



# CITY OF LODI

# COUNCIL COMMUNICATION

**AGENDA TITLE:** Specifications and Advertisement for Bids for 1200 KVAR Capacitor Bank and Controllers for the Electric Utility Department (EUD 93-4)

**MEETING DATE:** October 6, 1993

**SUBMITTED BY:** Electric Utility Director

**RECOMMENDED ACTION:** That the City Council approve the specifications and authorize advertisement for bids for the purchase of one 1200 KVAR capacitor bank and four controllers.

**BACKGROUND INFORMATION:** The capacitor bank and one controller will be installed on the distribution system to maintain the power factor during heavy loading periods. The remaining controllers will be installed on existing capacitor banks currently without controllers.

The bid opening date has been set for Wednesday, November 3, 1993.

**FUNDING:** The estimated cost of this purchase is \$7,600 with funding budgeted in the Electric Utility Department's 1993-94 FY Budget.

Henry J. Rice  
Electric Utility Director

Prepared by: Mel Grandi, Electrical Engineer

c: Asst. Electric Utility Director  
Purchasing Officer

APPROVED

THOMAS A. PETERSON  
City Manager



recycled paper



**CITY OF LODI**  
**ELECTRIC UTILITY DEPARTMENT**

CITY OF LODI

ELECTRIC UTILITY DEPARTMENT

Specifications

1200 KVAR CAPACITOR BANK  
AND CONTROLLERS

EUD 93-4

October 1993

NOTICE INVITING BIDS

FURNISH AND DELIVER 1200 KVAR CAPACITOR BANK AND CONTROLLERS  
TO  
CITY OF LODI, CALIFORNIA

The City of Lodi hereby invites sealed proposals for furnishing and delivering 1200 KVAR capacitor bank and controllers to the City of Lodi, California.

Each bid shall be in accordance with this notice and specifications on file with and available from the Electric Utility Director, City Hall, 221 West Pine Street, Lodi, California 95240, (209) 333-6762. No bid will be considered unless it is submitted on a proposal form furnished by the City of Lodi.

Said sealed proposals shall be delivered to the Purchasing Officer at City Hall, 221 West Pine Street, Lodi, CA 95240 (P. O. Box 3006, Lodi, CA 95241-1910) at or before

11:00 A.M., WEDNESDAY, NOVEMBER 3, 1993

Said sealed proposals will be publicly opened on said day and hour in the Public Works' Conference Room, First Floor, City Hall, 221 West Pine Street, Lodi, California. Bidders or their authorized agents are invited to be present.

The City of Lodi reserves the right to reject any or all bids, to waive any informality in any bid, to accept other than the lowest bid, or not to award the bid.

Reference is hereby made to said specifications for further details, which specifications and this notice shall be considered part of any contract made pursuant thereto.

CITY OF LODI  
Joel E. Harris  
Purchasing Officer

LN-1

LN-93.4/TXTU.01D

## INFORMATION TO BIDDERS

### BID OPENING

- A. The Purchasing Officer will receive sealed bids in his office, City Hall, 221 West Pine Street, Lodi, California 95240, (P. O. Box 3006, Lodi, CA 95241-1910) until 11:00 a.m., Wednesday, November 3, 1993. At that time, in the Public Works Conference Room, First Floor, City Hall, 221 West Pine Street, Lodi, California, bids will be publicly opened and read. Bidders or their authorized representative are invited to be present.
- B. The proposal shall be submitted as directed in the "Notice Inviting Bids" under sealed cover plainly marked "Bid Proposal - Capacitor Bank and Controllers." Proposals which are not properly marked may be disregarded.

### PROPOSAL FORM

- A. Prospective bidders are furnished with two proposal forms included with the specifications.
- B. One proposal must be signed with the full name and address of the bidder, by an authorized representative of the company.
- C. The purchaser reserves the right to accept other than the lowest bid or to reject any or all bids.

### REJECTION OF PROPOSALS

Bids may be rejected if they show any alterations of proposal form, additions not called for, or alternative bids not properly documented. Bids proposing equipment or materials with which the City has no prior in-service experience may be rejected. Erasures or irregularities of any kind may also be cause for rejection.

#### AWARD OF BID

- A. The award of the bid, if it be awarded, will be to the lowest responsible bidder whose bid proposal complies with all the requirements described.
- B. Where alternate bids are received, the City Council reserves the right to select the bid most advantageous to the City. The award, if made, will be made within forty-five days after the opening of the bids.
- C. In case of tie bids, the tie will be broken by a coin toss conducted by the City Purchasing Officer. Tie bidders will be notified and may be present.

#### DELIVERY

Delivery time will be part of the bid evaluation, and delivery shall be clearly indicated on the proposal. Truck delivery shall be made to City of Lodi Municipal Service Center, 1331 South Ham Lane, Lodi, CA 95242 only during normal working hours (8:00 a.m. - 4:00 p.m. Monday through Friday).

#### PRICES

All quoted prices shall be current and firm for at least forty-five days after date of bid opening. Prices to be F.O.B. Lodi, California.

#### SALES AND USE TAXES

All quotations submitted shall include 7.75% California/local sales or use taxes.

#### PAYMENTS

- A. Invoices shall indicate sales or use taxes as separate items apart from the cost F.O.B. point of delivery. Purchaser's item description and order number shall appear on all invoices. All invoices shall be rendered in duplicate.
- B. Full payment by purchaser shall not release supplier of his responsibility to fully carry out his bid obligations nor be construed by supplier as acceptance of the equipment hereunder by purchaser.

#### GUARANTEES

In addition to any or all guarantees mentioned elsewhere herein, the supplier shall repair and/or replace, at no expense to the City of Lodi, any part or parts that may develop defects due to faulty material, workmanship or design within a period of at least one year after the equipment has been accepted by the purchaser.

#### PURCHASES

This transaction will be covered by City of Lodi purchase order, and all terms included in Notice to Bidders, Information to Bidders, Proposal and Specifications will be binding.

PROPOSAL

EUD 93-4 1200 KVAR CAPACITOR BANK AND CONTROLLERS

FUR

THE CITY OF LODI, CALIFORNIA

PROPOSAL TO FURNISH AND DELIVER EQUIPMENT AS SPECIFIED HEREIN  
TO THE CITY OF LODI, CALIFORNIA.

From: (Name of Bidder) \_\_\_\_\_

To: The Lodi City Council  
City Hall  
Lodi, California

The undersigned, as bidder, declares to have carefully examined the Notice Inviting Bids, Information to Bidders and Specifications filed for furnishing and delivering this equipment, and agrees to be fully informed regarding all of the conditions affecting the equipment to be furnished for the completion of the order, and that the information was secured by personal investigation and research and not from any estimate of a City engineer; and that no claim will be made against the City by reason of estimates, tests or representations of any officer or agent of the City; and proposes and agrees, if the proposal be accepted, to furnish the City of Lodi the necessary equipment specified in the bid in the manner and time therein set forth. It has been noted the City of Lodi reserves the right to accept all or part of this bid, and to reject any or all bids or to accept other than the lowest bid.

Equipment listed below are to be in accordance with the City of Lodi specifications attached hereto. The bidder will submit a detailed list of any and all exceptions taken to these specifications. In the absence of such a list, it will be understood that the bidder's proposal is based on strict conformance to the specifications in all respects. All exceptions taken will be evaluated, and a determination as to acceptability of the exceptions will be made by the City of Lodi before the award is made.

If awarded the bid, the undersigned agrees to furnish and deliver the equipment described in the specifications and will take in full payment therefor the following unit and total prices, to-wit:

QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
One	1200 KVAR switched capacitor bank		
	_____	\$ _____	\$ _____
	(Unit Price Written in Words)		
Four	Capacitor bank controller, socket mounted, time and temperature controlled.		
	_____	\$ _____	\$ _____
	(Unit Price Written in Words)		
	Sub-total:		\$ _____
	Taxes: (7.75%)		\$ _____
	TOTAL PRICE:		\$ _____

Manufacturer (bank only) \_\_\_\_\_

Delivery \_\_\_\_\_ weeks

Descriptive literature on proposed equipment enclosed? Yes \_\_\_\_\_ No \_\_\_\_\_

Are any exceptions taken to the Specifications? Yes \_\_\_\_\_ No \_\_\_\_\_

(If yes, list exceptions below)

It is understood and agreed that if this proposal is accepted, the price quoted above is inclusive of sales or use taxes, or similar tax now imposed by Federal, State, or other governmental agency upon the material specified.

The undersigned has checked carefully all the above figures and understands that the City and its officers and employees will not be responsible for any errors or omissions on the part of the undersigned in completing this bid.

In any case where discrepancy in extensions may occur, the Bidder agrees that the unit price shall be taken as the correct figure.

The undersigned, as bidder, hereby declares that the only persons or firms interested in the proposal as principal or principals is or are named herein and that no other persons or firms than herein mentioned have any interest in this proposal, that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith, without collusion or fraud.

This bid may be withdrawn by the written request of an authorized representative of the bidding company at any time prior to the scheduled time for the opening of bids or prior to any authorized postponement thereof.

The undersigned hereby designates as his office to which such notice of acceptance may be mailed, telegraphed or delivered:

Name of Company \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Name (printed/typed) \_\_\_\_\_

Title \_\_\_\_\_

Telephone Number \_\_\_\_\_

FAX Number \_\_\_\_\_

Dated \_\_\_\_\_

EQUIPMENT SPECIFICATIONS

12-KV SWITCHED CAPACITOR BANK AND CONTROLLER

I. 12-KV SWITCHED CAPACITOR BANK

A. GENERAL

Capacitor banks shall be rated 1200 KVAR and be utilized on a 12.0-kv (nominal) system. The banks shall consist of six (6) individual, two (2) bushing, 7.2-kv, 200 KVAR single-phase capacitors connected in a floating (ungrounded) Wye.

B. REQUIREMENTS FOR CAPACITOR UNITS

1. Standards - Capacitor units shall be manufactured and tested in accordance with the latest revision(s) of NEMA CP1 and applicable ANSI/IEEE Standards.
2. Ratings - Each individual capacitor shall be rated as follows:
  - o 200 KVAR (nominal)
  - o 7200 volts
  - o 95-kv Bil (minimum)
3. Construction - Each individual capacitor shall be constructed as follows:
  - o Paint Color: ANSI 70 Gray
  - o Capable of mounting with NEMA standard 15.62" centers.
  - o Bushing creepage shall be 10" (minimum).
  - o Each bushing shall include an insulating terminal cover.

- o Capacitors shall contain NO PCB's.
  - o All film foil construction
  - o Two (2) porcelain bushings
4. Losses - Capacitor losses shall not exceed 0.2 watts/KVAR. This value is based upon being energized at rated voltage in a 40° C ambient temperature.
  5. The internal corona starting voltage or ionization level shall not be less than 180% of rated voltage at 25° C.
  6. Each capacitor design shall have successfully passed the applicable design tests described in ANSI and NEMA Standards (latest revision).
  7. All units shall successfully pass a test where d.c. voltage at 4.3 times the capacitor-rated voltage is applied for 10 seconds minimum.

C. REQUIREMENTS FOR ASSEMBLIES

1. Equipment shall be preassembled and wired ready for raising into place and bolting to the pole.
2. Equipment shall be capable of being installed in conformance with California G.O. 95 as received from the vendor.
3. Cantilever strength of the rack shall provide a safety factor of five (5).
4. Rack material shall be 6061-T6 aluminum (no finish is required) or steel. The steel shall conform to ASTM A36 (latest revision) with hot-dipped

galvanized finish per ASTM A153 (latest revision).

5. Bushing air clearances between individual units shall be twelve (12) inches minimum, phase-to-phase and six (6) inches minimum phase-to-ground.
6. Banks shall be wired in a floating (ungrounded) Wye and have a bare loop approximately three (3) inches long at each end of the neutral bus to permit attachment of grounds when required.
7. Bus wiring shall have 5-kv minimum insulation.

D. REQUIREMENTS FOR SWITCHES

1. Switches shall be rated for capacitor switching up to 1200 KVAR banks (400 KVAR per switch). Switches shall have terminal covers.
2. Switches must be supplied with 5-conductor plug and receptacle. The switches shall have two porcelain bushings. Control voltage to be 120 VAC and control circuit to include holding switch. Control wiring to be factory assembled with switch controls wired and terminated on a terminal board located in a weatherproof, frame-mounted junction box. Acceptable oil switches are:  

Westinghouse	C15S15CS00
General Electric	9F90DBF100

  
Cooper Power System KNR-KA121NR1-KA374NR2
3. Capacitor switches shall be insulated from the rack by means of porcelain stand-off insulators. Minimum creepage of the stand-off insulators shall

be ten (10 inches).

4. Means for grounding the switch tanks only shall be provided.
5. Grounding connector for switch tank shall be of a material compatible with switch tank finish.
6. Ground lead shall consist of 600-volt insulated copper, minimum of No. 6 AWG and shall be insulated from the rack with Schedule 80 PVC conduit.
7. Switch leads shall have three (3) inches bare section on load side to permit attachment of grounds when required.

E. QUOTATION AND DRAWING REQUIREMENTS

1. For evaluation purposes, each bid shall be accompanied by the following information for each capacitor unit:
  - a. Loss versus temperature.
  - b. Capacitance versus temperature.
  - c. Corona starting voltage versus temperature.
  - d. Maximum and average watts loss from actual production.
  - e. Safe time versus current plots or allowable  $i^2t$  values.
  - f. Dielectric stress in volts/mil.
  - g. Number of series - parallel sections and the section voltage at rated voltage operation.
  - h. Results of all required tests.

2. Complete descriptive data with proposed drawings for all included equipment shall accompany the proposal
3. Approval drawings are required. Two (2) sets of final drawings and instruction manuals shall be provided by the supplier.
4. Bidders shall submit information as to the chemical content of all fluids used within the capacitor units offered in this proposal. Absolutely no PCB's or any fluids containing any form of chlorinated benzines will be accepted. The nameplate on each oil-filled unit shall include the words, "fluid is less than one p.p.m. PCB."

## II. CAPACITOR BANK CONTROLLER

The controller shall be a Sangamo Type AW-T catalog No. 55945 with the following:

- o Socket type mounting
- o Suitable for outdoor installation
- o Lockable cover
- o 120 volt
- o Operation counter
- o Separate thermostat control settings within time switch settings