

Invitation for Bid

Transformer Requirements IFB #2023D

January 1, 2023 to December 31, 2024

Bid is for a 2-year period.

Sealed bids will be accepted until **1:00 P.M. EST on TUESDAY, NOVEMBER 15, 2022**, at the South Hadley Electric Light Department, 85 Main Street South Hadley, MA 01075 for the Transformer Requirements #2023D, at which time the bids will be opened publicly. No fax or electronic bids will be accepted. All bids must be clear and legible to be considered.

The term of this contract is January 1, 2023, through December 31, 2024. Bidders must submit two (2) copies of the sealed bid on the **SHELD Transformer Bid Form** and *must include the signed "Certification of Signature Sheet"*.

Please mark envelope: **"Transformer Bid #2023D"**. If you submit bids for more than one category, please submit in separate envelopes and mark accordingly.

For any technical questions or concerns regarding the transformer bid, please call Mark Gilmore (413) 341-8952 or e-mail at mgilmore@sheld.org.

The Invitation to Bid is also available on our website: www.sheld.org, under "About", "RFP and Specifications". To have the bid forms emailed to you, please contact Kim at kmendoza@sheld.org.

The General Manager reserves the right to reject any or all bids that are not in the best interest of the Department.

Sean Fitzgerald, General Manager
South Hadley Electric Light Department
85 Main Street
South Hadley, MA 01075

CERTIFICATION OF SIGNATURE SHEET

The undersigned hereby certifies that under the penalties of perjury that his bid is in all respects bonafide, fair and made without collusion or fraud with any other person. As used in the subsection, the word "person" shall mean any natural person, joint venture, partnership, corporation or any other business entity.

The undersigned further certifies that under pains and penalty of perjury that to the best of my knowledge and belief, the vendor/contractor has filed all state tax returns and paid all state taxes required under law and has complied with all laws of the Commonwealth of Massachusetts relating to taxes.

COMPANY NAME AND ADDRESS: _____

TELEPHONE AND FAX NUMBER: _____

FEDERAL I.D. NUMBER: _____

DATE: _____

Signature of Corporate or Company Officer

Print Name

Email Address

IF THE REMIT ADDRESS IS DIFFERENT THAN THE ADDRESS TO WHERE THE PURCHASE ORDERS ARE MAILED, PLEASE ENTER BELOW:

Remit to: _____

Approval of this contract will not be granted unless this certificate clause is signed by the applicant. This request is made under the authority of Mass. G.L. c. 62C S. 49A.

SOUTH HADLEY ELECTRIC LIGHT DEPARTMENT

TERMS AND CONDITIONS TRANSFORMER BID FOR 2023-2024

The Terms and Conditions listed below may or may not apply to this procurement.

1. **Preparation of Bids**

These Specifications cover the Department's biennial requirement for material, both General and Pole Line Hardware. The quantities of each item are the expected requirement for the term of this bid. The Department does not guarantee to purchase any minimum quantity. The Department also reserves the right to increase the purchase quantities during the term of this bid by a maximum of 100% of the expected requirement, and the successful bidder agrees to maintain the unit or item price.

2. **Bid Form**

Bids will not be accepted in any other form that is not accompanied by a completely filled out Bid Form. All bids must be submitted in duplicate (original with copy). Items quoted that are not in complete accordance with the Specifications must be clearly labeled as alternates and illustrations to verify their equivalency must be included.

All information, including item price and delivery date that will be used in awarding the contract(s) must be referenced on the Bid Form. Any additional information or explanation of terms may be attached but will not supersede the Bid Form or the Department's terms and conditions.

All prices listed on the Bid Form are to be net, including any prompt payment discounts. Statements requiring group purchases will not be accepted. All bid figures will be typed and priced on a per unit basis. All prices are firm for orders issued within the twenty-four month period noted on the Bid Form.

Bids will be considered even if they do not include each type or style of material. All bids will be based upon an item number and awards may be made on an item basis.

3. **Delivery**

Delivery shall be at the expense of the Bidder to 85 Main Street, South Hadley, MA 01075. Deliveries are accepted Monday through Friday between 8:00 a.m. - 12:00 p.m. and 1:00 p.m. - 3:00 p.m. only. The Department is closed on Holidays. A 24-hour notice is to be given if unloading assistance is required.

4. **Guarantee**

The Bidder shall guarantee all material against defects in design, materials, and workmanship and shall also guarantee that the material shall give successful service under the required conditions.

The material shall be manufactured, tested and meet all applicable industry, Federal and State standards.

5. **Award**

The Department will make a comparison of all properly received, qualifying bids for material based upon unit price and delivery date. Bidders' attention is directed to the policy of the Department to support, whenever possible, American industries. Notification of award will be made in the form of a purchase order for a particular item. No material will be accepted until a purchase order has been issued.

All items must be received by the South Hadley Electric Light Department within the specified delivery date of the bid, ARO, unless a longer delivery time has been agreed to in advance. Excessive delivery time is a factor in the award. The Vendor shall impose no penalties for cancellation of any order that was not received by the South Hadley Electric Light Department within the specified time.

6. **Contract and Payment Terms**

The successful Bidder shall agree that the following shall constitute the entire contract:

- 1) The completed bid form submitted by the Vendor shall be considered the offer; and
- 2) The Department's purchase order for each bid item will be considered the acceptance of the Vendor's offer; and
- 3) The terms and conditions contained within these specifications.

No other terms, conditions, or agreements shall be considered part of this contract unless agreed to in writing by both parties. The Department's contract shall be with the Vendor submitting the bid and not with any third party. No portion of the bids shall be sublet to any other Vendor without prior written approval of the Department.

The Department agrees to pay the Bidder in full within 30 days after delivery and acceptance of the material.

Massachusetts Tax Exempt Purchaser Certificate No. 046-001-303.

7. **Bids**

The Municipal Light Board hereby reserves and retains the right to reject any and all proposals that, in their opinion, are not in the best interest of the South Hadley Electric Light Department.

All bids must be submitted in a SEALED envelope plainly marked " ***Transformer Bid #2023D***".

8. **Mass. Tax Laws**

The Bidder certifies that he has complied with all Mass. Tax Laws, (CH 62C SEC 49A).

**SOUTH HADLEY ELECTRIC LIGHT DEPARTMENT
 TRANSFORMER BID FORM
 JANUARY 1, 2023 TO DECEMBER 31, 2024
 (Bid for 2 year period)**

ITEM #	DESCRIPTION	KVA & LOSSES	BID AMOUNT		
1	OVERHEAD TYPE Single Phase Single Voltage Single Bushing Conventional No Taps as per Spec. 1PH OH XFMR 2016 13800 Grd Y/ 7970- 120/240V	10 KVA Price COIL CORE Delivery			
		15 KVA Price COIL CORE Delivery			
		25 KVA Price COIL CORE Delivery			
		37.5 KVA Price COIL CORE Delivery			
		50 KVA Price COIL CORE Delivery			
		75 KVA Price COIL CORE Delivery			
		1 (a)	13800 Grd Y/ 7970- 277V	25 KVA Price COIL CORE Delivery	
				37.5 KVA Price COIL CORE Delivery	
				50 KVA Price COIL CORE Delivery	
				75 KVA Price COIL CORE Delivery	

**SOUTH HADLEY ELECTRIC LIGHT DEPARTMENT
 TRANSFORMER BID FORM
 JANUARY 1, 2023 TO DECEMBER 31, 2024
 (Bid for 2 year period)**

ITEM #	DESCRIPTION	KVA & LOSSES	BID AMOUNT
2	PADMOUNTED TYPE Single Phase Single Voltage Two Bushing Wells Protected No Taps Loop Feed Dead Front Two LBOR Switches Secondary Spades as per Spec 1PH PM XFMR 2016 13800 Grd Y/ 7970- 240/120V	25 KVA	
		Price	
		COIL	
		CORE	
		Delivery	
		37.5 KVA	
		Price	
		COIL	
		CORE	
		Delivery	
		50 KVA	
		Price	
		COIL	
		CORE	
		Delivery	
		75 KVA	
		Price	
		COIL	
		CORE	
		Delivery	
		100 KVA	
		Price	
		COIL	
		CORE	
		Delivery	
		167 KVA	
		Price	
		COIL	
CORE			
Delivery			

**SOUTH HADLEY ELECTRIC LIGHT DEPARTMENT
TRANSFORMER BID FORM
JANUARY 1, 2023 TO DECEMBER 31, 2024
(Bid for 2 year period)**

ITEM #	DESCRIPTION	KVA & LOSSES	BID AMOUNT
3	PADMOUNTED TYPE Three Phase Single Voltage Six Bushing Wells Three Draw-out Fuses Loop Feed Dead Front Two LBOR Switches Secondary Spades as per Spec 3PH PM XFMR 2022 13800 Grd Y/7970 - 208Y/120V	75 KVA	
		Price	
		COIL	
		CORE	
		Delivery	
		112.5 KVA	
		Price	
		COIL	
		CORE	
		Delivery	
		150 KVA	
		Price	
		COIL	
		CORE	
		Delivery	
		225 KVA	
		Price	
		COIL	
		CORE	
		Delivery	
300 KVA			
Price			
COIL			
CORE			
Delivery			
500 KVA			
Price			
COIL			
CORE			
Delivery			
	Taps 14400/14100/13500/13200V	750 KVA	
		Price	
		COIL	
		CORE	
		Delivery	

**SOUTH HADLEY ELECTRIC LIGHT DEPARTMENT
 TRANSFORMER BID FORM
 JANUARY 1, 2023 TO DECEMBER 31, 2024
 (Bid for 2 year period)**

ITEM #	DESCRIPTION	KVA & LOSSES	BID AMOUNT	
3 (a)	PADMOUNTED TYPE Three Phase Single Voltage Six Bushing Wells Three Draw-out Fuses Loop Feed Dead Front Two LBOR Switches Secondary Spades as per Spec 3PH PM XFMR 2022 13800 Grd Y/7970 - 480Y/277V	75 KVA	Price COIL CORE Delivery	
		112.5 KVA	Price COIL CORE Delivery	
		150 KVA	Price COIL CORE Delivery	
		225 KVA	Price COIL CORE Delivery	
		300 KVA	Price COIL CORE Delivery	
		500 KVA	Price COIL CORE Delivery	
		Taps 14400/14100/13500/13200V	750 KVA	Price COIL CORE Delivery
			1000 KVA	Price COIL CORE Delivery
			1500 KVA	Price COIL CORE Delivery

SPECIFICATIONS

1PH OH XFMR 2016

SINGLE PHASE OVERHEAD TRANSFORMERS

SCOPE - This specification covers electrical characteristics and mechanical features of single phase, 60 Hz, mineral-oil filled, self-cooled, overhead type distribution transformers, rated 167 KVA and smaller; high voltage 13,800 Grd Y/ 7970 volts and below; low-voltage 277 volts and below.

GENERAL - The transformer shall meet all applicable requirements of the current ANSI C57.12.20 standard except as otherwise specified herein.

RATINGS - Kilovolt-ampere ratings shall be 10, 15, 25, 37½, 50 and 75.

Voltage ratings for specific sizes shall be in accordance with Table 1.

CONSTRUCTION - The number of bushings shall be as listed in Table 1. Bushing location and arrangement shall be in accordance with ANSI C57.12.20.

All covers shall be electrically connected to the tank (internal or external).

Lifting lugs shall be located in such a manner that a lifting sling will not be in conflict with other transformer parts or accessories.

The nameplate shall clearly identify the month and year of manufacture (i.e. Jan 2016).

The nameplate shall clearly list the total weight and total number of gallons of oil of the transformer.

Single bushing transformers rated 10 thru 25 KVA shall have two-position mounting.

ACCESSORIES - All cover mounted bushings and lightning arresters shall be equipped with suitable bird guards.

Lightning arresters shall be tank mounted and solidly grounded to the tank. Arresters are to be MOV type with silicon rubber polymer housing and ratings shall conform to those shown in Table 1.

Arresters shall have guaranteed performance to equal or exceed the following:

1. High-current, short duration withstand (ANSI C62.11), minimum crest current of 100,000 amperes.
2. Low-current, long duration withstand (ANSI C62.11), with the following parameters:
 - a. Minimum surge current amperes --- 250
 - b. Minimum duration microseconds --- 2000
3. Duty cycle test (ANSI C62.11). Impulse crest 5,000 amperes. Manufacturer shall also provide certified proof that the arrester supplied will pass a duty cycle with a 10,000 ampere initiating impulse.

Protected transformers shall be equipped with the following accessories:

1. A low-voltage breaker, with emergency overload provisions, signal light and external operating handle shall be provided in accordance with Table 1. The breaker shall be calibrated to follow the thermal characteristics of the winding based on actual winding temperatures and shall protect the transformer from overloads and low voltage faults.
2. A high-voltage internal protective link is required with each primary bushing.

The nameplate shall clearly indicate in the connection diagram the circuit location of the protective link.

TANKS - All tanks and covers shall be finished in a gray color conforming to Munsell 5BG7.0/04.

OIL - Oil supplied with these transformers shall contain less than 2 ppm of PCBs.

The transformer nameplate, or a permanently attached label of the same material and durability as the nameplate, shall read "When Manufactured This Transformer Contained Less Than * ppm of PCBs".

All lettering shall be 5/32" minimum in height.

*The maximum guaranteed ppm of PCBs shall be filled in.

TABLE 1

			KVA by type/voltage						
HV Rating	BIL	Taps ¹	<u>Protected</u>		<u>Conventional</u>		Primary Bushings	Lightning Arresters	
			120/240	277	120/240	277		No.	KV
13800GRDY/7970	95	WO	10-75	25-75	10-75	25-75	1	1	10

NOTE

1. Taps - WO - None

SPECIFICATIONS

1PH PM XFMR 2016

SINGLE PHASE PADMOUNTED TRANSFORMERS LOOP FEED

SCOPE - This specification covers electrical characteristics and mechanical features of single phase, 60 Hz, mineral-oil filled, self-cooled, padmounted type distribution transformers, rated 167 KVA and smaller; high voltage 13,800 Grd Y/7970 volts and below, for operation between one phase and grounded neutral; low-voltage 240/120 volts.

GENERAL - The transformer shall meet all applicable requirements of the current ANSI C57.12.25 standard except as otherwise specified herein.

Transformer drawings shall be provided when requested.

RATINGS - Kilovolt-ampere ratings shall be 25, 37½, 50, 75, 100 and 167.

Voltage ratings for specific sizes shall be in accordance with Table 1.

CONSTRUCTION - The high-voltage terminals shall consist of two ESNA, clamped-in bushing wells of the proper KV and BIL rating designated as H1A and H1B and located as specified in ANSI C57.12.25. The two bushing wells shall be internally connected for loop feed. Hold-down brackets for bail attachment shall be provided.

The low-voltage terminals shall consist of three spade type terminals as shown in Fig. 4A of ANSI C57.12.25. The secondary neutral shall be solidly grounded to the tank.

The general arrangement of the high and low voltage terminals, as well as other accessories, shall be Type 1 as shown in Fig. 1 of ANSI-C57.12.25.

Door sills of 3" minimum height shall be provided. The transformer door shall allow opening while wearing lineman's Class 2 rubber gloves.

The nameplate shall clearly identify the month and year of manufacture (i.e. Jan-2016)

The nameplate shall clearly list the total weight, and total number of gallons of the transformer.

ACCESSORIES - The transformer shall have a protective link connected in series with the high-voltage winding.

Transformers shall be equipped with a low-voltage secondary breaker.

A cable accessory parking stand shall be furnished and located as shown in ANSI C57.12.25. Two, 2-position, 200 amp loadbreak switches (LBOR), one each on incoming line A and line B shall be furnished. There shall be no barrier between the high and low voltage segments of the compartment.

TANKS - In additional to the requirements of Paragraph 6.6 and Fig. 1 of ANSI C57.12.25, the transformer tank and its high and low voltage compartment shall meet the following requirements:

<u>Width</u>		<u>Depth</u>		<u>Height</u>
Base	Overall	Maximum		
<u>Min.</u>	<u>Max.</u>	<u>Base</u>	<u>Overall</u>	<u>Max.</u>
25"	40"	44"	50"	38"

The base dimension is defined as that part of the unit which rests on the pad. The overall dimension is the maximum width and the depth of the unit including fins and all other projections.

All tanks shall be furnished in a green color conforming to the following Munsell Color range: Hue, 4GY to 8GY; Value, 2.5 to 4.5; Chroma, 1.2 to 3.0.

OIL - Oil supplied with these transformers shall contain less than 2 ppm of PCBs.

The transformer nameplate, or a permanently attached label of the same material and durability as the nameplate, shall read "When Manufactured This Transformer Contained Less Than * ppm of PCBs".

All lettering shall be 5/32" minimum in height.

*The maximum guaranteed ppm of PCBs shall be filled in.

TABLE 1

TRANSFORMER HIGH VOLTAGE			KVA FOR LOW VOLTAGE RATING OF
Rating	BIL	Taps Note 1	120/240
13800GRDY/7970	95	WO	25 - 37½ - 50 - 75 - 100 - 167

NOTE

1. Taps - WO - None

SPECIFICATIONS

3PH PM XFMR 2022

THREE PHASE PADMOUNTED TRANSFORMERS LOOP FEED, DEAD FRONT

SCOPE - This specification covers electrical characteristics and mechanical features of three phase, 60 Hz, mineral-oil filled, self-cooled, padmounted type distribution transformers, rated 750 KVA and smaller; high voltage 13,800 Grd Y/ 7970 volts and below; low-voltage 480 volts and below.

GENERAL - The transformer shall meet all applicable requirements of the current ANSI C57.12.26 standard except as otherwise noted.

Transformer drawings shall be provided when requested.

RATINGS - Kilovolt-ampere ratings shall be 75, 112.5, 150, 225, 300, 500, 750, 1000, and 1500 KVA.

Voltage ratings for specific sizes shall be in accordance with Table 1.

Taps shall be provided as listed in Note 1. Taps shall be operated with an external switch.

CONSTRUCTION - The high-voltage terminals shall consist of six ESNA, clamped-in bushing wells of the proper KV and BIL rating. Six hold-down brackets for bail attachment shall be provided.

The WYE connected secondary shall have the secondary neutral brought out through the tank side wall through a fully insulated bushing and equipped with a removable ground strap. Secondary bushing shall be clamp-in type - four outlets total. The secondary bushing arrangement shall be staggered. Secondary bushing spades with 9/16 in. diameter holes on 1 3/4-inch centers. Transformer secondary terminals (spades) with greater than 4 holes shall be braced at the furthest end from the tank wall without interfering with the use of any of the holes.

Door sills of 3" minimum height shall be provided. The transformer's door shall allow opening while wearing lineman's Class 2 rubber gloves.

The nameplate shall clearly identify the month and year of manufacture (i.e., Jan-2016).

The nameplate shall clearly list the total weight, and total number of gallons of oil of the transformer.

ACCESSORIES - The following accessories are to be included:

- a) Instruction nameplate inside the LV compartment.
- b) One inch drain valve with build-in sampling device (located in the LV compartment);
- c) One-inch upper filter press and filling plug (or cap);
- d) Two two-position, 200-amp loadbreak switches (LBOR), one each on incoming line A and line B.
- e) Draw-out, loadbreak current limiting fuses.
- f) Handholes shall be provided to permit necessary access for the replacement of secondary bushings and primary bushing wells. Handholes shall have covers with no nuts, bolts or clamps accessible when the compartment doors are closed and locked. Handhole covers shall not be welded or tack welded closed.

TANKS - All tanks shall be finished in a green color conforming to the following Munsell color range: Hue, 4GY to 8GY; Value, 2.5 to 4.5; Chroma, 1.2 to 3.0.

The dimension shall be such that no part of the Tank and Cable compartment (not including cooling tubes or fins) will overhang the following pad size, and that it will completely cover the 52" cable openings in the top of each pad.

Pad Dimensions		
<u>Width</u>	<u>Depth</u>	<u>KVA</u>
76"	54"	75 - 300
76"	70"	500 - 1500

OIL - Oil supplied with these transformers shall contain less than 2 ppm of PCBs.

The transformer nameplate, or a permanently attached label of the same material and durability as the nameplate, shall read "When Manufactured This Transformer Contained Less Than * ppm of PCBs".

All lettering shall be 5/32" minimum in height.

Transformer quotations shall state the maximum guaranteed ppm of PCBs that will be filled in.

*The maximum guaranteed ppm of PCBs shall be filled in.

TABLE 1

High Voltage Rating	BIL	Taps¹	Low Voltage Rating	KVA
13800GDY/7970	95	WO	208Y/120	75, 112.5, 150, 225, 300, 500
13800GDY/7970	95	WO	480Y/277	75, 112.5, 150, 225, 300, 500
13800GrdY/7970	95	TC	208Y/120	750
13800GrdY/7970	95	TC	480Y/277	750, 1000, 1500

NOTE

1. Taps - TC – 14400/14100/13500/13200