

COUNCIL ACTION FORM

**SUBJECT: POWER PLANT DCS HARDWARE AND SOFTWARE UPGRADE –
CHANGE ORDER NO. 1**

BACKGROUND:

Electric Services uses a Distributed Control System (DCS) to monitor and operate the boilers, turbines, generators, and auxiliary equipment located in the Power Plant and at remote sites. The existing DCS was installed in 2015 during the Natural Gas Conversion Project. The DCS was supplied and is supported by Emerson Process Management Power & Water Solutions, Inc. of Pittsburgh, PA.

On January 26, 2021, the City Council approved a contract with Emerson Process Management, Power & Water Solutions, Inc. of Pittsburgh, PA to upgrade the DCS system in the amount of \$422,803 (including \$2,000 in freight). Since Emerson Process Management Power & Water Solutions, Inc. was not licensed to collect sales taxes for the State of Iowa, the City was responsible to pay \$29,456.21 in applicable Iowa sales taxes directly to the state. This brought the total cost to \$450,259.21.

Three control systems in the Power Plant (Water Treatment, Electrostatic Precipitator, and Diesel Fire Pump) are currently operated as individual systems, separated from the DCS. These three systems cannot be operated from the control room at the Power Plant and monitoring is very limited. The Water Treatment system is also very limited in its ability to automate chemical dosing, resulting in vulnerability to all the water systems in the Power Plant including the Boilers, Cooling Towers, and Internal Cooling Water systems.

When the Power Plant DCS Hardware and Software Upgrade project was planned and awarded, staff did not include the Water Treatment, Electrostatic Precipitator, and Diesel Fire Pump controls with the project, since these three systems do not integrate with the DCS. Instead, it was planned to update these three systems separately as part of a routine maintenance project.

After awarding the Power Plant DCS project to Emerson, staff began the process of researching options to update these three separate systems. As a result, it became apparent that the updates would be very complex and costlier than a typical maintenance project. Additionally, any update that could be undertaken would still cause these control systems to be separate from the Power Plant's DCS, resulting in reduced ability to monitor and respond to system conditions.

During the planning and testing phases of the current DCS hardware and software upgrade project, staff consulted with Emerson about the feasibility of

integrating these three systems into the DCS. Staff has determined that incorporating a change order into the current DCS project would be the simplest and most cost-effective approach.

The cost to do so would be an increase of the contract amount by \$175,855, plus \$12,309.85 in sales taxes, for a total cost of \$188,164.85. Since Emerson Process Management Power & Water Solutions, Inc. is not licensed to collect sales taxes for the State of Iowa, the City would pay up to \$12,309.85 in applicable Iowa sales taxes directly to the state.

The original Capital Improvements Plan funding for this project has been exhausted and the additional funding for this change order will come from the Unit 7 Turbine/Generator Overhaul project funds. The Unit 7 Turbine/Generator Overhaul has been completed and there is \$373,311 in funding remaining in that project.

ALTERNATIVES:

1. Approve Change Order No. 1 to Emerson Process Management, Power & Water Solutions, Inc. of Pittsburgh, PA in the amount of \$175,855.00. The City will pay applicable sales tax up to \$12,309.85 directly to the State of Iowa.
2. Do not approve the requested change order.

CITY MANAGER'S RECOMMENDED ACTION:

It is in the City's best interest to perform the integration of these three systems during this current project to improve system simplicity, maintenance, and reliability. It will also avoid additional cost and Power Plant down time if performed now instead of performing as a separate project in the future. The most effective way to complete this system integration is for the existing DCS supplier to perform the work.

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