ITEM # 13
DATE: 06-11-13

COUNCIL ACTION FORM

SUBJECT: PRELIMINARY PLANS AND SPECIFICATIONS FOR SF6 CIRCUIT BREAKERS

BACKGROUND:

The complete project is the replacement of 69kV switchyard relay and controls at the Ames Plant substation. The 69kV switchyard relaying and controls are currently located inside the Power Plant. This requires long runs of aged control cable between the Power Plant and switchyard, running beneath portions of the Water and Pollution Control's newer office. Some of the control cables are no longer operational and some conduits have collapsed and are not accessible for repair. The existing relays are obsolete electro-mechanical devices which are becoming difficult to maintain/repair as replacement parts are no longer manufactured. Additionally, some of the existing relays at the Stange Road, Dayton Avenue and Haber Road substations are also obsolete electro-mechanical devices that need to be replaced as part of this project to complete a coordinated 69kV looped scheme using the available fiber-optic communications previously installed. The relaying and controls for the 69kV switchyard and other listed substations are critical components that play a significant role in overall electric system reliability.

With the installation of the Ames Plant 161kV / 69kV substation, a relay and control enclosure was installed adjacent to the 69kV switchyard with sufficient room to house the relays and controls needed for the 69kV switchyard. By installing modern, programmable relays and updated controls in this location and using the previously-installed fiber-optic communications, long-term reliability can be improved by eliminating the obsolete and maintenance-intensive electro-mechanical relays and aged, lengthy control circuits that are no longer accessible for repair.

This portion of the project is for the purchase of three circuit breakers and related accessories. The Engineer's estimate of the cost of these circuit breakers is $160,000. It is necessary to specify and order these breakers ahead of the final design and construction bidding due to the long lead time for these pieces of equipment. A separate report is also being presented to Council for electrical materials. Additionally, the construction phase approval of plans and specifications will be presented to Council in the near future.

Upon City Council approval and receipt of favorable bids, the breakers will be ordered.

The approved FY2013/14 CIP for Electric Services includes $1,700,000 for engineering, materials and construction of this project with Iowa State University contributing an estimated $319,600 to the cost. To date the project budget has the following items encumbered:

1. $160,000	**Estimated for 3 circuit breakers – this item (pending Council approval of plans and specifications for this agenda item)**
2. $175,000	Estimated cost for electrical materials (see Electrical Materials Council Action Form on this Council meeting agenda)

This will leave $1,365,000 to cover engineering, additional materials purchases, and construction costs.

ALTERNATIVES:

1. Approve the plans and specifications for the SF6 Circuit Breakers and set June 26, 2013, as the bid due date and July 9, 2013, as the date of hearing and award of contract.

2. Do not approve the plans and specifications at this time.

MANAGER'S RECOMMENDED ACTION:

This equipment is necessary to complete the projects at the specified substations. This project will help move customer loads off the Power Plant bus and will help to limit exposure of the Power Plant bus to distribution faults, thereby improving Power Plant reliability. By installing modern, programmable relays and updated controls in these locations, long-term reliability can be improved by eliminating the obsolete and maintenance-intensive electromechanical relays and aged, lengthy control circuits that are no longer accessible for repair.

These projects are necessary for Electric Services to continue providing safe, reliable, service to the customers in the City.

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