

**COUNCIL ACTION FORM**

**SUBJECT:**           **UNIT 7 BOILER REPAIR PROJECT**

**BACKGROUND:**

This project, which has been planned for several years, is to repair Unit 7 boiler by the following actions:

- Replacing the boiler tubes in the lower waterwall section of the boiler
- Replacing all the pendant tubes in the superheat section
- Reinsulating the steam and mud drums
- Replacing the insulation and lagging (the aluminum skin) that covers the boiler

Unit 7 is one of two primary boilers at the City's Steam Electric Plant, and is now 50 years old and the boiler is in critical need of tube repairs.

As a result of boiler tube failures, Unit 7 has been off-line since early this year. With Unit 8 also experiencing frequent boiler tube issues, it is critical that this Unit 7 project proceed so that the Steam Electric Plant can be available and reliable to serve the electrical requirements of the City, and continue to burn refuse derived fuel.

After switching from coal to natural gas in 2016, staff found that the boiler tubes were deteriorating due to corrosion at an accelerated pace, especially in the high temperature zones of the superheater. For many years the power boiler and waste-to-energy (WTE) industries have relied on coating or cladding boiler tubes with various alloys containing formulations of nickel, chromium, and molybdenum to form a barrier to the corrosive attack of the boiler gases upon the tubes. For this project, the outer surfaces of the new replacement tubes for both the waterwall and superheater sections of Unit 7 boiler will be overlaid or clad with alloy to prevent or mitigate the corrosive attack upon the tubes.

Based upon earlier engineering estimates, the approved Capital Improvements Plan (CIP) includes the following funding for the Unit No. 7 Boiler Repair:

2015/16 Engineering	\$5,150
2016/17 Engineering	\$125,796
2017/18 Engineering	\$50,000
2019/20 Materials/labor - superheat and waterwall	\$5,650,000
<b>TOTAL</b>	<b>\$5,830,946</b>

It was noted at the time City Council approved the plans and specifications, that the funding included in the CIP is inadequate to accomplish these repairs. The updated engineer's cost estimate is \$8,400,000. The reason for this major cost increase stems from recent experience with similar tube issues in Unit 8. It has now become clear that burning natural gas with RDF leads to tube wastage in the higher portions of the boiler, specifically in the superheater section. It is also clear that protective coating must be applied to that section as well, meaning that many more tubes must be coated than were originally anticipated.

With the Engineer's estimate significantly higher than the funding included in the CIP, staff might need to evaluate delaying or eliminating other future capital projects to make up the difference. Those recommendations for additional funding will be presented by staff when staff brings a recommendation for award of bid. Staff also believes that bidding on this project may produce bids that are less than the Engineer's estimate, which would further reduce the amount of additional capital funding needed.

On October 23, 2018 the City Council approved plans and specifications for the Unit 7 Boiler Repair Project and set December 19, 2018, as the bid due date and January 8, 2019, as the date of hearing and award of contract.

**As a result of a plethora of technical questions posed by potential bidders during the scheduled pre-bid meeting on November 14, 2018, and other site visits, along with the input from technical experts in exotic alloy manufacturing and the weld and laser application industries, it is necessary to extend the bid due date to allow the potential bidders time to fully comprehend the scope of work, and to line up suppliers and subcontractors who can provide the materials and services required to perform the work.** The project has also been impeded by the current owner and possessor of the technical assets (drawings, engineering calculations, etc.) of the original equipment manufacturer (OEM) of the boiler, who has refused to release the boiler drawings for Unit 7 (circa 1967), that the City has requested to support the project.

Therefore, staff believes it is in the City's best interest to extend the bid due date to allow interested bidders sufficient time to perform the necessary study and work to assemble a quality, comprehensive bid.

#### **ALTERNATIVES:**

1. Approve the date changes for the Unit 7 Boiler Repair Project and set Wednesday, January 16, 2019, as the bid due date and Tuesday, January 22, 2019, as the date of hearing and award of contract.
2. Reject the request and leave the dates as currently established.

**CITY MANAGER'S RECOMMENDED ACTION:**

Extending the bid due date to allow the potential bidders to better comprehend the work scope and the specification for the Unit 7 Boiler Repair Project will likely improve the quality and pricing of the bids the City receives. Therefore, it is the recommendation of the City Manager that the Council approve Alternative #1 as stated above.