

RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES

DATE: April 13, 2020

ITEM NO: 7

SUBJECT: EXPENDITURE WITH GE PACKAGED POWER, LLC OF HOUSTON, TEXAS FOR EMERGENCY REPAIRS ON GAS TURBINES FOR RIVERSIDE ENERGY RESOURCE CENTER UNITS 1 AND 3 IN THE AMOUNT OF \$4,530,289 DUE TO URGENT NECESSITY FOR PROTECTION AND PRESERVATION OF PUBLIC LIFE, HEALTH, AND PROPERTY WITH A 10% CHANGE ORDER AUTHORIZATION IN THE TOTAL EXPENDITURE AMOUNT OF \$4,983,319.

ISSUES:

Approve the expenditure for the repairs on the gas turbines for Riverside Energy Resource Center Units 1 and 3 in the amount of \$4,530,289 due to the urgent necessity for the protection and preservation of public life, health, and property, with a 10% change order authorization, for a total expenditure of \$4,983,319, in accord with City Charter section 1202(b).

RECOMMENDATIONS:

That the Board of Public Utilities approve the expenditure for the repairs on the gas turbines for Riverside Energy Resource Center Units 1 and 3 in the amount of \$4,530,289 due to the urgent necessity for the protection and preservation of public life, health, and property, with a 10% change order authorization, for a total expenditure of \$4,983,319, in accord with City Charter section 1202(b).

CITY COUNCIL ACTION:

On December 17, 2019, the City Council unanimously adopted an emergency resolution waiving the formal bidding requirements and declaring that the repairs on the gas turbines for Riverside Energy Resource Center (RERC) Units 1 and 3 in the amount \$4,530,289 were of an urgent necessity for the protection and preservation of public life, health, and property. Additionally, the City Council approved the issuance of purchase orders with GE Packaged Power, LLC of Houston to complete the emergency repairs on the gas turbines for RERC Units 1 and 3 in the amount of \$4,530,289. RPU staff was authorized to make necessary revisions to the purchase order terms and conditions to complete the necessary repairs and provided with change order authority for 10% of the purchase order in the amount of \$453,030. Finally, the City Council authorized a supplemental appropriation of \$4,983,319 from the Electric Fund Unrestricted, Undesignated Cash Reserve for emergency repairs on RERC Units 1 and 3.

BACKGROUND:

RPU commissioned Riverside Energy Resource Center Generation Unit 1 (RERC 1) in June 2006 and Riverside Energy Resource Center Generation Unit 3 (RERC 3) in April 2011. Each of these fast-start gas turbine units is able to generate 50 megawatts (MW) of electricity in less than ten minutes and are strategically located in the city limits providing local generation capacity. RERC 1 and RERC 3 have

historically been reliable units that serve a critical role in meeting customer's energy demands, but these units are aging. Discussion below illustrates the critical nature the RERC units play in ensuring that Riverside can meet minimum customer demands for electricity in the event that the connection to the regional grid through the Vista Substation is lost.

Staff routinely conducts annual preventative maintenance on all RERC units in November. Every year authorized service technicians perform specialized borescope inspections on the gas turbine's internal components. This year's inspection resulted in the identification of internal component cracks above the allowable limits for continued operation on RERC 1 and RERC 3. (See Figure 1 for locations of repairs on each unit) RERC 2 and RERC 4 were determined to be fine. Because of the significance of these cracks, staff had GE Package Power, LLC (GE), the Original Equipment Manufacturer, perform a second inspection, which confirmed that the cracks are above the serviceable limits. As a result, RERC 1 and RERC 3 are currently non-operational until repairs are completed.

Loss of any of the generating units at RERC represents an emergency for the City of Riverside. RERC 1 and RERC 3, which comprise one-half of the RERC facility, provide emergency power to the City and as well as playing a crucial role in meeting the City's daily capacity and electricity demands. Extended time to make repairs will have a substantial impact on the City's ability to provide emergency power.

DISCUSSION:

Only four vendors worldwide are authorized to make the emergency repairs on the equipment in RERC 1 and 3. Staff contacted each vendor regarding availability of parts and to request proposals for the completion of the necessary work. These vendors included:

1. GE Package Power, LLC (GE)
2. Trans Canada Turbine (TCT)
3. IHI Power System Co, Ltd (IHI)
4. MTU Aero Engines AG (MTU)

Only GE provided a complete cost, had the component parts available, and was available to perform the work on site.

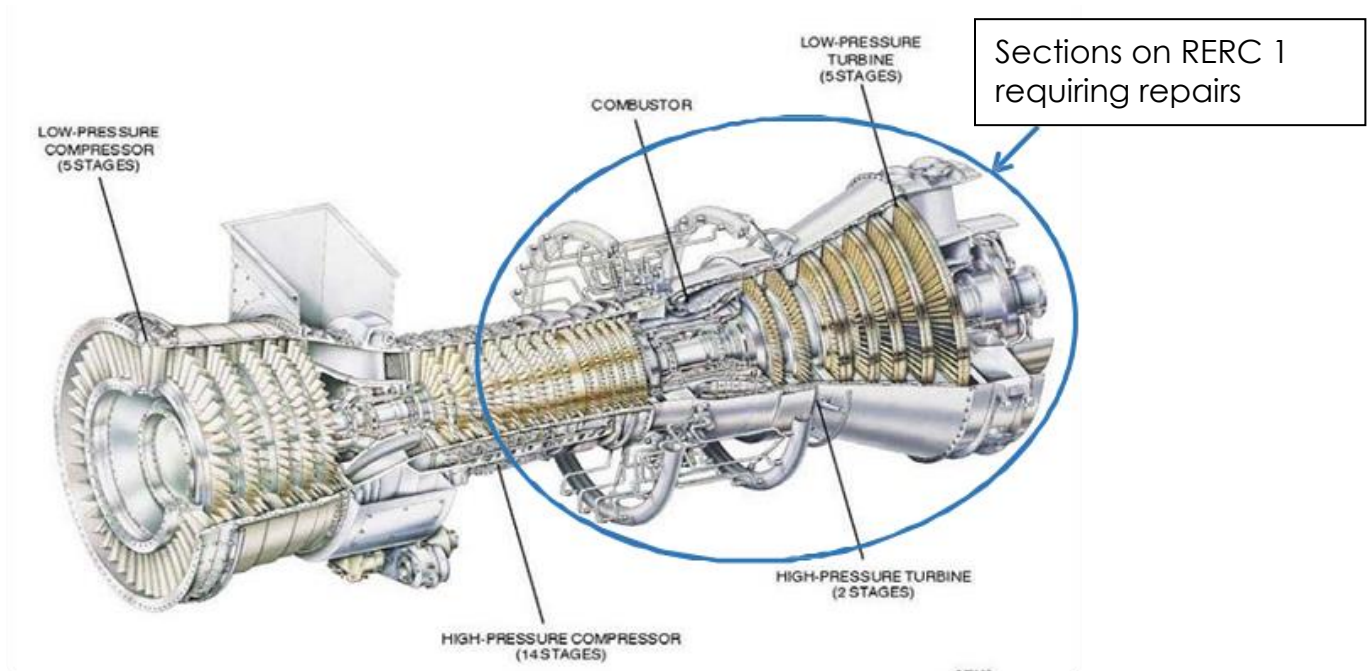


Figure 1. LM-6000 GE natural gas turbine engine

After extensive evaluation, staff recommended an onsite, rotatable exchange on the combustor, high-pressure turbine and low-pressure turbine on RERC 1. A rotatable exchange means that GE will exchange the damaged equipment for refurbished and fully warranted equipment at a lower cost than replacement of the equipment with completely new parts. All work for the replacement took place at the RERC facility. The option cost \$3,966,955; provided the quickest return to service; and eliminated the very high risk of costly and unforeseen repairs if the damaged equipment had been shipped to a repair facility.

The extent of the necessary emergency repairs on RERC 3 were not as severe. Cracks were contained to just the combustor and high-pressure turbine sections. A rotatable exchange of the combustor and high-pressure turbine was approximately \$1.8 million dollars. After review, staff recommended to only perform a rotatable exchange on the high-pressure turbine nozzle sections. This brought the unit back to normal operation at a cost of \$563,334.

In order to maintain reliable plant operations, staff obtained approval from the City Council on December 17, 2019 for this emergency work under City Charter section 1109, which states that for emergency repairs, such contracts may be let without bids “if such work or supplies or materials shall be deemed by the City Council to be of urgent necessity for the preservation of life, health or property, and shall be authorized by resolution passed by at least five affirmative votes of the City Council and containing a declaration of the facts constituting such urgency.” City Purchasing Resolution 23256, Sections 302 (c), states that for emergency purchases relating to Riverside Public Utilities, Article, XII, Section 1202 (b) of the City’s Charter applies and shall be followed. Section 1202(b) (2) of Article XII of the Riverside City Charter provides the following: “[A] purchase, or acquisition, construction, extension, enlargement, diminution or curtailment may be made without prior approval (2) if there is an urgent necessity to preserve life, health or property (i) as determined by the Director of Public Utilities or (ii) if the amount exceeds \$100,000 by the Director of Public Utilities and the City Manager. As soon as practicable thereafter, the Director of Public Utilities shall take the matter under Section 1202(b) (2) to the Board of Public Utilities for ratification.”



Figure 2: Photos RERC 1 removal and disassembly

As noted above, on December 17, 2019, RPU staff obtained City Council's five affirmative votes; approval for the issuance of a purchase order for the emergency repairs on Riverside Energy Resource Center Units 1 and 3; approval for 10% change order and; authorization for a supplemental appropriation. A purchase order was issued to GE Package Power, LLC on December 18, 2019. GE Package Power, Inc. was incorrect name listed in the City Council report and the correct name of GE Package Power, LLC is reflected in this RPU Board memorandum. Repairs commenced on RERC 1 on January 06, 2020 and the unit returned to normal operations on January 14, 2020. Subsequent repairs on RERC 3 started on January 15, 2020 and completed on January 24, 2020. Change order authority was not used.

The Purchasing Services Manager concurs that the recommended actions comply with Purchasing Resolution No. 23256.

FISCAL IMPACT:

The total fiscal impact for the emergency repairs is \$4,983,319. Sufficient funds are available to fully cover the urgent repairs in the amount of \$4,363,651 from RERC Machine and Equipment Account No. 6120130-462200 for RERC Unit 1 and in the amount of \$619,668 from RERC Maintenance-Generating Plants Account No. 6120130-424131 for RERC 3.

Prepared by: Daniel E. Garcia, Utilities Assistant General Manager/Resources
Approved by: Todd M. Corbin, Utilities General Manager
Approved by: Al Zelinka, FAICP, City Manager
Approved as to form: Gary G. Geuss, City Attorney

Certifies availability
of funds: Brian Seinturier, Utilities Fiscal Manager

Attachments:

1. Emergency Resolution
2. GE Proposal – High Pressure Turbine Stage 2 Nozzle Exchange
3. GE Proposal – Low Pressure Turbine, Combuster, and Hot Section Exchange
4. GE Quote for Fuel Nozzles
5. Proposal Attachment - Products and/or Services Terms and Conditions
6. Presentation