



Agenda Report

21-1404

Agenda Date: 1/12/2021

REPORT TO COUNCIL

SUBJECT

Action on a Resolution Authorizing the City Manager to Procure, Negotiate and Execute Amendments, Change Orders, and New Agreements with Various Vendors as Required to Complete Emergency Repairs and Maintenance at the Gianera Generating Station, in an Aggregate Amount Not-to-Exceed \$2,567,736

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 the city limits: the Donald Von Raesfeld Power Plant, the City of Santa Clara Cogeneration Plant, and the Gianera Generating Station. The Gianera Generation Station consists of two General Electric Frame 5 gas turbines, each in simple cycle producing a combined 48 Megawatts (MW).

On October 13, 2020, staff began troubleshooting a series of protection system trips caused by excessive vibrations on the #2 generator at Gianera (Gianera Unit 2). Staff took several actions to remedy the vibration issue and ultimately secured support from one of SVP's existing specialty contractors, Electrical Maintenance Consultants (EMC), to evaluate whether this issue was under warranty. Another existing contractor, Reliability Optimization, Inc. (ROI), was brought on-site and confirmed that the excessive vibrations are real and not an instrumentation issue. ROI also identified potential causes and optional solutions. None of those solutions were successful in bringing Gianera Unit 2 online.

Subsequent vibration analysis and visual inspection has determined issues with both the Generator and Accessory Gearbox. As a result, Gianera Unit 2 is unavailable for dispatch to meet power and Resource Adequacy (RA) needs of the City due to the potential for further equipment damage up to and including catastrophic failure of major components of the Turbine, Generator, and Accessory Gearbox. SVP staff estimates that without Gianera Unit 2's availability, SVP is experiencing an economic loss of up to \$10,000 per day because RA provided by Gianera Unit 2 is not available and needs to be purchased from the market.

On December 16, 2020, Council adopted a Resolution authorizing the City Manager to negotiate and execute amendments, change orders, and new agreements with various vendors as required to complete all repairs at the Gianera Generating Station, in an aggregate amount not-to-exceed \$1,000,000. The resolution also directed staff to provide Council with a report on contracts awarded and work performed once the repairs have been completed.

While the engine was shut down for the gear box issue, staff initiated routine inspections and maintenance. On December 14, 2020, it was discovered that the Generator rotor on Unit 2 had suffered damage due to the sustained, elevated vibrations leading up to the October 13th forced outage. The rotor insulation blocking has become loose, leading to an unsafe operating condition. Continued operation could lead to severe equipment damage and possible unscheduled/forced outage. This work was additional scope beyond what was previously identified.

In order to repair the additional issues that were discovered, staff recommends increasing the authorization from \$1,000,000 to \$2,567,736. This amount is based on quotes submitted by two contractors - EMC and Applied Power Group (APG) with additional contingency to support unexpected issues that continue to be anticipated as work proceeds. This funding authorization will permit staff to complete all necessary repairs to bring the engine back online avoiding further damage and minimizing economic loss.

DISCUSSION

There are two primary components to support activities needed to safely bring the Gianera plant back online: (1) Inspection and Repair of the Gearbox and (2) Inspection and Repair of Generator Rotor. Inspection and Repair of Generator Rotor requires shipment to a specialty factory for repairs. Due to long lead times for specialized parts and materials, these activities will take place in parallel where possible. Staff has taken a number of actions within existing contract authority covering initial mobilization, Inspection services, and long lead time parts procurement needs required to minimize the overall duration of the forced outage on Gianera Unit 2 currently in effect.

Inspection and Repair of Gearbox:

A purchase order has been issued to Applied Power Group (APG) to support the inspection and repair of the gearbox. APG is a new contractor to the City and was recommended by Northern California Power Authority (NCPA) for Turbine/Generator repairs. APG will subcontract with local contractors where needed as well as with the original manufacturer of the gearbox (Philadelphia Gear). Staff has issued a purchase order to include services necessary to initiate work activity needed to order parts and materials with a long lead time. With additional authority, staff will revise that purchase order to include the full scope of work. The complete scope of work associated with this activity is anticipated not to exceed \$822,954 plus tax and includes:

- Disassembly (removal of instruments and external equipment from gear box to permit on-site inspection)
- On-site inspection by Philly Gearbox
- Installation of new bearings
- Refurbish and replace components within the generator, gearbox, load coupling, and potentially turbine enclosure along with alignment and general mechanical labor associated with the drivetrain
- Perform all activities including inspection, cleaning, alignments, readings, and tagging using best practices to assure the generator is restored safely without damage

Removal and Repair of Generator Rotor:

A purchase order has been issued to Electrical Maintenance Consultants (EMC) to support the removal, shop repair, and reinstallation of the generator rotor. Repairs will take place in a specialty facility. A purchase order in the amount of \$553,902.50 was issued and includes:

- Removal of the generator rotor and shipping to a specialty facility

- Support services such as scaffolding and crane services
- Repairs including new insulation blocking, retaining rings, and other condition-based refurbishment required to return the rotor to service.

Due to long lead times for specialized parts, staff has taken actions within the current authorization to procure critical parts. Additional needs to bring the generator into service include: Rotor rewind, cleaning, and reinstallation including associated support services. The cost of these services is currently estimated at \$650,000. Staff anticipates including that activity in the purchase order issued to EMC. The rotor rewind was included as a capital project to occur in Fiscal Year 2022 - 2023. As a result of this activity, that project scheduled for Fiscal Year 2022 - 2023 will no longer be needed.

The total cost of work currently scoped is estimated at \$2,067,736. An additional authorization of \$500,000 (total authorization of \$2,567,736) is requested for additional unanticipated repairs, parts, services, or other needs that may be identified as the project progresses.

Staff requests the Council's approval of an expedited process and authorization for the City Manager to authorize purchase orders, execute amendments, change orders, and emergency agreements (as needed) for the specific purpose of completing all repairs at the Gianera Generating Station increasing the current authorization from \$1 million to \$2,567,736. Typically, staff would negotiate contract amendments with current vendors, or competitively procure services where new agreements are needed. However, that process can take up to several months and, depending on the contract amount(s), may require City Council approval. In this situation, the typical competitive procurement is infeasible given the Council's meeting schedule, the holiday season, and the emergency nature of the work.

This authorization will not be used for any purpose other than to facilitate the completion of all repairs at the Gianera Power Plant related to the outage and resulting unanticipated maintenance. SVP will coordinate closely with the Purchasing Division of the Finance Department as well as the City Attorney's Office to negotiate agreements with terms acceptable to the City, including obtaining reasonable pricing and ensuring compliance with applicable prevailing wage and bonding requirements. Where possible, staff will work with existing contractors but, due to the unknown cause of the issue, staff may need to identify and execute agreements with new vendors. Any requirements resulting in new agreements shall be procured pursuant to the City's purchasing rules for emergency procurements. Additional work shall not commence prior to the execution of required contractual documents. Staff will provide the Council with a report on the emergency repairs once they have been completed. Based on timelines for shipment of parts and materials, this is anticipated to occur around April, 2021.

ENVIRONMENTAL REVIEW

The action being considered does not constitute a "project" within the meaning of the California Environmental Quality Act ("CEQA") pursuant to CEQA Guidelines section 15378 (b)(4) in that it is a fiscal activity that does not involve commitment to a specific project which may result in potential significant impact on the environment.

FISCAL IMPACT

Funds for all repairs and related costs will come from the Major Engine Overhaul and Repair capital project budgeted in the Electric Utility Capital Fund.

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

Adopt a Resolution authorizing the City Manager to negotiate and execute amendments, change orders, and new agreements with various vendors as required to complete all repairs and maintenance at the Gianera Generating Station, in an aggregate amount not-to-exceed \$2,567,736 and directing staff to provide Council with a report on contracts awarded and work performed once the repairs have been completed.

Reviewed by: Manuel Pineda, Chief Electric Utility Officer

Approved by: Deanna J. Santana, City Manager

ATTACHMENT

1. Resolution - Gianera Emergency Repairs and Maintenance