

COUNCIL ACTION FORM

SUBJECT: ENERGY RESOURCE OPTIONS STUDY – CHANGE ORDER #3

BACKGROUND:

The Energy Resource Options Study was meant to assess the electric generating and power supply options to satisfy the City's future electrical power requirements. On May 22, 2012, City Council awarded a contract to Black & Veatch Corporation, Kansas City, MO, for this study in the not-to-exceed amount of \$375,000.

The initial findings of the Energy Resource Options Study performed by Black & Veatch indicated that the most viable option for the City's Steam Electric Plant (Units 7 and 8) was to continue to burn historic fuels (coal, RDF, and fuel oil). This option required the following work on our units to comply with existing and anticipated environmental regulations:

- 1) Installation of dry sorbent injection (DSI) systems for acid gas control
- 2) Installation of powder activated carbon (PAC) systems for mercury control
- 3) Conversion of Unit 8 electrostatic precipitator (ESP) from hot-side to cold-side for enhanced particulate matter (PM) control

In Black & Veatch's judgment, this option would provide compliance, but with a narrow and somewhat unquantifiable margin of safety. As a result of this conclusion, City staff was uncomfortable with projected compliance margin of safety.

The recommended action by the consultant to add a fabric filter baghouse alleviated most of the staff's concerns. However, this action would cause Unit 8 to be derated by approximately 17 megawatts. This loss of capacity would have to be replaced by either: 1) adding a new generating unit (most likely a new combustion turbine), 2) purchasing long-term capacity from another utility or from the MISO power market, or 3) by modifying (primarily by adding fans and "stiffening" key structures) our existing units to retain their historical generating output. **Of the three, the most economically feasible and reliable option appears to be the last -- to modify the units so that their historical generating output would be retained.**

To study the City's Steam Electric Plant's units to determine what specifically must be done to modify them so that their historical generating output is retained, requires detailed analyses and engineering of the unit's equipment and structures, well beyond the study's original scope of work. For this reason, the third change order is now needed to study two additional cases whereby Unit 7 & Unit 8 would continue to burn historical fuels (coal, RDF, and fuel oil), in

compliance with existing and anticipated environmental regulations, and without derating their output.

The cases are:

- Case 1 -- Add DSI, PAC, and fabric filter (FF) baghouse systems to Unit 7 and Unit 8, either individually or collectively, and in such a way that their historical generating outputs are maintained. With this case, Unit 8's ESP would not be converted (from hot-side to cold-side).
- Case 2 -- Add low NOx burners and overfire air (LNB/OFA), PAC, flue gas desulfurization (FGD), and fabric filter (FF) baghouse systems to Unit 7 and Unit 8, either individually or collectively, and in such a way that their historical generating outputs are maintained.

The estimated cost for this engineering work requested in Change Order 3 is not to exceed \$89,700.

Two change orders have already been approved for this contract. **Change Order No. 1**, for not-to-exceed \$6,780.90, increased funds to cover labor and expenses for the extra work performed to verify the "constructability" and cost of converting Unit 8's electrostatic precipitator from hot-side to cold-side. **Change Order No. 2**, for not-to-exceed \$38,750, increased funds to cover costs associated with the evaluation of several air quality control scenarios considered for the two coal-fired boilers. **This Change Order will increase the overall cost of the contract to \$510,230.90.**

The funding for this study will come from the Electric Administration's "Outside Professional Services" budget (\$65,473.90 remaining in 12/13, and \$24,226.10 in 13/14).

ALTERNATIVES:

1. Approve contract Change Order No. 3 to Black & Veatch Corporation, of Kansas City, MO, in the not-to-exceed amount of \$89,700.00 for the Energy Resource Options Study.
2. Reject contract Change Order No. 3.

MANAGER'S RECOMMENDED ACTION:

The additional engineering work that will be authorized in Change Order 3 will enhance the Energy Resource Options Study and provide valuable information for determining the feasibility and viability of continuing to operate the City's Power Plant as it has historically; by converting coal, RDF, and fuel oil into electric power. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1 as stated above.