

32

32

May 23, 1997



Los Angeles County
Metropolitan
Transportation
Authority

One Gateway Plaza
Los Angeles, CA
90012
213.922.6000

TO: BOARD OF DIRECTORS
FROM: LINDA BOHLINGER, INTERIM CHIEF EXECUTIVE OFFICER

SUBJECT: IFB NO. OP33600506 FOR OVERHAUL OF 114 METRO BLUE LINE LIGHT RAIL VEHICLE TRACTION MOTORS

RECOMMENDATION

Award a contract to Sherwood Electromotion, Inc., Ontario, Canada, the lowest responsive, responsible bidder under IFB No. OP33600506, to overhaul 114 Metro Blue Line light rail vehicle traction motors for a bid price of \$284,866.

ORGANIZATIONAL IMPACT

The Metro Blue Line light rail vehicle is entering its seventh year of operation. To ensure a continued high level of performance and reliability, the original equipment manufacturer has recommended that an overhaul of the traction motors be performed at the current mileage interval. This recommendation is based on empirical engineering data collected over many years on similar light rail projects and confirmed by MTA Rail Engineering.

BUDGET IMPACT

The funding for this procurement is contained in Capital Grant No. CA-03-0453.

ALTERNATIVES CONSIDERED

- An alternative to performing this overhaul by outside vendors is to perform it within the MTA. Rail Operations staff performed a cost analysis in 1996 to determine if this was a viable option. It was determined that the cost of purchasing equipment, training and personnel would exceed the cost of contracting to an outside vendor.
- Another alternative is to not perform the overhauls. This alternative could defer safety-related maintenance as mandated by the California Public Utilities Commission.

BACKGROUND

The light rail vehicle traction motor is the main electrical component that propels the rail car. Regular preventive maintenance is performed at scheduled intervals to ensure a high level of performance.

The original equipment manufacturer has recommended that an overhaul be performed to ensure the traction motor continues to perform with a high level of reliability. An MTA rail engineering analysis conducted in 1996 confirms the need to perform this overhaul at this time.

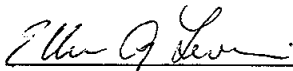
PROCUREMENT PROCESS

A competitive sealed bid process was conducted on February 24, 1997. Five bids were received and evaluated. MTA rail engineers conducted a site visit in April 1997 and determined that the low bidder, Sherwood Electromotion, Inc., was qualified to perform the overhaul program.

DBE PARTICIPATION

The DBE goal was waived due to a lack of subcontracting opportunities and limited suppliers of replacement parts.

Prepared by Robert C. Ogus



Ellen G. Levine
Executive Officer
Transit Operations

Procurement: TRACTION MOTOR OVERHAUL
 Board Date: JUNE 1997

BOARD REPORT ATTACHMENT "A"
 PROCUREMENT SUMMARY
 SEALED BID

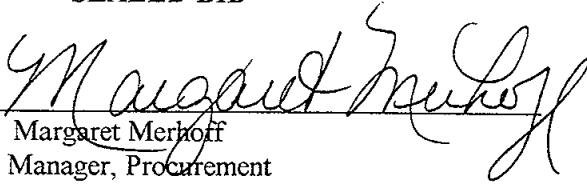
1.	Recommended Vendor:
	Name: Sherwood Electromotion
	City: Ontario Canada
	Total Dollar Amount: \$284,886.00
2.	Description of Equipment or Material: Traction Motor Overhaul
3.	Issued and Advertised: 1/15/97
4.	DBE Participation Goal? 0% Responsive? N/A
5.	No. of Bids Sent: 13
6.	No. of Bids Picked up by Vendors: 0
7.	Pre-Bid Conference: 1/29/97
8.	Date bids opened: 2/12/97
9.	No. of bids received: 5
10.	Staff analysis:
	1. List Bidders and Bid Prices:
	A. Sherwood Electromotion, Inc \$284,886.00
	B. Eastern Electric \$336,984.00
	C. Electric Motors \$339,470.34
	D. Electrical Rebuilders \$368,999.76
	E. Swiger Coil Systems, Inc \$450,642.00
	2. Tech Analysis-Responsiveness Yes 5/15/97
11.	Protest Received: No Disposition of Protest/Appeal: N/A
12.	Award to Other than Low Bid? No. Why?
13.	Conflict of Interest form submitted to Ethics? 5/28/97
14.	EO Evaluation Completed: N/A
15.	Audit Report Status: N/A
16.	Contract Administrator(Buyer) Ted Hope Tel: x21042
15.	Project Manager: Bob Ogus Tel: 310-816-6504

Procurement: TRACTION MOTOR OVERHAUL

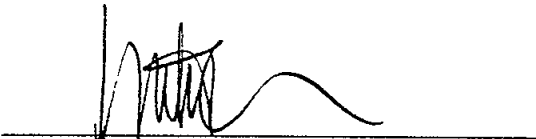
Board Date: JUNE 1997

BOARD REPORT ATTACHMENT "A"
PROCUREMENT SUMMARY
SEALED BID

Concur:


Margaret Merhoff
Manager, Procurement

Concur:


Richard P Carron
Director, Procurement



**INTEROFFICE
MEMORANDUM**

RAIL MAINTENANCE OPERATIONS

DATE: June 12, 1996

TO: Ken Miller, Rail Equipment Maintenance Operations

FROM: Sal Gatlula, Rail Equipment Engineering

SUBJECT: **OVERHAUL OF P865 LRV MOTOR ALTERNATORS**

Rail Equipment Engineering recommends that an overhaul of P865 LRV Motor Alternators be performed per MTA specification P865/TS/006. This recommendation is based on the following criteria.

- ▶ OEM (Stone Safety) recommends an overhaul of their motor alternators as per HRMM Part 9, Sec. 5.1 through 5.3.2.2
- ▶ The current Vehicle mileage is within the window of this OEM overhaul requirement.
- ▶ On time overhaul of these units will prevent catastrophic and expensive failures that can be caused by the wear and breakdown of individual components.

Please contact me at x 25843 if you require additional information or have any questions.

R. Morton W. Golditch C. Tenn J. Scott
J. Byrd S. Shrivavlc M. Aistrich R. Ogus P. Villicana

COST ANALYSIS

IN-HOUSE SERVICES

I. MATERIAL COSTS:

▶ Baker- model MT165R 15KV Surge/Hipot Bar to bar Multi-Tester	\$19,000
▶ SW24-3 Phase selector Sw.	\$ 3,000
▶ ATP02 Bar to bar test probes	\$ 300
▶ AT01F Bar test Fixture	\$ 200
▶ Megger-Simpson model 1T823	\$ 2,100
■ Steelman Electric 450 F Steel Oven with Chain hoist, drip pan, rack, Utility cart/sgl portable tray. Installed per code	\$26,000
■ Balancer American Hofmann Model HL-22-1	\$39,000
■ Motor Lathe Nardi Model IN 2560T	\$67,000
■ Overhead Crane between Upender, Lathe, Balancer, etc: 2 TON	\$90,000
■ Portable Press/Puller for bearings, etc.	\$ 5,000

■ Upcnder Autoquip model 360-80 (4 ton) \$ 22,000
PAGE 2

■ Power Bearing Packer \$ 900

■ Bearing Heater- RECO Model SC \$ 3,200

■ Scale for weighing bearings and Balancing putty \$ 500

■ Balancing Putty Dynaweight Brand
35 lb. Tub @\$275 Ea. \$ 1,100

■ Armature Stands -American Hofmann
Custom Manufactured to size (Set of two) \$ 7,500

■ Digital Profiler- Comtest Instruments
Harbor City, Ca. \$18,500

■ Motor Tester to spin test
motor upon completion \$14,500

■ Armature Cleaner No. 1091
Aldron Chemical Corp. @10.75 Gal \$ 7,500

■ Temperature Gauge (Dgital) \$ 300

■ Miscellaneous Hand Tools/Test Instruments \$ 5,000

TOTAL MATERIAL COSTS: \$332,600

Notes:

- a. All material costs obtained from vendor, alternate transit property, or manufacturer's catalogs.

- b. Replacement parts provided by MTA (brushes, springs, bearings, etc.) not included in cost estimate.

PAGE 4

LABOR COSTS:

Estimated Hours per Traction Motor Overhaul including handling.		30
Number of Traction Motors	108 + 6 spares	114
Total hours required		3420
1996 ATU labor Rate:		\$40.68
Total Labor Cost:		\$139,130
Training /Instructional Time		\$ 10,000

Total In House Project Cost (Excluding MTA Supplied materials)

\$481,730

COST ANALYSIS

OUTSIDE SERVICES

I.	ESTIMATED COST OF MOTOR OVERHAUL AS PER LACMTA SPECIFICATION P865/TS/008, REV. 0	\$2,595.00
II.	NUMBER OF MOTORS TO BE OVERHAULED	114
III.	TOTAL COST	\$295,830

Notes:

- a. Replacement parts provided by MTA (brushes, springs, bearings, etc.) not included in cost estimate.

COST ANALYSIS SUMMARY

ALTHOUGH IN-HOUSE COSTS ARE SIMILAR TO OUTSIDE SERVICE COSTS, THERE ARE A NUMBER OF FACTORS THAT MUST BE CONSIDERED IN OUR OVERALL MAINTENANCE OPERATION.

1. THE CURRENT GEARBOX REWORK PROGRAM HAS SIGNIFICANTLY IMPACTED THE MBL FACILITY RESOURCES AND IT IS OUR BELIEF THIS WILL CONTINUE FOR SOME TIME. A OVERHAUL PROGRAM OF THIS TYPE, REQUIRING ADDITIONAL SHOP SPACE FOR STAGING EQUIPMENT AND MATERIAL CAN ONLY FURTHER IMPACT OUR MAINTENANCE EFFORT.
2. OUTSIDE SERVICE VENDORS SUPPLY A WARRANTY WHICH COVERS PARTS, LABOR AND IN SOME CASES COSTS INCURRED BY THE MTA TO REMOVE/INSTALL THE WARRANTED COMPONENTS. THE MTA WOULD ONLY PAY FOR THE OVERHAUL A SINGLE TIME. ANY SUBSEQUENT WORK WOULD NOT BE AN EXPENSE TO THE MTA. IN-HOUSE SERVICE WOULD REQUIRE MULTIPLE COSTS TO THE MTA IN PARTS AND LABOR IF EQUIPMENT FAILURE OCCURS.
 - a. LIABILITY REGARDING EQUIPMENT MALFUNCTION IS AN IMPORTANT CONSIDERATION IN THIS PROCESS. MTA REQUIRES VENDORS TO POST BONDS OR INSURANCE TO COVER THIS POTENTIAL SITUATION. AN IN-HOUSE PROGRAM WOULD PLACE ALL LIABILITY ON THE MTA.
3. ADDITIONAL CONTRACT STAFF MUST BE HIRED TO PERFORM THE OVERHAUL OF THE TRACTION MOTOR. THIS PROGRAM IS SCHEDULED FOR COMPLETION WITHIN 18 MONTHS . THE FREQUENCY OF THIS PROGRAM IS APPROXIMATELY 5-6 YEARS. THIS WOULD NOT APPEAR TO BE A COST EFFECTIVE SCENARIO TO UNDERTAKE.
4. CONSIDERATION MUST BE GIVEN TO COSTS INVOLVED IN THE REGULATION OF INSULATING MATERIALS, EMISSIONS FROM THE BAKING OF ARMATURE WINDING, AND THE DISPOSAL OF MICA IN ADDITION TO OTHER HAZARDOUS WASTE.
5. VENDORS WHO SUBMIT PROPOSAL TO PERFORM THE TRACTION MOTOR OVERHAUL MUST BE CERTIFIED BY MTA RAIL EQUIPMENT ENGINEERING.

THEY MUST MEET EXACTING ENGINEERING STANDARDS RELATING TO THIS OPERATION. THEY MUST SUBMIT TO SITE INSPECTIONS AND HAVE A NUMBER OF YEARS EXPERIENCE REBUILDING SIMILAR TRACTION MOTORS FOR TRANSIT PROPERTIES. THIS WOULD NOT BE THE CASE WITH AN IN-HOUSE OVERHAUL.