner's specifications.
- 20.2 The manufacturer shall furnish approval drawings to BPUB within the time limits contained in the manufacturer's original quotation. Within two weeks of receipt of those drawings, the owner will provide a written response. The owner

reserves the right to review those drawings with the manufacturer and their local representative on the manufacturing premises.

- 20.3 The manufacture is to provide a hard and electronic copy of the Design Failure Mode and Effective Analysis (DFMEA) documentation.

21.0 TESTING

- 21.1 All test results shall be submitted to Brownsville PUB. The transformer shall receive all routine tests identified in Table 19 as specified in the latest revision of ANSI C57.12.00 and they shall be performed in accordance with the latest revision of ANSI C57.12.90. Per ANSI C57.12.00-2000 these tests are:

- 21.1.1 Insulation Resistance Measurements
- 21.1.2 Transformer Turns Ratio
- 21.1.3 Polarity and Phase Relation
- 21.1.4 No-Load Losses and Excitation Current
- 21.1.5 Impedance Voltage and Load Loss
- 21.1.6 Zero sequence impedance voltage
- 21.1.7 Low Frequency
- 21.1.8 Applied voltage
- 21.1.9 Induced voltage
- 21.1.10 Leak

- 21.2 The transformer shall also receive the following dielectric tests, performed in accordance with the latest version of ANSI C57.12.90:

- 21.2.1 Lightning impulse test (Front-of-wave tests are not required)
- 21.2.2 Switching impulse test
- 21.2.3 Radio influence voltage (partial discharge)
- 21.2.4 Insulation power factor (Power factor tests of completely assembled transformer shall not exceed 0.5%)
- 21.2.5 Insulation resistance

- 21.3 The transformer shall also receive a sweep frequency response analyses (SFRA) test. The transformer manufacturer shall provide BPUB with the SFRA test overlay to compare to the on-site field SFRA test.

- 21.4 All test results shall be certified.

- 21.5 Temperature rise tests shall be made on the unit.

- 21.6 The Manufacturer shall arrange for and include in their bid the costs for

- 21.6.1 Two BPUB employees to witness core and coil assembly before tanking the unit and
- 21.6.2 Two BPUB employees to witness impulse and loss testing for the unit.
- 21.6.3 Manufacturer is also responsible for additional trips for re-testing if necessary.
- 21.6.4 These costs shall include all airfare, motel, and rental car expenses. The Manufacturer shall advise the owner 15 working days in advance of all testing so that BPUB employees can be scheduled for this travel.
- 21.7 Owner shall be notified immediately of any test failure.
- 21.8 Following successful testing, the manufacturer shall furnish two sets of five 8"x10" glossy photographs of the assembled transformer. One photograph of each side and each end of the transformer as well as a top view. Manufacturer, at their option, may furnish the photos electronically on a photo-disc format.
- 21.9 The Owner does not require approval of test results prior to shipment of transformers, providing the test results meet all requirements of this specification and/or guarantees. If manufacturer ships without owner's prior approval, they do so at their own risk.

22.0 SHIPPING

- 22.1 The transformer and auxiliary equipment shall be shipped at the same time to specified BPUB electrical substations in Brownsville, FOB destination, freight prepaid and included. The vendor shall include in their cost all rail, truck, trailer, and permitting costs.
- 22.2 Owner shall be advised the dates of shipment two weeks in advance and shall be further advised of the actual shipping date and expected delivery date, the method of shipment, car number, if any, and PRO number, if any.
- 22.3 The transformer shall be shipped filled with oil or dry air. A cylinder of dry air shall also be shipped with the transformer, connected to the inert gas system, but with the flow shut off from the main tank. Prior to shipment, the flow of dry air shall be shut off and the transformer tank pressure and ambient temperature noted on a tag shipped on the cylinder so that any leak in transit may be detected by the loss of pressure.
- 22.4 For rail shipment, the transformer shall be shipped with two 30-day sealed two-axis impact recorders attached. The recorders shall record impacts in both the longitudinal and the transverse directions. Owner's personnel, in the presence of a factory-trained representative of the manufacturer, will remove recorders,

review the recorder charts, and return the recorders to the Manufacturer. The recorders shall be operative for the entire “In-Transit” time.

- 22.5 Just prior to shipment, the manufacturer shall check and record the transformer tank dew point, temperature and pressure. One copy of this data shall be shipped with the transformer, one copy sent to the owner and one copy to the owner’s Engineer.
- 22.6 The manufacturer shall have a factory trained representative available for the “on-car” inspection prior to unloading, at no charge to the owner. This inspection shall include the following as a minimum:
 - 22.6.1 Physical inspection of the exterior of the transformer for signs of shifting on the car and for possible damage to the unit or any component.
 - 22.6.2 Internal visual inspection of the core/coil assembly for indications of shifting or breakage.
 - 22.6.3 Full review of the entire lengths of both the impact recorder tapes (rail shipment only).
 - 22.6.4 Dew point reading.
 - 22.6.5 Megger of the core ground insulation resistance.
 - 22.6.6 Inspection of the dry air system and gauges ensuring that there has been no leaks during transit.
 - 22.6.7 A written report of the findings shall be made by the manufacturer to the owner within two days of the inspection.
- 22.7 If the transformer is required to be shipped without oil, then the transformer oil shall be shipped separately by truck; two weeks minimum notification by the owner is required. Delivery shall be coordinated with owner’s schedule to facilitate vacuum filling process with owner’s contractors. The oil shall be capable of meeting all the requirements specified at Table 2 of IEEE C57.106, following normal field vacuum filling procedure. The vendor shall allow up to eight full hours for unloading oil after oil truck is parked and lines are connected for filling without additional cost to BPUB.
- 22.8 Field Test (Optional): The transformer shall be tested at the project location after installation and full assembly but prior to energization. The following field test shall be performed as an option proposed by the Successful Respondent:
 - 22.8.1 Transformer Turns Ratio

- 22.8.2 Polarity and Phase Relation
- 22.8.3 Insulation power factor (Power factor tests of completely assembled transformer shall not exceed 0.5%)
- 22.8.4 Insulation resistance
- 22.8.5 Sweep frequency response analyses (SFRA) test with overlay of factory SFRA test.

23.0 PROGRESS REPORT

The manufacturer shall advise the owner promptly when any changes in the delivery schedule are anticipated. Notification shall be made in writing and shall include all reasons and other pertinent data to the delay.

24.0 DELIVERY

Shipments will be received only during normal working hours of 9:00 AM through 4:00 PM, Monday through Friday, excluding holidays, unless other specific arrangements are made prior to delivery. Shipments require notification 72 hours before arrival to be assured of the availability of BPUB personnel.

Notification shall be to the following parties:

Cesar A. Cortinas	Brian Garza	Diane Solitaire
Brownsville PUB	Brownsville PUB	Brownsville PUB Warehouse
1425 Robinhood Drive	1425 Robinhood Drive	1495 Robinhood Drive
Brownsville, Texas 78521	Brownsville, Texas 78521	Brownsville, Texas 78521
Office: (956) 983-6216	Office: (956) 983-6203	Office: (956) 983-6366
		Fax: (956) 983-6367

FAILURE TO DELIVER THE TRANSFORMER (WITH ALL OPTIONS AND ACCESSORIES) WITHIN THE DELIVERY SCHEDULE PROPOSED BY THE MANUFACTURER ON THE BID SHEET WILL RESULT IN LIQUIDATED DAMAGES AT A RATE OF \$ 500.00 PER DAY PER TRANSFORMER. THESE DAMAGES, IF ANY, WILL BE DEDUCTED FROM THE MANUFACTURER'S INVOICE

25.0 FIELD SERVICE ENGINEERING SERVICES

Field service engineering services are optional. The manufacturer is to provide a quotation with their bid for the services of a field service engineer to supervise the dress-out of the transformer including installation of the bushings, lightning arresters, cooling equipment, vacuum processing, and oil filling.

26.0 GUARANTEE

The transformer assembly shall be guaranteed against defects in materials and workmanship for a minimum period of 24 months from the date the transformer has been field assembled and energized. A written copy of the manufacturer's warranty shall be included with the bid.

27.0 DRAWINGS & DATA TRANSMITTAL REQUIREMENTS

- 27.1 After the award of the order, three copies of all engineering drawings (plus computer files in AutoCAD 2013 format or earlier format), supporting data, bills of material, etc., shall be submitted direct to the owner for review before the production cycle begins. These items should be sent to:

Cesar A. Cortinas
Brownsville PUB
1425 Robinhood Drive
Brownsville, Texas 78521
Office: (956) 983-6216

Brian Garza
Brownsville PUB
1425 Robinhood Drive
Brownsville, Texas 78521
Office: (956) 983-6203

- 27.2 All Respondents shall furnish the completed proposal data form, detailed plans, typical performance data, typical outline drawings, specifications, and equipment component information for evaluation with their proposals. One multi-page PDF shall be emailed and one (1) hard copy proposal package shall be sent to the Engineer.

Mr. Michael Jaco, P.E.
Ellett & Gaynor, LLC
5706 SW 45TH AVE.
Amarillo, TX 79109-5284
Telephone: (806) 376-9678
FAX: (806) 376-1931
Email: MichaelJ@egpe.biz

- 27.3 The Successful Proposal shall furnish one multi-page PDF package and three (3) hard copy sets of approval drawings for review by the Owner and Engineer. Four (4) complete sets of instruction books, guaranteed performance data, outline, and control drawings marked as FINAL shall be bound in a heavy duty 3-ring binders and sent prior to delivery of the transformer. All FINAL drawings and documents shall be provided on flash drive in AutoCAD 2015 or later format or via electronic submittal to the Engineer:

Mr. Michael Jaco, P.E.
Ellett & Gaynor, LLC

5706 SW 45TH AVE.
Amarillo, TX 79109-5284
Telephone: (806) 376-9678
FAX: (806) 376-1931
Email: MichaelJ@egpe.biz

- 27.4 No design drawings, data, etc., will be considered for review which are not complete in all respects, and which have not been thoroughly checked by the manufacturer. No drawings, data, etc., will be considered for review that are not contingent upon other features which have been submitted for review.
- 27.5 The Engineer will review the drawings, data, etc., for compliance with owner's specifications, will mark them to indicate whether changes or corrections are required and will return one set to Manufacturer. The Manufacturer shall resubmit the corrected or changed drawings, data, etc. Changes, corrections, etc., shall be clearly indicated.
- 27.6 Engineer's approval does not relieve the Manufacturer from any liability or responsibility for proper design, fabrication or compliance with this specification.
- 27.7 Where standard drawings are furnished which cover a number of variations of the general class of equipment, each such drawing shall be individually endorsed to describe exactly which parts of the drawing apply to the equipment being furnished. Such endorsement shall also include the job name, contract number and serial number of the particular item covered.
- 27.8 Two complete sets of all drawing, certified test sheets, instruction books, current transformer excitation and ratio correction factor curves and all other information relative to the installation, adjustment, inspections and maintenance (weekly, monthly, annually) of these transformers shall be furnished. In addition, one instruction book with drawings shall accompany each transformer.
 - 27.8.1 All final drawings and documents shall be bound in the instruction books.
 - 27.8.2 Final books shall be submitted to the engineer at the earliest possible date.
 - 27.8.3 One set of final drawings must be submitted in AutoCAD version 2013 or earlier format.
- 27.9 Quality
 - 27.9.1 Legibility of drawings and data submitted to the engineer shall be of such quality that said drawings and data shall be capable of yielding hard copy reproductions with every line, character and letter clearly legible.

- 27.9.2 Documents submitted to the Engineer that do not conform to the requirements of this specification shall be subject to rejection by the Engineer.

27.10 Mailing of Drawings

- 27.10.1 All documents shall be mailed flat (folded) with chip board protectors on top and bottom of the transmittal.

- 27.10.2 A letter of transmittal must accompany drawings, data, etc. All transmittals received without a letter of transmittal containing such information will be returned to sender. In this letter, manufacturer may include other pertinent data or information.

- 27.11 Connection or wiring diagrams shall be the line-less type. All points such as coil terminals, capacitor terminals, etc., shall be identified on the connection diagrams. Tabular wiring diagrams are not acceptable.

- 27.12 All drawings shall comply with ANSI Y14, latest published revision.

- 27.13 Each drawing and certified document shall have the following as a minimum:

- 27.13.1 Contract Number
- 27.13.2 Manufacturer's Name
- 27.13.3 Manufacturer's Shop Order Number
- 27.13.4 Manufacturer's Drawing Number
- 27.13.5 Manufacturer's Serial Number, when applicable
- 27.13.6 Owner's Order Number

- 27.14 The following information for each motor shall be shown on the electrical schematic drawing(s):

- 27.14.1 Voltage and Phase Rating
- 27.14.2 Horsepower Rating
- 27.14.3 Starting Current
- 27.14.4 Full Load Current
- 27.14.5 Power Factor
- 27.14.6 Quantity and Use (Function)

- 27.15 Transformer dimension outline drawing(s) shall include the following:

- 27.15.1 Weight of Transformer Tank
- 27.15.2 Weight of Core and Coils
- 27.15.3 Weight of Heaviest Part to be handled at On-Site Erection
- 27.15.4 Total Gallons of Oil

- 27.15.5 Total Gallons of Oil Loss Required to Trip Low Oil Alarm (For each compartment with low oil alarm)
- 27.15.6 Gallons of Oil Required to Cover Core and Coils
- 27.15.7 Weight of assembled and oil-filled transformer.

27.16 Auxiliary Power Requirements shall include:

- 27.16.1 Total power needed.
- 27.16.2 Power needed for one stage of cooling.
- 27.16.3 Location of all Accessories and Details of Owner's Power
- 27.16.4 Connection and Control Conduit Locations

27.17 Five percent (5%) of the purchase price will be withheld until all drawings and test reports have been received by the Engineer. Owner will not pay interest or if 5% is withheld due to Manufacturer's delay in fulfilling their entire obligation.

28.0 EXCEPTIONS

Any exceptions to this specification shall be clearly set forth in the Manufacturer's initial Proposal and specifically identified as exceptions. Comments must be clearly separated from exceptions. It is the owner's intent to purchase a unit Proposal with no exceptions taken to this specification. All such Proposals shall clearly indicate "No Exceptions Taken."

29.0 DESIGN/MANUFACTURING CHANGES

- 29.1 The Manufacturer shall keep the owner informed when quoting, and before construction, of any major design or manufacturing changes to be made on this transformer which varies from an established design previously furnished.
- 29.2 No changes shall be made which deviate from either these specifications or approved drawings without the express written consent of the owner.

30.0 PROPOSAL DOCUMENTS

- 30.1 The following items must be included with the manufacturer's bid:
 - 30.1.1 Completed BPUB Loss Evaluation Bid Form.
 - 30.1.2 The Manufacturer's warranty indicating compliance with the warranty specified in these specifications.
 - 30.1.3 Short circuit test report demonstrating compliance with the short circuit requirements of this specification and ANSI C57.12.00 and ANSI C57.91

- 30.1.4 Sound level test if manufacturer intends to use results from a previously built essentially duplicate unit.
- 30.1.5 An outline drawing showing approximate dimensions and weights with tolerances no greater than +/- 6 inches on dimensions and +/- 10% on weights.
- 30.1.6 A schedule of charges for field service engineering charges
- 30.1.7 A list, with prices and terms, of recommended spare parts and critical spare parts for all units.
- 30.1.8 Bill of material (BOM)
- 30.2 An industry standard performance data sheet shall be completely filled out listing guaranteed values for the ratings, tap voltages, basic impulse levels, mechanical data, losses, impedance, etc.

REQUIRED FORMS CHECKLIST

The following forms are to be submitted as a part of the Bid/RFP/RFQ document

NAME	FORM DESCRIPTION	SUBMITTED WITH BID	
		YES	NO
Legal Notice	Acknowledgement Form	<input type="checkbox"/>	<input type="checkbox"/>
	Debarment Certification	<input type="checkbox"/>	<input type="checkbox"/>
	Ethics Statement	<input type="checkbox"/>	<input type="checkbox"/>
	Conflict of Interest Questionnaire	<input type="checkbox"/>	<input type="checkbox"/>
	Certification of Interested Party Form 1295	<input type="checkbox"/>	<input type="checkbox"/>
	Residence Certification	<input type="checkbox"/>	<input type="checkbox"/>
	State Law Verification	<input type="checkbox"/>	<input type="checkbox"/>
	House Bill 89 Verification	<input type="checkbox"/>	<input type="checkbox"/>
	W9 or W8 Form	<input type="checkbox"/>	<input type="checkbox"/>
Special Instructions	Bid Schedule/Cost sheet completed and signed	<input type="checkbox"/>	<input type="checkbox"/>
	Cashier Check or Bid Bond of 5% of Total Amount of Bid (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>
	OSHA 300 Log (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>
	Contractor Pre-Bid Disclosure completed, signed and notarized (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>
	Sub-Contractor Pre-Bid Disclosure completed, signed, and notarized (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
References	Complete the Previous Customer Reference Worksheet for each reference provided	<input type="checkbox"/>	<input type="checkbox"/>
Addenda			

ETHICS STATEMENT

(THIS FORM MUST BE COMPLETED IN ITS ENTIRETY AND SUBMITTED WITH BID RESPONSE)

The undersigned bidder, by signing and executing this bid, certifies and represents to the Brownsville Public Utilities Board that bidder has not offered, conferred or agreed to confer any pecuniary benefit, as defined by (1.07 (a) (6) of the Texas Penal Code, or any other thing of value as consideration for the receipt of information or any special treatment of advantage relating to this bid; the bidder also certifies and represents that the bidder has not offered, conferred or agreed to confer any pecuniary benefit or other thing of value as consideration for the recipient's decision, opinion, recommendation, vote or other exercise of discretion concerning this bid, the bidder certifies and represents that bidder has neither coerced nor attempted to influence the exercise of discretion by any officer, trustee, agent or employee of the Brownsville Public Utilities Board concerning this bid on the basis of any consideration not authorized by law; the bidder also certifies and represents that bidder has not received any information not available to other bidders so as to give the undersigned a preferential advantage with respect to this bid; the bidder further certifies and represents that bidder has not violated any state, federal, or local law, regulation or ordinance relating to bribery, improper influence, collusion or the like and that bidder will not in the future offer, confer, or agree to confer any pecuniary benefit or other thing of value of any officer, trustee, agent or employee of the Brownsville Public Utilities Board in return for the person having exercised their person's official discretion, power or duty with respect to this bid; the bidder certifies and represents that it has not now and will not in the future offer, confer, or agree to confer a pecuniary benefit or other thing of value to any officer, trustee, agent, or employee of the Brownsville Public Utilities Board in connection with information regarding this bid, the submission of this bid, the award of this bid or the performance, delivery or sale pursuant to this bid.

THE BIDDER SHALL DEFEND, INDEMNIFY, AND HOLD HARMLESS THE BROWNSVILLE PUBLIC UTILITIES BOARD, ALL OF ITS OFFICERS, AGENTS AND EMPLOYEES FROM AND AGAINST ALL CLAIMS, ACTIONS, SUITS, DEMANDS, PROCEEDING, COSTS, DAMAGES, AND LIABILITIES, ARISING OUT OF, CONNECTED WITH, OR RESULTING FROM ANY ACTS OR OMISSIONS OF CONTRACTOR OR ANY AGENT, EMPLOYEE, SUBCONTRACTOR, OR SUPPLIER OF CONTRACTOR IN THE EXECUTION OR PERFORMANCE OF THIS BID.

I have read all of the specifications and general bid requirements and do hereby certify that all items submitted meet specifications.

COMPANY: _____
AGENT NAME: _____
AGENT SIGNATURE: _____
ADDRESS: _____
CITY: _____
STATE: _____ ZIP CODE: _____
TELEPHONE: _____ TELEFAX: _____
FEDERAL ID#: _____ AND/OR SOCIAL SECURITY #: _____

DEVIATIONS FROM SPECIFICATIONS IF ANY:

NOTE: QUESTIONS AND CONCERNS FROM PROSPECTIVE CONTRACTORS SHOULD BE RAISED WITH OWNER AND ITS CONSULTANT (IF APPLICABLE) AND RESOLVED IF POSSIBLE, PRIOR TO THE PROPOSAL SUBMITTAL DATE. ANY LISTED DEVIATIONS IN A FINALLY SUBMITTED PROPOSAL MAY ALLOW THE OWNER TO REJECT A PROPOSAL AS NON-RESPONSIVE.

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS (THIS FORM MUST BE COMPLETED IN ITS ENTIRETY AND SUBMITTED WITH BID RESPONSE)

Name of Entity: _____

The prospective participant certifies to the best of their knowledge and belief that they and their principals:

- a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b) Have not within a three year period preceding this bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, Local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and
- d) Have not within a three year period preceding this application/bid had one or more public transactions (Federal, State, or Local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this bid or termination of the award. In addition, under 18 USC Section 1001, a false statement may result in a fine up to a \$10,000.00 or imprisonment for up to five (5) years, or both.

Name and Title of Authorized Representative (Typed)

Signature of Authorized Representative

Date

☐ **I am unable to certify to the above statements. My explanation is attached**

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY & SUBMITTED WITH BID RESPONSE

CONFLICT OF INTEREST QUESTIONNAIRE For vendor doing business with local governmental entity		FORM CIQ
<p>This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.</p> <p>This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).</p> <p>By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.</p> <p>A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.</p>	OFFICE USE ONLY <div style="border: 1px solid black; height: 100px; margin-top: 5px;"></div>	
1 Name of vendor who has a business relationship with local governmental entity.		
2 <input type="checkbox"/> Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)		
3 Name of local government officer about whom the information is being disclosed.		
_____ Name of Officer		
4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.		
<div style="margin-bottom: 20px;"> <p>A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?</p> <div style="display: flex; justify-content: center; gap: 50px;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </div> </div> <p>B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?</p> <div style="display: flex; justify-content: center; gap: 50px;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </div>		
5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.		
6 <input type="checkbox"/> Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).		
7		
_____ Signature of vendor doing business with the governmental entity		_____ Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

- (a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

- (2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

- (i) a contract between the local governmental entity and vendor has been executed; or
- or
- (ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

- (a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

- (1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
- (2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or
- (3) has a family relationship with a local government officer of that local governmental entity.

- (a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

- (1) the date that the vendor:
 - (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
 - (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or
- (2) the date the vendor becomes aware:
 - (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
 - (B) that the vendor has given one or more gifts described by Subsection (a); or
 - (C) of a family relationship with a local government officer.

CERTIFICATE OF INTERESTED PARTIES-FORM 1295

Special message: Please read the Special Notification regarding HB 1295 effective January 1, 2016, implemented by the Texas Ethics Commission, which requires business entities to provide a completed Form 1295 to Brownsville PUB with signed contracts in order to execute them.

In 2015, the Texas Legislature adopted House Bill 1295. The law states that a governmental entity or state agency may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the governmental entity or state agency at the time the business entity submits the signed contract to the governmental entity or state agency. The law applies to a contract of a governmental entity or state agency that either (1) requires an action or vote by the governing body of the entity or agency before the contract may be signed or (2) has a value of at least \$1 million. The disclosure requirement applies to a contract entered into on or after January 1, 2016.

To implement the law, the Texas Ethics Commission (TEC) adopted new rules necessary to prescribe the disclosure of interested parties form, and post a copy of the form on the commission's website. The commission adopted the Certificate of Interested Parties form, Form 1295, on October 5, 2015. The commission also adopted new rules as part of Chapter 46 of the Texas Administrative Code on November 30, 2015.

On January 1, 2016, TEC made a new filing application available on their website for business entities to use to both create and file Form 1295. Business entities will enter the required information on Form 1295 within the application and print a copy of the completed form, which will include a certification of filing with a unique certification number. An authorized agent of the business entity will need to sign the printed copy of the form and have the form notarized. The completed Form 1295 with the certification of filing must be included with the signed contract to the governmental body or state agency in order for the governmental body to execute the contract.

Brownsville PUB will then notify the commission, using TEC's filing application, of the receipt of the filed Form 1295 with the certification of filing not later than the 30th day after the date the contract binds all parties to the contract.

TEC will then post the business entity's completed Form 1295 to its website within seven (7) business days after receiving notice from Brownsville PUB acknowledging that it was received.

To obtain additional information on HB 1295, to learn more about TEC's process to create a new account or to complete an electronic version of Form 1295 for submission with a signed contract, please go to the following link: https://ethics.state.tx.us/whatsnew/elf_info_form1295.htm

NOTE: IF AWARDED THIS CONTRACT, FORM 1295 WILL BE SUBMITTED AT THE TIME THE SIGNED CONTRACT IS SUBMITTED TO BPUB. YES NO

CERTIFICATE OF INTERESTED PARTIES**FORM 1295**

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the goods or services to be provided under the contract.

4 Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)	
		Controlling	Intermediary

5 Check only if there is NO Interested Party. ☐

6 UNSWORN DECLARATION

My name is _____, and my date of birth is _____.

My address is _____, _____, _____, _____, _____.
(street) (city) (state) (zip code) (country)

I declare under penalty of perjury that the foregoing is true and correct.

Executed in _____ County, State of _____, on the _____ day of _____, 20____.
(month) (year)

Signature of authorized agent of contracting business entity
(Declarant)

ADD ADDITIONAL PAGES AS NECESSARY

BROWNSVILLE PUBLIC UTILITIES BOARD
RESIDENCE CERTIFICATION

In accordance with Art. 601g, as passed by the 1985 Texas Legislature, the following will apply. The pertinent portion of the Act has been extracted and is as follows:

Section 1. (a)

(1) "Nonresident bidder" means a bidder whose principal place of business is not in this state, but excludes a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

(2) "Texas resident bidder " means a bidder whose principal place of business is in this state, and includes a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

Section 1. (b)

The state or governmental agency of the state may not award a contract for general construction, improvements, services, or public works projects or purchases of supplies, materials or equipment to a nonresident bidder unless the nonresident's bid is lower than the lowest bid submitted by a responsible Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid a nonresident bidder to obtain a comparable contract in the state in which the nonresident's principal place of business is located.

I certify that _____
(Company Name) is **a resident Texas bidder** as defined in Art. 601g.

Signature: _____

Print Name: _____

I certify that _____
(Company Name) is a **nonresident bidder** as defined in Art. 601g. and our principal place of business is: _____
(City and State)

Signature: _____

Print Name: _____

Organization Name
State Law Verifications

I, _____ (Person's name), the undersigned
representative of (Company or Business name) _____
_____ (hereafter referred to as the
"Company") being an adult over the age of eighteen (18) years of age, after being duly sworn by
the undersigned notary, do hereby depose and verify under oath as follows:

- **IRAN, SUDAN AND FOREIGN TERRORIST ORGANIZATIONS:** By submission of a response to City of Brownsville Public Utilities Board ("BPUB") Request for Qualifications Q018-23 (the "RFQ"), the responding Company represents that, to the extent this proposal submission or any contracts executed in response to this proposal constitutes a governmental contract within the meaning of Section 2252.151 of the Texas Government Code, as amended, solely for purposes of compliance with Section 2252.152 of the Texas Government Code, and except to the extent otherwise required by applicable federal law, neither the responding Company, nor any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the Company is a company listed by the Texas Comptroller of Public Accounts under Sections 806.051, 807.051, or 2252.153 of the Texas Government Code.
- **ANTI-BOYCOTT ISRAEL VERIFICATION:** By submission of a response to the BPUB RFQ, the responding Company represents that, to the extent this proposal submission, or any contracts executed in response to this proposal, constitutes a contract for goods or services within the meaning of Section 2271.002 of the Texas Government Code, as amended, solely for purposes of compliance with Chapter 2271 of the Texas Government Code, and subject to applicable federal law, including without limitation, 50 U.S.C. Section 4607, the responding Company, as well as any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the Company, (1) does not boycott Israel and (2) will not boycott Israel through the term of any such contract. The term "boycott Israel" as used in this paragraph has the meaning assigned to such term in Section 808.001 of the Texas Government Code, as amended.
- **VERIFICATION REGARDING NO DISCRIMINATION AGAINST FIREARMS:** By submission of a response to the BPUB RFQ, the responding Company represents that, to the extent this proposal submission, or any contracts executed in response to this proposal, constitutes a contract for goods or services for which a written verification is required under Section 2274.002, Texas Government Code (as added by Senate Bill 19, 87th Texas Legislature, Regular Session), as amended, the responding Company hereby verifies that it, as well as any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the Firm, (1) does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (2) will not discriminate during the term of any such contract against a firearm entity or firearm trade association. The foregoing verification is made solely to comply with Section 2274.002, Texas Government Code (as added by Senate Bill 19, 87th Texas Legislature, Regular Session), as amended, to the extent such section does not contravene applicable Texas or

federal law. As used in the foregoing verification, “discriminate against a firearm entity or firearm trade association” shall have the meaning assigned to such term in Section 2274.001, Texas Government Code (as added by Senate Bill 19, 87th Texas Legislature, Regular Session).

- **VERIFICATION REGARDING NO ENERGY COMPANY BOYCOTTS:** By submission of a response to the BPUB RFQ, the responding Company represents that, to the extent this proposal submission, or any contracts executed in response to this proposal, constitutes a contract for goods or services for which a written verification is required under Section 2274.002, Texas Government Code (as added by Senate Bill 13, 87th Texas Legislature, Regular Session), as amended, the responding Company hereby verifies that the responding Company, as well as any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the Firm, (1) does not boycott energy companies and (2) will not boycott energy companies during the term of any such contract. The foregoing verification is made solely to comply with Section 2274.002, Texas Government Code (as added by Senate Bill 13, 87th Texas Legislature, Regular Session), as amended, to the extent such section does not contravene applicable Texas or federal law. As used in the foregoing verification, “boycott energy companies” shall have the meaning assigned to such term in Section 809.001(1), Texas Government Code.

DATE

SIGNATURE OF COMPANY REPRESENTATIVE

On this the ____ day of _____, 20____, personally appeared

_____, the above-named person, who after by me being duly sworn, did swear and confirm that the above is true and correct.

NOTARY SEAL _____

NOTARY SIGNATURE _____

Date

Organization Name
House Bill 89 Verification

I, _____ (Person name), the undersigned representative
of (Company or Business name) _____
_____ (hereafter referred to as
company) being an adult over the age of eighteen (18) years of age, after being duly sworn by the
undersigned notary, do hereby depose and verify under oath that the company named- above, under
the provisions of Subtitle F, Title 10, Government Code Chapter 2270:

1. Does not boycott Israel currently; and
2. Will not boycott Israel during the term of the contract providing that:
 - (1) "company" does not include a sole proprietorship; and
 - (2) the law applies only to a contract that:
 - (a) is between a governmental entity and a company with 10 or more full-time employees; and
 - (b) has a value of \$100,000 or more that is to be paid wholly or partly from public funds or the governmental entity

Pursuant to Section 2270.001, Texas Government Code:

1. "Boycott Israel" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes; and
2. "Company" means a for-profit sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or any limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of those entities or business associations that exist to make a profit.

DATE

SIGNATURE OF COMPANY REPRESENTATIVE

On this the ____ day of _____, 20____, personally appeared

_____, the above-named person, who after by me
being duly sworn, did swear and confirm that the above is true and correct.

NOTARY SEAL _____

NOTARY SIGNATURE _____

Date

Previous Customer Reference Worksheet

Name of Customer:		Customer Contact:
Customer Address:		Customer Phone Number:
		Customer Email:
Name of Company Performing Referenced Work:		

What was the Period of Performance?		What was the Final Acceptance Date?
From:		
To:		
Dollar Value of Contract? \$_____		What Type of Contract? Firm Fixed Price Time and Material Not to Exceed Cost Plus Fixed

[illegible]

**Request for Taxpayer
Identification Number and Certification**

Go to www.irs.gov/FormW9 for instructions and the latest information.

**Give form to the
requester. Do not
send to the IRS.**

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See Specific Instructions on page 3.	1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)	
	2 Business name/disregarded entity name, if different from above.	
	3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only one of the following seven boxes. <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C corporation <input type="checkbox"/> S corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) _____ Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner. <input type="checkbox"/> Other (see instructions)	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any) _____ (Applies to accounts maintained outside the United States.)
	3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions. _____ <input type="checkbox"/>	
	5 Address (number, street, and apt. or suite no.). See instructions.	Requester's name and address (optional)
6 City, state, and ZIP code		
7 List account number(s) here (optional)		

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number
- -
or
Employer identification number
- -

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	Signature of U.S. person	Date
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

CONFIDENTIAL

Form W-8BEN-E

(Rev. October 2021)
Department of the Treasury
Internal Revenue Service

Certificate of Status of Beneficial Owner for United States Tax Withholding and Reporting (Entities)

► For use by entities. Individuals must use Form W-8BEN. ► Section references are to the Internal Revenue Code.
► Go to www.irs.gov/FormW8BEN-E for instructions and the latest information.
► Give this form to the withholding agent or payer. Do not send to the IRS.

OMB No. 1545-1621

Do NOT use this form for:

- U.S. entity or U.S. citizen or resident W-9
- A foreign individual W-8BEN (Individual) or Form 8233
- A foreign individual or entity claiming that income is effectively connected with the conduct of trade or business within the United States (unless claiming treaty benefits) W-8ECI
- A foreign partnership, a foreign simple trust, or a foreign grantor trust (unless claiming treaty benefits) (see instructions for exceptions) W-8IMY
- A foreign government, international organization, foreign central bank of issue, foreign tax-exempt organization, foreign private foundation, or government of a U.S. possession claiming that income is effectively connected U.S. income or that is claiming the applicability of section(s) 115(2), 501(c), 892, 895, or 1443(b) (unless claiming treaty benefits) (see instructions for other exceptions) W-8ECI or W-8EXP
- Any person acting as an intermediary (including a qualified intermediary acting as a qualified derivatives dealer) W-8IMY

Instead use Form:

Part I Identification of Beneficial Owner

1 Name of organization that is the beneficial owner	2 Country of incorporation or organization
3 Name of disregarded entity receiving the payment (if applicable, see instructions)	

4 Chapter 3 Status (entity type) (Must check one box only):	
<input type="checkbox"/> Simple trust	<input type="checkbox"/> Corporation
<input type="checkbox"/> Central Bank of Issue	<input type="checkbox"/> Tax-exempt organization
<input type="checkbox"/> Grantor trust	<input type="checkbox"/> Complex trust
<input type="checkbox"/> Disregarded entity	<input type="checkbox"/> Estate
<input type="checkbox"/> Partnership	<input type="checkbox"/> International organization
<input type="checkbox"/> Foreign Government - Controlled Entity	<input type="checkbox"/> Foreign Government - Integral Part

If you entered disregarded entity, partnership, simple trust, or grantor trust above, is the entity a hybrid making a treaty claim? If "Yes," complete Part III. ☐ Yes ☐ No

5 Chapter 4 Status (FATCA status) (See instructions for details and complete the certification below for the entity's applicable status.)	
<input type="checkbox"/> Nonparticipating FFI (including an FFI related to a Reporting IGA FFI other than a deemed-compliant FFI, participating FFI, or exempt beneficial owner).	<input type="checkbox"/> Nonreporting IGA FFI. Complete Part XII.
<input type="checkbox"/> Participating FFI.	<input type="checkbox"/> Foreign government, government of a U.S. possession, or foreign central bank of issue. Complete Part XIII.
<input type="checkbox"/> Reporting Model 1 FFI.	<input type="checkbox"/> International organization. Complete Part XIV.
<input type="checkbox"/> Reporting Model 2 FFI.	<input type="checkbox"/> Exempt retirement plans. Complete Part XV.
<input type="checkbox"/> Registered deemed-compliant FFI (other than a reporting Model 1 FFI, sponsored FFI, or nonreporting IGA FFI covered in Part XII). See instructions.	<input type="checkbox"/> Entity wholly owned by exempt beneficial owners. Complete Part XVI.
<input type="checkbox"/> Sponsored FFI. Complete Part IV.	<input type="checkbox"/> Territory financial institution. Complete Part XVII.
<input type="checkbox"/> Certified deemed-compliant nonregistering local bank. Complete Part V.	<input type="checkbox"/> Excepted nonfinancial group entity. Complete Part XVIII.
<input type="checkbox"/> Certified deemed-compliant FFI with only low-value accounts. Complete Part VI.	<input type="checkbox"/> Excepted nonfinancial start-up company. Complete Part XIX.
<input type="checkbox"/> Certified deemed-compliant sponsored, closely held investment vehicle. Complete Part VII.	<input type="checkbox"/> Excepted nonfinancial entity in liquidation or bankruptcy. Complete Part XX.
<input type="checkbox"/> Certified deemed-compliant limited life debt investment entity. Complete Part VIII.	<input type="checkbox"/> 501(c) organization. Complete Part XXI.
<input type="checkbox"/> Certain investment entities that do not maintain financial accounts. Complete Part IX.	<input type="checkbox"/> Nonprofit organization. Complete Part XXII.
<input type="checkbox"/> Owner-documented FFI. Complete Part X.	<input type="checkbox"/> Publicly traded NFFE or NFFE affiliate of a publicly traded corporation. Complete Part XXIII.
<input type="checkbox"/> Restricted distributor. Complete Part XI.	<input type="checkbox"/> Excepted territory NFFE. Complete Part XXIV.
	<input type="checkbox"/> Active NFFE. Complete Part XXV.
	<input type="checkbox"/> Passive NFFE. Complete Part XXVI.
	<input type="checkbox"/> Excepted inter-affiliate FFI. Complete Part XXVII.
	<input type="checkbox"/> Direct reporting NFFE.
	<input type="checkbox"/> Sponsored direct reporting NFFE. Complete Part XXVIII.
	<input type="checkbox"/> Account that is not a financial account.

6 Permanent residence address (street, apt. or suite no., or rural route). Do not use a P.O. box or in-care-of address (other than a registered address).
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City or town, state or province. Include postal code where appropriate.

Country

7 Mailing address (if different from above)
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City or town, state or province. Include postal code where appropriate.

Country

For Paperwork Reduction Act Notice, see separate instructions.

Cat. No. 59689N

Form W-8BEN-E (Rev. 10-2021)