

**COUNCIL ACTION FORM**

**SUBJECT: POWER PLANT UNIT #7 AND #8 FUEL CONVERSION – NATURAL GAS CONVERSION EQUIPMENT**

**BACKGROUND:**

On July 8, 2014, City Council approved preliminary plans and specifications for the Natural Gas Conversion Equipment, including burners, igniters, scanners, thermal analysis and computer modeling.

**This project is required to meet future Environmental Protection Agency (EPA) air quality requirements for electric generating power plants.** In recent years the electric utility industry, and particularly utilities with fossil-fueled generation resources, has been challenged by the introduction of several major environmental regulations promulgated by the EPA. At the same time, the price and supply of natural gas has dropped significantly in the United States. These two factors together have caused the industry to reevaluate its strategies of how to generate electric power. The City of Ames, with its two coal-fired generating units, has carefully assessed its future role of supplying power for the City's electric ratepayers.

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. **This specific phase of the project is for the procurement of equipment, including burners, igniters, scanners, thermal analysis and computer modeling.**

Bid documents were issued to thirteen firms. 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 bid was also sent to one plan room. The engineer's cost estimate for the procurement of this equipment was \$4,500,000.

**On October 7, 2014, three bids were received as shown on the attached report. Electric Services staff is pleased with the bids received, but feels 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 Natural Gas Conversion Equipment including burners, igniters, scanners, thermal analysis and computer modeling.
2. Award a contract to the apparent low bidder.
3. Reject all bids and direct staff to rebid.

**MANAGER'S RECOMMENDED ACTION:**

Conversion of Units 7 and 8 from coal to natural gas was previously approved by the City Council, and is needed in order for the Power Plant to remain in compliance with state and federal air quality regulations. To meet the project timetable, this conversion equipment must be ordered in advance of scheduling the construction and installation. **By choosing alternative No. 1, staff will have enough 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.

		2014-282 Natural Gas Conversion Equipment Including Burners, Igniters, Scanners, Thermal Analysis and Computer Modeling Bid Summary					
		BIDDER:		Riley Power Worcester, MA		Babcock & Wilcox Power Generation Group, Inc. Barberton, OH	
#	DESCRIPTION	UNIT #7	UNIT #8	UNIT #7	UNIT #8	UNIT #7	UNIT #8
1.0	<b>TOTAL FIRM LUMP SUM PRICE for the Scope of Work</b>	\$1,247,472.00	\$1,305,924.00	\$1,346,635.00	\$2,064,299.00	\$1,057,200.00	\$2,298,100.00
1.2	<b>Base Scope: Natural Gas Conversion Equipment Costs</b>						
A	<b>Engineering, Design and Supply of New Low Nox NG Burner System</b>						
i	Engineering, Design, and Supply for New Low Nox NG Burners	\$352,883.00	\$495,016.00	\$598,381.00	\$1,032,228.00	\$229,469.00	\$1,052,191.00
ii	Engineering, Design, and Supply for New NG Igniters	\$202,505.00	\$169,595.00	\$278,389.00	\$424,893.00	\$117,188.00	\$353,314.00
iii	Engineering, Design, and Supply of Flame Scanners, Associated Ductwork, Dampers, and Cooling Fans	\$68,759.00	\$36,666.00	\$56,040.00	\$133,966.00	\$21,503.00	\$53,781.00
iv	Engineering and Supply of Boiler Pressure Parts and/or modifications (if required)	n/a	n/a	n/a	n/a	n/a	n/a
v	Engineering and Supply of Boiler wall openings and related modifications	n/a	n/a	n/a	n/a	n/a	n/a
vi	Engineering and Supply of OFA ports and related modifications (if required)	\$2,050.00	\$1,936.00	n/a	n/a	n/a	n/a
vii	Engineering and Supply of new and/or modified coal burners and related modifications (if required)	n/a	n/a	n/a	n/a	n/a	n/a
viii	Engineering and Supply of new and/or modified RDF burner system and related modifications (if required)	n/a	n/a	n/a	n/a	n/a	n/a
ix	Engineering and Supply of Windbox Modifications	\$29,161.00	\$14,024.00	n/a	n/a	n/a	n/a
x	Engineering and Supply of Draft Systems Modifications	n/a	n/a	n/a	n/a	n/a	n/a
xi	Other, As Needed by Supplier	n/a	n/a	n/a	n/a	n/a	n/a
	<b>New Natural Gas Conversion System Subtotal</b>	\$655,359.00	\$717,238.00	\$932,810.00	\$1,591,087.00	n/a	n/a
B	<b>Electrical System</b>						
i	Engineering, design, and supply of new electrical cables, conduits, cable tray, breakers, starters, motors, switchgear, motor control centers, transformers, and all other components	\$4,957.00	\$4,089.00	n/a	n/a	n/a	n/a
C	<b>Spare Parts</b>	n/a	n/a	Later	Later	n/a	n/a
D	<b>Balance of Plant Engineering and Design</b>	n/a	n/a	n/a	n/a	n/a	n/a
F	<b>Burner Management and Control System Descriptions and Logic</b>	\$100,510.00	\$68,074.00	Included in "A.i"	Included in "A.i"	\$204,987.00	\$204,987.00
G	<b>FAT, Design Review, Checkout, Startup and Tuning Support</b>	\$19,318.00	\$16,244.00	See "N" below	See "N" below	Included w/F	Included w/F
H	<b>Baseline Testing (if necessary)</b>	\$23,078.00	\$19,599.00	\$4,584.00	\$4,698.00	n/a	n/a
I	<b>Performance/Emissions Testing</b>	\$46,157.00	\$39,021.00	\$40,038.00	\$41,034.00	n/a	n/a
J	<b>Thermal Analysis</b>	\$27,010.00	\$22,777.00	Included in "A.i"	Included in "A.i"	Included w/K	Included w/K
K	<b>CFD Modeling</b>	n/a	\$14,125.00	\$96,820.00	\$98,210.00	\$51,000.00	\$51,000.00
L	<b>O&amp;M Manuals</b>	\$22,722.00	\$21,271.00	\$4,850.00	\$5,160.00	\$28,612.00	\$28,612.00
M	<b>Training Services</b>	\$33,978.00	\$33,225.00	\$31,047.00	\$31,629.00	\$41,200.00	\$42,970.00
N	<b>Checkout, Startup and Tuning</b>	\$134,334.00	\$132,420.00	\$105,641.00	\$99,212.00	\$171,000.00	\$176,000.00
O	<b>Other; As Needed by Supplier</b>	n/a	n/a	n/a	n/a	n/a	n/a
P		n/a	n/a	n/a	n/a	n/a	n/a
Q	<b>Bonds, Insurance, Warranty, Risk Provisions</b>	n/a	n/a	n/a	n/a	\$36,884.00	\$116,978.00
R		n/a	n/a	n/a	n/a	n/a	n/a
S		n/a	n/a	n/a	n/a	n/a	n/a
T		n/a	n/a	n/a	n/a	n/a	n/a
U	<b>Freight</b>	\$11,792.00	\$15,182.00	\$31,521.00	\$41,013.00	\$2,148.00	\$23,001.00
	<b>Total: Base Scope Natural Gas Conversion Subtotal</b>	\$1,079,216.00	\$1,103,266.00	\$314,501.00	\$320,956.00	n/a	n/a
1.3	<b>Administration, Management, Scheduling, Meetings, and Other Similar Activities</b>	\$168,256.00	\$202,658.00	Included	Included	\$153,209.00	\$195,266.00
1.4	<b>TOTAL FIRM LUMP SUM BASE PRICE (sum of items 1.2 and 1.3) for the Work defined in Specification C-2400</b>	\$1,247,472.00	\$1,305,924.00	\$1,247,311.00	\$1,912,043.00	\$1,057,200.00	\$2,298,100.00
2.0	<b>PRICE ADDERS</b>						
2.1	Design and Engineering Labor Rate, \$/hour	\$186.25	\$186.25			\$185.00	\$185.00
2.1	Performance Bond Costs			\$11,226.00	\$17,208.00		
2.2	Project Management					\$260.00	\$260.00
2.2	Option 1 Unit 7 Cooling Air Skid	\$79,563.00					
	Option 2 Unit 8 Cooling Air Skid		\$79,563.00				
	Option 3 Unit 7 Pressure Parts (Budgetary Estimate)	\$597,269.00					
	Option 4 Unit 8 Pressure Parts (Budgetary Estimate)		\$871,971.00				
	Option 5 Unit 7 Windbox CFD Modeling	\$31,842.00					
	Option 6 Unit 8 Windbox CFD Modeling		\$31,842.00				
	Option 7 Unit 8 Furnace CFD Modeling		\$37,619.00				
	Option 8 Unit 7 Coal Burner Gas Igniters, Scanners Furnace CFD Modeling	\$102,251.00					
	Option 9 Unit 8 Coal Burner Gas Igniters, Scanners Furnace CFD Modeling		\$75,104.00				
2.2	Other - Taxes			\$88,098.00	\$135,048.00		
	<b>Price Adders Subtotal</b>	\$810,925.00	\$1,096,100.00	\$99,324.00	\$152,256.00	\$445.00	\$445.00