



**Council Meeting: December 17, 2013**

**SUBJECT: Award of Contract for Top End Overhauls of Power Generating Engines at the Water Pollution Control Plant (F14-47)**

**BACKGROUND**

Approval is requested for the award of a contract in the amount of \$135,403, excluding applicable taxes, to Peterson Power Systems of San Leandro to perform top-end overhauls of the Power Generation Facility Caterpillar Engines #1 and #2, as required by the Environmental Services Department. Given the age and condition of the engines, approval is also requested for a 25% contract contingency in the amount of \$33,851. The contingency will cover unforeseen conditions encountered during the work, which are typically not discovered until the engines are disassembled.

**CEQA REVIEW**

N/A

**DISCUSSION**

The Power Generation Facility (PGF) is an electrical generation power plant located within the Water Pollution Control Plant (WPCP). The PGF was designed in 1995, constructed in 1997 and commissioned in November 1997. The PGF is owned and operated by the City of Sunnyvale and has the capacity to generate 1.6 megawatts of electricity. The facility is equipped with two Caterpillar Model 3516 Engine Generator Sets (800kW each) with Caterpillar Brushless SR4 Generators.

The engines are designed to burn lean fuels, including landfill gas, digester gas and air-blended natural gas (ABNG) or any combination of those gases. Currently, about 70% of the Plant's PGF fuel demands are met by the use of landfill and digester gas, with the balance being made up with ABNG. The PGF facility presently generates enough power to meet all of the needs of the Water Pollution Control Plant, and when both generators are running a small amount of power is exported back to the California power grid. In addition, heat generated by the engines is recovered and used in other plant processes.

These engines run 24 hours a day, seven days a week. The only time they are offline is for maintenance. In order to efficiently burn the blended gas fuel, meet strict air emission regulations and optimize electrical output, the Caterpillar engines must be maintained on a regular basis. As of December 2, 2013 engine #1 is currently at 12,900 hours and Engine #2 is at 10,700 hours since the last major rebuild. Both engines will be overhauled consecutively, with a small time interval between the two to allow engine #1 to complete the necessary break-in period and allow #2 to reach or near the 14,000-hour mark. Every 41.7 days adds 1,000 hours of operation. The goal is to have this purchase order in place to ensure that timely maintenance is completed. The first engine will be at the targeted hours by the end of January 2014.

Council last awarded a contract in April 2012 for a major overhaul to be performed on both engines, which is recommended to be performed every 40,000 hours. This contract provides for a top end overhaul, an activity recommended for every 14,000 hours.

Section 2.08.070(b) of the Sunnyvale Municipal Code exempts from competitive bidding "situations where solicitations of bids would for any reason be impractical, unavailing or impossible." In this case, Peterson Power Systems of San Leandro is the only authorized Caterpillar dealer in the Bay Area and, as such, is the only local source for the remanufactured Caterpillar parts used in the overhaul.

**FISCAL IMPACT**

Estimated cost to the City will be \$135,403 plus \$33,851 for contingencies for a total budget of \$169,254. Budgeted funds are available in the Wastewater Management Fund for mechanical preventative maintenance.

**PUBLIC CONTACT**

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, at the Sunnyvale Senior Center, Community Center and Department of Public Safety; and by making the agenda and report available at the Sunnyvale Public Library, the Office of the City Clerk and on the City's Web site.

**RECOMMENDATION**

It is recommended that Council:

1. Award a contract, in substantially the same form as the attached draft Purchase Order in the amount of \$135,403, excluding applicable taxes, to Peterson Power Systems for the overhaul of Power Generation Facility Caterpillar Engines #1 and #2;
2. Approve a 25% contingency in the amount of \$33,851.

Reviewed by:

Grace K. Leung, Director of Finance  
Prepared by: Pete Gonda, Purchasing Officer

Reviewed by:

John Stufflebean  
Director of Environmental Services

Approved by:

Gary M. Luebbers  
City Manager

**Attachments**

- A. Draft Purchase Order
- B. Peterson Powers Systems Quotes





**BUYER:**

Howard, Dreama

**PHONE** (408) 730-7396

**FAX** (408) 730-7710

ATTACHMENT B



2828 TEAGARDEN ST  
 SAN LEANDRO, CA 94577  
 800-963-6446

CITY OF SUNNYVALE  
 FINANCE DEPARTMENT  
 ACCOUNTS PAYABLE  
 P O BOX 3707  
 SUNNYVALE, 94088-3707

# Quote

CUSTOMER NO.	CONTACT	PHONE NO.	FAX NO.	EMAIL
6283550	TANNER MCGINNIS	408 730 7713		tmcginnis@sunnyvale.ca.gov
QUOTE NO.	P.O. NO.	DATE	WORK ORDER NO.	
1330930		Oct 29, 2013		
MAKE	MODEL	SERIAL NO.	UNIT NO.	HOURS
AA	3516	04EK00772	Cogen 1	0

SEGMENT: 01      **PERFORM TOP END OVERHAUL ON COGEN ENGINE #1**

**REPLACE WITH NEW**  
 Valve rotators (included with cylinder heads)  
 Cooling system Thermostats  
 Oil system Thermostats  
 Gaskets and Seals required to perform work

**REPLACE WITH CATERPILLAR REMAN**  
 16 Cylinder Heads  
 Necessary Turbo Cartridges  
 Aux Water Pump  
 Fresh Water Pump

**REBUILD TO CATERPILLAR GUIDELINES**  
 Exhaust Waste Gate  
 Carburetors  
 Gas Regulator

**CLEAN AND TEST**  
 Aftercooler (as needed)  
 Megometer Test of Generator Windings  
 On site cleaning of dust / debris from Generator Windings  
 Visual Inspection of complete Generator Package

**NOTES:**  
 Labor is figured at qty. of 5 days field labor @10 hrs/ day for two men, 3 days of shop labor @ 8 hours for one man, plus travel .  
 If Turbo Cartridges do not need to be replaced deduct \$1,425.84 each.  
 If Gas Pressure Regulator does not need to be rebuilt deduct \$2,918.44  
 Add \$955.12 core charge for each non-rebuildable Cylinder Head.  
 Add \$604.29 core charge if the Fresh Water Pump is non-rebuildable.  
 Add \$801.88 core charge if the Aux Water Pump is non-rebuildable.  
**QUOTE DOES NOT INCLUDE**

Damaged or cracked housings, manifolds, cylinder heads, or cores.  
 Replacement of crankshaft, camshafts, gears or cylinder block.  
 Repairs or machining to cylinder block, inserts, line boring, etc.  
 Overtime

Qty	Item No	Description	Unit Price	Ext Price
Parts				

2	0R6968	CARTRIDGE GP	\$1,532.73	\$3,065.46
16	0R7734	HEAD GP CYL	\$840.00	\$13,440.00
2	1A9066	GASKET	\$2.09	\$4.18
1	1H8278	SEAL	\$5.82	\$5.82
2	1P0810	TAPE	\$5.86	\$11.72
3	1R0726	ELEMENT AS	\$43.31	\$129.93
2	1S4810	GASKET	\$0.78	\$1.56
2	1S6595	GASKET	\$0.70	\$1.40
1	1T0132	SEAL	\$6.40	\$6.40
50	1U5516	DISC	\$1.52	\$76.00
1	1U8846	SEALANT	\$14.69	\$14.69
4	2J6274	SEAL O RING	\$0.92	\$3.68
1	3B8453	SEAL	\$1.83	\$1.83
2	3D2824	SEAL O RING	\$1.43	\$2.86
1	3J1907	SEAL	\$0.83	\$0.83
4	3J9196	NUT	\$0.29	\$1.16
8	3P2044	INHIBITOR	\$8.11	\$64.88
1	3P6061	GASKET	\$2.09	\$2.09
2	3S5849	GASKET	\$2.20	\$4.40
5	4C4200	PAINT-YELLOW	\$9.70	\$48.50
3	4C4205	PRIMER YELLO	\$8.24	\$24.72
1	4C5599	ANTI SEIZE	\$17.44	\$17.44
1	4H-3243	SEAL-O-RING (UPDATED #)	\$10.84	\$10.84
2	4P1505	REGULATOR AS	\$347.56	\$695.12
2	4P1511	SLEEVE	\$63.83	\$127.66
2	4P6719	GASKET	\$15.08	\$30.16
6	4P7581	CLIP	\$3.46	\$20.76
6	4P8134	CLIP	\$3.59	\$21.54
1	4W9723	GASKET	\$5.54	\$5.54
2	4W9765	GASKET	\$3.72	\$7.44
3	5H2471	CEMENT	\$16.93	\$50.79
1	5H6734	SEAL-O-RING	\$4.84	\$4.84
2	5L5840	WASHER	\$1.64	\$3.28
1	5N1940	GASKET	\$2.55	\$2.55
2	5N2126	ADAPTER	\$6.10	\$12.20
4	5P1480	SEAL-O-RING	\$10.18	\$40.72
4	5P5700	SEAL O RING	\$20.57	\$82.28
2	5P9890	SEAL	\$8.59	\$17.18
20	6K0806	TIE	\$0.30	\$6.00
2	6L1694	GASKET	\$0.95	\$1.90

4	6V1454	SEAL O RING	\$5.47	\$21.88
2	6V5051	SEAL-O-RING	\$18.11	\$36.22
1	4C-9614	SEALANT	\$5.04	\$5.04
1	7C9710	GASKET	\$16.08	\$16.08
1	7E1558	HARDWARE KIT	\$29.84	\$29.84
4	7K1978	SEAL	\$11.58	\$46.32
32	7N4782	SPRING	\$8.10	\$259.20
1	7N4932	GASKET	\$2.37	\$2.37
1	7S7816	NUT	\$10.86	\$10.86
1	7W0371	REGULATOR	\$42.08	\$42.08
4	7W4286	DIAPHRAGM	\$58.60	\$234.40
4	7W4287	SPRING	\$3.42	\$13.68
1	8C3680	CONDITIONER	\$91.19	\$91.19
1	8M2665	BREATHER A	\$6.47	\$6.47
4	8M2933	SHIM	\$2.11	\$8.44
2	8N2555	FILTER	\$20.64	\$41.28
1	8N6309	ELEMENT A-A	\$121.92	\$121.92
4	8T1703	SEAL-O-RING	\$3.37	\$13.48
6	8T1919	SEAL	\$5.20	\$31.20
2	8T7765	PAD-HAND	\$1.63	\$3.26
2	9F2247	PLUG	\$1.68	\$3.36
1	3S-1219	SEAL-O-RING	\$12.38	\$12.38
1	2427406	HOSE-BELLOWS	\$18.78	\$18.78
1	9X6591	KIT GASKET	\$270.49	\$270.49
16	9Y6792	GASKET	\$0.46	\$7.36
4	9Y6893	GASKET	\$2.90	\$11.60
6	9Y8069	GASKET	\$3.48	\$20.88
4	0617540	SEAL O RING	\$9.04	\$36.16
1	10R1669	PUMP GP WTR	\$841.84	\$841.84
1	10R1673	PUMP GP WTR	\$998.98	\$998.98
16	1352651	SEAL	\$15.44	\$247.04
4	1429675	REGULATOR	\$42.08	\$168.32
1	1460758	BYPASS GP	\$1,250.46	\$1,250.46
2	1552270	PLUG KIT	\$4.13	\$8.26
4	2002003	SCREW-ADJUST	\$24.10	\$96.40
1	2138467	GASKET KIT	\$637.58	\$637.58
16	355-0762	KIT-GASKET(S	\$216.59	\$3,465.44
1	DOW NO 4	COMPOUND	\$26.50	\$26.50
2	105	LUBRIPLATE	\$5.52	\$11.04
2	5005	9 OZ 5-56	\$3.40	\$6.80

18	4105	split loom	\$0.95	\$17.10
2	5P8248	WASHER	\$1.17	\$2.34
1	REG	Fisher Regulator Valve	\$2,130.04	\$2,130.04
16	1176512	GROMMET	\$6.07	\$97.12
6	1182950	GROMMET	\$6.50	\$39.00
8	1183509	GROMMET	\$6.59	\$52.72
1	1190814	GASKET	\$1.87	\$1.87
1	2485513	REGULATOR - TE (92 deg)	\$42.17	\$42.17
1	1092332	SEAL O RING	\$16.73	\$16.73
1	8N1991	RING	\$17.16	\$17.16
1	3S9643	SEAL	\$12.67	\$12.67

**Total Parts      \$29,674.15**

**Labor**

FLD	FIELD LABOR	\$16,740.00
FLD OT	FIELD OVERTIME LABOR	\$0.00
SHOP	SHOP LABOR	\$4,377.60
UTL	UTILITY LABOR (PARTS PICK UP AND DELIVERY)	\$712.00
TVL	TRAVEL LABOR	\$6,324.00

**Total Labor      \$28,153.60**

**Miscellaneous**

906	MLG	TRUCK MILEAGE	\$2.80	\$2,536.80
1	MISC	MISC HARDWARE AND SUPPLIES	\$500.00	\$500.00
1	SOL	CLEAN AND TEST SPARK ARRESTOR	\$1,050.00	\$1,050.00
1	SOL	CLEAN AND TEST AFTERCOOLER CORE	\$1,000.00	\$1,000.00
1	SOL	MEGGAR TEST GENERATOR WINDINGS	\$1,475.00	\$1,475.00
1	EST TAX	Estimated tax for the parts	\$3,311.79	\$3,311.79

**Total Miscellaneous      \$9,873.59**

**Segment 01 Total      \$67,701.34**

**TOTAL QUOTE      \$67,701.34**

- The above pricing is good for 30 days
- Estimate EXCLUDES sales tax, freight, misc. service fees and hauling charges unless otherwise stated.
- You will be notified if additional repairs or parts are required.
- All invoices are due net 10th prox.

**ESTIMATED REPAIR TIME:** \_\_\_\_\_ *from start date*

" The signature is an authorization to proceed with the required repair work as described within the quote ".

Issued PO# \_\_\_\_\_, Authorized Name \_\_\_\_\_ Please Print



2828 TEAGARDEN ST  
 SAN LEANDRO, CA 94577  
 800-963-6446

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REPLACE WITH NEW  
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 Oil system Thermostats  
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1	SOL	CLEAN AND TEST AFTERCOOLER CORE	\$1,000.00	\$1,000.00
1	SOL	MEGGAR TEST GENERATOR WINDINGS	\$1,475.00	\$1,475.00
1	EST TAX	Estimated tax for parts	\$3,311.79	\$3,311.79

**Total Miscellaneous      \$9,873.59**

**Segment 01 Total      \$67,701.34**

**TOTAL QUOTE      \$67,701.34**

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