

COUNCIL ACTION FORM

SUBJECT: POWER PLANT FUEL CONVERSION – DISTRIBUTED CONTROL SYSTEM (DCS) REPORT OF BIDS

BACKGROUND:

On November 12, 2013, the City Council voted to convert the City's Power Plant from coal to natural gas. Implementing this decision requires a significant amount of engineering, installation of equipment, and modification and construction in the Power Plant.

In conjunction with this conversion, on November 25, 2014 the City Council approved preliminary plans and specifications for the Distributed Control System. **This specific phase of the project is to purchase the new Distributed Control System (DCS). The DCS is a dedicated control system, made up of hardware and software, used for boiler controls and power plant systems. It is a crucial coordinating and communication system needed to operate the plant.**

Bid documents were issued to fifteen companies. The bid was advertised on the Current Bid Opportunities section of the Purchasing webpage and a Legal Notice was published in the Ames Tribune. The Engineer's estimate of the cost for this phase of the project is \$1,161,000.

On January 28, 2015, three bids were received as shown on the attached report. The specifications and bids are quite complex, and Electric Services staff feels that additional time is needed to evaluate each bid in order to recommend an award that best meets the City's needs.

The approved FY 2014/15 Capital Improvements Plan for Electric Services includes \$36,880,000 for the Unit #7 and #8 Fuel Conversion. This amount includes \$2,000,000 for engineering and \$34,880,000 for equipment and installation.

ALTERNATIVES:

1. Accept the report of bids and delay award for the Distributed Control System.
2. Award a contract to the apparent low bidder.
3. Reject all bids and direct staff to rebid.

MANAGER'S RECOMMENDED ACTION:

The Power Plant's existing Distributed Control System is over 14 years old, and is no longer supported by the manufacturer. An up-to-date control system is needed for the safe and efficient operation of the plant into the future. **By choosing alternative No. 1, staff will have adequate time to evaluate each bid and recommend an award that best meets the needs of the City.**

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



2015-101 Distributed Control System (DCS) Bid Summary

BIDDER:		Schneider Electric Houston, TX	Emerson Process Management Power & Water Solutions, Inc. Pittsburgh, PA	ABB Wickliffe, OH
		1	FIRM PRICE for Distributed Control System and appurtenances, as specified in Specification C-2401, subdivided as follows:	\$1,516,350.00
1.1	ENGINEERING, PROGRAMMING, GRAPHICS AND PROJECT MANAGEMENT	\$661,245.00	\$522,910.00	\$920,353.00
1.1.1	Unit 7 DCS Programming and Configuration	\$193,470.00	\$161,896.00	Included above
1.1.2	Unit 7 DCS Graphics Configuration	Included in 1.1.1	\$31,474.00	Included above
1.1.3	Unit 8 DCS Programming and Configuration	\$396,375.00	\$179,613.00	Included above
1.1.4	Unit 8 DCS Graphics Configuration	Included in 1.1.1	\$42,805.00	Included above
1.1.5	Project Management and Administration	\$71,400.00	\$107,122.00	Included above
1.2	DISTRIBUTED CONTROL SYSTEM			
1.2.1	Total DCS Hardware	\$719,995.00	\$897,291.00	\$1,379,283.60
1.2.2	Unit 7 DCS Hardware, Software, Workstations and accessories (excluding Performance Monitoring software)	\$185,780.00	\$192,173.00	Included above
1.2.3	Unit 8 DCS Hardware, Software, Workstations and accessories (excluding Performance Monitoring software)	\$443,195.00	\$420,934.00	Included above
1.2.4	DCS Software Licensing and Upgrades for one year per Specification C-2401.	\$30,125 estimate OPTION - Not in Base	Included	Not included
1.2.5	Low Fidelity Simulator per Specification C-2401, Division 6	\$53,370.00	\$134,749.00	Included above
1.2.6	DCS Spare Parts for start-up and Special Tools per Specification C-2401	\$32,150.00	\$12,438.00	Included above
1.2.7	System Security per Spec C-2401 as modified by Bidder's Offer (Emerson add)		\$130,997.00	
1.2.8	Freight	\$5,500.00	\$6,000.00	Included above
1.3	TECHNICAL FIELD ASSISTANCE (TFA)	\$104,000.00	\$103,937.00	\$241,088.40
1.3.1	Number of working days included in the above TFA price	90 days	640 Hours	TFS 50 Days TFS Tuning 16 Days
1.3.2	Price per work day in excess of the TFA time included above	\$1,300 / Day	\$1,593 / 8 hours + travel & living (Technical) \$2,145 / 8 hours + travel & living (Tuner)	TFS \$1,936.80/ Day TFS Tuning \$2,412.00 Day
1.3.3	Number of round trips to the Project Site included in the above TFA price	10 trips	10 trips	TFS 6 Trips TFS Tuning 4 Trips
1.3.4	Price per round trip in excess of trips included above	\$750/ Trip	Billable at Cost / Trip	TFS \$5,248.60/Trip TFS Tuning \$6,199.00/Trip
1.4	ON SITE TRAINING	\$31,110.00	\$70,862.00	\$109,275.00
1.4.1	Total cost for On Site Operator Training (up to 20 people)	\$15,210 for 1 session with 8 Student	\$57,725.00	\$18,315.00
1.4.2	Total cost for Technician Training at Supplier's office (up to 8 people)	\$15,900.00	\$13,137.00	\$90,960.00
1.4.3	Number of days included in the above Operator Training price	2	10	4
1.4.4	Number of days included in the above Technician Training price	5	80	8 students for unlimited classes for 1 Year
1.4.5	Number of round trips to the Project Site included in the above Operator Training price	1	2	1
1.4.6	Price per round trip in excess of trips included above	\$2,000 / Trip	Billable at Cost / Trip	\$4,615.00 / Trip
1.4.7	Price per one (1) additional week of On Site Operator Training	\$25,000 / week OPTION Not in Base	\$17,386 / week	\$17,780 /week
2	OPTIONS			
2.1	Spare Parts (Recommended for 5 years) per Specification C-2401, Section 111	\$76,110.00	\$76,736.00	\$51,503.41
2.2	High Fidelity Simulator C-2401, Section 614	Not Proposed	\$774,465.00	\$345,000.00
2.3	Cost to extend warranty to two (2) years (including software upgrades and licensing fees) after Owner acceptance and release of retention	\$30,900 estimate	\$46,255.00	\$42,800.00
2.4	Cost to extend warranty to three (3) years (including software upgrades and licensing fees)	\$31,880 estimate	\$92,510.00	\$85,600.00
2.5	Monthly cancellation charges - BASE BID:	N/A	See schedule	See schedule
2.6	Credit for Panelmatic Console (Emerson add)		\$15,312.00	
2.7	Ovation Remote IO for Pond I/O to the BOP DCS (Emerson add)		\$11,599.00	
3	ADD / DELETE PRICING			

3.1	Price to add or delete one (1) PC-based Operator workstation with dual LCD monitors and all accessories	\$4,400.00	\$5,829 / \$5,199	\$12,013.76 / \$9,010.32
3.2	Price to add or delete one (1) PC-based Operator workstation with single LCD monitor and all accessories	\$4,120.00	\$5,170 / \$4,597	\$11,533.19 / \$8,649.89
3.3	Price to add or delete one (1) PC-based Engineering workstation with single LCD monitor and all accessories	\$4,575.00	\$8,523 / \$7,662	\$14,222.72 / \$10,667.04
3.4	Price to add or delete a Redundant Processing Unit or Process Controller (excluding I/O)	\$7,800.00	\$22,164 / \$19,948	\$25,019.50 / \$18,764.63
3.5	Price to add or delete isolated 4-20 mA (with HART), RTD or thermocouple inputs in groups of 8	\$615 - FBM214b	\$326 / \$298	\$2,769.68 / \$2,007.26
3.6	Price to add or delete isolated RTD or thermocouple inputs in groups of 8	\$805 - FBM202/\$535 - FBM 203	\$239 / \$219 (RTD only)	\$1,449.67 / \$1,087.25
3.6a	Price to add or delete isolated thermocouple inputs (Emerson add)		\$208 / \$190	
3.7	Price to add or delete 4-20 mA dc outputs in groups of 8	\$630 - FBM215	\$217 / \$198	\$2,429.67 / \$1,822.25
3.8	Price to add or delete digital inputs in groups of 8 (dry contact)	\$540 - FBM207c	\$117 / \$107	\$1,751.74 / \$1,313.81
3.9	Price to add or delete digital inputs in groups of 8 (field wetted contact)	N/A	\$170 / \$155	N/A
3.10	Price to add or delete digital outputs in groups of 8 (solid state outputs)	N/A	N/A	\$1,500.08 / \$1,125.06
3.11	Price to add or delete digital outputs in groups of 8 (electromechanical relay outputs)	\$545 - FBM242	\$308 / \$281 (G2R 1 Form C)	N/A
3.11a	Price to add or delete digital outputs in groups of 8 (electromechanical relay outputs) (Emerson add)		\$377 / \$345 (KUEP 1 Form C)	
3.12	Price to add or delete a ETHERNET interface card for MODBUS TCP/IP or OPC datalinks	\$2,200.00	\$257 / \$235	\$25,019.50 / \$18,764.63
3.13	Price to add or delete a DH+ interface card	N/A	N/A	\$26,429.33 / \$19,822.00
3.14	Price to add or delete a MODBUS serial interface card	\$1,590.00	\$211 / \$193	\$25,342.06 / \$19,006.54
3.15	Price to add or delete a DCS cabinet with modular power supply and internals	N/A	\$3,600 / \$3,291	\$5,148.73 / \$3,861.55
3.16	Price to add or delete a DCS cabinet (empty shell)	N/A	\$1,043 / \$9,534	\$2,600.51 / \$1,950.38
3.17	Price to add or delete a Marshalling Cabinet complete with terminal blocks	N/A	N/A	See Above
3.18	Price to add or delete a Printer	\$520.00	\$3,157 / \$2,885 (Color)	\$3,185.54 / \$2,861.65
3.19	Price to add or delete a Printer B & W (Emerson add)		\$2,390 / \$2,184 (B & W)	