

COUNCIL ACTION FORM

**SUBJECT: POWER PLANT UNIT 7 ROTARY AIR PREHEATER
PARTIAL BASKET REPLACEMENT**

BACKGROUND:

Unit 7 Boiler utilizes an air preheater to capture the heat in the exhaust gas from the boiler and transfers the heat energy to the incoming combustion air to warm it to the temperature needed for efficient combustion of the fuels in the boiler. The rotary air heater is made of multiple baskets filled with sandwiched layers of steel that rotate between the exhaust and inlet air ducts and in doing so transfers the heat energy from the exhaust to the incoming air needed for combustion of the fuel in the boiler. Over time the basket material corrodes, deteriorates, and loses thermal efficiency. The loss of thermal efficiency results in more fuel consumption and increased costs to the utility. The boiler is currently operating satisfactory, but at less than optimum thermal efficiency due to the deteriorated condition of the air heater. Previous inspections and temperature data indicates the preheater needs basket replacement.

During the plant's recent 2012 spring outage, debris was found in the exhaust duct. The hot side baskets of the air preheater had corroded to the point of becoming loose and falling out. This loose material could also cause the rotary air heater to bind or stall, making the Unit 7 boiler inoperable.

The plant maintenance staff removed all loose material and tightened up the remaining baskets by wedging, installing hold down bars, and expanded metal to prevent more thin steel sheets from falling out.

This maintenance modification stabilized the deterioration and loss of material. However, the work resulted in a higher pressure drop across the air heater, which affected the ability of the fan system to supply enough air to obtain full load output of Unit 7. Unit 7 is rated at 33MW and was regularly operated without problems up to 35MW. **Now, due to the deteriorated condition of the air heater and its impact on the fan system, Unit 7 is limited to just under 25MW. This load restriction also limits the unit's ability to burn refuse derived fuel.**

The deteriorated and damaged hot side air heater baskets must be replaced in order to restore the air heater to normal, thus allowing the fan system to operate so that Unit 7 can be operated up to full output.

The rotary air heater on both plant boilers are manufactured by Alstom Power, Inc. During the recent Unit 8 spring outage, one row of baskets was replaced on Unit 8. The material was formally bid and awarded to Alstom Power Inc. for the amount of \$78,500. (Alstom provided the only responsive bid out of a total of two received.)

Since Alstom was the only responsive bidder from the aforementioned project and they are also the Original Equipment Manufacturer (OEM), staff contacted them and inquired on cost and availability of the needed basket components for Unit 7. Alstom provided staff a price of \$75,067 with delivery three weeks after receipt of order. **Delivery is usually months, not weeks for this product. Alstom happens to currently have enough material in stock for this relatively small order. (They may not in the future.)**

This work is considered routine maintenance repair and replacement. The work will also reduce the amount of fuel required and associated air emissions at any given load point.

In FY 2012/13, \$555,000 is budgeted for Unit 7 boiler maintenance. The amount needed for procurement of these Unit 7 baskets will be taken from this account.

ALTERNATIVES:

1. Waive the purchasing policy requirement for competitive bidding and award a contract in the amount of \$75,067 to Alstom Power Inc., Wellsville, NY for the Unit 7 hot side basket material. Installation will be conducted by plant staff.
2. Operate Unit 7 with load limits this summer and secure competitive bids for the baskets with replacement at a future date.

MANAGER'S RECOMMENDED ACTION:

In order to meet customer demand, have full output available during the normal fall outage of Unit #8, and restore the unit's capability to normal output, it is in the City's best economic interest to immediately procure the needed hot side baskets and install them this year.

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