

RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES

DATE: MARCH 13, 2023

SUBJECT: REQUEST FOR PROPOSAL NO. 2241 – AGREEMENT WITH GE PACKAGED POWER, LLC. OF HOUSTON, TEXAS TO PERFORM TURBINE BLADE MAINTENANCE ON RIVERSIDE ENERGY RESOURCE CENTER UNITS 1 AND 2 IN THE AMOUNT OF \$280,563.

ISSUE:

Consider recommending City Council approval of an agreement from Request for Proposal No. 2241 with GE Packaged Power, LLC. of Houston, Texas for turbine blade maintenance on Riverside Energy Resource Center Units 1 and 2 for \$280,563.

RECOMMENDATIONS:

That the Board of Public Utilities recommend that the City Council:

1. Approve the agreement, from Request for Proposal No. 2241, with GE Package Power, LLC. of Houston, Texas for turbine blade maintenance at Riverside Energy Resource Center Units 1 and 2 for \$280,563; and
2. Authorize the City Manager, or designee, to execute the agreement with GE Packaged Power, LLC., including making minor and non-substantive changes.

BACKGROUND:

The Riverside Energy Resource Center (RERC) consists of four General Electric LM6000 model gas turbine engines that, in total, provide 30% of Riverside's summer daily electric power demands. Riverside constructed the RERC facility in two phases: Units 1 and 2 (Units 1&2) commissioned in 2006, and Units 3 and 4 (Units 3&4) in 2011.

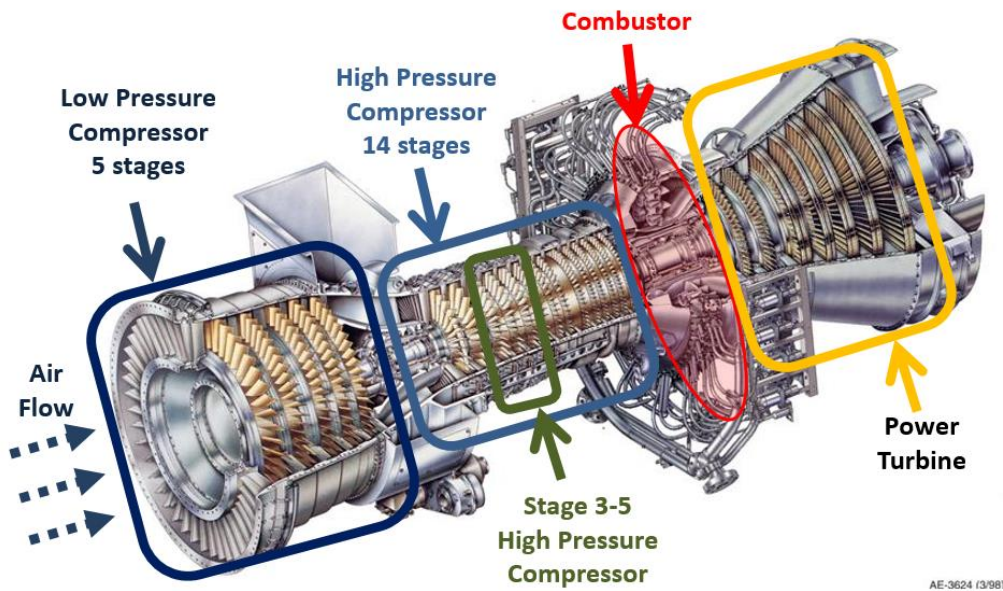
In February 2016, GE issued Service Bulletin 310. A service bulletin is a document issued by a manufacturer to notify equipment owner/operators of an identified deficiency with specific equipment that could have a significant material impact if not addressed in a timely manner. This maintenance advisory identified a limitation with unit start-up cycles and recommends partial turbine blade replacements after 1,500 engine starts.

The LM6000 gas turbine has 14 stages of high-pressure compressor (HPC) turbine blades. Service Bulletin 310 specifies replacement of the rotating blades on stages three, four, and five. If not replaced before 1,500 engine starts, the affected rotating blades could dislodge, cause

significant downstream damage during engine operation, and result in catastrophic failure of the gas turbine.

RERC 1&2 reached the start cycles limit and staff completed the Service Bulletin 310 blade replacements in November 2016. Since then, RERC 1&2 reached another 1,500 start cycles and staff recommends completing the recommended maintenance during an outage planned in May 2023.

The following illustration shows various components of the turbine. The section highlighted in green outlines stages three, four, and five under Service Bulletin 310 discussed in this report.



The following photos below show examples of the damage caused by turbine blade failures in GE turbines owned by others.



DISCUSSION:

Request for Proposal (RFP) No. 2241 posted on October 3, 2022 and closed on October 27, 2022. Only four vendors worldwide can perform the specialized work and all four were invited to submit competitive pricing. Only one proposal was received.

Table 1. RFP Notification Summary

Action	Number of Vendors
Authorized Vendors Notified	4
Vendors Who Downloaded the RFP	3
Proposals Received	1

Table 2. Proposals Received

Vendor	Location	Average Score (100 max)	Amount	Rank
GE Packaged Power, LLC.	Houston, TX	100	\$280,563	1

Staff reviewed and evaluated the proposal submitted by GE Packaged Power, LLC. (GE) according to the RFP selection criteria listed below. Staff formulated the weighting of selection criteria with the goal of identifying the best proposal and a competitive price. RPU staff emphasized pricing and gave it the highest weighting. Since all four vendors were similar in qualifications, the vendor's ability to meet outage schedules, repair times, and parts availability was strongly considered.

- a. Qualifications (25% - 25 points)
- b. Pricing (40% - 40 points)
- c. Experience, Approach and Methodology (35% - 35 points)

Staff recommends the proposal from GE, the original equipment manufacturer. GE provided competitive pricing and is capable of meeting Riverside's outage schedules and repair times.

The Purchasing Manager concurs that the recommended actions are in compliance with Purchasing Resolution No. 23914.

STRATEGIC PLAN ALIGNMENT:

This item contributes to the following strategic priorities and goals from the Envision Riverside 2025 Strategic Plan:

Strategic Priority 5, High Performing Government

Goal 5.4. Achieve and maintain financial health by addressing gaps between revenues and expenditures and aligning resources with strategic priorities to yield the greatest impact.

Strategic Priority 6, Infrastructure, Mobility & Connectivity

Goal 6.2. Maintain, protect, and improve assets and infrastructure within the City's built environment to ensure and enhance reliability, resiliency, sustainability, and facilitate connectivity.

The item aligns with each of the five cross-cutting threads as follows:

1. **Community Trust** – Ensuring that RERC operates reliably during critical periods and provides electricity to RPU's electric customers serves the greater public good.
2. **Equity** – This item ensures that RPU's power plants can safely and effectively operate and provide reliable electricity benefitting the entire City and all customers.
3. **Fiscal Responsibility** – Staff negotiated a price reduction of \$80,000 to GE's original proposal. The final price is consistent to lowest price submitted for the same maintenance completed in 2016.
4. **Innovation** – Performing the OEM recommended turbine blade maintenance on RERC 1&2 is the best practice and ensures the units will continue to operate with high reliability.
5. **Sustainability & Resiliency** – RERC operates during the most critical times when the demand for electricity is high and beyond the capacity from renewable sources. Performing the turbine blade maintenance prevents the potential of a catastrophic failure and supports the goal of sustaining highly reliable power plant operations.

FISCAL IMPACT:

The total fiscal impact is \$280,563. Sufficient funds are available in the RERC Maintenance-Generating Plants Account No. 6120130-424131.

Prepared by:	Daniel E. Garcia, Utilities Deputy General Manager/Power Resources
Approved by:	Todd M. Corbin, Utilities General Manager
Approved by:	Kris Martinez, Assistant City Manager
Approved as to form:	Phaedra A. Norton, City Attorney

Certifies availability of funds:	Edward Enriquez, Interim Assistant City Manager/Chief Financial Officer/City Treasurer
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Attachments:

1. Award Recommendation
2. Agreement with GE Packaged Power, LLC.
3. Presentation