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Title:	Action on a Resolution Authorizing the City Manager to Award and Execute Agreements, Amendments, Purchase Orders, and Change Orders, with Various Vendors as Required to Complete Emergency Repairs, Corrective and Preventative Maintenance at the Gianera Generating Station, Including Purchase of a Spare Rotor; Increasing Previous Authorization to an Aggregate Amount Not-to-Exceed \$12,000,000 and Related Budget Amendment				

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Attachments: 1. Resolution - Gianera Emergency Repairs, 2. POST MEETING MATERIAL, 3. Resolution No. 22-9043

Date	Ver.	Action By	Action	Result
1/11/2022	1	Council and Authorities Concurrent Meeting	Adopted	Pass

REPORT TO COUNCIL

SUBJECT

Action on a Resolution Authorizing the City Manager to Award and Execute Agreements, Amendments, Purchase Orders, and Change Orders, with Various Vendors as Required to Complete Emergency Repairs, Corrective and Preventative Maintenance at the Gianera Generating Station, Including Purchase of a Spare Rotor; Increasing Previous Authorization to an Aggregate Amount Not-to-Exceed \$12,000,000 and Related Budget Amendment

COUNCIL PILLAR

Deliver and Enhance High Quality Efficient Services and Infrastructure

BACKGROUND

The City of Santa Clara's Electric Utility, Silicon Valley Power (SVP), operates three power generation facilities within City limits: the Donald Von Raesfeld Power Plant (DVR), the City of Santa Clara Cogeneration Plant (Cogen), and the Gianera Generating Station (Gianera). These plants are critical to providing sufficient power to meet electric grid reliability requirements, the needs of SVP's power customers, and SVP's Resource Adequacy (RA) requirements.

Gianera uses two General Electric Frame 5 gas turbine engines (Unit 1 and Unit 2). In Fall 2020, staff identified issues with the generator and accessory gearbox on Gianera Unit 2 and took initial actions to bring the engine back online. Upon further investigation staff determined that significant repairs were needed to bring the engine back online without risking damage to the system.

On December 16, 2020, Council adopted a Resolution authorizing the City Manager to negotiate and

execute agreements, amendments, and change orders with various vendors as required to complete repairs at Gianera, for an aggregate amount not-to-exceed \$1,000,000. The Resolution also directed staff to provide Council with a report on the contracts awarded and work performed once the repairs were completed. On January 12, 2021, Council adopted a Resolution increasing the aggregate maximum compensation from \$1,000,000 to \$2,567,736, after staff discovered more critical issues that could have resulted in significant equipment damage or forced outage if left unresolved.

The Unit 2 generator and gearbox underwent repairs in February 2021, and Unit 2 returned to service on March 12, 2021. While Unit 2 was undergoing repairs, Unit 1 was found to have several unserviceable conditions and was taken offline. The critical issues found were:

- Cracked blades in the compressor section that will require repair/replacement
- A failed oil seal on a bearing that requires replacement
- Severely cracked combustion liners that require replacement
- Disintegrating Turbine shroud blocks.

On May 4, 2021, Council adopted a Resolution increasing the aggregate maximum compensation from \$2,567,736 to \$10,000,000 in order to complete additional emergency repairs, corrective and preventative maintenance at the Gianera Generating Station including a Major Overhaul of Unit 1.

After undergoing Major Overhaul, Unit 1 was returned to service on September 14, 2021. Overhaul expenses for Unit 1 totaled approximately \$5.5 million and included:

- Completed refurbishment of turbine;
- Completed refurbishment of generator;
- Completed refurbishment of reduction gearbox; and
- Overhaul of all primary auxiliaries including pumps, motors, etc.

Allied Power Group (APG) served as the primary contractor, and expenses to APG totaled approximately \$3.5 million. Additional amounts spent on Unit 1 totaling \$5.5 million included generator work performed by Electrical Machinery Consultants (EMC), technical oversight provided by HPI, Inc, and parts and services procured under existing contracts or standard purchasing process.

DISCUSSION

As part of SVP's routine maintenance program, a planned maintenance outage was undertaken at Gianera from November 6, 2021 through November 23, 2021. This maintenance outage included a borescope inspection of both Frame 5 Turbines. The results of the inspection show that Unit 2 suffered accelerated wear and damage of the combustion and turbine components during the summer dispatch period of June - October 2021. The following critical conditions were also found.

- Damaged fuel nozzles and combustion liners;
- Eroded stage 1 shroud blocks, nozzles and turbine blades;
- Loose and missing components used to secure rotating parts; and
- Liberation of missing parts has impacted turbine blades downstream.

Consequently, Unit 2 has been taken out of service to prevent any further or catastrophic damage resulting from the age of the turbine which was installed in 1986.

Staff initially planned to have Unit 2 undergo a major overhaul in February 2022, due to the engine's service age, declining performance, and condition monitoring, however, with the accelerated wear of components and the engine's current unserviceable condition, the Unit 2 engine needs to be overhauled as soon as possible so that Unit 2 is available during the peak use period in Summer 2022.

Staff recommends increasing the authorization for the City Manager to negotiate and execute amendments, change orders, and new agreements with various vendors as required to complete repairs at the Gianera Plant to an amount not to exceed \$12 million including the continuation of the emergency repairs of the facility as a whole, sole source authorization(s) where a bid process is not feasible, and potential purchase of a spare rotor.

Due to competing priorities and the urgent nature of this required work, a Request for Proposal (RFP) will not be completed in time to cover this work. Staff still intends to release an RFP to establish a long-term master agreement for future gas turbine engine service needs. The master agreement approach aligns with SVP's new proactive maintenance approach and also with the recent Council approved maintenance master agreements for the turbines at DVR and Cogen. This efficiency strategy will stabilize essential contracts management and needed services: for example, SVP has approximately seventy contracts requiring RFP or similar process, approximately forty contracts from solicitation processes (RFP or similar) have been completed during the last year, and approximately thirty contracts for services have been extended to assure coverage for critical services.

Staff intends to use Applied Power Group (APG) for the immediate service, as APG performed the major services necessary to bring the Unit 1 back into service as well as services associated with the prior repairs of the gearbox on Unit 2. Staff was pleased with the quality of APG's work along with their safety record during the performance of the Unit 1 outage and APG has plans in place currently to ensure an expeditious work scope for the Unit 2 Turbine. The new work on Unit 2 is distinct and is not caused by the work performed by APG on Unit 2 previously. Staff also intends to further utilize HPI for Technical oversight and other vendors as required to complete the work at Gianera.

In addition to the proposed overhaul, APG has a spare rotor available. Staff is evaluating the purchase of this spare rotor as it would ensure a readily available substitute in the event of future unplanned outages. The estimated cost to purchase the spare rotor for immediate installation and then repair the City's current rotor to serve as a spare engine is anticipated at less than \$4 million dollars. In addition to saving several weeks of outage time, the cost of the spare in combination with the major overhaul project is a difference of less than \$1 million. Spare rotors aren't commonly available and this spare has minimal operating hours and, therefore, significant remaining service life available. The availability of the spare rotor will lessen future outage time and help ensure the assets are returned to service quickly in the event of future outages.

Other than the proposed purchase of a spare rotor, this authorization will not be used for any purpose other than for services associated with the emergency outage at the Gianera Power Plant including emergency repairs, corrective maintenance, and preventative maintenance that can be economically completed at the same time in order to assure reliable operation of both units in advance of Summer 2022 when the Gianera units play a critical role in supporting Santa Clara's electric load. Due to the critical nature of this work, staff also had the option to proceed immediately under emergency work. However due to the holidays and vendor availability the work could not proceed until early January. Staff has scheduled mobilization of the vendor for January 12, 2022 to ensure that the unit is back on

-line as soon as possible.

ENVIRONMENTAL REVIEW

Council action on this item is exempt from CEQA review under Section 15301 of the CEQA Guidelines, operation, repair, and maintenance of existing public facilities.

FISCAL IMPACT

The Major Engine Overhaul project includes appropriations for planned and unscheduled or emergency maintenance at all three power plants in Santa Clara: Cogen, DVR, and Gianera. Funds for all repairs and related costs for this emergency authorization will come from the Major Engine Overhaul and Repair Project in the Electric Utility Capital Fund. Of the total \$12 million requested emergency authorization amount (a \$2 million increase from the previous \$10 million authorization), \$1.3 million of the emergency authorization amount was spent in FY 2020/21. In FY 2021/22, \$0.6 million is encumbered and \$3.4 million is budgeted in the Major Engine Overhaul and Repair project. A remaining \$6.7 million is recommended to increase the Major Engine Overhaul and Repair project budget to cover the \$12 million emergency authorization amount and complete emergency activities at Gianera. The budget amendment allocates funding from available fund balance in the Electric Utility Operating Fund to complete work activities at Gianera as well as additional scheduled activities at other power plants for this fiscal year. Approval of this action would reduce the recommended capital budget for this activity in Fiscal Year 2022/23 as some of the emergency work was scheduled to take place in FY 2022/23. Absent this budget amendment, other planned work at power plants may need to be delayed or cancelled which may result in future emergencies or outages during the peak summer season.

Budget FY 2021/2022

	Current	Increase/ (Decrease)	Revised
Electric Utility Capital Fund (591)			
<u>Revenues</u>			
Transfer from Electric Utility Operating Fund (091)	\$4,300,865	\$6,700,000	\$11,000,865
<u>Expenditures</u>			
Major Engine Overhaul and Repair Project (no. 2127)	\$ 7,274,431	\$6,700,000	\$13,974,431
Electric Utility Operating Fund (091)			
<u>Expenditures</u>			
Operating Transfer Out to Electric Utility Capital Fund	\$4,300,865	\$6,700,000	\$11,000,865
Unrestricted Ending Fund Balance	\$121,198,721	(\$6,700,000)	\$114,498,721

Consistent with City Charter Section 1305, “At any meeting after the adoption of the budget, the City Council may amend or supplement the budget by motion adopted by the **affirmative votes of at least five members** so as to authorize the transfer of unused balances appropriated for one purpose to another purpose or to appropriate available revenue not included in the budget.”

COORDINATION

This report has been coordinated with the Finance Department and City Attorney's Office.

PUBLIC CONTACT

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall Council Chambers. A complete agenda packet is available on the City's website and in the City Clerk's Office at least 72 hours prior to a Regular Meeting and 24 hours prior to a Special Meeting. A hard copy of any agenda report may be requested by contacting the City Clerk's Office at (408) 615-2220, email clerk@santaclaraca.gov <<mailto:clerk@santaclaraca.gov>>.

RECOMMENDATION

1. Adopt a Resolution authorizing the City Manager to negotiate, award and execute agreements, amendments, purchase orders, and change orders with various vendors as required to complete emergency repairs, corrective and preventative maintenance including the purchase of a spare rotor at the Gianera Generating Station increasing previous authorization to an aggregate amount not-to-exceed \$12,000,000 and directing staff to provide Council with a report on contracts awarded and work performed once the repairs have been completed; and
2. Approve the following FY 2021/22 budget amendments:
 - A. In the Electric Utility Capital Fund, recognize a transfer of \$6,700,000 from the Electric Utility Operating Fund, and increase the Major Engine Overhaul and Repair capital project by \$6,700,000 **(five affirmative Council votes required to appropriate additional revenue)**.
 - B. In the Electric Utility Operating Fund, increase the transfer to the Electric Utility Capital Fund by \$6,700,000 and reduce the unrestricted ending fund balance by \$6,700,000 **(five affirmative Council votes required for the use of unused balances)**.

Reviewed by: Manuel Pineda, Chief Electric Utility Officer

Approved by: Deanna J. Santana, City Manager

ATTACHMENT

1. Resolution - Gianera Emergency Repairs and Maintenance