



Pasadena Water and Power

AUTHORIZATION TO ENTER INTO A CONTRACT WITH ENERGY SERVICES LLC TO PROVIDE LABOR AND MATERIALS; AUTHORIZATION TO ISSUE A PURCHASE ORDER CONTRACT WITH CLEAN POWER CONSULTING PARTNERS FOR PROJECT MANAGEMENT; AND APPROVE AN INCREASE IN APPROPRIATION FOR CIP 3182 BY \$5,953,211 FOR THE GT2 REPAIR AND GT1 & GT2 CONTROL SYSTEM RETROFIT

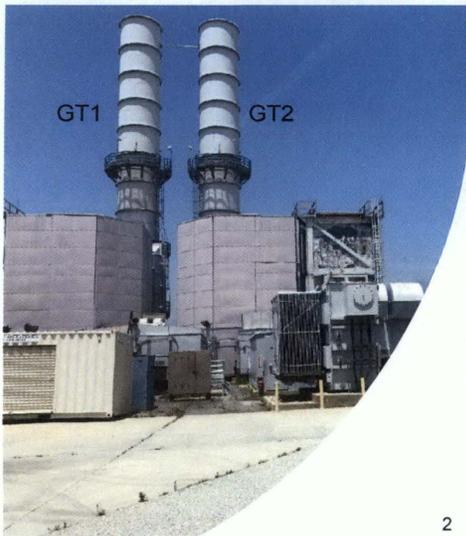
May 4, 2020

Item 6



GT2 Repair GT1 & GT2 Control System Retrofit

Pasadena Water and Power





Background

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- **Power Plant consists of 5 electric generating units**
 - > Total capacity of approximately 200 MW
 - > Natural gas fueled
 - > Quick-start within 10 minutes
- **GT2 is 22 MW Simple Cycle - 1975 vintage**
- **Mechanical failure in October 2012**
- **Insurance settlement proceeds of \$14 million available for repair and retrofit**
- **GT1 and GT2 control system**
 - > Obsolete analogue
 - > Limited manufacturer support

3

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Need for Repair and Upgrades

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- **Higher reliability of Pasadena's electric system**
 - > Maximum import capability is 280 MW
 - > Often reduced due to maintenance, repairs or forced outages of the transmission system or City's internal electric distribution system
 - > Provides the needed power to supplement imported power
- **22 MW of additional local electric generation in <10 minutes**
- **Helps integrate more renewables like wind and solar**
 - > CAISO is demanding pre-determined amount of quick start backup capacity from each utility
- **Provide valuable capacity (CAISO Resource Adequacy)**
 - > Capacity of the local Power Plant commands highest market premium in greater Los Angeles area

4

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Need for Repair and Upgrades

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- Lower cost than any other alternative
- Expected payback in 7-10 years
- Total Cost = 20,455,251
 - > Insurance proceeds = \$13,947,702
 - > Out of pocket = \$6,507,549
- Meets new stringent air emission standards
- Replace obsolete analogue controls with latest technology

5

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Competitive Bid

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- Competitive Bidding Process
 - > Specifications advertised on December 5, 2020
 - > 2,627 vendors received electronic notification (140 local)
 - > 69 vendors downloaded the Specifications (four local)
 - > No local vendors submitted bids
- Two bids received
 - > Energy Services LLC- Glastonbury, CT - \$16,683,317 (recommended)
 - > ARB, Inc. - Lake Forest, CA - \$20,196,328

6

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GT2 Repair Project Scope

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- Remove damaged equipment
- Furnish and install refurbished power turbine
- Perform engine overhaul
- Furnish and install refurbished electric generator
- Refurbish enclosure
- Repair and modify foundation
- Repair and upgrade SCR system
- Repair evaporative cooler basin
- Repair stack
- Replace fire protection system
- Replace continuous emission monitoring system
- Hazmat and Biological Waste Abatement

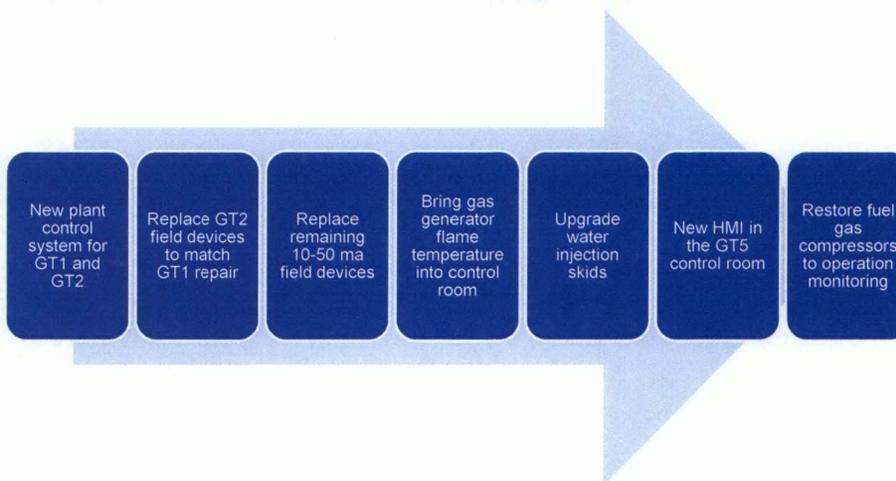
7

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GT1 and GT2 Control System Retrofit

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8

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Performance Guarantees

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- 22 MWs (Minimum)
- Cold start to full load in <8 minutes
- Emissions
 - > ≤ 2.0 ppm NO_x @ 22 MW with water injection
 - > ≤ 5 ppm NH_3 slip
 - > $\leq 3"$ H_2O pressure drop across SCR and stack
- Noise <85 dBa at 3 feet
- One Button start from main control room

9

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P.O Contract for Clean Power Consulting Partners (CPCP)

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- City's best interest to issue PO for CPCP
 - > Developed specifications and schedule for the project
 - > Has deep knowledge of project technical requirements
 - > Resolved complex technical and commercial issues and demonstrated ability to meet budget and schedule in the project management of the completed Glenarm Repowering
- Services- Project Management and technical consulting
- Propose new PO for \$442,060

10

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Appropriation Increase for CIP 3182

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Original Appropriation	\$14,710,892	
Expenditures to Date	\$208,852	
Available Appropriation to date		\$14,502,040
Estimated Cost:		
Construction Cost & 10% Contingency	\$18,351,649	
Project Management	\$442,060	
Owner's Engineer	\$117,720	
PWP Engineering & Power Delivery Labor	\$175,000	
Fuel/Commissioning Cost & Third Party Testing	\$125,000	
10% Contingency (excluding Const'n)	\$85,978	
Sub-Total	\$19,297,406	
Admin Charges (6% of Subtotal)	\$1,157,844	
Total Estimated Cost		\$20,455,251
Proposed Appropriation Increase		\$5,953,211

Insurance proceeds = \$13,947,702 (GT1 - \$6,234,488 and GT-2 \$7,713,214)
 The proposed appropriation increase will be funded from the Power Fund

11

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Recommendation

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- Exempt from CEQA
- Authorize a contract with Energy Services in an amount not to exceed \$18,351,649
 - > Base contract amount of \$16,683,317
 - > \$1,668,332 (10%) contingency to provide for any necessary change orders
- Authorize CM to issue a P.O. Contract with Clean Power Consulting Partners for PM of GT2 Repair by \$442,060
 - > Total not to exceed amount \$442,060
- Approve increase in appropriation by \$5,953,211 for CIP #3182

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