

**COUNCIL ACTION FORM**

**SUBJECT: POWER PLANT NATURAL GAS CONVERSION EQUIPMENT, INCLUDING BURNERS, SCANNERS, THERMAL ANALYSIS, AND COMPUTER MODELING – CHANGE ORDER NO. 2**

**BACKGROUND:**

In November of 2013 the City Council decided to convert the City's Power Plant from coal to natural gas. In May of 2014 the City Council selected Sargent & Lundy of Chicago, Illinois, to provide engineering and construction oversight services for the conversion project.

As staff has previously described, the major phases of work necessary to complete this conversion project are as follows:

1. Procure the natural gas burners, igniters, and scanners, plus boiler/furnace modeling to assess the necessity for boiler modifications.
2. Replace the Power Plant's Distributed Control System (DCS), including both hardware and software (current project).
  - 2a. Replace (upgrade) the Turbine Control Systems (TCS) on Unit 7 and Unit 8, plus the steam seal regulator on Unit 8 only.
3. Design the necessary modifications to the control room and DCS cabinet room.
4. Design the necessary modifications to source natural gas inside the power plant, and all necessary structural, mechanical, and electrical modifications for the power plant to burn natural gas as its primary fuel.
5. Select a contractor to construct a new control room/DCS room in the Power Plant.
6. Select a contractor to modify the Power Plant and install the materials and equipment necessary to operate the Power Plant on natural gas.
7. Select a contractor to install the electrical equipment, including the work associated with the DCS upgrade and the electrical modifications to the control room.

**This specific phase of the project deals with #1 above, which is to procure the natural gas burners, igniters and scanners, plus boiler/furnace modeling to**

**assess the necessity for boiler modifications.** On November 5, 2014, City Council awarded a contract for this work to Alstom Power Inc. of Windsor, CT in the amount of \$3,355,300.

**Change orders were anticipated with the original scope of work.** On January 20, 2015, staff administratively approved Change Order No. 1 in the amount of \$29,869 for Alstom to perform base line testing for Unit 8. That testing paved the way for a second change order, which will now require Council approval.

### **CHANGE ORDER NO. 2:**

This Change Order makes the following changes to the original contract with Alstom regarding burner equipment:

- On Unit #7 add two flame scanner frequency signal analyzers.
- On Unit #8 reduce the number of natural gas burners (and associated burner equipment) from twelve to nine.
- On Unit #8 add six frequency signal analyzers.

**The total cost of Change Order No. 2 is a reduction of \$321,600.**

### **PROJECT COST HISTORY:**

**The engineer's cost estimate for procurement of the equipment covered by this contract was \$4,500,000. With this second change order, the total costs for the Alstom contract within the project will be reduced to \$3,063,569.**

Overall, the total project dollar amount committed to date (inclusive of this Change order No. 2) is \$9,679,597. The approved FY 2015/16 Capital Improvements Plan includes \$26,000,000 for the Unit 7 and Unit 8 fuel conversion. This amount includes \$4,000,000 for engineering and \$22,000,000 for equipment and installation. The project budget to date is attached to this report.

### **ALTERNATIVES:**

1. Approve contract Change Order No. 2 with Alstom Power Inc. of Windsor, CT for the Natural Gas Conversion Equipment Including Burners, Igniters, Scanners, Thermal Analysis and Computer Modeling, with a reduction in the contract amount of \$321,600.
2. Reject contract Change Order No. 2.

**MANAGER'S RECOMMENDED ACTION:**

Conversion of the City's power plant (Units 7 & 8) from coal to natural gas was previously approved by the City Council. This conversion is needed in order for the power plant to remain in compliance with state and federal air quality regulations.

**Staff and the engineering consultant have determined that Unit 8 will meet all performance and environmental specifications if nine natural gas-fired burners are installed, instead of the twelve originally included in Alstom's bid. This will allow three existing burners to remain while significantly reducing the cost of the project.**

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

## PROJECT BUDGET STATUS

\$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
\$3,355,300	Contract cost for Natural Gas Conversion Equipment
\$29,869	Equipment Contract Change Order No. 1
<b>(-\$321,600)</b>	<b>Equipment Contract Change Order No. 2</b>
\$ 1,161,300	Estimated cost for DCS equipment (currently evaluating bids received)
\$1,064,728	Estimated cost for TCS equipment (currently out for bid)
<b><u>\$9,679,597</u></b>	<b>Costs committed to date for conversion</b>
<b>\$16,320,403</b>	<b>Remaining Project Balance</b> to cover the installation of natural gas burners, natural gas piping into the power plant from the gas gate, DCS installation, Control/DCS room, and other miscellaneous equipment and modifications to the power plant needed for the fuel conversion