

ITEM #:	18
DATE:	01-13-26
DEPT:	ELEC

## COUNCIL ACTION FORM

**SUBJECT: COMBUSTION TURBINE CONTROLS UPGRADE - CHANGE ORDER NO. 2**

### **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The existing controls systems on Combustion Turbines 1 (CT1) and Combustion Turbine 2 (CT2) are outdated and are in need of replacement.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 needed to 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.

On August 12, 2025, City Council awarded a contract to Petrotech Inc., of New Orleans, LA, for the Combustion Turbine Controls Upgrade project in the amount of \$1,213,252.67.

During the review project after the contract was awarded, the Petrotech recommended that additional controls needed to be replaced. Therefore, on October 28, 2025, City Council approved Change Order No. 1, in the amount of \$174,300.86, to add additional controls equipment to the specification and to change the control system to use a centralized network architecture identified by Petrotech.

### **THIS ACTION:**

**Change Order No. 2, in the amount of \$176,054.59, will be necessary for replacing additional control equipment and instrumentation in both CT1 and CT2. A total of five additional changes are being recommended by Petrotech for the following reasons:**

1. Replace the existing expander and generator lubricating oil tank level switch with a modern level transmitter. The expander and generator lubricating oil tank located in CT1's auxiliary equipment room is utilizing a level switch instrument which is original to installation. This switch is well beyond its useful life and requires replacement. **(\$22,183.24)**
2. Replace the original rack-style modules used to relay field information to the central processor. The current modules are outdated and too large to fit with the other updated hardware and will be replaced with more compact modules. There is no additional cost to replace these modules. **(\$0.00)**
3. Replace the servo controller that drives the stator vanes with a new assembly hosted by

the central processor in the CT2 control room. This will allow for the ability to perform calibration and maintenance without the need for a laptop with antiquated software. **(\$15,365.20)**

4. Replace the older digital valve positioner (DVP) with a modernized version that still works with the existing valve body. CT2 utilizes a water injection system to reduce the nitrous oxides produced during operation. This water injection system has a valve driven by a DVP to allow the optimal amount of water into the combustion zone. The current DVP is original to the installation and also requires using an outdated version of Windows operating system for access. **(\$40,125.00)**
5. Replace seventeen (17) outdated instruments on critical systems. Instrumentation on CT2 is mostly original to when the asset was installed and commissioned in 2005. Many of the instruments that are crucial to operation are beyond their useful life cycle and in need of replacement. A total of sixteen (16) pressure transmitters and one (1) level transmitter have been identified as critical for replacement. **(\$98,381.15)**

With this action the total contract amount will be \$1,563,608.12. There is currently \$1,083,992 available in this Capital Improvement Project to fund this change order.

#### **ALTERNATIVES:**

1. Approve Change Order No. 2 with Petrotech Inc., of New Orleans, LA, for Combustion Turbine Controls Upgrade in an amount of \$176,054.59 (inclusive of Iowa sales tax).
2. Do not approve the change order.

#### **CITY MANAGER'S RECOMMENDED ACTION:**

**The Combustion Turbines have antiquated equipment that is difficult to maintain and replace, causing reliability concerns in critical operating systems. The recommended changes from Petrotech will enable Power Plant staff to maintain the generating assets more easily while also replacing sources of reliability concerns, thus increasing the reliability of the Combustion Turbines. The items listed in this Change Order were not anticipated during specification development.** Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1 as stated above.