

ITEM #: 15  
DATE: 12-12-23  
DEPT: ELEC

**COUNCIL ACTION FORM**

**SUBJECT:       UNIT 7 BOILER FEEDWATER PUMP NO. 2 INSPECTION AND REPAIR  
PROJECT - CHANGE ORDER NO. 1**

**BACKGROUND:**

Feedwater pumps are required for operation of the Power Plant, as they are the primary pumps used to pump water through the boiler for conversion to steam to drive the turbine. To keep the pumps operating and providing required pressure, these pumps require routine inspection and repair. This project includes disassembling the Unit #7 feedwater pump, documenting as-found conditions, addressing components that need to be replaced or repaired, reassembly, documenting as-repaired conditions, and returning the pump to the City.

On August 8, 2023, City Council awarded a contract to Flowserve Corporation, Chicago, IL, for the inspection and repair of the 72 Boiler Feedwater Pump in the amount of \$115,876.95 (inclusive of sales tax).

**When the pump was disassembled, it was found with several components out of tolerance from the original equipment manufacturer's specifications.** The impellers which provide the flow and pressure, were found with too large an opening in the middle for the shaft. The only way to repair this opening is to weld additional material on the inside of the impeller and then machine the new material to the appropriate dimension. Another major item found is the need to replace the existing studs. These studs are large, threaded bolts that hold the case together. Because of the high operating pressure, the torque applied to the studs is very high, ranging between 2,000 and 5500 ft-lb. This high torque causes the bolts to stretch and after one or two uses, they need to be replaced. The manufacturer recommends replacing the studs due to the stretch already incurred on the studs. Failure of one or more studs could be catastrophic to the pump.

City staff visited the factory to review the repairs and the proposed change order costs. Staff anticipates these repairs will allow the pump to operate for another 5-10 years.

**THIS ACTION:**

**The actual conditions of the pump were unknown until it was opened up and examined.** The base bid covered anticipated typical wear, however, there are extensive repairs needed to restore the pump to its necessary operating condition. Change Order No. 1 covers the additional repair and restoration needed. **The cost of the change order is \$178,185.97 (inclusive of sales tax). Funds will come out of equipment repair portion of the operating budget which contains in excess of \$200,000 in this fiscal year.**

**ALTERNATIVES:**

1. Approve Change Order No. 1 in the amount of \$178,185.97 to Flowserve Corporation, Chicago, IL, for the 72 Boiler Feedwater Pump Inspection and Repair.
2. Do not approve the change order and direct staff to seek other options available to complete this work.

**CITY MANAGER'S RECOMMENDED ACTION:**

Approving this change order will restore the Unit 7 Boiler Feedwater Pump No. 2 to good operating condition providing reliable performance for the future. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, as described above.