

Agenda Report

February 11, 2002

To: City Council
Through Municipal Services Committee

From: City Manager

Subject: Authorization to enter into contract with GE Packaged Power to supply equipment and engineering services for the local repowering project.

RECOMMENDATION:

It is recommended that the City Council:

- 1) Authorize the City Manager to enter into a contract with GE Packaged Power Inc. (GE) to perform engineering services and supply necessary equipment for the installation of new gas turbines and related equipment at the Glenarm power plant site for an amount not to exceed \$58,000,000. As to the services, competitive bidding is not required pursuant to City Charter Section 1002(F), Contracts for professional or unique services. For the equipment, competitive bidding is not required pursuant to City Charter Section 1002(H), Contracts with other governmental entities or their contractors; City Charter Section 1002(C), Contracts for Labor, materials, supplies or services available from only one vendor; and should be exempted from competitive bidding under the doctrine of impracticality as set forth in the background section of this report;
- 2) Grant this contract an exemption from the competitive selection process of the Affirmative Action in Contracting Ordinance, pursuant to P.M.C. Section 4.09.060, contracts for which the City's best interests are served; and,
- 3) Appropriate an additional \$73,360,000 to the Light and Power Fund Capital Improvement Project (CIP) #3166 budget project entitled "Installation of GT 3 and GT 4" to fund anticipated expenses for this contract.

BACKGROUND:

Project History and Urgency

The City Council unanimously adopted the Pasadena Water and Power (PWP) Power System Strategic Resource Plan (Plan) on November 19, 2001. The plan was developed in response to recent regional power shortages, energy price volatility, and stricter emissions control requirements recently adopted by the South Coast Air Quality Management District (SCAQMD). It serves as a guide for developing PWP's portfolio of power supply and transmission resources (Portfolio) to meet PWP's goals of reliable service, stable rates, competitive energy pricing, and environmental stewardship.

A key element of the Plan is the replacement of Broadway 1 and Broadway 2 (B1 and B2) with two new 45MW combustion turbines by summer 2003. These new units, which will be located on the Glenarm property and designated as Gas Turbine Unit 3 and Unit 4 (GT3 and GT4), are essential and time critical. B1 and B2 provide needed capacity to reliably meet PWP's peak loads and an important hedge against power market price spikes. With their higher efficiency, superior operational flexibility, and 98% reduction in NOx emission rates, GT3 and GT4 will be far more effective in the role currently played by B1 and B2.

By summer 2003, it is possible that energy supplies may be tight and market prices high, thus it is prudent for economic and reliability purposes to schedule the new units commercial operation date for June 2003. Although the current outlook for near term supply is good and market prices have stabilized at reasonable rates, the long-term outlook is very uncertain. Currently, federally mandated regulation is ensuring maximum supply availability and imposing reasonable price caps; however, these measures are expected to expire after summer 2002. Many of the proposed new generation projects have been delayed or cancelled, and it is uncertain whether last year's reduced demand trend will continue under normal or higher temperature patterns.

More importantly, the existing units B1 and B2 will lose their operating permits on January 1, 2003 under strict new emission control requirements imposed by the SCAQMD. This creates an urgent need to get the new units on line in order to meet PWP's peak summer demands in 2003. In short, the new gas turbine units GT3 and GT4 must be on line in 16 months.

Project Implementation Approach

The replacement of B1 and B2 with GT3 and GT4 (Project) consists of the following major tasks:

- Demolition of existing structures
- Obtaining construction and operating permits
- Detailed engineering design
- Equipment procurement/supply
- Construction
- Commissioning and start up activities

Although each task could be contracted out individually, certain tasks have been grouped together because they are interdependent in terms of milestones and deliverables. There are several logical combinations of tasks that could be bid together to simplify contract and vendor management, improve the strength of performance guarantees, and compress the project schedule timeline. The ideal approach would include engineering, equipment procurement, and construction in a single contract, an approach commonly referred to as "design/build" or "EPC" contracting. This provides the most solid performance guarantees without the potential for vendors disputing responsibility. Unfortunately, this approach requires intensive up-front specification development and a lengthy bid/award/contract turnaround due to the project complexity and potential poor design or equipment selection. It would not be possible to meet the required schedule using the EPC approach without bypassing all competitive processes.

After evaluating several potential approaches, PWP has determined the best approach to meet the City's needs would consist of:

- Awarding a combined engineering, equipment supply, and start-up contract (Engineer/Procure contract) without competitive bidding;
- Competitively bidding and awarding demolition contract(s);
- Competitively bidding and awarding a construction contract;

Combining engineering design, equipment procurement, and startup responsibility for the Project under a single turn-key contract will provide PWP with the most comprehensive performance and schedule warranty possible while compressing the schedule as necessary to meet the commercial operation deadline of June 2003. By combining engineering and procurement, the vendor will be able to select and secure delivery of appropriate long-lead equipment without completing detailed design. If a particular piece of equipment is unavailable, another can be selected without having to revisit the detailed design specification (eliminating change orders and delays). Furthermore, utilizing pre-packaged auxiliary equipment that is approved by turbine vendor and field

proven will reduce design and construction time as well as overall costs to PWP.

The Engineer/Procure contractor will also be responsible for developing construction specifications by summer 2002. PWP intends to competitively bid the construction work, which is estimated to cost about \$10M. This will be the only vendor interface PWP must manage to ensure schedule and performance guarantees are met.

In order to protect PWP's interests and ensure project success, PWP will retain the services of an Owner's Engineer (OE) to supplement PWP staff resources and provide technical expertise. The OE will perform engineering design review, independent schedule and cost estimates, progress payment milestone verification for the Engineer/Procure contractor, start up coordination, emission and performance testing, and acceptance verification on an as needed basis. The OE will be an important resource to PWP in managing the Project, but will not be responsible for the Project's design, construction, or performance.

Exemptions from Competitive Bidding Process:

PWP recognizes the importance of competitive bidding to ensure that ratepayers receive the best value for their investment, and furthermore that this is a project of extraordinary scope and cost for the City of Pasadena. There are, however, compelling reasons to bypass the competitive bid process for the Engineer/Procure contract with GE.

Impracticality

Due to regulatory conditions beyond the City's control, completion of the Project by June 2003 is essential in order to ensure adequate and reliable power supply for PWP customers during the peak summer loads in 2003. Even under ideal conditions, it would not be possible to meet the required 16 month schedule under any approach that includes competitive selection process for the major long lead time equipment, which represents about \$45 million of the contract price. This is because certain long lead items, such as transformers and switchgear, cannot be ordered until the design specification is sufficiently completed, which is not likely to occur for a minimum of 3-4 months. Delivery of this equipment would then take approximately 12 months, and the project could not be completed until after the summer peak load period.

The City Council is asked to approve the Engineering/Procurement contract with GE without competitive bidding on the grounds that it is impractical to bid and that the public interest would not be served by bidding. The Impracticality

Doctrine is recognized and created by the case Graydon v. Pasadena Redevelopment Agency, 104 Cal. App. 3d631, 164 Cal. RTTR. 56 1980. It is impractical to bid, and the public interest would not be served by bidding, for the following reasons: The schedule delay as a result of bidding would lead to potential blackouts during peak summer loads in 2003, and furthermore, the bidding would not likely result in selecting an alternative vendor or a lower contract price for reasons that are explained further below.

Limited Market/Sole Source Vendor

There are few vendors capable of providing gas turbines in the 45-50 MW size range. Based on discussions with various experts, the LM-6000 was determined to be the most appropriate and best technology for simple cycle power generation needed by PWP. The LM-6000, which is derived from the 747 aircraft engines, has by far the most operating hours and proven success for power generation of any engine in its class. It has been optimized for simple-cycle operation using patented SPRINT technology, which uses water-injection inter-cooling to increase output and improve efficiency, and has been successfully permitted and operated under strict SCAQMD emissions limits in this configuration. It has recently been selected by Los Angeles Department of Water and Power (LADWP), the City of Burbank, Sacramento Municipal Utilities District, Modesto Irrigation District, and many other municipal and private utilities throughout the world to meet their peaking and intermediate resource needs.

GE is the manufacturer and sole-source for the LM-6000 combustion turbine, which has approximately 85% of the market share in its size class. With more than 300 LM-6000 machines in operation, of which 166 have over 10,000 hours of operating experience, GE has proven reliability. They are the only vendor that can supply pre-engineered and pre-packaged equipment and auxiliaries with multiple proven installations. Furthermore, they are the only vendor with local (Bakersfield) service technicians and replacement/lease-pool engines available.

PWP has identified three other commercially available units generally similar in size to the LM-6000, but they would not meet the necessary requirements for Pasadena. The Siemens-Westinghouse V64.3A is 17MW larger than the desired 45-50MW capacity and less fuel efficient than the LM-6000. The Allstrom GTX-100 is a new design and is not adequately proven for simple cycle operation. It is slightly smaller than the LM-6000, and it is not well suited for the simple cycle operation needed by PWP because it is less fuel efficient and has hotter exhaust temperatures (making emissions controls more difficult and costly). The Pratt and Whitney FT-8 Twinpack uses two gas turbines to power a single 56MW generator. This configuration does not meet the design

specification and exceeds available space requirements. None of these units has the SPRINT system, which is needed for optimized simple cycle operation. Furthermore, PWP has not identified any 45-50MW units, other than the LM-6000 that have been permitted and successfully operated under the SCAQMD's current emission standards in simple cycle mode, as required for PWP's needs.

Contract with Other Government Agencies Contractor

In year 2000, LADWP contracted with GE to supply all major equipment (engine, generator, transformers, emissions controls), balance of plant equipment, and engineering services required for detailed design and construction specifications for seven LM-6000 generator sets. GE is providing equivalent equipment and services to PWP for two LM-6000 generator sets at the same or better terms than those in the LADWP contract.

Engineer/Procure Contract:

Contract Terms

Contract terms will include the following major provisions:

- Scope of products and services to be delivered (detailed further below)
- Firm cost, payment, and cancellation cost schedule (detailed further below)
- Equipment and design delivery schedule
- Equipment warranties
- Performance guarantees (capacity, heat rate, and emissions)
- Liquidated damages for performance guarantees and schedule

Scope of Services

The scope of work will include:

- Develop equipment and construction specifications
- Provide and deliver all equipment
- Perform detailed design for site, equipment, and electrical integration
- Develop site preparation and construction specifications

Cost and Payment Schedule

The contract amount will be a fixed-firm package price for all deliverables. The requested maximum expenditure of \$58 million includes provisions for taxes, spare parts, and a contingency for change orders.

GE's standard terms of payment call for 10 monthly payments of 10% of total contract amount to begin upon execution of an "agreement in principle" or the actual supply contract. Turbine delivery schedules are not fixed until the first

payment is received.

PWP has negotiated a more favorable schedule, as follows:

The first payment of \$2 million will be due on contract execution, scheduled for February 15, 2002. An additional payment of \$2 million will be due upon completion of the design review, scheduled for March 15, 2002;

On June 15, 2002, a payment of approximately \$12 million will be due to initiate the balance of plant detailed engineering and secure major equipment orders and ensure timely delivery schedules;

On July 15, 2002, a payment of approximately \$12 million will be due to secure balance of plant equipment orders and ensure timely delivery schedules; and,

Starting August 15, 2002, and monthly thereafter until the contract amount is paid in its entirety, payments of approximately \$3 million will be due.

Cancellation Schedule

In the event PWP cancels the project and terminates the contract, PWP's cancellation cost schedule will be identical to the payment schedule. In other words, if all payments have been made on a timely basis, no additional amounts will be due GE and no refunds will be received by PWP.

Risks & Risk Mitigation

The primary risk to Pasadena is loss of money in the unlikely event that the project is cancelled by Pasadena or the necessary permits are not obtained for construction and operation. As described in the cancellation schedule, any payments made by Pasadena will be forfeited if the project is cancelled. If significant payments have been made for major equipment, some of these funds may be recoverable through transfer of the assets, but it is uncertain how much, if any, money would be recovered in that case.

The secondary risks to Pasadena arise from vendor or project non-performance. Given the reputation, experience, and demonstrated success of GE, the likelihood of non-performance is not great. GE's standard contract includes performance guarantees and equipment warranties that ensure the capacity, efficiency, and emissions specifications are met. Nonetheless, PWP is

negotiating terms in addition to those in GE's standard contract to protect Pasadena, including a performance bond and increased liquidated damages for performance guarantees. Also, PWP is attempting to negotiate terms that, in the event financing or permits are not secured, PWP may, at its option, delay the payments due June 15 and beyond without increasing the contract amount. However, this would also likely result in Project schedule delays.

Repowering Plan Budget and Financing

The budget for the Local Generation Repowering plan consists of the following items:

Project Planning	FY02	\$781,324
New GT Units 3 & 4	FY02-03	\$74,000,000
Glenarm GT 1 & 2 Retrofit	FY03	\$7,000,000
Total Estimated Cost		\$81,781,324

This total repowering plan budget was approved on November 19, 2001 and \$782,324 was appropriated in the CIP for the Project Planning phase.

This agenda report requests an additional CIP appropriation of \$73,360,000 for the GT 3 and 4 project, which reflects the total budget for the Project less the \$640,000 appropriation requested for the owner's engineer contract. At this time, no appropriation has been requested for the Glenarm GT 1 & 2 retrofit project.

Financing

PWP is working with the Finance Department to execute a bond financing to cover the entire estimated \$74 million cost of this Project by early June. Debt service is projected to be approximately \$6-6.5 million per year, or about 0.6¢/kWh for retail sales. No net rate increase is expected, however, because the cost of the financing is expected to be offset by reduced fuel and purchased power costs.

Additional Services Contract Needs

PWP anticipates that it will return to Council in the coming months to request approval of contracts with other vendors for additional services needed for the Project, including:

- Financial consulting and/or Independent Engineers report
- Permit preparation

- Electrical integration engineering
- Demolition and site preparation

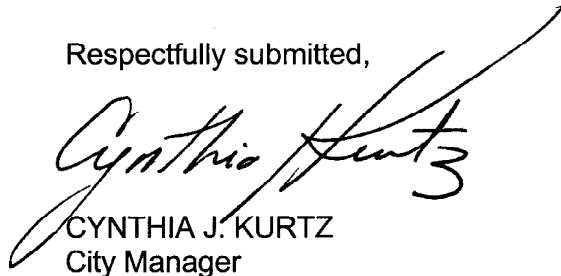
FISCAL IMPACT

An estimated total of \$73,360,000 in additional expenses will be incurred in the Light and Power fund capital budget as a result of these recommendations, including about \$15,360,000 in expenses for additional contracts to be approved at a later date. Funds are available in the unappropriated Light and Power Fund fund balance for the \$4,000,000 payments scheduled for February and March 2002. No additional payments are scheduled until June 15, 2002. These funds will be recovered through a \$74 million debt financing for the total amount of the Project. Debt service for the financing is projected to be approximately \$6-6.5 million per year, or about 0.6¢/kWh for retail sales. No net rate increase is expected, however, because the cost of the financing is expected to be offset by reduced fuel and purchased power costs.

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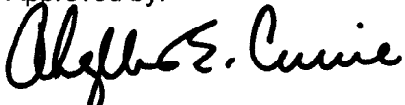
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