

COUNCIL ACTION FORM

**SUBJECT: UNIT 7 CONDENSER TUBE CLEANING AND EDDY CURRENT TESTING AT
THE POWER PLANT**

BACKGROUND:

Each of the Power Plant's two boilers heat water into high pressure steam, which then passes through a turbine. The turbine spins a generator to produce electricity. A steam condenser is a mechanical device which is used to condense the steam which has passed through the turbine back into water. It does so with the help of circulation water from the cooling tower, flowing through condenser tubes. The Unit 7 condenser consists of 4,310 admiralty brass tubes and 469 stainless steel tubes. When steam inside the condenser passes over these tubes, the circulating water within the tubes cools the steam back into condensate and then the boiler water is recirculated in the boiler system.

Condenser tubes must be cleaned periodically with high pressure water jets to ensure maximum heat transfer across the tube walls. Unit 7 has experienced condenser tube failures that have caused forced shutdowns and water system contamination. A number of condenser tubes have been plugged because of failure.

After mechanically cleaning the condenser tubes, eddy current testing will be performed to determine the thickness of each tube. If any thin tubes or problem areas are identified, individual tubes will be taken out of service to prevent future forced shutdowns. After the testing is completed, a report will be provided to determine life expectancy of the condenser tubes. City staff will use this information to determine if tube replacement is necessary.

City staff received 3 competitive quotes for the cleaning and eddy current testing on Unit 7 condenser tubes.

<u>Contractor</u>	<u>Total</u>
Conco Services LLC	\$51,285.76
The Merrick Group	\$54,500.00
American Efficiency Services	\$61,965.00

This project was budgeted to be performed this fiscal year. \$50,000 is available in the Unit 7 Steam Turbine and Generator Maintenance account for the work.

ALTERNATIVES:

1. Award service to Conco Services LLC, of Vernova, PA, for Unit 7 condenser tube cleaning and eddy current testing at the Power Plant, in an amount not to exceed \$51,285.76.
2. Award contract to one of the other firms.
3. Reject all proposals and direct staff to rebid

CITY MANAGER'S RECOMMENDED ACTION:

Performing cleaning and testing on Unit 7 condenser tubes will determine the current condition of these tubes. This information will be used to determine the tube life expectancy and what future maintenance activities need to be performed in the future. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative #1 as stated above.