ITEM #:__24__
DATE: 6-28-11

COUNCIL ACTION FORM

SUBJECT: APPROVE A CONTRACT CHANGE ORDER FOR POWER PLANT OIL IGNITOR SYSTEM STUDY

BACKGROUND:

This project provides for the engineering services to improve the Igniter Oil System for long term effective and safe operation. Both plant coal boilers use No. 2 oil fired ignitors for start up, warm up and are required to be in service whenever a coal burner is placed in service to increase Plant output. This system has been difficult to operate and unreliable with frequent mis-firings and flameouts. **Electric Services desires a more reliable oil supply system and ignitors that together will provide a more safe, secure, and reliable system to start up and operate the boilers. Unreliability causes delays to start up and leads to lost opportunities in the power market or results in the need to purchase power at a cost higher than plant production cost.**

The current scope of work requires the engineering firm to complete the study in two phases. The first phase requires the engineering firm to provide a detailed analysis of the Power Plant ignitor oil system from storage tanks to the boilers with recommended improvements for the oil supply to No. 7 and No. 8. The second phase requires the engineering firm to provide technical specifications, detailed cost estimate, and a potential bidder's list. This first phase is complete and the second phase is approximately 75% complete.

On August 24, 2010, City Council awarded a contract to Burns & McDonnell for Power Plant Ignitor Oil Study in the not to exceed amount of $31,023.00. The scope of Change Order Number 1 is to have Burns & McDonnell review the system on Boiler No. 7 and determine modifications for the future installation of Class 1 ignitors that are currently the industry standard. **The supply system is currently being set up for this future modification but the original scope did not call for this review of the system directly adjacent to the burners. Recent start up delays have lead to the conclusion that changes required for the future Class 1 system will have an immediate improvement for the existing ignitor equipment.** The ignitor equipment is not being upgraded now because this hardware must be compatible with any low NOX coal burners that will be mandated in the next few years.

The engineering tasks required for this and to improve other recently identified operational problems would be:

1. Unit Start Up Permissives: Currently, the Unit 7 cannot start up the first coal mill without all ignitors and warm up guns in service burning properly. The Power Plant has problems keeping all four warm up guns operating; therefore, delays occur in starting the first coal mill. This has a cost impact due to delays in bringing the unit on the grid.

   Burns & McDonnell will review all requirements for unit start up and provide recommendations and control system changes for both ignitor and warm up gun operation.

2. Ignitor and Warm up Air and Oil supply: There are operating problems with both the ignitors and warm up guns due to modifications that have been made over time to the piping and valves around Unit 7.

   Burns & McDonnell will review the existing layout of the piping, analyze changes and make recommendations for modifications to allow for the future installation of Class 1 ignitors and more reliable ignitor and warm up gun operation with the current equipment.

3. Oil Return Line: In order to eliminate any cross connections between the separate unit oil systems, a separate return line is required. Burns & McDonnell will include this change into the drawings and specifications currently in progress with at least one additional drawing required.

4. Oil Storage Tank Equalization: The two oil storage tanks are separated with only a top equalizing line. It is difficult to maintain common levels in the tanks. Burns & McDonnell will review the system configuration and provide recommendations for modifications for improved equalization.

This change order would be Change Order No. 1 and it would be for the amount of $22,500.00. The total of the project with Change Order No. 1 will be $53,523.00.

The approved 2010/11 CIP includes $100,000 for the engineering portion and $525,000.00 for the materials/installation portion of the project.

ALTERNATIVES:

1. Approve contract Change Order No. 1 in an amount not to exceed of $22,500.00 to Burns & McDonnell for the scope of work increase to the Power Plant Ignitor Oil Study. This will bring the total contract cost to $53,523.00.

2. Reject contract change order no 1 and do not increase scope of work.

MANAGER'S RECOMMENDED ACTION:

This project is necessary for Electric Services to continue and improve safe, reliable energy production to the City. The ignitor oil system is experiencing increased flame failures, especially during periods of start up and load changes. With each of these failures there is an increased risk of a unit shutdown, which could result in damage to the Power Plant or increased purchased energy costs. The unit trips out of service regularly due to ignitor failure, and without this oil system analysis and modifications the failure rate will continue and increase. This change order will provide the City of Ames with an improved, reliable oil supply and oil ignitor burner system for the foreseeable future.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, thereby approving contract Change Order No. 1 in an amount not to exceed of $22,500.00 to Burns & McDonnell for the scope of work increase to the Power Plant Ignitor Oil Study. This will bring the total contract cost to $53,523.00.