



CITY OF GLENDALE, CALIFORNIA REPORT TO THE CITY COUNCIL

AGENDA ITEM

Report: Grayson Power Plant (GPP) Unit 9 Chiller Overhaul and a Five-Year Service Agreement with Trane U.S. Inc.

1. Resolution dispensing with competitive bidding, and authorizing the City Manager, or his designee, to enter into and execute a Service Agreement with Trane U.S. Inc. (Trane) for the overhaul, preventative maintenance, and service of the GPP Unit 9 chiller for a period of five years and an amount not to exceed \$930,790.
2. Resolution of Appropriations.

COUNCIL ACTION

Item Type: Action Item

Approved for October 22, 2024 **Calendar**

EXECUTIVE SUMMARY

The 48 megawatt (MW) net GPP Unit 9 combustion gas turbine-generator uses a chilled water system, with a chiller manufactured by Trane, to decrease the combustion air temperature and maximize the turbine-generator's output during peak demand periods. After 20 years of use, and after being serviced, maintained, and repaired by various vendors, other than Trane, the chiller has stopped working requiring complete overhaul and extensive repairs by a qualified and experienced vendor. Without the chiller, Unit 9 can only generate 35 MW net during high heat conditions which typically coincides with periods of high demand.

Trane, being the original equipment manufacturer (OEM) of the Unit 9 chiller, has factory-trained and certified technicians who have proprietary access to the Trane software and controls, and the engineering support necessary to provide the full service/support that is needed to overhaul, properly maintain, and service the Unit 9 chiller. As such, GWP is requesting City Council authorization to dispense with competitive bidding, and execute a Service Agreement with Trane for a period of five years and an amount not to exceed \$930,790, which includes a 25% contingency for any additional repairs, replacement parts, and refrigerant that may be needed during the overhaul.

RECOMMENDATION

Dispense with competitive bidding, and authorize the City Manager, or his designee, to enter into and execute a Service Agreement with Trane for the overhaul, preventative maintenance, and service of the GPP Unit 9 chiller for a period of five years and an amount not to exceed \$930,790.

ANALYSIS

The GPP Unit 9 chiller is designed to remove heat from water that is circulated in a closed looped circuit through the turbine's inlet air cooling coils to cool the turbine's combustion air and maximize the unit's power output during peak demand periods. The Unit 9 chiller is a 2000-ton nominal, water-cooled duplex centrifugal, Trane CenTraVac, chiller consisting of two compressor circuits utilizing refrigerant as the working fluid, and an evaporator and condenser.

Unit 9, including its chiller, was installed and commissioned over 20 years ago. Over this period, GWP competitively bid the service/repair and maintenance of the chiller with the contracts going to various vendors, other than Trane. With the chiller recently starting to fail, and GWP's current heating, ventilation, and air conditioning contractor unable to diagnose or repair the Unit 9 chiller, GWP, using sole source justification, established an annual service agreement with Trane for preventative maintenance and service of the Unit 9 chiller for an amount not-to-exceed \$50,000.

The sole source justification was based on Trane being the original equipment manufacturer of the Unit 9 chiller and the only authorized vendor having factory-trained and certified technicians who have proprietary access to the Trane software and controls, and the engineering support necessary to provide the full service/support that is needed to properly maintain and service the Unit 9 chiller.

To understand what is ailing the chiller, GWP had Trane perform preventative maintenance including multiple inspections and tests where they identified several issues including the following:

- Circuit 1 compressor oil was found to be very dark in color and have a high acid content which is likely caused by motor burnout and a clean-up kit that was never added to filter the refrigerant and clean up the oil system.
- Circuit 2 compressor has high vibration and erratic amperage fluctuations which could be caused by open rotor bars.
- A malfunctioning refrigerant monitor that is past its life expectancy.

As of now, the Unit 9 chiller is out of service, causing Unit 9 to be derated, during high ambient temperatures, by 13 MW from a maximum capacity of 48 MW down to 35 MW. Under worst case conditions, considering extreme heat and peak loads, an unplanned unit outage could lead to rolling outages caused by an inability to meet customer energy demands. The City will incur significant costs attempting to purchase energy from other resources to make up for the lost capacity, assuming its available.

To repair the chiller and restore it to its original operating condition, reliability, and life expectancy, GWP is recommending an overhaul of the Unit 9 chiller utilizing the Trane CenTraVac R'newal Service Program which is a factory remanufacturing of the chiller that is done in the field. As part of the service, and because the chiller is over 20-years old, both compressor motors will be sent to the Trane motor shop in Charlotte, North Carolina for refurbishment and speed balancing. The major benefit to this service is that every seal, roller, pin, and bearing is replaced. This service program also provides a new nameplate and serial number which enables the City to depreciate the new asset for tax purposes. A one-year standard parts and 90-day labor warranty on all components replaced is included. A five-year Limited Factory Warranty on the compressor motor, compressor motor bearings, and lubrication system is included if a five-year Trane service agreement is maintained. As part of the overhaul, a refrigerant clean-up kit, which adds additional filtration capacity, will be added to the circuit 1 compressor to eliminate the current contamination, and the failed chiller refrigerant monitor will also be replaced. The estimated total cost of the overhaul, addition of a refrigerant clean-up kit, and replacement of the refrigerant monitor including taxes is \$586,797.

To properly maintain the chiller after it is overhauled and include the five-year Limited Factory Warranty offered through the overhaul, GWP is recommending that the Service Agreement be for a term of five years and an amount not-to-exceed \$197,294. The services would include preventative maintenance consisting of one annual and three quarterly inspections of the chiller per year, three chilled water system controls support per year, and one system analysis and review per year.

GWP is recommending a 25% contingency in the amount of \$146,699 to cover the cost of any additional repairs, replacement parts, and refrigerant that may be needed/discovered during the overhaul.

The estimated total cost of the Unit 9 Chiller Overhaul and five-year Service Agreement is \$930,790. Below is a cost breakdown:

Description	Amount
Overhaul of both circuit 1 and 2 compressors	\$504,520
Addition of a refrigerant clean-up kit to the circuit 1 compressor	\$14,012
Replacement of the refrigerant monitor	\$13,710
Estimated sales tax for the above items (10.25%)	\$54,555
Subtotal	\$586,797
Contingency (25%)	\$146,699
Five-Year Service Agreement	\$197,294
Total	\$930,790

STAKEHOLDERS/OUTREACH

Not applicable.

FISCAL IMPACT

The Unit 9 Chiller Overhaul and first year of the five-year Service Agreement is estimated to cost \$770,288, which was not included as a part of the FY 2024-25 approved budget. Therefore, staff is requesting an appropriation of \$770,288 from GWP's Electric Surplus Fund Balance as follows:

Requesting Appropriation			
Amount	From (Account String)	To (Account String)	Funding Source
\$36,792	27900-5810-GWP-0000-P0000	43110-5820-GWP-4690-P0000	Net Position, Electric Surplus Fund Balance
\$733,496	27900-5810-GWP-0000-P0000	51000-5830-GWP-4690-P0000	Net Position, Electric Surplus Fund

Funding for the subsequent four years of the five-year Service Agreement will be included as part of the annual budget process.

ENVIRONMENTAL REVIEW (CEQA/NEPA)

The action requested herein is categorically exempt from the California Environmental Quality Act (CEQA) under CEQA Guidelines Section 15301 – repair and maintenance of existing facilities.

CAMPAIGN DISCLOSURE

The names and business addresses of the members of the board of directors, the chairperson, CEO, COO, CFO, Subcontractors and any person or entity with more than 10% interest in the company proposed for contract in this Agenda Item Report are attached in Exhibit A, in accordance with the City Campaign Finance Ordinance No. 5744.

ALTERNATIVES TO STAFF RECOMMENDATION

Alternative 1: Not authorize the action requested herein would delay repairs and maintenance and jeopardize the City's ability to provide continuous reliable electrical service to its residents and businesses.

Alternative 2: Consider any other alternative not proposed by staff.

ADMINISTRATIVE ACTION

Submitted by:

Manuel Robledo, Interim General Manager - Glendale Water and Power

Prepared by:

Scott K. Mellon, P.E., Assistant General Manager - Power Management

Approved by:

Roubik R. Golanian, P.E., City Manager

EXHIBITS/ATTACHMENTS

Exhibit A: Campaign Disclosure Form for Trane U.S. Inc.