



RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES

DATE: AUGUST 08, 2016

ITEM NO: 8

SUBJECT: PURCHASE ORDER WITH GE PACKAGE POWER, INC. FOR THE IMPLEMENTATION OF GENERAL ELECTRIC SERVICE BULLETIN 310 FOR RECOMMENDED REPAIRS ON RIVERSIDE ENERGY RESOURCE CENTER UNITS 1 AND 2 GAS TURBINE ENGINES, REQUEST FOR PROPOSALS NO. 1630 - IN THE AMOUNT OF \$126,139

ISSUE:

Approval of a purchase order with GE Package Power, Inc. to install the recommended repairs under GE Service Bulletin 310 on Riverside Energy Resource Center Gas Turbine Engines in Units 1 and 2.

RECOMMENDATION:

That the Board of Public Utilities approve a purchase order to GE Package Power, Inc., of Houston, Texas, for installation of recommended repairs under GE Service Bulletin 310 on the Riverside Energy Resource Center Units 1 and 2 gas turbine engines in the amount of \$126,139.

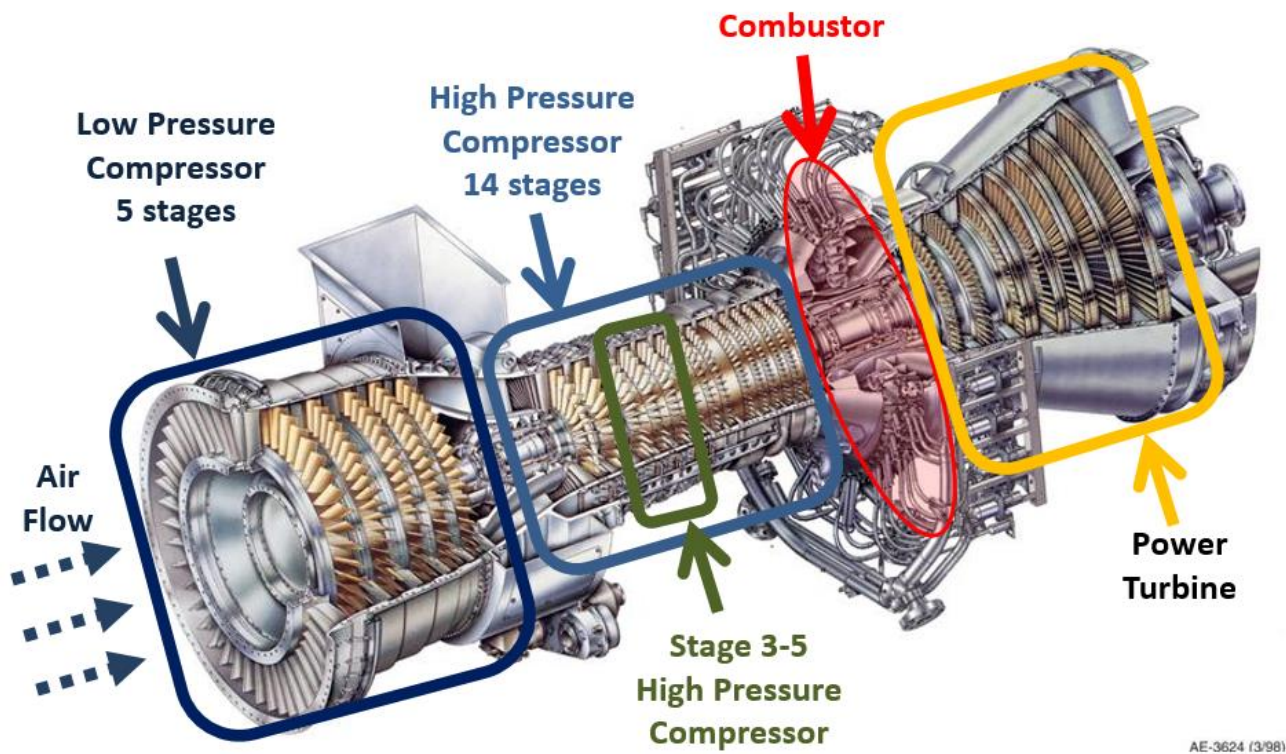
BACKGROUND:

The Riverside Energy Resource Center (RERC) facility consists of four GE LM6000 model gas turbine engines that produce 200 megawatts of electricity that can provide up to thirty percent of Riverside's summer daily electric power demands. The City commissioned RERC Units 1 and 2 in 2005. Since then, the gas turbines have started 1,270 and 1,120 times for Units 1 and 2, respectively.

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 timely. GE Service Bulletin 310 (SB310) dictates partial replacement of gas turbine High Pressure Compressor (HPC) blades before the gas turbine unit has started 1,500 times. Completing the HPC blade replacement during the California Independent System Operator's (CAISO) approved plant outage in November 2016 is essential to avoid exceeding the 1,500 start limitation. Waiting until the next CAISO approved outage period in November 2017 will likely exceed the start recommendation from GE Package Power, Inc. (GE) and could make the units unavailable.

The LM6000 model gas turbine has fourteen stages of HPC blades. SB310 addresses replacement of the affected rotating blades on stages three, four and five of the fourteen stages. If not replaced before the 1,500th engine start, the rotating blades can become dislodged, cause significant downstream damage during engine operation, and result in catastrophic failure of the gas turbine.

The following illustration shows various components of the turbine, with the portion in green (prior to the combustor) representing stages three, four, and five of the HPC under SB310 discussed in this report.



If Riverside does not implement SB310, and a blade(s) were to dislodge, damage is difficult to predict. The following pictures represent actual results of blades becoming dislodged and subsequent damages.



Request for Proposal 1630 was posted on June 3, 2016, and closed on June 17, 2016. The City received three proposals, as noted below. Staff reviewed proposals and deemed GE Package Power Inc., to be the lowest responsive and responsible proposer.

Request for Proposal No. 1630 Summary:

Company	Location	Proposal Total (Includes Taxes)	Materials & Labor
GE Package Power, Inc.,	Houston, Texas	\$126,139	Included
IHI Corporation	Cheyenne, Wyoming	\$130,548	Included
TransCanada Turbines	Bakersfield, California	\$144,806	Included

The Purchasing Services Manager concurs with the recommendations above.

FISCAL IMPACT:

The estimated cost to comply with GE Service Bulletin 310 is \$126,139. Sufficient Funds are available in the RERC Maintenance-Generating Plant Account No. 6120130-424131.

Prepared by: Reiko A. Kerr, Public Utilities Assistant General Manager/Resources
Approved by: Girish Balachandran, Public Utilities General Manager
Approved by: John A. Russo, City Manager
Approved as to form: Gary G. Geuss, City Attorney

Certifies availability
of funds: Laura Chavez-Nomura, Public Utilities Assistant General Manager/Finance

Attachment: General Electric Power and Water Proposal