

COUNCIL ACTION FORM

SUBJECT: POWER PLANT UNIT 8 AIR HEATER BASKET REPLACEMENTS

BACKGROUND:

This proposed project is for the procurement and installation of basket and associated materials that need to be replaced in the regenerative air heaters on Unit 8.

Air heaters are large rotating sets of three stacked metal elements. The flue gas exiting from the boiler passes across the metal elements, heating them. The rotation of the assembly then brings the elements into the cold air forced draft fan side. As the cold air passes through the heated metal elements, the air is heated to 600 degrees Fahrenheit and is used for combustion, drying, and transport of pulverized coal to the boiler. This recovery of the heat from the flue gas increases the efficiency of the boiler.

Only the cold end baskets on Unit 8 are in need of replacement. The lower levels of the metal elements have become loose and are falling out, allowing air to pass through without being heated properly and the flue gas to exit at too high of a temperature.

It is not possible to operate with defective baskets for long periods because, as the flue gas temperature goes up, it will eventually reach and then exceed the design material temperature of the duct work and stack and exceed the temperature allowed in the City's IDNR operating permit. Additionally, the cost to operate with inefficient air heaters is very expensive. A 100 degree temperature rise in the flue gas leaving the plant results in an increase of approximately 2.5% in fuel costs.

The Engineer's estimate of the total installed cost of this project is \$165,000. **The Council should note that this bid is for the purchase of the air heater baskets only. Installation for these air heaters will be bid separately at a later date.**

The approved 2011/12 budget and Capital Improvements Plan includes \$150,000 for this Unit #8 Air Heater Basket Replacement project. This includes \$100,000 for the materials and \$50,000 for the installation. Staff is planning on obtaining additional funds from the Unit 8 boiler maintenance Operating and Maintenance account to cover the additional \$15,000 if it is needed.

ALTERNATIVES:

1. Approve the preliminary plans and specifications for the Unit 8 Air Heater Baskets and set October 12, 2011, as the bid due date and October 25, 2011, as the date of hearing and award of contract.
2. Delay the purchase and replacement of the air heater baskets.

MANAGER'S RECOMMENDED ACTION:

Air heater baskets are subject to long term corrosion due to exhaust gas and operating conditions. Periodic replacement is required in order to maintain operability and high efficiency. As is noted above, poorly maintained air heater baskets increase costs for the utility, and there is a significant risk of damage to the downstream fans, ductwork and stacks.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, thereby approving the preliminary plans and specifications for the Unit 8 Air Heater Baskets, and establishing October 12, 2011, as the bid due date and October 25, 2011, as the date of public hearing.