

KEYS BID 33-21 SPECIFICATIONS FOR PURCHASE OF TRANSFORMERS

CALL FOR BIDS

THE UTILITY BOARD OF THE CITY OF KEY WEST, FLORIDA, operator of Keys Energy Services (KEYS), hereby gives notice to prospective bidders that sealed proposals will be received by **KEYS** electronically until 1:30 p.m. on **Friday, November 19, 2021** for:

KEYS BID 33-21 SPECIFICATIONS FOR PURCHASE OF TRANSFORMERS

KEYS has instituted VendorLink and DemandStar systems to provide current information to potential bidders. These systems will allow you to receive bid information quickly and at your convenience 24 hours a day, 7 days a week. Specifications may be obtained from their websites at www.myvendorlink.com or www.DemandStar.com. Registered vendors will be notified automatically of all Requests for Proposals. You may also visit www.KeysEnergy.com for links and download information for all KEYS bid specifications.

It shall be the sole responsibility of each bidder to have their bid electronically delivered on or before the time for opening proposals last announced to bidders. Bid bonds and/or cashier's checks are to be delivered via FedEx or UPS to:

Keys Energy Services
Bid Opening Committee – KEYS Bid 33-21
6900 Front Street Extended
Key West, FL 33040
Note: This address does not receive US Postal Service.

Any proposal received after the time last announced for opening proposals may be retained by KEYS or returned to the bidder, but such proposal may be rejected as not responsive.

Vendors with questions pertaining to this bid specification must submit them in writing via email to purchasing@keysenergy.com no later than **November 5, 2021 at noon**. Any questions received after noon on November 5, 2021 will not be addressed.

Each proposal should be accompanied by a Certified Check or Bid Bond payable to the **UTILITY BOARD OF THE CITY OF KEY WEST** in an amount not less than five (5%) percent of the amount of the proposal as security.

Each proposal should constitute an offer to **KEYS**, as outlined therein, and should be irrevocable after the time announced for the opening thereof.

At a meeting of the **BID OPENING COMMITTEE** to be held virtually on **Friday, November 19, 2021 at 1:30 p.m.** Proposals will be opened and vendor names will be publicly read aloud.

KEYS reserves the right to reject any or all proposals, to waive irregularities and informalities in any or all proposals, and to separately accept or reject any item, items, bid schedule or bid schedules of the proposal which KEYS deems to be in the best interest of the Utility Board.


Tyler Randolph, Purchasing Supervisor

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GENERAL

The Utility Board of the City of Key West "Keys Energy Services" herein after called KEYS is a municipally owned electric utility serving approximately 31,000 customers in Key West and the Lower Florida Keys.

KEYS and its representatives have exercised due care in preparing this Request for Proposals (RFP). All information contained herein is believed to be substantially correct. However, Proposers should verify information independently if desired. KEYS and its representatives do not warrant the accuracy of information contained herein.

BID SPECIFICATIONS

Specify and include manufacturer of distribution transformer and all technical data on transformers provided.

Vendors may submit alternate bids only if the alternate bid is from a different manufacturer than the base bid. No more than one alternate bid will be accepted.

After bids are received KEYS reserves the right to adjust the quantities to meet KEYS budget constraints.

Transformer losses will be utilized as one of the evaluation criteria. The evaluation process is outlined below.

$$\text{T.O.C.} = \text{Price} + (\text{NL Watts} \times 8.380) + (\text{LL Watts} \times 2.258)$$

Where:

T.O.C. = Total Owning Cost

Price = Total Unit Price

NL Watts = Quoted No-Load Losses in Watts

LL Watts = Quoted Load Loss Watts

Failure to submit transformer losses along with bid will result in non-compliance and the bid will be rejected.

All test data will be supplied as specified in bid package.

An "equivalent" group of bidders is created by determining all Total Owning Cost amounts that are within 2.5% of the lowest Total Owning Cost.

All "equivalent" bidders are compared on the basis of Total Selling Price. The "equivalent bidder" with the lowest Total Selling Price is determined to be the best bidder and is awarded the contract for that particular transformer group.

DRAWINGS AND APPROVAL

APPROVAL DRAWINGS

The vendor shall submit electronically the transformer outline drawing, nameplate, and bill of materials for approval within two (2) weeks of award. KEYS must approve drawings prior to manufacturing the equipment. The drawing shall be in PDF or AutoCAD format and may be submitted via email to purchasing@keysenergy.com. KEYS shall review the drawings and return

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them with any comments within two (2) weeks. Any drawings returned to vendor marked "Not Approved" must be resubmitted for approval after making corrections. Drawings returned to vendor marked "Approved" or "Approved with exceptions as noted" need not be resubmitted for approval but must be corrected and returned as final drawings. All transformers shipped must be in accordance with the approved drawings.

INDIVIDUAL ORDERS

The manufacturer shall provide KEYS with one (1) sets of final drawings before any transformers are shipped.

TEST RESULTS

The actual certified test report values showing the values for No Load Loss (at 20° C) and Load Loss (at 85° C) and Total Loss (No-Load Loss plus Load Loss) for each unit supplied under this Bid Specification shall be sent to KEYS **PRIOR** to unit delivery. Invoices will not be paid until this report has been received. The file format shall be Microsoft Excel. Files may be provided via email (preferred) or a CD.

The report shall contain:

- a. the date of manufacture
- b. manufacturer
- c. serial number
- d. size i.e., high and low voltage ratings
- e. the purchase order number
- f. stock number
- g. unit cost
- h. the specified test values
- i. any other information specified on the Purchase Order or deemed desirable by the manufacturer

MANUFACTURER'S PROPOSAL

TRANSFORMER PARAMETERS

- a. Two of the considerations for purchase of distribution transformers will be total owning cost and estimated delivery dates. To be considered, bidders must supply the following transformer parameters for evaluation:
- b. The guaranteed (core) no load losses in watts, at 20°C.
- c. The guaranteed average (copper) full load losses in watts, at 85°C.
- d. Impedance in percent at 85° to three significant figures.
- e. Exciting current in percent to three significant figures.
- f. Estimated delivery dates will be considered in the event lead times do not support KEYS anticipated project timeline.

The guaranteed average values of no load loss, full load loss and total losses shall not exceed the bid losses by the following tolerance percentages per IEEE C57.12.00, latest revision, where guaranteed average losses is defined as: "the average of the losses of several transformers in a shipment." The (core) no load losses of a transformer shall not exceed the specified no load losses by more than 10%, and the (copper) full load losses of a transformer shall not exceed the specified total losses by more than 6%. The actual impedance received shall not exceed quoted

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values by more than $\pm 7.5\%$ and exciting current of transformers received shall not exceed quoted values by more than $\pm 25\%$.

Units exceeding these limits shall not be shipped to KEYS. At KEYS discretion, if any such unit is found to have been shipped, KEYS will have the option of returning the units at the vendor's expense or shall be compensated based upon the compensation penalty below.

- a. Quoted $(NL \times 8.380) + (LL \times 2.258) \times \# \text{ units} = Q$
- b. Test $(NL \times 8.380) + (LL \times 2.258) \times \# \text{ units} = T$
- c. $Q - T = \text{Compensation penalty}$

The loss penalty relative to impedance shall be equal to the excess or non-normal costs incurred by KEYS in utilizing the nonconforming transformer. The penalty charge shall include engineering, transportation, installation, and material costs of any additional equipment needed to utilize the transformer. There will be no loss penalty relative to out of tolerance exciting current. In all cases, the loss penalty shall not exceed the quoted price of the transformer.

TECHNICAL SPECIFICATIONS

Word Usage: When a standard is used on a mandatory basis, the words **shall** and **must** indicate mandatory requirements. The words **should** and **may** refer to matters that are recommended or preferred, but alternatives could be considered by KEYS.

The term stainless steel as used in this specification shall mean 304/304L.

1.0 POLE MOUNT TRANSFORMERS 7970/13800Y

All transformers will be installed on KEYS 13,800 nominal voltage distribution system. KEYS voltage is 13,800 volts phase to phase and 7,970 volts phase to ground. All transformers supplied shall be capable of operating on this voltage system.

Unless otherwise specified herein, all transformers shall be in accordance with the latest revision of the following standards:

- A. IEEE C57.12.00, latest revision, Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers.
- B. ANSI C57.12.20, latest revision, Standard for Overhead Type Distribution Transformers, 500 kVA and smaller: High Voltage 34,500 volts and Below, Low Voltage 7970/13800 and Below.
- C. IEEE C57.12.31, latest revision, IEEE Standard for Pole Mounted Equipment – Enclosure Integrity
- D. IEEE C57.91, latest revision, IEEE Guide for Loading Mineral-Oil-Immersed Transformers
- E. 10 CFR Part 431, Energy Conservation Program for Commercial Equipment: Distribution Transformers Energy Conservation Standards, Final Rule.

1.1 RATINGS

All transformers shall have the capability of meeting or exceeding the recommended load limits as shown in the Guide for Loading Mineral Oil-Immersed Overhead Type Distribution Transformers, C57.91, latest revision, Section 8.3.

- A. Transformers shall be specified as a 2-bushing transformer with fully insulated winding.

1.2 NOISE LEVEL

- A. Noise level shall not exceed ANSI standards for distribution class transformers. (*References NEMA TR-1*).

1.3 THERMOSETTING INSULATION

- A. All transformers shall employ an approved bonded thermosetting insulation system in the construction of the coil assembly.

1.4 TRANSFORMER CORE MATERIAL

- A. All transformers shall employ cores constructed of traditional silicon steel unless otherwise specified on the purchase order.
- B. All coil designs shall meet or exceed the ANSI short circuit requirement.
- C. Only adhesive coated paper shall be used in the coil design.

1.5 DIELECTRIC FLUID

- A. Coolant shall be the following:
 - a. Shall use Mineral Oil (*Standard ASTM D3487*) or biodegradable coolant.
Note: If biodegradable coolant is used, the transformer must be clearly marked as containing biodegradable coolant.
- B. General Requirements
 - a. PCB Content shall be less than 2 ppm on a dry weight basis when tested in accordance with an EPA approved method.
Note: Any transformer which is not in compliance with this requirement will be returned to the manufacturer for replacement.
- C. Label Requirements
 - a. All transformers should have an approved durable label (Uticom U6060 or U6060B or exact equivalent).
Note: Equivalent must be approved by KEYS prior to bid award.
 - b. Background color
 - i. Shall be a medium blue background.
 - c. Lettering size and color
 - i. Shall be a minimum 2" white lettering.
 - d. Contents
 - i. Shall describe the dielectric fluid as non-PCB.
 - ii. Shall state its maximum PCB concentration at the time of manufacture.
 - e. Location on transformer
 - i. Shall be placed on the outside at a location to be easily read from the ground.

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- D. Coolant shall be the following:
 - a. Shall use Mineral Oil (*Standard ASTM D3487*) or biodegradable coolant.
Note: If biodegradable coolant is used, the transformer must be clearly marked as containing biodegradable coolant.
- E. General Requirements
 - a. PCB Content shall be less than 2 ppm on a dry weight basis when tested in accordance with an EPA approved method.
Note: Any transformer which is not in compliance with this requirement will be returned to the manufacturer for replacement.
- F. Label Requirements
 - a. All transformers should have an approved durable label (Uticom U6060 or U6060B or exact equivalent).
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 - d. Contents
 - i. Shall describe the dielectric fluid as non-PCB.
 - ii. Shall state its maximum PCB concentration at the time of manufacture.
 - e. Location on transformer
 - i. Shall be placed on the outside at a location to be easily read from the ground.

1.6 EXTERIOR FINISH

- A. Color Requirements
 - a. Shall be Munsell number 5BG 7.0/0.4 ANSI Gray #70.
- B. Finish Requirements
 - a. Shall meet or exceed requirements in IEEE C57.12.31, latest revision.
 - b. Shall consist of sufficient coat(s) of high grade quality paint which will not fade, blister or chalk and will be scuff resistant. This is to insure long field life (20 years plus) with minimum maintenance under severe environmental conditions such as salt spray, high humidity and high ultraviolet levels.
- C. Coating for 167kVA and below Requirements
 - i. Shall be supplied with an insulated coating.
- D. Markings
 - i. There shall be no additional markings, signs or decals unless specified.

1.7 BASIC LIGHTNING IMPULSE INSULATION LEVELS (BIL)

- A. Per Table 4 ANSI C57.12.00, latest revision:
 - a. High Voltage Insulation Class: 15 kV, 95 kV BIL
25 kV, 125 kV
 - b. Low Voltage Insulation Class: 1.2 kV, 30 kV BIL

1.8 CONSTRUCTION

A. General Requirements

- a. Transformers shall be assembled in the USA and major components made in the USA.
- b. Taps
 - i. All transformers shall have four (4) 2.5% full capacity taps (*3 below and 1 above voltage rating*):

Tap	%	Voltage
1(a)	102.5%	8169V
2(b)	100.0%	7970V
3(c)	97.5%	7771V
4(d)	95.0%	7572V
5(e)	92.5%	7372V

Table 1.1 – Tap Percentages

- c. Markings
 - i. Internal secondary leads shall be identified with appropriate markings permanently embossed in the lead that corresponds with the lead markings on the nameplate.
- d. Mounting
 - i. All transformers shall be arranged and equipped for single position mounting.

B. Material Requirements

- a. Tank, cover, bands and hardware
 - i. Shall be 304/304L stainless steel.
- b. High voltage bushings
 - i. Shall be porcelain and 17" creep.
- c. Low voltage bushings
 - i. Shall be porcelain.
- d. All paints and/or coatings
 - i. Shall be free of lead and chromates
 - ii. The color shall be Munsell # 5BG 7.0/0.4 ANSI Gray #70.

C. Tank Cover Requirements

- a. Shall be removable.
- b. Shall be metallicly bonded to the transformer tank by means of an external strap.
- c. Shall have slope for moisture run-off.
- d. Shall be stainless steel.

D. Grounding Requirements

- a. Transformers shall be equipped with a solder-less tank grounding connector located in the tank ground pad.
- b. Bidder shall provide copper ground straps
 - i. Between secondary and neutral bushing and the tank ground.
 - ii. Between the lightning arrestor and tank ground.

1.9 OIL PRESERVATION

All transformers shall be equipped per ANSI C57.12.20, latest revision, 6.2.5 Relief of Excessive Pressure.

A. Pressure Relief Valve and Transformer Failure Device

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- a. Each transformer shall be equipped with a non-resettable device which detects and provides external indication of internal transformer faults, and also incorporates pressure relief functionality. The approved device is manufactured by IFD Corporation or approved equal.
- b. Device shall provide external indication visible from the ground after an internal fault has occurred.
- c. This device will function as replacement for the conventional PRV.

1.10 PROTECTIVE DEVICES

- A. Lightning Arrestor
 - a. Rating
 - i. Shall be 12kV.
 - b. Type
 - i. Shall be **Heavy Duty Class**, direct disconnect polymer housed.
 - c. Shall also be furnished/installed with an adequate size copper strap to tank case.
 - d. Suitable provisions shall be provided for mounting a distribution lightning arrester adjacent to each primary bushing (H1 side).
 - e. Shall be provided or installed with all hardware and brackets for mounted installation.
 - f. Arrestors shall be designed to prevent overheating during normal operation from excessive current leakage.
 - i. *An acceptable example:* A stainless steel collector plate can be placed between the polymer housing and isolator bracket to divert excessive leakage current.

Note: External secondary MOV arrestors are required regardless of the secondary winding. Only approved ANSI heavy duty secondary low voltage arrester will be accepted.

1.11 NAMEPLATE INFORMATION

All transformer nameplates shall be mounted in such a manner that there are no sharp edges exposed, be made of **stainless steel (PREFERRED)** and shall exist for all kVA ratings per IEEE C57.12.00, latest revision.

- A. Nameplate shall have the following informational items:
 - a. Serial number.
 - b. Month/year of manufacture.
 - c. Class (ONAN, ONAF etc.)
 - d. Number of phases.
 - e. Frequency.
 - f. kVA rating
 - g. Voltage rating (High voltage and Low voltage).
 - h. Tap voltages.
 - i. Temperature rise, degree Celsius.
 - j. Polarity (single-phase transformer).
 - k. Phasor diagram (polyphase transformers)
 - l. Percent impedance.
 - m. Approximate total mass in pounds.
 - n. Connection diagram.

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- o. Name of manufacturer.
- p. Installation and operating instructions reference.
- q. The word transformer or autotransformer.
- r. Type of insulating liquid (generic name preferred, PCB Content).
- s. BIL rating of high voltage winding (both high voltage BIL rating on dual voltage transformers).
- t. Bar-code in accordance with IEEE C57.12.35, latest revision.

1.12 MAXIMUM TRANSFORMER DIMENSIONS AND WEIGHT

Transformers supplied under this specification shall conform to the following maximum weights, tank heights, and tank diameters:

Transformer Size (kVA)	Maximum Weight (LBS)	Maximum Tank Height	Maximum Tank Diameter
5, 10, & 15	375	32.0"	16.0"
25	490	32.0"	18.5"
37.5	690	33.5"	22.5"
50	750	34.5"	23.0"
75	1,010	36.5"	25.5"
100	1,050	36.5"	25.5"
167	1,150	39.5"	25.5"
250	1,886	48.5"	38"
333	3,029	51"	42"
500	4,088	67"	48"

Table 1.2 – Pole mount weight and height parameters

1.13 PACKING AND SHIPPING

- A. No manufacturer's installation instructions are to be packaged or shipped with the transformers.
- B. Copies of installation instructions shall be delivered to KEYS.
- C. Each transformer shall be banded to a two-way entry, pallet.
- D. The pallet must be of such dimensions as to provide two inch (2") clearance of the transformer at its widest outside measurements on all four sides.
- E. All transformers shall be positioned on pallets allowing decal to be visible from the front of the pallet.
- F. The pallet must provide a minimum of 2-1/2" of fork under clearance.
- G. The transformer shall be banded to the pallet in such a way as to prevent shifting of the unit on the pallet surface during transit, while allowing the unit to be handled by sling or by fork truck without removing the banding.
- H. Unless otherwise specified at the time of purchase, transformers shall be shipped on open-bed trailers suitable for side unloading with fork truck.

1.14 DELIVERY

- A. All POLE MOUNT transformer deliveries must be F.O.B. Stock Island Warehouse, 6900 Front Street, Extended, Stock Island (Key West) Florida, 33040.
- B. KEYS will not be responsible for off-loading delays when notice of delivery is not given in advance.
- C. Notification on delivery must be made no less than 48 hours prior to delivery by contacting KEYS Warehouse at (305) 295-1192 or (305) 295-1212 or emailing purchasing@keysenergy.com.
- D. Deliveries must be made Monday through Friday between the hours of 7:30am and 3:30pm except for holidays. KEYS does not allow overnight parking of freight trucks on its property.
- E. All deliveries must be made on an open-bed trailer suitable for side unloading using a forklift. Deliveries made by standard semi-trailer, enclosed truck, or sealed container will be refused at the time of arrival.

2.0 SINGLE PHASE, DEAD FRONT PAD MOUNT TRANSFORMERS

All transformers will be installed on KEYS 13,800 nominal voltage distribution system. KEYS voltage is 13,800 volts phase to phase and 7,970 volts phase to ground. All transformers supplied shall be capable of operating on this voltage system. This section covers ANSI, pad mounted, single phase, 60 hertz mineral-oil filled, self-cooled distribution transformers, 167 KVA and smaller.

Unless otherwise specified herein, all transformers shall be in accordance with the latest revision of the following:

- A. IEEE C57.12.00, latest revision, Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers.
- B. ANSI C57.12.25, latest revision, Requirements pad mounted, compartmental-type, self-cooled, single-phase distribution transformers with separable insulated high-voltage connectors: High Voltage 34500 GRDY/19920 volts and below, Low-voltage, 240/120; 167 kVA and smaller.
- C. ANSI C57.12.28, latest revision, Pad-mounted Equipment - Enclosure Integrity
- D. IEEE C57.12.90, latest revision, Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers
- E. 10 CFR Part 431, Energy Conservation Program for Commercial Equipment: Distribution Transformers Energy Conservation Standards, Final Rule
- F. ASTM D3487-09 Standard Specifications for Mineral Insulating Oil Used in Electrical Apparatus.

2.1 RATINGS

- A. Typical KVA ratings are as follows: 25 – 333

2.2 NOISE LEVEL

- A. Noise level shall not exceed ANSI standards for distribution class transformers.

2.3 DIELECTRIC FLUID

- A. Coolant shall be the following:
 - a. Shall use Mineral Oil (*Standard ASTM D3487*) or biodegradable coolant.
Note: If biodegradable coolant is used, the transformer must be clearly marked as containing biodegradable coolant.
- B. General Requirements
 - a. PCB content of less than two (2) ppm on a dry weight basis when tested in accordance with an EPA approved method.
Note: Any transformer which is not in compliance with this requirement will be returned to the manufacturer for replacement.
- C. Label Requirements
 - a. All transformers shall have an approved durable label (Uticom U6060 or U6060B or exact equivalent).
 - b. Background color
 - i. Shall be a medium blue background.
 - c. Lettering size and color
 - i. Shall be a minimum 2" white lettering
 - d. Contents
 - i. Shall describe the dielectric fluid as non-PCB.
 - ii. Shall state its maximum PCB concentration at the time of manufacture.
 - e. Location on transformer
 - i. Shall be placed on the outside at a location to be easily read from the ground.

2.4 EXTERIOR FINISH

- A. Color requirements
 - a. Shall be Munsell number 7GY 3.29/1.5.
- B. Tank and cabinet material requirements
 - a. Shall be made of 304/304L stainless steel.
- C. Coat and finish requirements
 - a. All paint and/or coatings including topcoats, intermediate coats and primers shall be free of lead.
 - b. Shall have a corrosion resistant finish that shall meet or exceed ANSI C57.12.28, latest revision.
 - c. Shall consist of sufficient coat(s) of high grade quality paint which will not fade, blister or chalk and will be scuff resistant.

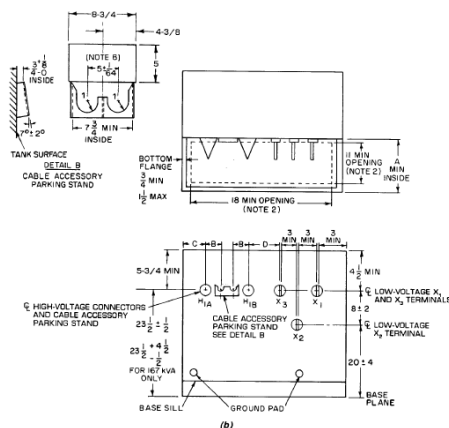
Note: This is to insure long field life (20 years plus) with minimum maintenance under severe environmental conditions such as salt spray, high humidity and high ultraviolet levels.
- D. Markings
 - a. There shall be no additional markings, signs or decals unless specified.

2.5 CONSTRUCTION

A. General requirements

- a. Transformers shall be assembled in the USA and major components made in the USA.
- b. Opening between tank wall and front sill flange shall be a minimum of 15-1/2".
- c. Shall be designed to minimize areas where water and corrosive elements can accumulate.
- d. Shall be designed to be lifted or slid on to a pad without disturbing entrance cables.
- e. Transformer sizing, clearances, and arrangements shall follow figure 1b of ANSI C57.12.25, Latest Rev.

ANSI C57.12.25-1990



- NOTES
- 1 All dimensions are in inches unless otherwise specified.
 - 2 This minimum opening in the bottom of the compartment is provided for cable entrance.
 - 3 When a loop lead is not required, only one high-voltage connector.
 - 4 The low-voltage is shown for additive polarity transformers. The location of X_1 and X_2 is reversed for subtractive polarity.
 - 5 The location of H_{1a} and H_{1b} shall be such that the separable connectors can be operated with the base sill in place.
 - 6 Minimum clear space, excluding area required for H_{1a} and H_{1b} , required for installing accessory devices in parking stand.
 - 7 These dimensions are required for certain separable insulated connectors.

Figure 1—Interchangeability dimensions - Type-1 arrangement (continued)

- f. Enclosure security requirements as stated in ANSI C57.12.28, Latest Rev. (repeated information may be listed in other categories for reiteration)
- g. 2 parking stands to be equipped per the figure above.

B. Material requirements

- a. All metal shall be 304/304L stainless steel where possible unless specified herein.
 - i. Nameplate
 - ii. Exposed hardware (e.g. screws, brackets, etc...)
 - iii. Sill, hood, and operating mechanisms
 - iv. Faceplate hardware (including parking stand)
 - v. Sill hold down cleats
 - vi. Hinges (including pins)
 - vii. Lifting bolts
 - viii. Retainer
- b. Exceptions to stainless
 - i. Ground connector (See grounding in section 2.5 for detail)

C. Welding requirements

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- a. Exterior welds shall be full welds.
- b. Spot, tack, or skip welds are not acceptable for attaching hinges, brackets, grounding bosses, etc.
- c. Hinges shall be continuously welded to the tank and lid.
- D. Tank securement
 - a. Two (2) sill hold down cleats shall be provided and support 1/2" stainless steel mounting bolts with a slotted hole.
 - b. Compartment sill shall be mounted utilizing a minimum of two (2) 3/8" bolts on each side of the compartment.
- E. Door requirements
 - a. Hood type doors are **NOT** acceptable. Side opening hinged doors shall be provided and meet the requirements of ANSI C57.12.25 paragraph 6.1.2.
 - b. Door latch shall operate such that it avoids all primary and secondary connectors and cables.
 - c. All door types shall have provisions for a 1/2" penta head captive bolt with NC Class 2 threading as stated in ANSI C57.12.28, Latest Rev for enclosure security.
 - d. Latch shall support a Best Co. #5B620 padlock or equivalent.
 - e. Penta head bolt shall be unable to be removed prior to padlock removal for security.
 - f. Hinge gauge shall be the same or greater than the gauge of the door.
- F. Lifting provision requirements
 - a. Transformer shall have 5/8" stainless steel threaded inserts.
 - b. Inserts shall be placed as to allow a single lift from two (2) points (*one on each side of the transformer*).
 - c. Lifting bolts shall be provided - 5/8" x 2-1/4" to 3" stainless steel
- G. Pressure requirements
 - a. Minimum sealed tank pressure capability without permanent distortion shall be 7 PSI.
 - b. Minimum sealed tank withstand pressure shall be 15 PSI.
 - i. At the minimum tank withstand pressure, no oil leak shall be initiated and no component or bushing shall be expelled from the unit.
 - c. If there is deformation, the unit shall remain tamper-proof and it shall be possible to open the compartment for access to the cable terminations.
 - d. The product of the minimum tank withstand pressure in PSIG (*without a pressure relief device in place*) and the cubic inches of air space above the transformer 140° C. oil level shall equal or exceed 16,500.
 - e. Reference section 2.10 for pressure relief detailed information.
- H. Cooling requirements
 - a. It is KEYS preference to have tanks without cooling fins.
 - i. If design requires cooling fins, they shall be no point or edge that is sharp including the attachment to the tank.
 - ii. Fins must be designed to minimum possible protrusion from tank.
- I. Protection requirements
 - a. A 1/2" to 1" drain plug shall be provided near the center of the tank.
 - b. Drain plug shall follow all ANSI/IEEE standards for placement to avoid inaccessible locations.
- J. Grounding requirements
 - a. Transformer shall consist of 2 ground pads

- i. 1/2"-13 threaded boss, 7/16" deep
- b. Shall contain a bronze type tank ground connector that supports up to a #6 to 250MCM copper conductor, Penn Union GSE-025 or equivalent. Must be approved by KEYS prior to bid acceptance if choosing an equivalent.

2.6 HIGH VOLTAGE TERMINATIONS

- A. All transformers shall have four 2-1/2% full capacity taps, three below and one above rated voltage as shown below:

Tap	%	Voltage
1(a)	102.5%	8169V
2(b)	100.0%	7970V
3(c)	97.5%	7771V
4(d)	95.0%	7572V
5(e)	92.5%	7372V

Table 2.1 – Tap Percentages

- B. The transformer shall be furnished with the required high-voltage removeable stud bushing wells, Elastimold K1601PC-S2-R or approved equal, for use with replaceable 200-amp, 15 kV load break type-bushing inserts per IEEE 386. Bail tabs or holes are required on the bushing well clamp. Specific written approval is required for use on wells other than the one specified (Bidder shall provide documentation for comparison). Bushing inserts will be furnished and installed by the vendor (Elastimold or Equal).
- C. The bushing wells shall be orientated so that the elbows can be operated with a hot stick.
- D. A bracket for ground or test bushing shall be located between primary bushings.

2.7 HIGH VOLTAGE PROTECTION DEVICES

- A. Fuse requirements
 - a. The primary fuse shall be externally replaceable equivalent to expulsion, bayonet type.
 - b. The fuse links will be load sensing in series with coordinated isolation links.
 - c. The fuse holder shall be located so the eye will not touch the lid in any position.

Note: Stops to prevent rotation of the eye to the twelve o'clock position are not acceptable.

Bayonet type fuses required for pad mount transformers.

Size	Phase	Type
25	1	C04
50	1	C08
75	1	C08
100	1	C10
167	1	C12
250	1	C14
333	1	C14

- B. Isolation link
 - a. If provided, then the link shall be in series with the bayonet oil fuse cutout.

- b. Shall be sized to melt when the cutout rating is exceeded.
 - c. This link will be designed to operate at high fault conditions only.
(*Optional - not required by KEYS unless an IEEE or ANSI requirement*).
- C. Drip shield requirements
- a. Shall be provided under the bayonet fuse.
 - b. Shall not extend more than 5" from the transformer tank.
 - c. The shield shall be designed to prevent accidental dislodgment.

2.8 LOW VOLTAGE TERMINATIONS

- A. The low-voltage line and neutral terminals for **all size** transformers shall be a 1"-14 threaded copper stud. (*Fig. 4c of ANSI C57.12.25, latest revision.*)
- a. Low voltage bushings to be Central Maloney part number 70133452 or approved equal by KEYS
 - b. Low voltage bushings shall have adequate strength to support the cables and prevent oil leaks.
- Note:** No exception will be taken on LV terminal stud sizing. KEYS will be utilizing CMC Lugs' NSM750-8I stud connector for single phase pad mounts.
- B. The neutral stud shall be furnished with one jam nut suitable for retaining the tank ground strap between the nut and a secondary connector.
- C. The neutral bushing shall be insulated from the tank and provided with a detachable ground strap adequate to conduct maximum available fault current.

2.9 BREAK SWITCH

- A. Each transformer shall include a 4-position load break switch.
- a. Shall be a rotary "T-blade" type
 - b. Shall be externally operated for loop feed switching.
 - c. A spring loaded, quick make and break system shall be utilized and be hot stick operable.
 - d. This oil-immersed mechanism will be rated as follows:
 - i. 95 kV BIL
 - ii. Maximum Voltage L-L 25kV, L-Gnd 15kV
 - iii. Continued interrupt current – 300A
 - iv. Momentary and making current – 12kA
 - v. R.M.S. SYM/ASSYM. – 16kA
 - e. The four-position switch will provide for:
 - i. Loop A Feed
 - ii. Loop B Feed
 - iii. Loop A and B Feed and Transformer
 - iv. Transformer off – Loop closed

2.10 OIL PRESERVATION

All transformers shall be equipped per ANSI C57.12.20, latest revision, 6.2.5 Relief of Excessive Pressure.

- A. Pressure Relief Valve and Transformer Failure Device

- a. Each transformer shall be equipped with a non-resettable device which detects and provides external indication of internal transformer faults, and also incorporates pressure relief functionality. The approved device is manufactured by IFD Corporation or approved equal.
- b. Device shall provide external indication visible from the ground after an internal fault has occurred.
- c. This device will function as replacement for the conventional pressure relief device.

2.11 NAMEPLATE INFORMATION

- A. All transformer nameplates shall be mounted in such a manner that there are no sharp edges exposed, made of stainless steel 304/304L (preferred), and indicate the following per IEEE C57.12.00, latest revision:
 - a. The metal (aluminum or copper) used in each winding shall be shown on the nameplate.
 - b. kVA, High voltage, and low voltage.
 - c. BIL rating of high voltage winding (both high voltage BIL rating on dual voltage transformers).
 - d. Transformer weight.
 - e. Month and year of manufacture.
 - f. Serial number.
 - g. Bar-code in accordance with IEEE C57.12.35, latest revision.
 - h. PCB Content.
 - i. % Impedance

2.12 PAD MOUNTY TRANSFORMER SAFETY LABELS

- A. No markings, signs, or safety labels are permitted on the exterior surface of the transformer unless otherwise specified.
- B. A NEMA 260 - "Mr. Ouch" danger label is required on the inside surface of the compartment door and shall be clearly visible and readable when the transformer compartment door is in the open position.

2.13 WARRANTY

Each transformer conforming to this material specification shall be unconditionally guaranteed against failure due to any cause, except misapplication or abuse, for a minimum of one (1) year from the date of installation or 18 months from the date of shipment, whichever occurs first. Any transformer, which does not conform to this warranty, shall, at buyer's option, be repaired or replaced by seller. Seller shall indemnify buyer for all costs incurred as a result of any such nonconformity.

2.14 PACKING AND SHIPPING

- A. No manufacturer's installation instructions are to be packaged or shipped with the transformers.
- B. Copies of installation instructions shall be delivered to KEYS.
- C. Each transformer shall be banded to a two-way entry, pallet.

- D. The pallet must be of such dimensions as to provide two inch (2") clearance of the transformer at its widest outside measurements on all four sides.
- E. All transformers shall be positioned on pallets allowing decal to be visible from the front of the pallet.
- F. The pallet must provide a minimum of 2-1/2" of fork under clearance.
- G. The transformer shall be banded to the pallet in such a way as to prevent shifting of the unit on the pallet surface during transit, while allowing the unit to be handled by sling or by fork truck without removing the banding.
- H. Notification on delivery must be made no less than 48 hours prior to delivery by contacting KEYS Warehouse at (305) 295-1192 or (305) 295-1212 or emailing purchasing@keysenergy.com.
- I. Deliveries must be made Monday through Friday between the hours of 7:30am and 3:30pm except for holidays. KEYS does not allow overnight parking of freight trucks on its property.
- J. Unless otherwise specified at the time of purchase, transformers shall be shipped on open-bed trailers suitable for side unloading with fork truck.

3.0 THREE PHASE, DEAD FRONT PAD MOUNT TRANSFORMERS

All transformers will be installed on KEYS 13,800 nominal voltage distribution system. KEYS voltage is 13,800 volts phase to phase and 7,970 volts phase to ground. All transformers supplied shall be capable of operating on this voltage system. This section covers three-phase pad mounted, 60 Hertz, mineral oil filled, self-cooled transformers.

Unless otherwise specified herein, all transformers shall be in accordance with the latest revision of the following:

- A. IEEE C57.12.00, latest revision, Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers.
- B. IEEE C57.12.26, latest revision, Requirements for pad mounted compartmental-type, self-cooled, three phase distribution transformers for use with separable insulated high voltage connectors; high-voltage, 13,800 volts and below; 2500 KVA and smaller.
- C. IEEE C57.12.90, latest revision, Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers
- D. IEEE C57.91, latest revision Guide for Loading Mineral Oil-Immersed Overhead Type Distribution Transformers, Section 8.3
- E. 10 CFR Part 431, Energy Conservation Program for Commercial Equipment: Distribution Transformers Energy Conservation Standards, Final Rule.

3.1 RATINGS

- A. Typical KVA ratings are as follows: 45, 75, 112.5, 150, 225, 300, 500, and 750, 1000.
- B. Transformers must have a five-legged core and coil.
- C. Case temperature rise over ambient shall not exceed 45 degree C.

3.2 NOISE LEVEL

- A. Noise level shall not exceed ANSI standards for distribution class transformers.

3.3 DIELECTRIC FLUID

KEYS BID 33-21 SPECIFICATIONS FOR THE PURCHASE OF TRANSFORMERS

- A. Coolant shall be the following:
 - a. Shall use Mineral Oil (*Standard ASTM D3487*) or biodegradable coolant.
- B. General requirements
 - a. PCB content of less than two (2) ppm on a dry weight basis when tested in accordance with an EPA approved method.
 - b. An oil sight gauge, Tedco Nol M36E, or approved equivalent, shall be provided in three phase units.
 - i. It shall be located ½" to 1" below the surface of the 25-degree C oil level.

Note: Any transformer which is not in compliance with this requirement will be returned to the manufacturer for replacement.

- C. Label requirements
 - a. All transformers shall have an approved durable label (Uticom U6060 or U6060B or exact equivalent).
 - b. Background color
 - i. Shall be a medium blue background.
 - c. Lettering size and color
 - i. Shall be a minimum 2" white lettering
 - d. Contents
 - i. Shall describe the dielectric fluid as non-PCB.
 - ii. Shall state its maximum PCB concentration at the time of manufacture.
 - e. Location on transformer
 - i. Shall be placed on the outside at a location to be easily read from the ground.

3.4 EXTERIOR FINISH

- A. Color requirements
 - a. Shall be Munsell number 7GY 3.29/1.5.
- B. Tank and cabinet material requirements
 - a. Shall be made of 304/304L stainless steel.
- C. Coat and finish requirements
 - a. All paint and/or coatings including topcoats, intermediate coats and primers shall be free of lead.
 - b. Shall have a corrosion resistant finish that shall meet or exceed ANSI C57.12.28, latest revision.
 - c. Shall consist of sufficient coat(s) of high grade quality paint which will not fade, blister or chalk and will be scuff resistant.

Note: This is to insure long field life (20 years plus) with minimum maintenance under severe environmental conditions such as salt spray, high humidity and high ultraviolet levels.

- D. Markings
 - a. There shall be no additional markings, signs or decals unless specified.

3.5 CONSTRUCTION

- A. General requirements

KEYS BID 33-21 SPECIFICATIONS FOR THE PURCHASE OF TRANSFORMERS

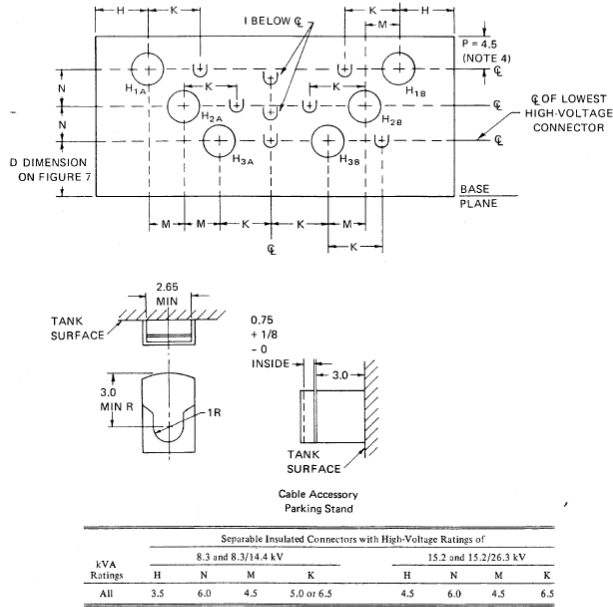
- a. Transformers shall be assembled in the USA and major components made in the USA.
- b. Opening between tank wall and front sill flange shall be a minimum of 15-1/2".
- c. Shall be designed to minimize area where water and corrosive elements can accumulate.
- d. Shall be designed to be lifted or slid on to a pad without disturbing entrance cables.
- e. Enclosure security requirements as stated in ANSI C57.12.28, Latest Rev. (*repeated information may be listed in other categories for reiteration*) A compartment shall be affixed on one side of the transformer:
 - i. Compartment depth shall be 18" deep at a minimum.
 - ii. Primary bushings shall be on the left side.
 - iii. Secondary bushings shall be on the right side.
 - iv. Secondary bushings shall be staggered.
 - v. There shall be a barrier in between the bushing sections such that:
 - 1. Shall be 16" deep at minimum.
 - 2. Shall extend 6" above and below the top most and lowest most secondary bushing from the centerline.
- f. Secondary cabinet shall be 25" in width (*barrier to side wall*) at a minimum.
- g. Transformer sizing, clearances, and arrangements shall follow Figures 6A, 7 & 8 IEEE C57.12.26, latest revision.

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KEYS BID 33-21 SPECIFICATIONS FOR THE PURCHASE OF TRANSFORMERS

THREE-PHASE DISTRIBUTION TRANSFORMERS

IEEE C57.12.20-1992



NOTES: (1) High-voltage connector arrangements and dimensions are for applications requiring certain specific dimensions.
 (2) All dimensions are in inches.
 (3) H and P are minimum dimensions. Dimension K, M, and N have a tolerance of ± 0.25 in.
 (4) For bail clearances, when specified, P = 11.0 in for 8.3/14.4 kV connectors and 14.0 in for 15.2 and 15.2/26.3 kV connectors.

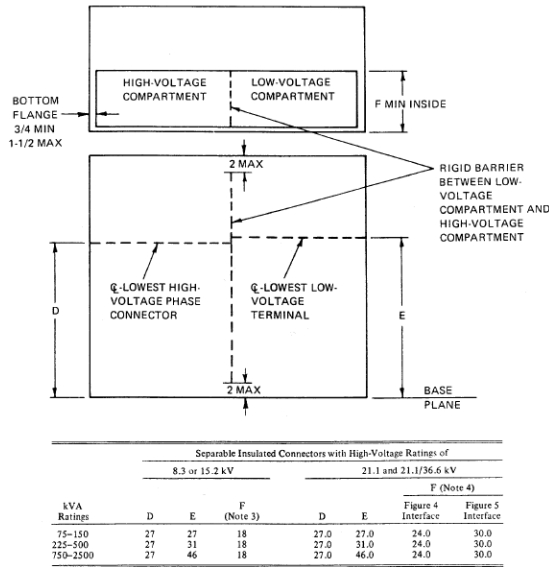
Figure 6.A—Specific Dimensions for Loop-Feed Transformers

IEEE C57.12.20-1992

IEEE STANDARD FOR PAD-MOUNTED, COMPARTMENTAL-TYPE, SELF-COOLED,

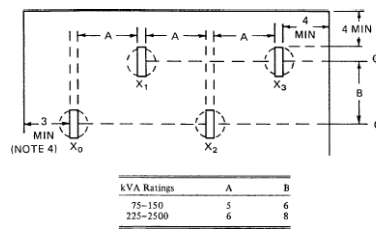
THREE-PHASE DISTRIBUTION TRANSFORMERS

IEEE C57.12.20-1992

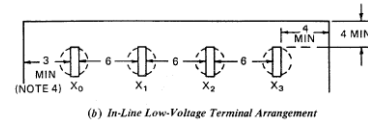


NOTES: (1) High-voltage connector arrangements and dimensions are for applications requiring certain specific dimensions.
 (2) All dimensions are in inches. Tolerance on dimensions D and E is ± 0.5 in.
 (3) Transformers conforming to Fig 6, using 15.2 kV connectors, require a minimum depth of 19.0 in at the elevation at the parking stands.
 (4) Dimensions are based on IEEE Std 386-1985 [8], Figs 7 and 8, interface for separable connectors.

Figure 7—Compartment Designations and Specific Dimensions for Loop-Feed and Radial-Feed Transformers



(a) Staggered Low-Voltage Terminal Arrangement



(b) In-Line Low-Voltage Terminal Arrangement

NOTES: (1) Low-voltage terminal arrangements and dimensions are for applications requiring certain specific dimensions.
 (2) All dimensions are in inches.
 (3) Tolerance on all dimensions is ± 0.25 in, unless otherwise specified.
 (4) Dimensions are to rigid barrier between high-voltage compartment and low-voltage compartment.

Figure 8—Low-Voltage Terminal Arrangements and Specific Dimensions

KEYS BID 33-21 SPECIFICATIONS FOR THE PURCHASE OF TRANSFORMERS

- B. Material requirements
 - a. All metal shall be 304/304L stainless steel where possible unless specified herein:
 - i. Nameplate
 - ii. Exposed hardware (*e.g. screws, brackets, etc...*)
 - i. Sill, hood, and operating mechanisms
 - ii. Faceplate hardware (*including parking stand*)
 - iii. Sill hold down cleats
 - iv. Hinges (*including pins*)
 - v. Lifting bolts
 - b. Exceptions to stainless
 - i. Ground connector (*See grounding in section 3.5 for detail*)
 - c. Aluminum hardware shall not be used.
- C. Welding requirements
 - a. Exterior welds shall be full welds.
 - b. Spot, tack, or skip welds are not acceptable for attaching hinges, brackets, grounding bosses, etc.
 - c. Hinges shall be continuously welded to the tank and lid.
- D. Tank securement
 - a. Two (2) sill hold down cleats shall be provided and support 1/2" stainless steel mounting bolts with a slotted hole.
 - b. Compartment sill shall be mounted utilizing a minimum of two (2) 3/8" bolts on each side of the compartment.
- E. Door requirements
 - a. Doors and top-hinged lids shall be designed to prevent inadvertent dislodgment from the hinge.
 - b. Door latch shall operate such that it avoids all primary and secondary connectors and cables.
 - c. When an externally replaceable fuse is used, the lid and doors must be designed so as not to interfere with replacement of this fuse
 - d. All door types shall have provisions for a 1/2" penta head captive bolt with NC Class 2 threading as stated in ANSI C57.12.28, Latest Rev for enclosure security.
 - e. Latch shall support a Best Co. #5B620 padlock or equivalent.
 - f. Penta head bolt shall be unable to be removed prior to padlock removal for security.
 - g. Hinge gauge shall be the same or greater than the gauge of the door.
- F. Lifting provision requirements
 - a. Shall be permanently attached and arranged on the tank to provide a distributed balanced lift in a vertical direction for the completely assembled transformer.
 - b. Shall be designed to provide a safety factor of 5.

Note: The safety of 5 is the ratio of the ultimate stress of the materials used to the working stress. The working stress is the maximum combined stress developed in the lifting provisions by the static load on the completely assembled transformer.
- G. Pressure requirements
 - a. Minimum sealed tank pressure capability without permanent distortion shall be 7 PSI.
 - b. Minimum sealed tank withstand pressure shall be 15 PSI.
 - i. At the minimum tank withstand pressure, no oil leak shall be initiated and no component or bushing shall be expelled from the unit.

KEYS BID 33-21 SPECIFICATIONS FOR THE PURCHASE OF TRANSFORMERS

- c. If there is deformation, the unit shall remain tamper-proof and it shall be possible to open the compartment for access to the cable terminations.
 - d. The product of the minimum tank withstand pressure in PSIG (*without a pressure relief device in place*) and the cubic inches of air space above the transformer 140° C. oil level shall equal or exceed 16,500.
- H. Cooling requirements
- a. It is KEYS preference to have tanks without cooling fins.
 - i. If design requires cooling fins, they shall be no point or edge that is sharp including the attachment to the tank.
 - ii. Fins must be designed to minimum possible protrusion from tank.
- I. Protection requirements
- a. A ½" – 1" drain plug shall be provided near the center of the tank.
 - b. Drain plug shall follow all ANSI/IEEE standards for placement to avoid inaccessible locations.
- J. Grounding requirements
- a. Transformer shall consist of 2 ground pads
 - i. ½"-13 threaded boss, 7/16" deep
 - b. Shall contain a bronze type tank ground connector that supports up to a #6 to 250MCM copper conductor, Penn Union GSE-025 or equivalent. Must be approved by KEYS prior to bid acceptance if choosing an equivalent.

3.6 HIGH VOLTAGE TERMINATIONS

- A. All transformers shall have four 2-1/2% full capacity taps, three below and one above rated voltage as shown below:

Tap	%	Voltage
1(a)	102.5%	8169V
2(b)	100.0%	7970V
3(c)	97.5%	7771V
4(d)	95.0%	7572V
5(e)	92.5%	7372V

- B. The transformer shall be furnished with the required high-voltage removeable stud bushing wells, Elastimold K1601PC-S2-R or approved equal, for use with replaceable 200-amp, 15 kV load break type-bushing inserts per IEEE 386. Bail tabs or holes are required on the bushing well clamp. Specific written approval is required for use on wells other than the one specified (Bidder shall provide documentation for comparison). Bushing inserts will be furnished and installed by the vendor (Elastimold or Equal).
- C. A bracket for ground or test bushing shall be located as shown on Figure 6A IEEE C57.12.26, latest revision.
- D. The bushing wells shall be orientated so that the elbows can be operated with a hot stick.
- E. Primary bushing wells shall have a dust cover in place for shipment.

3.7 HIGH VOLTAGE PROTECTION DEVICES

- A. Fuse requirements
 - a. The primary fuse shall be externally replaceable equivalent to expulsion, bayonet type.
 - b. The fuse links will be load sensing in series with coordinated isolation links.
 - c. The fuse holder shall be located so the eye will not touch the lid in any position.

Note: Stops to prevent rotation of the eye to the twelve o'clock position are not acceptable.

Bayonet type fuses required for pad mount transformers:

Size (KVA)	Phase	Type
75	3	C06
150	3	C08
300	3	C10
500	3	C12
750	3	C14
1000	3	C14

- B. Isolation link
 - a. If provided, then the link shall be in series with the bayonet oil fuse cutout.
 - b. Shall be sized to melt when the cutout rating is exceeded.
 - c. This link will be designed to operate at high fault conditions only.
(Optional - not required by KEYS unless an IEEE or ANSI requirement).
- C. Drip shield requirements
 - a. Shall be provided under the bayonet fuse.
 - b. Shall not extend more than 5" from the transformer tank.
 - c. The shield shall be designed to prevent accidental dislodgment.

3.8 LOW VOLTAGE TERMINATIONS

- A. Low voltage bushings to be Central Maloney part number 70133452 or approved equal by KEYS
 - a. Low voltage bushings shall have adequate strength to support the cables and prevent oil leaks.
- B. The neutral bushing shall be insulated from the tank and provided with a detachable ground strap adequate to conduct maximum available fault current.
- C. Primary wye connections and secondary neutrals shall be internally connected to this tank ground with a HO switch to isolate the primary wye and secondary neutrals.
- D. All 3-phase transformers shall come with spade terminals and located as in IEEE C57.12.26, latest revision:

Size	Spade Size	Minimum Spade Thickness
45-150 kVA	10 hole spade (5 above, 5 below)	3/8"
225-500kVA	12 hole spade (6 above, 6 below)	3/8"
750kVA	12 hole spade (6 above, 6 below)	1/2"
1000kVA	12 hole spade (6 above, 6 below)	1/2"

3.9 BREAK SWITCH

- A. Each transformer shall include a 4-position load break switch.
 - a. Shall be a rotary "T-blade" type
 - b. Shall be externally operated for loop feed switching.
 - c. A spring loaded, quick make and break system shall be utilized and be hot stick operable.
 - d. This oil-immersed mechanism will be rated as follows:
 - i. 95 kV BIL
 - ii. Maximum Voltage L-L 25kV, L-Gnd 15kV
 - iii. Continued interrupt current – 300A
 - iv. Momentary and making current – 12kA
 - v. R.M.S. SYM/ASSYM. – 16kA
 - e. The four-position switch will provide for:
 - i. Loop A Feed
 - ii. Loop B Feed
 - iii. Loop A and B Feed and Transformer
 - iv. Transformer off – Loop closed

3.10 OIL PRESERVATION

All transformers shall be equipped per ANSI C57.12.20, latest revision, 6.2.5 Relief of Excessive Pressure.

- A. Pressure Relief Valve and Transformer Failure Device
 - a. Each transformer shall be equipped with a non-resettable device which detects and provides external indication of internal transformer faults, and also incorporates pressure relief functionality. The approved device is manufactured by IFD Corporation or approved equal.
 - b. Device shall provide external indication visible from the ground after an internal fault has occurred.
 - c. This device will function as replacement for the conventional PRV.

3.11 NAMEPLATE INFORMATION

- A. All transformer nameplates shall be mounted in such a manner that there are no sharp edges exposed, made of stainless steel 304/304L (preferred), and indicate the following per IEEE C57.12.00, latest revision:
 - a. The metal (aluminum or copper) used in each winding shall be shown on the nameplate.
 - b. kVA, High voltage, and low voltage.
 - c. BIL rating of high voltage winding (both high voltage BIL rating on dual voltage transformers).
 - d. Transformer weight.
 - e. Month and year of manufacture.
 - f. Serial number.
 - g. Bar-code in accordance with IEEE C57.12.35, latest revision.

- h. PCB Content.
- i. % Impedance.

3.12 PAD MOUNTED TRANSFORMER SAFETY LABELS

- A. No markings, signs, or safety labels are permitted on the exterior surface of the transformer unless otherwise specified.
- B. A NEMA 260 - "Mr. Ouch" danger label is required on the inside surface of the compartment door and shall be clearly visible and readable when the transformer compartment door is in the open position.

3.13 WARRANTY

Each transformer conforming to this material specification shall be unconditionally guaranteed against failure due to any cause, except misapplication or abuse, for a minimum of one (1) year from the date of installation or 18 months from the date of shipment, whichever occurs first. Any transformer, which does not conform to this warranty, shall, at buyer's option, be repaired or replaced by seller. Seller shall indemnify buyer for all costs incurred as a result of any such nonconformity.

3.14 PACKING AND SHIPPING

- A. No manufacturer's installation instructions are to be packaged or shipped with the transformers.
- B. Copies of installation instructions shall be delivered to KEYS.
- C. Each transformer shall be banded to a two-way entry, pallet.
- D. The pallet must be of such dimensions as to provide two inch (2") clearance of the transformer at its widest outside measurements on all four sides.
- E. All transformers shall be positioned on pallets allowing decal to be visible from the front of the pallet.
- F. The pallet must provide a minimum of 2-1/2" of fork under clearance.
- G. The transformer shall be banded to the pallet in such a way as to prevent shifting of the unit on the pallet surface during transit, while allowing the unit to be handled by sling or by fork truck without removing the banding.
- H. Notification on delivery must be made no less than 48 hours prior to delivery by contacting KEYS Warehouse at (305) 295-1192 or (305) 295-1212 or emailing purchasing@keysenergy.com
- I. Deliveries must be made Monday through Friday between the hours of 7:30am and 3:30pm except for holidays. KEYS does not allow overnight parking of freight trucks on its property.
- J. Unless otherwise specified at the time of purchase, transformers shall be shipped on open-bed trailers suitable for side unloading with fork truck.

4.0 BIDDER DELIVERABLES

- A. Exception sheet provided in this bid packet (*Prior to bid acceptance*)
 - a. Shall submit even if there are no exceptions with indication as such.

KEYS BID 33-21 SPECIFICATIONS FOR THE PURCHASE OF TRANSFORMERS

- B. Specifications and/or pre-drawings with details confirming specific requests such as 304 stainless, extra creep bushings, heavy duty arrester type, etc. *(Prior to bid acceptance)*
- C. Nameplate drawing *(Post bid award)*
 - a. Shall show sample information of the nameplate print that will be on final manufactured nameplate.
 - b. Shall indicate or show that the barcode will be printed upon manufacture.
 - c. Shall call out type of metal either on nameplate drawing or transformer drawing.
- D. Transformer drawing *(Post bid award)*
 - a. Shall list and/or show all relevant dimensions and weight:
 - i. Relevant to proper installation and transportation planning.
 - ii. Showing minimum bid requirements are met.
 - iii. Showing all minimums in ANSI/IEEE requirements are met.
 - b. Shall indicate material used where necessary per bid specification.
 - i. E.g. 304/304L stainless steel or ALL hardware 304/304L.
- E. Bill of materials / Parts list *(Post bid award)*
 - a. Shall list all components outside of the base transformer portion and metal compartment shell.
 - b. Shall list part number of all replaceable items.
 - i. Examples – LV bushings, Ground lugs, valves, gauges, etc...
 - c. Shall contain description of part.

The drawings provided are not considered final until after KEYS full review of the drawings upon bid award as indicated in the terms and conditions portion of this document under **Drawings and Approvals**. Please see the drawings and approvals section for more information.

KEYS ENERGY SERVICES **GENERAL TERMS & CONDITIONS**

ADDITIONS/DELETIONS

KEYS reserves the right to add or delete any item from this bid or resulting contract when deemed to be in the best interest of KEYS.

ALTERATIONS IN PROPOSAL

Except as otherwise provided herein, Proposals which are conditional in any way, or which contain erasures or interlineations not authenticated as provided herein, or which contain items not called for, items not in conformity with applicable laws, changes, additions, recapitulations, alternative Proposals, or any other modifications of the Proposal forms which are not specifically called for in the Contract Documents, will be rejected as not responsive unless specifically agreed to in writing by KEYS. Erasures, interlineations or other corrections shall be authenticated by affixing in the margin immediately opposite the correction, the handwritten initials of each person executing the Proposal.

APPLICABLE LAW

This Contract shall be interpreted in accordance with the law of the State of Florida.

ASSIGNMENT

No contract awarded under these terms, conditions, and specifications, may be sold, transferred or assigned in full or part without the written permission of KEYS. Such written permission shall not relieve contractor from its obligations and liabilities.

ATTORNEY FEES

The prevailing party in any litigation or mediation relating to the contract shall be entitled to recover its reasonable attorney fees and costs from the other party for all matters, including, but not limited to, appeals.

BASIS OF AWARD

- A. The award will be made by KEYS on the basis of the Proposal from the lowest responsive* responsible**, Bidder which, in KEYS' sole and absolute judgment, will best serve the interest of KEYS.
- B. KEYS reserves the right to accept or reject any or all Proposals, and to waive any informalities and irregularities in said Proposal.
*Responsive Bidder: Any person, firm, or corporation submitting a bid for the work contemplated whose bid form is complete and regular, free of excisions or special conditions and has no alternative bids for any item unless requested in the technical specifications.
**Responsible Bidder: Any person, firm, or corporation submitting a bid for the work contemplated who maintains a permanent place of business, has adequate manpower and equipment to do the work properly and within the time limit that is established, has adequate financial status to meet his obligations contingent to the work and has a history of performance of like contracts (acceptable to KEYS).
- C. Evaluation: The lowest evaluated price shall be determined from an analysis which assesses the impact of the contract price, operational and maintenance costs.

BID BOND/CERTIFIED CHECK

Each proposal should be accompanied by a Bid Bond or Certified Check payable to the UTILITY BOARD OF THE CITY OF KEY WEST in an amount not less than five (5%) percent of the amount of the proposal as security.

BID PROPOSAL PRICING

All bid proposals must remain firm for 120 days minimum.

COMPLETENESS OF PROPOSAL

- A. Each Bidder shall respond to all items on Proposal Page. When quoting on all items including optional items, bidders shall insert the words "No Bid" in the space provided for any item for which no offer is made. Failure to do so may result in the Proposal being rejected as not responsive.
- B. KEYS will consider alternative, additive, or deductive options with no initial pricing.
- C. Each Proposal shall include specific acknowledgment of receipt of all Addenda issued during the bidding period. Failure to do so may result in the Proposal being rejected as not responsive.
- D. Each Bidder shall furnish information relating to its experience, facilities, material, equipment and business as is required by the Proposal form. Failure to do so may result in the Proposal being rejected as not responsive.
- E. Additional technical data furnished by a Bidder, but not required by the Request for Proposal (RFP), may at KEYS' option be considered part of the Proposal to the extent that it is supplementary to, is consistent with and not contrary to the RFP.

CONTACT REFERENCES

KEYS contact for bidding requirements and technical specifications: Tyler Randolph, Supervisor of Purchasing, Tyler.Randolph@keysenergy.com or purchasing@keysenergy.com.

CONTRACT CHANGES

No changes, over the contract period, shall be permitted unless prior written approval is given by the Utility Board of the City of Key West, Florida. No Contractor shall assign the contract or any rights or obligations there under without the written consent of KEYS. In the event of such approved subcontracting, contractor agrees to provide KEYS with written documentation relative to the Subcontractor(s) employed in this contract.

CONTRACT COMPLIANCE

KEYS BID 33-21 SPECIFICATIONS FOR THE PURCHASE OF TRANSFORMERS

All contracts are subject to the terms and conditions of the Fair and Accurate Credit Transactions Act of 2003. The said provisions and compliance therewith are expressly made part of the contract and are binding covenants on the party contracting with KEYS.

CONTRACTOR LIABILITY

In the event of default by Contractor, KEYS reserves the right to utilize the next lowest Bidder as the new Contractor. In the event of this occurrence, the next lowest Bidder, if it wishes the award, shall be required to provide the bid items at the prices as contained on its proposal or bid for this specification.

DELIVERY

- A. Delivery, inspection and acceptance - delivery, inspections and acceptance will be at destination, F.O.B. Key West as specified in the RFP, KEYS Warehouse, unless otherwise provided. Until delivery and acceptance and after any rejections, risk of loss will be on the Vendor, unless loss results from negligence of KEYS.
- B. Notwithstanding the requirements for any KEYS inspection and test contained in the specifications applicable to this proposal, except where specialized inspections or tests are specified for performance solely by KEYS, contractor shall perform or have performed the inspections and tests required to substantiate that the supplies and services provided under this proposal conform to the drawings, specifications and proposal requirements listed herein, including if applicable, the technical requirements for the manufacturer's part numbers specified herein.
- C. Delivery of Excess Quantities – Contractor is responsible for the delivery of each item quantity within allowable variations, if any. If contractor delivers and KEYS receives quantities of any item in excess of the quantity called for (after considering any allowable variations of quantity) such excess quantities will be treated as being delivered for the convenience of contractor. KEYS may retain such excess quantities without compensating the interests herein. Quantities in excess, will at the option of KEYS, either be returned at contractor's expense, or retained and paid for by KEYS at the contract unit price.
- D. Deliveries – In the event of failure to deliver material of the quality or within the time specified, KEYS may cancel the order and buy elsewhere. Contractor will be responsible for any cost differences encountered in the procurement of materials. Failure of KEYS to exercise this option with respect to any installment shall not be deemed a waiver with respect of future installments, if any.
- E. Delivery tickets – All shipments under this agreement shall be accompanied with delivery tickets, or packing slips, in triplicate, which shall contain the following minimum information: name of supplier, purchase order number, date of order, date of delivery or shipment, itemized list of supplies or services furnished, quantity, unit price, and extension of each line item. Upon delivery, the Warehouse will retain a copy of the related delivery ticket.
- F. Inspection, Acceptance and Title – Inspection and acceptance will be at destination, unless otherwise provided. Title and risk of loss or damage to all items shall be the responsibility of the contract supplier until accepted by KEYS in writing.

ENTIRE AGREEMENT

The terms, specifications and/or drawings included in a duly executed contract will constitute the entire agreement between the parties. No modification or waiver of terms of this agreement shall be binding, unless in writing, signed by a duly authorized representative of KEYS.

ERROR IN BID CALCULATION

In the event there is a mathematical error in the bid, KEYS will recalculate using the line items and correct the total.

EXECUTION OF PROPOSAL

If a Proposal is made by a partnership, it shall contain the name and address of each partner and shall be executed in the partnership name, followed by the handwritten signature of a partner authorized to execute the Proposal for the partnership. If a Proposal is made by a corporation, it shall be executed in the name of the corporation, followed by the handwritten signature of an officer authorized to execute the Proposal for the corporation, and the printed or typewritten designation of the office he holds in corporation. Another partner of the partnership or official of the corporation shall attest to the authority of the person executing the Proposal. KEYS may require any Bidder to furnish certified copies of extracts of the minutes of meetings of the governing body of the Bidder authorizing execution of the Proposal and Contract Documents.

FORCE MAJEURE

KEYS shall not be liable in any way to contractor as a result of an event, circumstance or act of a third party that is beyond a party's reasonable control (e.g. an act of God, and act of the public enemy, an act of a government entity, strikes or other labor disturbances, hurricanes, earthquakes, fires, floods, epidemics, embargoes, war and riots).

LITIGATION SEARCH

KEYS reserve the right to conduct a litigation search on contractor's history of past litigation.

LIQUIDATED DAMAGES

In the event the Scope of Work is not substantially complete on or before the delivery date stated by the Contractor on the Proposal Page, liquidated damages shall be payable by Contractor to KEYS in the amount of \$100.00 per day for each day delivery is delayed.

The parties recognize that the damages to be incurred by KEYS as a result of delay in completion of the Scope of Work are difficult to estimate at this time and would be difficult for KEYS to prove. The parties intend that the payment of Liquidated Damages set forth above would serve to compensate KEYS for its damages resulting from such delay in completion, and constitutes a reasonable, good faith approximation of such damages. The liquidated damages set forth herein are not intended to, nor shall be construed to, function as a penalty, and shall not preclude other remedies available to KEYS at law or in equity.

MATERIAL

No goods or materials provided pursuant to the proposal shall consist of or contain any equipment which has been manufactured or supplied by persons or entities owned by, controlled by, or subject to the jurisdiction or direction of the government of the People's Republic of China.

KEYS BID 33-21 SPECIFICATIONS FOR THE PURCHASE OF TRANSFORMERS

MODIFICATION OF PROPOSAL

A modification of a proposal already received will be considered only if the modification is received prior to the time last announced for opening Proposals. All modifications shall be made in writing, executed and submitted in the same form and manner as the original proposal, fax or E-mail. Phone modifications will not be considered.

OPENING PROPOSALS

At the time and place last announced for opening Proposals, each Proposal which has been received prior to the time last announced for opening Proposals, except those which have been properly withdrawn, will be publicly opened and read aloud, irrespective of any irregularities or informalities in such Proposals.

KEYS INSPECTIONS/MEETINGS

KEYS will make inspections and/or meetings as deemed necessary to ensure that all work is being performed in compliance with these specifications and guarantees.

PAYMENT

Payment will be made after acceptance of services and materials and within 30 days after receipt of invoice. KEYS does not pay service charges on late payments.

PENALTIES

KEYS reserves the right to increase or decrease quantities shown without penalties.

POSTPONEMENT OF OPENING

KEYS reserves the right to postpone the date and time last announced for opening Proposals and such postponement may be made at any time prior to the time last announced for opening Proposals. KEYS will give written notice in the form of an Addendum by email to each party to whom Contract Documents have been issued in addition to posting the Addendum on DemandStar, Vendorlink, and Keysenergy.com websites, stating the change in date and time of any such postponement.

PRICES

- A. All prices bid shall be firm unless the conditions of the RFP permit price escalation. If an escalation method or indices are specified, the Bidder shall indicate in its bid the specific items subject to escalation, and shall give the method and indices to be used in computing the amount thereof.
- B. The vendor shall provide the proposal price in U.S. dollars only.

PROTESTS

Any bidder who believes he has been aggrieved in connection with the staff recommendation or award of a contract may protest in writing to the KEYS Purchasing Department. The deadline for filing a protest is prior to the commencement of the Utility Board meeting wherein the award is to be considered. It is the responsibility of the bidder to ascertain the bid award information from DemandStar or VendorLink. Protests shall specifically describe the subject matter and facts giving rise to the protest.

PUBLIC RECORDS ACT

Pursuant to F.S. 119.0701 of the Public Records Act, any request to inspect or copy public records relating to a public agency's contract for services must be made directly to the public agency. Contractors is required to comply with public records laws and upon request by the public records custodian, shall provide a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost not to exceed the cost provided in Ch. 119, F.S. or as otherwise provided by law. A contractor who fails to provide the records to the agency within a reasonable time may be subject to penalties as provided in F.S. 119.10

IF CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

**KEYS ENERGY SERVICES
P.O. BOX 6100
Key West, FL 33041-6100
(305) 295-1067
Gricel Owen**

Email: gricel.owen@keysenergy.com

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PUBLIC ENTITY CRIME CLAUSE

Any person submitting a bid or proposal in response to this invitation must execute the enclosed form **FOR 094, SWORN STATEMENT UNDER SECTION 287.133 (3) (a), FLORIDA STATUTES ON PUBLIC ENTITY CRIMES**, including proper check(s), in the space(s) provided, and enclose it with his bid proposal. If you are submitting as bid or proposal on behalf of dealers or suppliers who will ship commodities and receive payment from the resulting contract, it is your responsibility to see that copies of the form are executed by them and are included with your bid or proposal. Corrections to the form will not be allowed after the bid or proposal opening time and date. Failure to complete this form may result in immediate disqualification of your bid or proposal.

QUALITY ASSURANCE PROVISIONS

A system of test and inspection shall be used to insure receipt of the quality and quantity of material(s)/service(s) purchased. Material(s)/service(s) will be promptly inspected and any discrepancies from the purchase order and/or the supplier's invoice shall be reported immediately.

RELEASE OF LIENS

Contractor is to furnish a release of liens for sub-contractual materials and labor prior to each payment. In addition, contractor is to furnish the standard form of "Statement Concerning Claims."

REJECTION

The Utility Board reserves the right to reject any or all proposals, to waive irregularities and informalities in any or all proposals, and to separately accept or reject any item, items, bid schedule or bid schedules of the proposal which the Utility Board deems to be in the best interest of the Utility Board.

SEVERABILITY

If any of these General Terms & Conditions is determined to be invalid, illegal or enforceable, the remaining provisions of these General Terms & Conditions remain in full force to the extent permitted by law.

SUBMISSION OF PROPOSAL

It is the sole responsibility of each Bidder to deliver its Proposal to KEYS at the place designated for receiving Proposals and prior to the time for opening Proposals last announced to Bidders. Any Proposal received after the time last announced for opening Proposals may be retained by KEYS or returned to the Bidder, but such Proposal shall be rejected as not responsive.

SUPPLY BOND

Within ten (10) days after notification of award of the Contract to Bidder, Bidder shall obtain and provide to KEYS a Supply Bond in favor of, or a Certified Check or Cashier's Check payable to, the UTILITY BOARD OF THE CITY OF KEY WEST, FLORIDA in an amount not less than 100% of the amount of the total Contract, to secure the awarded Bidder's obligation to provide the goods and materials specified on time and at the cost set forth in the Proposal. Bidder shall maintain such surety in force and effect until such time as all goods and materials are delivered to KEYS. KEYS shall have the right under such surety to recover the difference between the Contract price and any revised pricing in the event Contract prices for any goods and/or materials are not honored, and/or to recover the liquidated damages set forth herein in the event goods and/or materials are not delivered within the time period specified in the Contract. Failure of Bidder to supply such surety within the time specified may result in award revocation. In the event Bidder elects to satisfy this obligation by provision of a Certified Check or Cashier's Check, and Bidder honors the above-listed obligations secured by the surety, KEYS will return or destroy such check, at Bidder's election, within ten days of delivery of all goods and materials as set forth in the proposal.

TAX

The prices of materials set forth herein shall not include state sales tax or local option tax. KEYS is generally exempt from state sales tax, (sales tax number 85-8012621609C-2), and local option tax. However; any purchases of materials for construction of new electrical transmission and distribution facilities are subject to state sales tax and local option tax.

TERMINATION OF CONTRACT

When deemed to be in the best interest of KEYS, any awards or contracts resulting from this specification may be cancelled by KEYS by the following means: 1) ten (10)-day written notice with cause; or 2) thirty (30)-day written notice without cause.

WARRANTY

- A. Contractor warrants to KEYS that the Material and/ Equipment to be furnished under the Contract shall be designed and fit for the purpose specified when operated in accordance with contractor's specific operating instructions or, in the absence thereof, in accordance with generally accepted operating practices; free from defects in material, workmanship, and title; shall meet all specifications, including those relating to performance, contained or incorporated by reference in the Contract; and that the technical direction of installation on KEYS' premises when furnished by contractor shall be performed in a competent, diligent manner in accordance with generally accepted professional practices.
- B. The foregoing warranties, except as to title, shall apply to defects or deficiencies occurring within a period of **1** year from Final Acceptance provided the same is not unreasonably delayed by the KEYS or others. If, however, during the above **1** year warranty period the Equipment is not available for operation due to a failure to meet such warranties, such time of unavailability shall not be counted as part of the warranty period. The condition of any field tests shall be mutually agreed upon, and Contractor shall be notified of and may be represented at all tests that may be made.
- C. If the equipment and materials furnished hereunder does not meet the warranties specified above when it has normal and proper use and maintenance, KEYS shall promptly notify contractor and make the Equipment available for correction. Contractor shall thereupon within a reasonable time correct all defects, including nonconformance with the Engineering Specifications, by either repairing or replacing any defective or damaged parts of the Equipment.

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The cost of Labor, Materials and Equipment components directly associated with such repair or replacement of the Equipment, including removal, loading and unloading, transportation to and from the repair site and reinstallation, shall be borne by contractor.

- D. Any repaired or replacement part furnished under the foregoing warranty shall carry warranties on the same terms as set forth above for **1** year from the date of its Final Acceptance.
- E. Contractor shall obtain written warranties from its Subcontractors and suppliers of Materials, Labor and Equipment components where such warranties are obtainable and shall deliver the original warranties to KEYS.
- F. Neither the final payment, nor any other provision of the Contract, nor partial or entire use of the Material and Equipment by KEYS shall relieve contractor of liability with respect to the warranties referred to in the Contract or any other warranties, express or implied.

WITHDRAWAL OF PROPOSAL

Each Proposal shall constitute an offer to KEYS as outlined therein and shall be irrevocable after the time last announced for opening Proposals. Any Bidder may withdraw its Proposal by giving written notice to KEYS at the place such Proposals are to be received and at any time prior to the time last announced for opening Proposals. After the time last announced for opening Proposals and until execution of the Contract, no Bidder will be permitted to withdraw its Proposal for a period exceeding 120 days after the time last announced for opening Proposals.

INSURANCE SECTION

INDEMNITY REQUIREMENT

By the signing of this contract and indemnity requirement, the vendor agrees with the provisions shown below.

INDEMNITY

Contractor shall indemnify, defend and hold harmless KEYS and their officers, partners, agents, employees and servants from and against any and all claims, judgments, liens, loss, damage, cost, charge or expense, including defense costs, court costs and attorneys' fees, whether direct or indirect, by reason of liability imposed by law or by bodily injuries, including death at any time resulting there from, sustained by any person or persons or on account of damages to property, including loss of use thereof, arising out of or in consequence of the performance of the Contract, whether such injuries to or death of persons or damages to property are due or are claimed to be due to operations, errors, omissions, or negligent acts of KEYS or any of their officers, partners, agents, employees or servants, excepting only such injuries or damages as shall have been finally determined to have resulted solely from errors, omissions or negligent acts of KEYS or of their officers, partners, agents, employees or servants or independent contractor directly responsible to KEYS. For this indemnity, the Utility Board of the City of Key West will pay the sum of ten dollars (\$10.00). The bidder shall add this amount (\$10.00) to their base bid proposal, which will be included in payment to firm.

INSURANCE AGENT'S STATEMENT

I have reviewed the above requirements with the bidder named below. The following limits apply to the corresponding policy for the following company:

DATE: _____ FIRM NAME: _____

POLICY (Type /Number)	LIMITS
_____	_____
_____	_____
_____	_____
_____	_____

Acknowledgement of the additional insured and waiver of subrogation requirements: _____
Initials

Liability policies are _____ Occurrence _____ Claims Made

Name of Insurance Agency

Signature of Insurance Agent

SUBMITTED BY: _____
Print Name & Title

NOTE: EACH BIDDER SHALL PROVIDE A COPY OF COMPLETED CERTIFICATE OF INSURANCE COMPLYING WITH THE AFOREMENTIONED INSURANCE REQUIREMENTS OR SIGN AND DATE THE ABOVE INSURANCE AGENT'S STATEMENT AND AGREE TO PROVIDE A VALID CERTIFICATE OF INSURANCE UPON NOTIFICATION OF CONTRACT AWARD.

BIDDER'S STATEMENT

In consideration of this contract, if awarded, the Vendor agrees without reservation to KEYS' Terms & Conditions, Indemnification Clause, and insurance clause herein. The signing of this statement confirms the Vendor's acceptance, which will become a part of the contract.

DATE: _____

FIRM NAME: _____ EMAIL: _____

SUBMITTED BY: _____
Print Name & Title

SIGNATURE: _____

WITNESS: _____

NOTICE: THIS SIGNATURE PERTAINS TO THE ACKNOWLEDGEMENT AND ACCEPTANCE OF THE ENTIRE TERMS & CONDITIONS. ANY EXCEPTIONS TO THIS AGREEMENT SHOULD BE NOTED SEPARATELY.

FAILURE TO COMPLETE ABOVE NOTED DOCUMENT WILL RESULT IN NON-COMPLIANCE WITH THESE SPECIFICATIONS.

Keys Energy Services
Safety Compliance Affidavit

Keys Energy Services [KEYS] requires all Contractors to follow the American Public Power Association (APPA) Safety Manual while working for KEYS on all projects.

It is solely contractor's Responsibility to:

1. Obtain the latest edition of the APPA Safety Manual at their expense from the American Public Power Association (<http://www.publicpower.org/Topics/Landing.cfm?ItemNumber=38512>)
2. Comply to the required safety protocols described in the APPA Safety Manual – for contractor's employees and sub-contractors;
3. Appoint a qualified employee who is authorized to monitor, supervise and ensure compliance to APPA Safety Manual's protocols on the job site and
4. Do whatever is necessary for safety compliance and be solely and completely responsible for conditions of the job site, including safety of all persons and property during the project's duration.

It is not the responsibility of KEYS to review or police contractor's implementation of the APPA Safety Manual's protocols.

As the person authorized to sign this affidavit, I certify that this firm understands and will fully comply with the above requirements.

Company Name: _____

Representative's Printed Name: _____

Representative's Signature: _____

Date Signed: _____

DRUG-FREE WORKPLACE STATEMENT

Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids which are equal with respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

The undersigned vendor in accordance with Florida Statutes Section 287.087 hereby certifies that

_____ does:
(Name of Business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in Subsection 1.
4. In the statement specified in Subsection 1, notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 1893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Print Name _____

Vendor's Signature _____

Date: _____

**SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a),
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to _____
(print name of public entity)

by _____
(print individual's name and title)

for _____
(print name of entity submitting sworn statement)

whose business address is _____

and (if applicable) its Federal Employer Identification Number (FEIN) is _____

If the entity has no FEIN, include the Social Security Number of the individual signing sworn statement: _____

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
 - a. A predecessor or successor of a person convicted of a public entity crime; or
 - b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employee, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
5. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means:
 - a. any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on

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contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity.

b. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

6. Based on information and belief, the statement, which I have marked below, is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies):

_____Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with the convicted of a public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer, determined that is was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. (Attach a copy of the final order).

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IN PARAGRAPH ONE (1) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDE IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

(Signature) (Date)

STATE OF _____

COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority, _____
who, after first being sworn by me, affixed his/her signature in the space provided above on this
_____ day of _____ of 20_____.

NOTARY PUBLIC
My Commission Expires:

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Proposal Page 1 of 2

Pursuant to and in compliance with your advertisement for bids and other contract documents relating thereto, the undersigned bidder, having familiarized himself with the terms and conditions affecting the performance of the contract contained in the specifications, hereby proposes and agrees to perform within the contract documents, schedules, and specifications for the following amounts.

Item	Stock Number	Qty.	KVA	Unit Price	Total Cost	No Load Loss Watts	Full Load Loss Watts	Total Loss Watts	Expected Delivery	Manufacturer
Pole Mount Transformers										
Voltage 13,800/7970 Wye, Single Phase, 120/240 Volts										
1	025-0110	162	25							
2	025-0130	140	50							
3	025-0150	39	75							
4	025-0170	26	100							
5	025-0190	1	167							
Pole Mount Transformers										
Voltage 13,800/7970 Wye, Single Phase, 277/480 Volts										
6	025-0120	6	25							
7	025-0140	9	50							
8	025-0160	2	75							
9	025-0180	3	100							
Pole Mount Transformers										
Voltage 13,800/7970 Wye, Single Phase, 240/480 Volts										
10	025-0310	2	25							
Pad Mount Transformers										
Voltage 13,800/7970 Wye, Single Phase, 120/240 Volts										
11	026-0010	1	50							
Pad Mount Transformers										
Voltage 13,800/7970 Wye, Three Phase, 120/208 Volts										
12	026-0050	2	150							

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13	026-0060	5	300							
14	026-0070	2	500							
Pad Mount Transformers Voltage 13,800/7970 Wye, Three Phase, 277/480 Volts										
15	026-0120	4	300							
16	026-0120	1	500							

Please note, a \$10.00 indemnity fee will be added to the total price and will be included in payment to Contractor.

Keys Energy Services reserves the right to accept and/or reject any proposal or any portion of a proposal and may increase or decrease any quantities as needed. Bidder shall submit with the proposal any constraints.

Bid Bond or Cashier's Check Amount: _____

Company: _____

Address: _____

Contact Person: _____

Phone Number: _____

Email: _____

Bid Submitted By: _____

Signature

Printed Name and Title