

ITEM #:	19
DATE:	08-12-25
DEPT:	ELEC

COUNCIL ACTION FORM

SUBJECT: COMBUSTION TURBINE CONTROLS UPGRADE&NBSP;

BACKGROUND:

The existing controls systems on Combustion Turbines 1 (CT1) and Combustion Turbine 2 (CT2) are outdated and are in need of replacement. The hardware, software, system architecture, and several pieces of instrumentation are antiquated, replacements are difficult to find, and generally the systems no longer reflect best industry practices. Electric Department staff worked with AP4 Energy Services, LLC to develop a specification for acquiring a combined, updated controls system for both Combustion Turbines.

During the development of the specification and review of the existing infrastructure, it was also determined the existing motor control center (MCC) for CT1 must be updated. The existing MCC utilizes a proprietary communications protocol that is no longer supported by the manufacturer and replacement parts are difficult to acquire, with only used parts available.

The most effective method of replacement is by swapping out the electrical "buckets". Replacement buckets were obtained from the OEM, Eaton, following approval of City Council at the February 13, 2024 meeting. These buckets have been received and will be installed concurrently with the controls update to CT1. With the buckets and supporting documentation delivered, the specification was finalized and prepared for the proposal process.

On March 24, 2025, a Request for Proposal document was posted on AmesBids by the City's Purchasing division. On May 15, 2025, three proposals were received. An evaluation team was formed by staff to review proposals. Proposals were evaluated on compatibility, experience, support, the proposed timeline, cost, and the software/hardware solution, which includes reliability and intuitiveness. Vendors did not include sales tax in their pricing. The results of this evaluation are below.

VENDOR	PRICE	POINTS	RANK
HPI Energy Services Tomball, TX	\$995,000	365	1
Petrotech, Inc. New Orleans, LA	\$1,133,881	341	2
Emerson Process Management Freedom, PA	\$1,994,791	336	3

Presentations were then given by all three vendors. The presentations were evaluated on experience of the project team, implementation plan, usability, and security, and training and support.

VENDOR	POINTS	RANK
Petrotech, Inc. New Orleans, LA	451	1
Emerson Process Management Freedom, PA	430	2
HPI Energy Services Tomball, TX	422	3

After evaluating the presentations and combining all the points, the final RFP rank appears below.

VENDOR	POINTS	FINAL RANKING
Petrotech, Inc. New Orleans, LA	792	1
HPI Energy Services Tomball, TX	787	2
Emerson Process Management Freedom, PA	766	3

The top two firms, Petrotech, Inc. and HPI Energy Services, are separated by less than 0.7% difference in total points. The second ranked-firm, HPI Energy Services, provided a pricing proposal that was \$138,881 less than Petrotech. However, for the qualitative scoring metrics, Petrotech earned higher scores. This is demonstrated in the comparison below:

VENDOR	PRICE	POINTS FROM PRICE	POINTS FROM QUALITATIVE FACTORS	TOTAL POINTS
Petrotech, Inc. New Orleans, LA	\$1,133,881	66	726	792
HPI Energy Services Tomball, TX	\$995,000	75	712	787

The City's consultant for the project, AP4, has experience with all three of the companies proposing on the project. AP4 highly recommended Petrotech over others due to their experience as a company and continued history of performing projects within budget and on schedule. Petrotech has extensive experience working on Pratt & Whitney FT4 (GT1) and GE LM2500 (GT2) engines and a comprehensive implementation plan that minimizes outage time. The schedule given in Petrotech's proposal is the most detailed. Project phases and tasks are broken down on a day-by-day basis and allow for a reasonable amount time for City staff to review submittals. The schedules provided by other companies did not do the same.

Petrotech's proposed system offers an open architecture software operated on commonly available industrial computing equipment that is reliable and easy for staff to use. System features like a data historian, trend builder, and control logic builder will help Electric staff

reliably operate and maintain the generating assets. Petrotech's training course provides training materials for more staff than the other companies proposing. Lastly, Petrotech has a 24/7 technical support line available for the life of the controls system, which is included in the price of the proposal. This was not included by other companies. Their solution is cost-effective, secure, and based on common industry practice. **Therefore, staff determined that the proposal from Petrotech, Inc., of New Orleans, LA is most acceptable.**

Staff confirmed that this project is subject to Iowa Sales tax and that Petrotech is licensed to collect and remit Iowa sales tax. Petrotech confirmed that their updated total including sales tax would be \$1,213,252.67. The approved FY 2021/22 CIP included \$750,000 for controls upgrades and the approved FY 2024/25 CIP included \$600,000 for controls upgrades to GT1 and GT2. Additional funds in the amount of \$1,500,000 were made available from the Ash Pond project in FY 2023/24. A total of \$2,850,000 in funds are available to perform the Combustion Turbine controls upgrades. A project budget is shown below:

Expenses:		Funding Sources:	
Design (AP4)	\$149,670.00	CT Generation Improvements	
MCC Design (Zachry Group)	\$96,000.00	2021/22 CIP	\$750,000
Control Equipment & Installation (This Action, Inclusive of Tax)	\$1,213,252.67	2023/24 CIP Ash Pond Funds savings	\$1,500,000
Replacement Buckets (Previous Action)	\$160,213.56	2024/25 CIP	\$600,000
Bucket Installation	\$11,914.45		
TOTAL	\$1,631,050.68	TOTAL	\$2,850,000

ALTERNATIVES:

1. Award a contract to Petrotech Inc., of New Orleans, LA, for Combustion Turbine Controls Upgrade, in the amount of \$1,213,252.67 (inclusive of sales tax)
2. Award a contract to another vendor.
3. Reject all proposals.

CITY MANAGER'S RECOMMENDED ACTION:

The existing controls systems on Combustion Turbines 1 (CT1) and Combustion Turbine 2 (CT2) are outdated and in need of replacement. The proposed solution from Petrotech, Inc. of New Orleans, LA offers software and hardware that are reliable and easy for staff to use. System features like a data historian and trend builder, control logic builder, and technical support beyond the length of the warranty period will help Electric Department staff reliably operate and maintain the generating assets for many

years. Petrotech has extensive experience working on GE LM2500 and Pratt & Whitney FT4 engines and a comprehensive implementation plan that minimizes outage time. Their solution is cost-effective, secure, and based on common industry practice. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No.1 as stated above.