ITEM # ___43__
DATE: 05-27-14

COUNCIL ACTION FORM

SUBJECT: ENGINEERING SERVICES FOR CONVERTING THE POWER PLANT FROM COAL TO NATURAL GAS

BACKGROUND:

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 United States Environmental Protection Agency (EPA). At the same time, the price and supply of natural gas has improved significantly in the United States. These two factors together have forced the industry to seriously evaluate its strategies of how to generate electric power. In the face of these forces, the City of Ames, with its two coal-fired generating units 47 and 32 years old, 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 will require a significant amount of engineering, installation of equipment, and modification and construction in the power plant. The first order of business following Council approval last November was for staff to develop and write a scope of work and specification for the engineering services needed to convert the power plant from coal to natural gas.

On March 25, 2014, the City issued a Request for Proposal (RFP) for "Engineering Services for Converting the City of Ames Steam Electric Plant from Coal to Natural Gas". The RFP documents were initially issued by the City to 12 engineering firms. The RFP was advertised on the Current Bid Opportunities section of the Purchasing webpage, and was also sent to one plan room. Ultimately, the RFP document was issued to a total of 24 firms. A pre-proposal/site visit meeting was held April 10, and proposals were due on April 25, 2014.

The scope of work as outlined in the RFP for engineering the conversion was subdivided into the five phases listed below:

Phase 1 Perform Engineering Necessary to Produce Plans and Specifications for Bidding Natural Gas Burners, Igniters, and Boiler Modeling

Phase 1A Provide Bidding Assistance to the City for the Procurement of Natural Gas Burners, Igniters and Boiler Modeling

Phase 2 Perform Engineering Necessary to Produce Plans and Specifications for Bidding the Conversion of the City's Steam Electric Plant from Coal to Natural Gas

Phase 2A Provide Bidding Assistance to the City for the Selection of the Contractor(s) to Perform the Work to Convert the City's Steam Electric Plant from Coal to Natural Gas

Phase 3 Provide Construction Management Services to the City during the Conversion of the City's Steam Electric Plant from Coal to Natural Gas

On April 25, 2014, the City received competitive proposals from nine firms. Copies of each proposal were delivered to members of a select committee for evaluation. The committee consisted of the Director of Electric Services, the Assistant Director of Electric Services, the Electric Services Maintenance Superintendent, the Electric Services Operations Superintendent, and the Power Plant Engineer.

The committee members independently evaluated and scored the proposals in two separate steps.

STEP 1:

In the first step, the nine proposals were evaluated and scored considering the following criteria:

- Firm's Capability (Relevant Knowledge and Experience)
- Team's Qualifications and Responsiveness
- Project Comprehension and Proposal Quality
- Resources and Commitment to the Project
- Price

Council should note that price in this proposal process was not a majority weighting factor in the overall evaluation.

Based on the results of the committee members' evaluations, the scores for Step 1 are shown in the table below:

Offerors	Averaged Scores	Evaluated Amount*	Not-to-Exceed Amount
Burns & McDonnell Kansas City, MO	**882**	**$1,100,000**	**$1,600,000**
Sargent & Lundy, LLC Chicago, IL	**797**	**$1,995,000**	**$1,995,000**
Black & Veatch Corporation Overland Park, KS	**765**	**$3,840,000**	**$3,840,000**
Kiewit Power Engineers Co. Lenexa, KS	700	$1,122,816	$1,212,929
Sega Inc Stilwell, KS	564	$1,308,000	$1,308,000
URS Chicago, IL	559	$1,243,608	$1,243,608
Bibb Engineers Architects & Constructors Kansas City, MO	550	$1,518,107	$1,518,107
Lutz, Daily & Brain, LLC Consulting Engineers Overland Park, KS	495	$2,854,000	$2,854,000
Zachry Engineering Minneapolis, MN	438	$2,025,000	$2,025,000
* Both Burns & McDonnell and Kiewit Power Engineers Co. proposed additional options in each of their proposals. The Evaluated Amount column does not include options recommended by these two companies. The Not-to-Exceed Amount includes the proposed additional options from these two firms.			

Scores were based on evaluating each criteria on a scale of 1 to 10. The evaluation of the five criteria elements by each committee member was worth a maximum cumulative score of 1,000 possible points. The average scores for each proposal shown in the table above was the average of the individual scores of the five committee members.

STEP 2:

The evaluation team invited the top three firms from Step 1 to Ames for oral presentations. Each firm brought as many key members (especially the team leader or project manager) as possible of their team to the presentation.

The presentations were evaluated and scored utilizing the following criteria:

- Relevant Knowledge and Experience of the Team
- Comprehension and Understanding of the Project
- Project Plan and Approach –Ability to Successfully Perform the Work
- Attitude of the Team for the Project
- Presentation's Quality and Thoroughness

Based on the results of the committee members' evaluations, the scores for Step 2 are shown in the table below:

Offerors	Averaged Scores	Not-to-Exceed Amount
Sargent & Lundy, LLC Chicago, IL	**892**	**$1,995,000**
Burns & McDonnell Kansas City, MO	780	$1,600,000
Black & Veatch Corporation Overland Park, KS	704	$3,840,000

Scores were assigned following the same process and formula described for the previous phase, with a maximum possible cumulative score of 1,000 points.

Based on the averaged weighted scores and a unanimous decision by the evaluation committee, it is recommended that a contract for this work be awarded to Sargent & Lundy, LLC, Chicago, IL, in the not-to-exceed amount of $1,995,000. Actual payments would be calculated based on unit prices (as proposed) for actual work performed.

Through their proposal and subsequent presentation, Sargent & Lundy distinguished themselves from the other semi-finalists in the following ways:

1. They had significantly more experience converting power plant units over to natural gas.

2 Their team assigned to this project offered greater experience and resources on how to co-fire refuse derived fuel (RDF) with natural gas.

3. Their team also offered greater knowledge and resources for assessing the effects of firing natural gas in boilers designed to burn coal, and then for ascertaining the possible modifications to optimize these boilers to now burn natural gas.

4. They had a clear and proven approach on how to integrate the specifying and selection of natural gas burners and igniters with modeling the boiler as a whole. Establishing the relationship of the natural gas burners/igniters with the performance of the rest of the boiler via a model analysis is very important, and appears to be necessary for the suppliers of the natural gas burners and igniters to commit to providing performance guarantees for steam output and air emissions (NOx and CO).

5. Finally, Sargent & Lundy's comprehension of the project, their project plan and approach, and the relevant knowledge and experience of their team, especially

pertaining to the critical defining elements of the work scope, was superior to the other semi-finalists.

Funding for the engineering necessary to convert the power plant over to natural gas will come from the “Unit #7 and #8 Fuel Conversion” Capital Improvements Plan project, which included $2,000,000 in the 2014/15 fiscal year for this work. The total estimated cost of this conversion project, including the cost for engineering, is $36,880,000.

ALTERNATIVES:

1. Award a contract to Sargent & Lundy, LLC, Chicago, IL, for the Engineering Services for Converting the City of Ames Power Plant from Coal to Natural Gas in the not-to-exceed amount of $1,995,000.

2. Direct staff to negotiate an agreement with the firm offering the lowest proposal price, which is Kiewit Power Engineers Co., at a price of $1,212,929 or with one of the other companies that submitted a proposal.

3. Reject all proposals and re-issue the RFP for a new round of proposals. This would delay the conversion of the power plant from coal to natural gas by at least two months, impacting a schedule that is already very challenging and extremely tight.

MANAGER'S RECOMMENDED ACTION:

Conversion of the City’s Power Plant (Units 7 & 8) from coal to natural gas was approved by City Council on November 12, 2013. This conversion is needed in order for the Power Plant to remain in compliance with state and federal air regulations. At this juncture, the most notable of these regulations is the Mercury and Air Toxics Standard (MATS). The first essential step on the path to converting the power plant over to natural gas is approval of a contract for the necessary engineering services for this project, which this action addresses.

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

The City Council should remember that the other essential component of the conversion to natural gas is the determination of how the gas will be transported to our power plant, either through a City-owned or through an Alliant Energy line. The staff is currently analyzing these two options to develop a recommendation to the City Council for the preferred course of action.