ITEM # ___33__
DATE: 07-28-15

COUNCIL ACTION FORM

SUBJECT: ENGINEERING SERVICES CONTRACT CHANGE ORDER – CONVERSION OF POWER PLANT FROM COAL TO NATURAL GAS

BACKGROUND:

In November 2013, the City Council voted to convert the City's Power Plant from coal to natural gas. On May 27, 2014, City Council awarded a contract to Sargent & Lundy, LLC, Chicago, IL, for Engineering Services required to convert the Power Plant to natural gas. That contract was in the not-to-exceed amount of $1,995,000.

On November 25, 2014, City Council approved Change Order #1 in the not-to-exceed amount of $2,395,000 for Sargent & Lundy to design the installation of the DCS, design the control room and DCS cabinet room, and integrate the main and auxiliary control boards into the DCS.

Council authorization for a second change order containing two elements is now being requested. **This Change Order is necessary because at the time the original agreement with Sargent & Lundy (S&L) was signed, the need for a new Distributed Control System (DCS) and Control room expansion was not known. To accommodate the new control room addition, an old switchgear panel board must be removed from the existing Control Room and HAVC engineering must be done to balance the heating/cooling of the new and old space.**

Item 1 : 13.8 kV Switchgear Control and Relaying Modifications

Description: The control room expansion requires the removal of existing auxiliary control board. The circuit breaker control switches for the existing 13.8kV Switchgear breakers, plus several ammeters, are presently located on this auxiliary control board.

Staff has decided to relocate the operator manual control of the existing 13.8 kV switchgear breakers from the auxiliary control board to the front of the existing 13.8 kV switchgear. The breakers are also controlled via the SCADA System.

The protective relays and test switches for the existing 13.8kV switchgear breakers are located on the existing duplex panel. Staff has also decided to abandon the protective relays and test switches presently located on the existing duplex panel and provide new protection equipment on the front of the existing 13.8kV switchgear.

Since the switchgear cannot be easily taken out-of-service, the plan is to purchase replacement switchgear cubicle doors complete with the new control and relay devices pre-installed to facilitate rapid cut-out of the existing devices and rapid cut-in of the new devices on a cubicle by cubicle basis.

The existing 13.8kV switchgear consists of 8 cubicles of late 40's vintage General Electric equipment with 7 cubicle additions to both ends of the line-up installed in the mid-50's.

Cost: The not-to-exceed cost for Item 1 is $120,000.

Item 2: Existing HVAC Equipment and Controls Replacement

Description: Staff has determined that the existing HVAC equipment (2x100% HVAC units with roof mounted condensers, in-duct heaters, modulating dampers) and controls for the Relay Room, Lunch Room and Control Room is nearing the end of its life. Additionally, the temperature control between the three different rooms is not very accurate. To address these issues, the staff has requested that the equipment be replaced as part of the ongoing natural gas conversion project.

Cost: The not-to-exceed cost for Item 2 is $54,000.

In total, Change Order #2 will add an additional $174,000 to the existing S&L engineering services agreement, and will bring S&L's total not-to-exceed contract amount to $4,564,000.

The approved FY 2015/16 Capital Improvements Plan included $26,000,000 for the Unit #7 and #8 Fuel Conversion. The overall project budget and commitments to date are summarized on page 3.

ALTERNATIVES:

1. Approve contract Change Order No. 2 to Sargent & Lundy, LLC, Chicago, IL, in the not-to-exceed amount of $174,000 for the Engineering Services for Converting the City of Ames Power Plant from Coal to Natural Gas.

2. Reject contract Change Order No. 2 and delay the in service date of the control room.

MANAGER'S RECOMMENDED ACTION:

It has been determined that the existing power plant HVAC equipment is nearing the end of its 40 year life. Since this system will also provide HVAC service to the new control room, a comprehensive design is necessary to serve both the new and old control room, break room and relay room.

The control room expansion requires the removal of an existing auxiliary control board. To remove this board, engineering is required to relocate existing control switches for switchgear breaker equipment, and provide new protetction equipment on the front of the existing switchgear.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1 as described above.

PROJECT BUDGET

The overall project budget and commitments to date are summarized below. To date, the project budget has the following items encumbered:

$26,000,000	FY 2015/16 CIP amount budgeted for project
$1,995,000	Encumbered not-to-exceed amount for Engineering Services
$2,395,000	Engineering Services Contract Change Order No. 1
$174,000	**Engineering Services Contract Change Order No. 2 (this agenda item)**
$3,355,300	Contract cost for Natural Gas Conversion Equipment
$29,869	Equipment Contract Change Order No. 1
(-$321,600)	Equipment Contract Change Order No. 2
(-$51,000)	Equipment Contract Change Order No. 3
$1,595,000	Contract cost for DCS equipment
$1,001,240	Contact cost for TCS equipment
$925,000	Estimated cost for Control Room Installation General Work Contract (separate item on this agenda)
$5,115,000	Estimated cost for Mechanical Installation General Work Contract (separate item on this agenda)
$3,272,793	Estimated cost for Electrical Installation General Work Contract (separate item on this agenda)
$116,000	Estimated cost for UPS System (separate item on this agenda)
$19,601,602	**Costs committed to date for conversion**
$6,398,398	**Remaining Project Balance** to cover miscellaneous equipment and modifications to the power plant needed for the fuel conversion