

COUNCIL ACTION FORM

SUBJECT: POWER PLANT DCS HARDWARE AND SOFTWARE UPGRADE

BACKGROUND:

Electric Services uses a Distributed Control System (DCS) to monitor status and operate the boilers, turbines, generators, and auxiliary equipment located in the Power Plant and at remote sites.

The existing DCS system 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. from Pittsburgh, PA.

It has been common practice to update the DCS system hardware every 5 years to maintain reliability and maintainability and it is recommended by the Original Equipment Manufacturer (OEM). The proposed upgrades will include 6 servers, 7 workstations, all up-to-date Emerson Ovation software and all third-party software used to support the DCS, 7 root switches, 1 router, all on-site/off-site management as well as engineering to support the upgrade, offsite Factory Acceptance Testing, on-site installation, and training.

A part of the upgrade will include updating the existing Ovation Security Center (OSC) to a Power and Water CyberSecurity Suite (PWCS). The new hardware will also help staff keep current in a world subject to North American Electric Reliability Corporation (NERC) operating requirements. **The new PWCS will include a McAfee antivirus software package, replacing the existing Kaspersky antivirus software which NERC recommends replacing due to its possible ties with the Russian Government.**

The existing DCS cabinets, controllers, infostructure, wiring, and graphics need to all remain in order to avoid much greater costs, invasive hardware change outs, extensive down time, and new system training for all plant operators. This requires the upgrade project to be a single source purchase made to Emerson.

Upgrading our existing DCS hardware with Emerson Ovation is the most practical and cost-effective way to maintain system reliability and stay current with supported software and hardware while gaining more functionality and security. This requires a single-source purchasing arrangement with the current DCS software supplier.

Staff requests that a contract be awarded to Emerson Process Management, Power & Water Solutions, Inc. of Pittsburgh, PA in the amount of \$422,803

(includes \$2,000 in freight). 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 \$29,456.21 in applicable Iowa sales taxes directly to the state. This will bring the total cost to \$450,259.21.

The Capital Improvements Plan includes \$375,000 in the 2020/21 fiscal year for DCS hardware upgrades. The additional \$77,259.21 will come from the Power Plant O&M budget. Less funds were used on boiler chemicals than anticipated because of not operating Unit 8 for half the year.

ALTERNATIVES:

1. A. Waive the City's purchasing policy requirement for formal bidding procedures allowing for a single-source purchasing arrangement with the current DCS software and hardware supplier.

B. Award a contract to Emerson Process Management Power & Water Solutions, Inc. of Pittsburgh, PA, for the Power Plant DCS Software and Hardware Upgrade in the amount of \$422,803. The City will pay applicable sales taxes up to \$29,456.21 directly to the State of Iowa.
2. Postpone the DCS hardware upgrade and run the risk of replacement hardware components not being available or the current hardware failing.

CITY MANAGER'S RECOMMENDED ACTION:

It is in the City's best interest to update the DCS in a timely and cost-effective manner. Not updating this system adds to the risk of unit unavailability and increased cost incurred from unplanned downtime, emergency repairs, and trying to maintain unsupported hardware and software. **The most effective way to complete this DCS upgrade is to enter into an agreement with the existing DCS supplier to complete the current hardware upgrade.**

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