

**COUNCIL ACTION FORM**

**SUBJECT:     **AWARD AND APPROVAL OF CONTRACT AND BOND FOR UNIT 8  
BOILER REPAIR PROJECT****

**BACKGROUND:**

On August 25, 2020, the City Council approved plans and specifications for the Unit 8 Boiler Repair Project. This project, which has been planned for several years, is to repair Unit 8 boiler through the following actions:

- Replace a section of waterwall tubes at the bottom of the boiler
- Replace all the pendant tubes in the superheater section
- Replace six (6) lower sidewall headers and add eight (8) riser tubes connecting the upper headers to the steam drum as per the original equipment manufacturer's recommendation to improve boiler circulation and to enhance the ability to control the temperature of the steam from the boiler to the turbine

Unit 8 is one of two boilers at the City's Steam Electric Plant and is now 38+ years old. Due to age, a history of firing coal and natural gas (since 2016), along with co-firing refuse derived fuel (RDF), the boiler is in critical need of repair, especially the tubes in the superheater.

After switching from coal to natural gas in 2016, staff found that the boiler tubes in the superheater were deteriorating at an accelerated pace. Staff believes this is because water vapor created by the combustion of natural gas combines with chlorides from combusting RDF, causing the surfaces of the tubes in the superheater to corrode, with the higher temperature zones of the superheater suffering the greatest corrosive attack.

For many years, the power boiler and waste-to-energy industries have relied on coating or cladding boiler tubes with nickel-based alloys to act as a barrier to the corrosive attack of boiler gases on the tubes. **For this project, the outer surfaces of the new replacement tubes for the superheater and the waterwall tubes at the bottom of the boiler (that connect to the lower headers), will be clad with a nickel-based alloy to prevent or substantially mitigate the corrosive attack on the tubes.**

As a result of the boiler becoming more and more unreliable due to tube failures, Unit 8 has been off-line since 2019. It is critical that this Unit 8 boiler repair project proceed expeditiously so that the Steam Electric Plant's units are available and reliable.

On October 14, 2020, seven bids were received, ranging in price from \$6,690,271 to \$9,775,245. The low bid (\$6,690,271) was submitted by TEi Construction Services, Inc.

(TEiC) of Duncan, South Carolina. TEiC, along with an affiliated company, Boiler Tube Company of America (BTA), (both are part of the Babcock Power group of companies), combined to offer a bid for this project. BTA will responsible for sourcing the boiler tubes, applying the alloy cladding to the tubes, and fabricating (bending) the tubes as required. TEiC will be responsible for installing the tubes in the boiler. Both firms are well known in the industry and qualified to perform the project work. BTA, for example, has designed, fabricated, and installed parts and components for boilers since 1918.

**In addition to the bid amount of \$6,690,271, there will need to be a Change Order approved in the amount of \$369,324 to account for additional sales tax obligation.** (The Change Order for the additional sales tax will be brought before the City Council for its approval at a future meeting.) **Therefore, the total price including the bid proposal plus the additional sales tax change order necessary to accomplish the scope of work is \$7,059,595. However, even with the adjustment for sales tax, TEiC's bid is \$1,335,760.05 less than the next highest bid (with appropriate sales tax included).**

**It should also be noted that TEiC's low bid of \$6,690,271 plus the additional sales tax of \$369,324 totaling \$7,059,595 is \$1,514,405 less than the engineer's cost estimate of \$8,574,000, and the Capital Improvements Plan (CIP) budget of \$7,399,455 is more than adequate to pay for the project.**

**ALTERNATIVES:**

1. a. Award a contract to TEi Construction Services, Inc. of Duncan, South Carolina, for the Unit 8 Boiler Repair Project in the amount of \$6,690,271.

**(NOTE: A Change Order in the amount of \$369,324 for the additional sales tax obligation is necessary to be approved by City Council at a later date.)**

- b. Approve the Contract between TEiC Construction Services, Inc. and the City of Ames along with the Performance Bond provided by TEiC.
2. Award a contract to one of the other bidders.
3. Reject all bids and delay this project.

**CITY MANAGER'S RECOMMENDED ACTION:**

This project will greatly improve the availability and reliability of Unit 8. It is crucial that the project proceed in order to increase the Power Plant's reliability to produce electricity and burn refuse derived fuel.

**Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1.a and 1.b, as described above.**



## ITB 2021-005 UNIT 8 BOILER REPAIR BID SUMMARY

### BIDDER: HELFRICH BROTHERS BOILER WORKS INC, LAWRENCE, MA

|  | Base Bid                         | Alternate 1                      | Alternate 2                      | Alternate 3                      |
|--|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <b>PRICE</b>                                 | \$7,846,126.21                   | \$7,237,831.65                   | \$5,045,274.59                   | \$4,377,980.03                   |
| <b>Sales Taxes Included in above amount</b>  | \$549,228.84                     | \$506,648.22                     | \$353,169.22                     | \$306,458.60                     |
| <b>EVALUATED AMOUNT:</b>                     | <b>\$8,395,355.05</b>            | <b>\$7,744,479.87</b>            | <b>\$5,398,443.81</b>            | <b>\$4,684,438.63</b>            |
| <b>Lead time ARO to source tubes (weeks)</b> | 6-10 weeks                       | 6-10 weeks                       | 6-10 weeks                       | 6-10 weeks                       |
| <b>Total project time ARO (weeks)</b>        | 34 weeks                         | 34 weeks or less                 | 34 weeks or less                 | 34 weeks or less                 |
| <b>Source of Tubes</b>                       | Domestic and/or Foreign - Europe | Domestic and/or Foreign - Europe | Domestic and/or Foreign - Europe | Domestic and/or Foreign - Europe |

### BIDDER: TEI CONSTRUCTION SERVICES INC., DUNCAN, SC

|  | Base Bid           | Alternate 1        | Alternate 2        | Alternate 3        |
|--|--------------------|--------------------|--------------------|--------------------|
| <b>PRICE</b>                                 | \$6,650,364        | \$5,855,964        | \$4,676,411        | \$3,882,011        |
| <b>Sales Taxes Included in above amount</b>  | \$39,907           | \$35,140           | \$28,062           | \$23,295           |
| <b>EVALUATED AMOUNT:</b>                     | <b>\$6,690,271</b> | <b>\$5,891,104</b> | <b>\$4,704,473</b> | <b>\$3,905,306</b> |
| <b>Lead time ARO to source tubes (weeks)</b> | 5-8 weeks          | 5-8 weeks          | 5-8 weeks          | 5-8 weeks          |
| <b>Total project time ARO (weeks)</b>        | 34 weeks           | 34 weeks           | 34 weeks           | 33 weeks           |
| <b>Source of Tubes</b>                       | Domestic           | Domestic           | Domestic           | Domestic           |

### BIDDER: THOMPSON CONSTRUCTION GROUP, INC., SUMTER, SC

|  | Base Bid             | Alternate 1          | Alternate 2         | Alternate 3         |
|--|----------------------|----------------------|---------------------|---------------------|
| <b>PRICE</b>                                 | \$8,729,809          | \$7,657,470          | \$6,429,918         | \$5,372,634         |
| <b>Sales Taxes Included in above amount</b>  | \$0                  | \$0                  | \$0                 | \$0                 |
| <b>EVALUATED AMOUNT:</b>                     | <b>\$8,729,809</b>   | <b>\$7,657,470</b>   | <b>\$6,429,918</b>  | <b>\$5,372,634</b>  |
| <b>Lead time ARO to source tubes (weeks)</b> | 8 weeks              | 8 weeks              | 8 weeks             | 8 weeks             |
| <b>Total project time ARO (weeks)</b>        | 34 weeks             | 34 weeks             | 33 weeks            | 33 weeks            |
| <b>Source of Tubes</b>                       | Domestic             | Domestic             | Domestic            | Domestic            |
| <b>Deduct using Inconel 625</b>              | <b>-\$124,000.00</b> | <b>-\$109,000.00</b> | <b>-\$78,000.00</b> | <b>-\$63,000.00</b> |

### BIDDER: AZZ SMS LLC, SAINT PETERSBURG, FL

|  | Base Bid           | Alternate 1        | Alternate 2        | Alternate 3        |
|--|--------------------|--------------------|--------------------|--------------------|
| <b>PRICE</b>                                 | \$9,775,245        | \$8,822,203        | \$7,187,079        | \$6,164,340        |
| <b>Sales Taxes Included in above amount</b>  | \$0                | \$0                | \$0                | \$0                |
| <b>EVALUATED AMOUNT:</b>                     | <b>\$9,775,245</b> | <b>\$8,822,203</b> | <b>\$7,187,079</b> | <b>\$6,164,340</b> |
| <b>Lead time ARO to source tubes (weeks)</b> | 46 weeks           | 40 weeks           | 33 weeks           | 25 weeks           |
| <b>Total project time ARO (weeks)</b>        | 51 weeks           | 45 weeks           | 38 weeks           | 30 weeks           |
| <b>Source of Tubes</b>                       | Domestic           | Domestic           | Domestic           | Domestic           |

**BIDDER: ENERFAB POWER & INDUSTRIAL, KANSAS CITY, MO**

|  | <b>Base Bid</b>    | <b>Alternate 1</b> | <b>Alternate 2</b> | <b>Alternate 3</b> |
|--|--------------------|--------------------|--------------------|--------------------|
| <b>PRICE</b>                                 | \$8,649,782        | \$7,669,223        | \$6,121,265        | \$5,215,776        |
| <b>Sales Taxes Included in above amount</b>  | \$430,209          | \$360,226          | \$262,892          | \$206,382          |
| <b>EVALUATED AMOUNT:</b>                     | <b>\$9,079,991</b> | <b>\$8,029,449</b> | <b>\$6,384,157</b> | <b>\$5,422,158</b> |
| <b>Lead time ARO to source tubes (weeks)</b> | 46 weeks           | 40 weeks           | 33 weeks           | 25 weeks           |
| <b>Total project time ARO (weeks)</b>        | 51 weeks           | 45 weeks           | 38 weeks           | 30 weeks           |
| <b>Source of Tubes</b>                       | Domestic           | Domestic           | Domestic           | Domestic           |

**BIDDER: A&D CONSTRUCTORS, LLC, EVANSVILLE IN**

|  | <b>Base Bid</b>       | <b>Alternate 1</b> | <b>Alternate 2</b> | <b>Alternate 3</b> |
|--|-----------------------|--------------------|--------------------|--------------------|
| <b>PRICE</b>                                 | \$9,589,573.54        | \$8,421,254        | \$6,554,693        | \$5,483,509        |
| <b>Sales Taxes Included in above amount</b>  | \$0                   | \$0                | \$0                | \$0                |
| <b>EVALUATED AMOUNT:</b>                     | <b>\$9,589,573.54</b> | <b>\$8,421,254</b> | <b>\$6,554,693</b> | <b>\$5,483,509</b> |
| <b>Lead time ARO to source tubes (weeks)</b> | 46 weeks              | 40 weeks           | 33 weeks           | 25 weeks           |
| <b>Total project time ARO (weeks)</b>        | 54 weeks              | 48 weeks           | 39 weeks           | 31 weeks           |
| <b>Source of Tubes</b>                       | Domestic              | Domestic           | Domestic           | Domestic           |

**BIDDER: FRANK LILL & SON, INC., VICTOR NY**

|  | <b>Base Bid</b>    | <b>Alternate 1</b> | <b>Alternate 2</b> | <b>Alternate 3</b> |
|--|--------------------|--------------------|--------------------|--------------------|
| <b>PRICE</b>                                 | \$8,248,337        | \$7,749,337        | \$7,149,337        | \$6,549,337        |
| <b>Sales Taxes Included in above amount</b>  | \$50,000           | \$50,000           | \$50,000           | \$50,000           |
| <b>EVALUATED AMOUNT:</b>                     | <b>\$8,298,337</b> | <b>\$7,799,337</b> | <b>\$7,199,337</b> | <b>\$6,599,337</b> |
| <b>Lead time ARO to source tubes (weeks)</b> | 24 Weeks           | 24 Weeks           | 24 Weeks           | 24 Weeks           |
| <b>Total project time ARO (weeks)</b>        | 34 weeks           | 34 weeks           | 34 weeks           | 34 weeks           |
| <b>Source of Tubes</b>                       | Unknown            | Unknown            | Unknown            | Unknown            |