COUNCIL ACTION FORM

SUBJECT: ENGINEERING FOR ADDITIONAL MISCELLANEOUS BOILER PROJECTS

BACKGROUND:

There are three upcoming projects affecting Electric Services' boilers located at the Power Plant. Staff consolidated the required engineering services portions of these projects into a single request for proposal (RFP). A single RFP allows staff to procure these services more efficiently since each project requires similar qualifications from engineering firms. Additionally, the City still reserves the option to award the contract in whole or in parts depending on the evaluated scores for each firm on each project listed on the RFP.

On July 13, 2010, the proposal document was issued to ten firms for proposals. On August 13, staff received competitive proposals for engineering services from five firms for Project 1 and from six firms for Projects 2 and 3. These proposals were then sent to a committee of two Power Plant Engineers and the Power Plant Manager for evaluation.

The committee members independently evaluated and scored all of the proposals. The proposals' evaluation criteria for all three were the same. The evaluations were based on price, experience and qualifications from both the firm and the team, and the firm's approach.

Project 1: Engineering for Unit 8 Turbine Blade and Parts Procurement

Project 1 of the RFP provides for engineering services for the procurement of turbine blades and parts for Unit 8 turbine generator. The Unit 8 turbine generator is a straight condensing single flow 3600 rpm machine manufactured by General Electric and rated at 65,000 kw. During the last overhaul it was determined that at least 3 rows of blades needed to be replaced at the next outage due to long term particle erosion. Due to the risk of long lead times staff would like to go ahead and order these critical parts. The parts will be installed during the Fall 2011 outage by a turbine repair contractor which will be determined at a later date.

Upon approval, the scope of work requires the engineering firm to provide technical specifications and an engineer's cost estimate. Five firms submitted proposals for this project:

PROPOSERS	AVERAGED SCORE
Burns & McDonnell, Chesterfield, MO	837.78
Black & Veatch, Kansas City, MO	803.73
Stanley Consultants, Inc., Muscatine, IA	794.40
Zachry Engineering, Minneapolis, MN	686.67
Sega, Inc., Stilwell, KS	634.03

Each score was based on a scale of 1 to 10, with a maximum of 1,000 points possible.

Based on the averaged scores and a unanimous decision by the evaluation committee, staff recommends that a contract be awarded to Burns & McDonnell, Chesterfield, Missouri, for an amount not to exceed \$30,000.

The approved FY 2010/2011 operating budget for #8 Steam Turbine and General Maintenance contains \$50,000 for miscellaneous parts and supplies. A portion of those funds will be used for this project.

Project 2: Engineering for Electromatic Relief Valve Replacement

Project 2 of the RFP provides for the engineering services for the Electromatic Relief Valve Replacement located in the Unit 8 boiler. The Unit 8 boiler has a 2.5 inch Consolidated Electromatic (brand name) relief valve installed on the boiler steam outlet. This valve system has been problematic for many years. Staff wants an improved, more reliable valve installed in place of the Electromatic valve. The engineer shall make a recommendation to staff for a replacement valve and valve control system that can perform the function and duty of the existing valve, but with significantly improved reliability.

Upon approval of the recommendation, the scope of work requires the engineering firm to provide technical specifications and an engineer's cost estimate. Six firms submitted proposals for this project:

PROPOSERS	AVERAGED SCORE
Burns & McDonnell, Chesterfield, MO	777.45
Black & Veatch, Kansas City, MO	771.05
Brown Engineering Company, Des Moines, IA	744.57
Stanley Consultants, Inc., Muscatine, IA	722.83
Zachry Engineering, Minneapolis, MN	703.33
Sega, Inc., Stilwell, KS	653.32

Each score was based on a scale of 1 to 10, with a maximum of 1,000 points possible.

Based on the averaged scores and a unanimous decision by the evaluation committee, staff recommends that a contract be awarded to Burns & McDonnell, Chesterfield, Missouri, for an amount not to exceed \$24,000.

The approved FY 2010/2011 operating budget for #8 Boiler Maintenance contains \$25,000 for equipment, parts and supplies that will be used for this project. Additional funds of \$15,000 are unspent and available for carry-over from the 2009/2010 budget. These funds were originally budgeted for this work, but the complexity of the project resulted in its delay to the current year. This was budgeted in the #8 Boiler Maintenance budget, and its carry-over will bring the total amount for this work to \$40,000. The Council will be asked to approve an amendment to the 2010/2011 budget to provide for this carry-over at the appropriate time.

Project 3: Engineering for Unit 7 Circulating Water Pipe Rehabilitation

Project 3 of the RFP provides for engineering services for the rehabilitation of the circulating water pipe located in Unit 7. Unit 7 is a 35,000 kw steam turbine generator uses a cooling tower to cool the circulating water that flows through the condenser. The

pipe connecting the condenser to the tower has experienced several leaks. During a recent repair it was discovered that the wall thickness in many locations on the pipe was below minimum thickness which increases the risk to the reliability of the system. Staff desires to return this pipe to a status of providing safe, reliable, and leak free operation. The scope of work requires the engineering firm to: 1) review the pipe condition by interviewing staff, reviewing photos taken during recent weld repairs and reviewing past inspection reports; 2) make a rehabilitation method recommendation for alternatives to insure the pipe can operate leak free; 3) prepare the technical specifications; 4) provide a detailed cost estimate; 5) provide a bidder's list; 6) collaborate with the City on the bid evaluation and selection process; and 7) administer the rehabilitation contract, which consists of providing field construction oversight/management of the contract and contractor during periods of field work.

Following is a summary of the scores assigned to the six engineering firms by the evaluation committee:

PROPOSERS	AVERAGED SCORE
Burns & McDonnell, Chesterfield, MO	812.63
Brown Engineering Company, Des Moines, IA	778.33
Black & Veatch, Kansas City, MO	751.42
Stanley Consultants, Inc., Muscatine, IA	693.73
Zachry Engineering, Minneapolis, MN	676.77
Sega, Inc., Stilwell, KS	620.55

Each score was based on a scale of 1 to 10, with a maximum of 1,000 points possible. Based on the averaged scores and a unanimous decision by the evaluation committee, staff recommends that a contract be awarded to Burns & McDonnell, Chesterfield, Missouri, for an amount not to exceed \$50,000.

The approved FY 2010/2011 operating budget for #8 Steam Turbine and General Maintenance contains \$65,000 for equipment, parts and supplies that will be used for this project.

ALTERNATIVES:

- 1. a. Award a contract to Burns & McDonnell, Chesterfield, Missouri, for the engineering for Unit 8 Turbine Blade and Parts Procurement in an amount not to exceed \$30,000.
 - b. Award a contract to Burns & McDonnell, Chesterfield, Missouri, for the engineering for Electromatic Relief Valve Replacement, in an amount not to exceed \$24,000.
 - c. Award a contract to Burns & McDonnell, Chesterfield, Missouri, for the engineering for Unit No. 7 Circulating Water Pipe Rehabilitation, in an amount not to exceed \$50,000.
- 2. Reject all proposals and ask staff to take proposals on each project individually, thus delaying the engineering for all three projects.

MANAGER'S RECOMMENDED ACTION:

These three projects are necessary for Electric Services to continue providing safe, reliable energy production to the City. The Unit 8 Turbine Generator is scheduled for a complete overhaul outage in Fall 2011. This overhaul is needed about every 5 years to restore unit efficiency which would maintain good unit life and reliability. This project allows staff to procure the services of a competent contractor to prepare for the overhaul by acquiring a number of parts with a long delivery time. These are parts that will be needed for the overhaul. Without this overhaul, the Power Plant's performance would degrade considerably and eventually become inoperable. This is particularly the case with the turbine blades.

The Electromatic relief valve is located on the main steam line to the turbine and is to protect the steam system and turbine from over pressurization. The installed valve is inoperable and when repaired and returned to service does not last more than a few weeks before failing again. This project's goal is to obtain a more reliable type of valve to replace the existing valve which would protect the steam system from over pressurization. Over pressurization could potentially destroy the turbine and steam equipment and cause significant personal injury and death.

The Unit 7 circulating water pipe is over 40 years old. It is made of steel and has corroded to the point of causing several outages due to pipe leaks. Without the rehabilitation leaks and outages will continue to increase to a point where the unit cannot operate.

Therefore, it is the recommendation of the City Manager that the City Council adopt the Alternative #1 actions stated below:

- Project #1 awarding a contract to Burns & McDonnell, Chesterfield, Missouri, for the engineering for Unit 8 Turbine Blade and Parts Procurement, in an amount not to exceed \$30,000;
- Project #2 awarding a contract to Burns & McDonnell, Chesterfield, Missouri, for the engineering for Electromatic Relief Valve Replacement, in an amount not to exceed \$24,000;
- Project #3 awarding a contract to Burns & McDonnell, Chesterfield, Missouri, for the engineering for Unit No. 7 Circulating Water Pipe Rehabilitation, in an amount not to exceed \$50,000.

MIES	REQUEST FOR PROPOSAL 2011-005 ENGINEERING FOR MISCELLANEOUS BOILER PROJECTS II	
Project 1: Engineering for Unit 8 Turbine Blade and Parts Procurement		
BIDDER	TOTAL	
Zachry Engineering,	\$19,900,00	
Minneapolis, MN	\$13,300.00	
Stanley Consultants, Inc.,	\$25,000.00	
Muscatine, IA	. ,	
Burns & McDonnell, Chastarfield, MO	\$30,000.00	
Chestemeld, MO		
Kansas City MO	\$37,100.00	
Sega, Inc.		
Stilwell, KS	\$58,925.00	
Project 2: Engineering for Electromatic Relief Valve Replacement		
Zachry Engineering.		
Minneapolis, MN	\$11,600.00	
Brown Engineering Company,	£10,800,00	
Des Moines, IA	\$19,800.00	
Burns & McDonnell,	\$24,000,00	
Chesterfield, MO	ψ24,000.00	
Stanley Consultants, Inc.,	\$27.000.00	
Muscatine, IA	<i> </i>	
Black & Veatch,	\$28,500.00	
Sega Inc		
Stilwell KS	\$54,995.00	
Broject 2: Engineering for Unit 7	Circulating Water Bine Rehabilitation	
Brown Engineering Company	Circulating water Fipe Renabilitation	
Des Moines IA	\$28,100.00	
Zachry Engineering.	.	
Minneapolis, MN	\$38,300.00	
Burns & McDonnell,	\$50,000,00	
Chesterfield, MO	\$50,000.00	
Black & Veatch,	\$77 100 00	
Kansas City, MO	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>	
Sega, Inc.,	\$118,825.00	
Stilwell, KS	·····	
Stanley Consultants, Inc.,	\$119,000.00	
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