

Attachment A

Glenarm Repower Project Status Report

Status Report

September 2015

Glenarm Repowering Project

Combined Cycle Power Plant (GT-5)

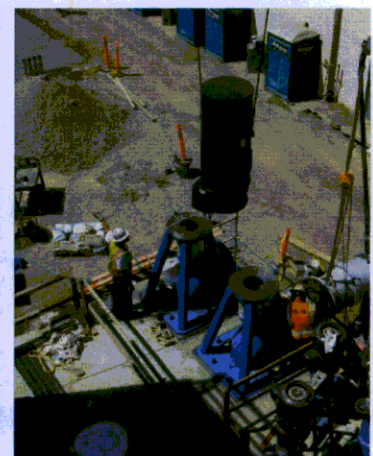


Rendering of GT-5



Glenarm Plant Mid-1950s

- Greater reliability of Power
- Most advanced technology
- Most efficient in its class
- Least emissions in its class
- Help integrate solar and wind power
- Preserve historic buildings on site



Piping, Foundations and Pump installation

City of Pasadena Water and Power Department

Glenarm GT5 Repowering Project Status Report

September 2015

The project continues to move forward. The following major activities have occurred since the last update.

- **Budget**

- City Council approved increase of the project budget by \$5 million from \$131.9 million to \$136.9 million on September 29, 2014 to provide allowance for potential contingencies.
- City Council granted the City Manager authority to approve up to \$4 million dollars of project contingency for the six major repowering contracts.
- At this time, PWP anticipates completing the project within budget.

- **Balance of the Plant contract (“BOP”) – Contractor: ARB, Inc.**

- Equipment procurement continues.
- Engineering at 78.8% complete.
- Electrical conduit bank installation continues.
- Foundation work continues.
 - Aux Transformer
 - Fuel Gas Compressor
- Setting of equipment on foundation continues.
 - Condenser Air Extraction Skids
 - Condensate Polisher
 - Condensate Pumps
 - LM600 Lube Oil Skid
- Construction of the Control Building continues.
- Erection of the cooling tower continues.
- Erection of the Once Through Steam Generator (“OTSG”) structural steel was completed.
- OTSG tempering air ductwork was installed.
- Pipe racks between OTSG and STG enclosure were erected.
- Waste Water and Distilled tank fabrication started.
- Cable pulls began.
- Change Order #9 is being reviewed:

Labor and Materials to install OTSG sound attenuation enclosure	\$60,188.38
Labor and Materials to erect SRV acoustical enclosure	\$19,000.00
Labor and Materials to install new fuel gas valve for GT-1 and 2	\$30,084.64
Labor and Materials to erect the steam turbine enclosure	\$512,856.72
Alternate manufacturer of instrument transmitters	(\$124,266.29)
Provide temperature transmitters to OTSG	\$41,290.29
Credit for OTSG tube welding by IST	(\$63,125.00)
Change in T&M unit and equipment rates	N/A
Credit for permit fees	(\$30,101.94)
Labor and Materials for grading and forklift access to PE building	\$31,000.00
Provide pump for fountain drain	\$24,999.00
TOTAL	\$501,925.80

- **Power Island Contract (“PIE”) – Contractor: General Electric**
 - Engineering, procurement and manufacturing are completed with the exception of the Steam Turbine Enclosure and the GSU sound wall.
 - All GE equipment has been delivered with the exception of the SCR Catalyst, Steam Turbine Enclosure and the GSU sound wall.
 - Training for PWP power plant staff has been scheduled.
 - Work continues on recommended spare parts.
 - GE Change Order #13 – being processed in the amount of \$30,265.50 for the bracing added to the GSU sound wall design, inclusion of a Net MW signal to the CEMS software and credit for the removal of the steam turbine enclosure heaters.

- **Site Operations**
 - Gas Company contractor continues work in preparation for new meter installation.
 - 34 kV lines were pulled by PWP staff/contractor.
 - Work continues on ISO interconnection.
 - Coordination with Power Delivery for installation of 34 kV and 17 kV lines continues.
 - Met with the City’s Hazardous Materials Inspector.

- **Other Project Activities**
 - Hosted site tours for PWP personnel.
 - CAISO meter certification process is underway.

- **Major Potential Issues**

New Issues

- ARB was unable to come to terms with IST, Canada (manufacturer of OTSG to perform proprietary boiler tube welding.) A purchase order has been approved to contract directly with IST to perform this work.

On Going Issues

- **UPDATED:** ARB requested a thirteen week delay to commercial operation due to a delayed PDC delivery. The PDC vendor cited heavy rains during April to June this year in the Houston area as the reason for the delay. ARB has been able to partially mitigate the impact of the late delivery. The current schedule indicates a shorter delay to the commercial operation date. However, collaborative efforts continue to bring the commercial operation date back to the original date.
- **UPDATED:** The cost of erecting the steam turbine enclosure has increased. The building in the bid documents was sized at 65’L X 45’W X 20’H. Due to an increase in the size of the Steam Turbine, Condenser and Steam Turbine Generator by GE the building is now 78’L X 51’W X 34’9”H. ARB change order #9 includes the estimated amount of \$512,856.72 for the erection of the steam turbine enclosure. Work will be done on a time and material basis.
- There is a scope gap issue concerning the design and supply of the piping from the Ammonia Flow Control Unit to the injection points on the OTSG. An agreement in principle has been reached to split the cost of the ammonia piping design and materials with ARB.
- The variable bypass valve exhaust stack was designed with a sound wall. The sound wall is not typical on an LM6000 installation and was not included in the original GE drawings. Therefore, it was not included in the BOP scope. Work is near completion. The cost will be well below the estimated cost of \$167,000. A credit will be included in ARB Change Order #10.

- GE's sound engineer has recommended the erection of one single sound wall on the west side of the GSU. The estimate for the sound wall is \$99,975; the estimate for the bracing is \$32,235 and installation is being re-evaluated due to the need for suitable bracing.
- Gas Compressor Fire Protection
The gas compressor sound attenuation enclosure has been redesigned to have 3 walls and a partial roof. Pasadena Fire Department has indicated they will require a fire protection system for the enclosures. Water mist has been determined to not be a viable option. A deluge system will be installed with containment for each skid. Staff will seek to recover partial costs from GE. Estimated cost of \$465,560.29 is included in ARB Change Order #7.
- GE sound engineer has recommended a sound wall be erected around the base of the OTSG. ARB has submitted a change order request with a cost estimate for installation of \$60,188.38. Work will be done on Time & Material basis.
- 95.5% percent of the Power Engineers' contract amount is expended. Power Engineers has provided a detailed task and cost estimate for their expected remaining involvement. Staff will contain the scope of work to remain within the contracted amount.
- On April 2, 2015 in response to a claim for approximately \$100,000 staff offered the remaining contract amount of \$5,370 as the full and final payment to the EIR consultant, on the basis that the City's approval was not obtained for the claimed services. The staff had offered 45 days to the EIR consultant to accept the offer. The consultant has not responded and the contract expired.

Resolved Issues

- California Clean Energy Committee – The Second District State Court of Appeals heard oral arguments on May 8, 2016. It determined that the EIR did not properly address water supply. The City has reached a settlement with CCEC and the case is dismissed.

- **Schedule**

- The target scheduled completion date is still May/June 2016. However, the late PDC delivery may negatively impact the deadline.

- **Safety**

- As of mid-August ARB reports 100,000 man-hours worked with zero lost time accidents and one reportable health and safety related injury.

EXHIBIT - 1: Financial Summary
Glenarm Repowering Project (GT-5) Status Report For MSC on September 22, 2015
Table 1 - Repowering Project Budget Summary

Updated: September 11, 2015

Reporting Through Aug 15, 2015	Approved Budget		Revised Budget (9/29/14)		Contracted Commitments				Potential Contract Commitments		How Much Contingency Has Been Used?				Commitment With Contingencies		Variance Between Budget and Potential Contract Contingency Used		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N					
Description	Approved Budget	Revised Budget (9/29/14) Increased by \$9 M	Base Contract Amounts	Approved Revisions to Base Contract	Contractual Contingency	Total Awarded Contract Amount (C+D+E)	Potential Changes	Total Awarded & Potential Changes (F+G)	Contractual Contingency	Committed Project Contingency, Council Approved June 1, 2015 (To be used after \$1 M is committed)	Total of Contractual and Project Contingency Used (I+J)	Total Awarded, Potential Changes & Contingency (K+L)	Savings Available at Contract/PO's	Positive If Approved Budget Amount Higher Than Potential Contract Contingency (B-L+N)					
Major Contracts																			
PE Contract - GE Packaged Power	\$ 65,843,230	\$ 65,843,230	\$ 60,484,529	\$ 0	\$ 1,376,000	\$ 61,870,529	\$ 61,870,529	\$ 61,870,529	\$ 302,726	\$ 0	\$ 302,726	\$ 61,870,529	\$ 0	\$ 3,977,701					
PM/CM Contract - PROU	\$ 3,325,800	\$ 3,325,800	\$ 3,004,000	\$ 0	\$ 300,000	\$ 3,304,000	\$ 3,304,000	\$ 3,304,000	\$ 0	\$ 0	\$ 0	\$ 3,304,000	\$ 0	\$ 21,800					
Air Permit - Woksy Parsons	\$ 400,000	\$ 400,000	\$ 235,000	\$ 75,500	\$ 20,000	\$ 330,500	\$ 330,500	\$ 330,500	\$ 0	\$ 0	\$ 0	\$ 330,500	\$ 0	\$ 69,500					
GEA/ER - PCR Services	\$ 400,000	\$ 400,000	\$ 61,590	\$ 150,407	\$ 21,110	\$ 233,107	\$ 333,107	\$ 333,107	\$ 15,740	\$ 0	\$ 15,740	\$ 333,107	\$ 0	\$ 66,883					
BOP Contract - ARB	\$ 46,232,388	\$ 46,232,388	\$ 55,661,973	\$ 0	\$ 0	\$ 55,661,973	\$ 714,204	\$ 56,376,177	\$ 0	\$ 1,000,000	\$ 966,685	\$ 56,362,861	\$ 0	\$ (13,130,473)					
OE Contract - Power Engineers	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 0	\$ 0	\$ 3,000,000	\$ 0	\$ 3,000,000	\$ 0	\$ 0	\$ 0	\$ 3,000,000	\$ 0	\$ 0					
Subtotal: Major Contracts	\$ 118,951,418	\$ 118,951,418	\$ 122,467,092	\$ 225,907	\$ 1,717,110	\$ 124,400,109	\$ 814,204	\$ 125,214,313	\$ 318,466	\$ 1,000,000	\$ 866,685	\$ 127,200,997	\$ 0	\$ (6,998,679)					
Project Contingency balance after subtracting approved + potential change orders														\$ (1,108,112)					
Other Contracts and Miscellaneous																			
PWP & Other Opst. PO's	\$ 0	\$ 0	\$ 1,297,471	\$ 71,897	\$ 0	\$ 1,369,368	\$ 1,369,368	\$ 1,369,368	\$ 0	\$ 0	\$ 0	\$ 1,369,368	\$ 597,571	\$ (761,797)					
Legal Expenses	\$ 0	\$ 0	\$ 796,866	\$ 0	\$ 0	\$ 796,866	\$ 796,866	\$ 796,866	\$ 0	\$ 0	\$ 0	\$ 796,866	\$ 0	\$ (796,866)					
Natural Gas Pipeline/Meter Upgrades - Southern California Gas Company	\$ 0	\$ 0	\$ 1,285,545	\$ 0	\$ 128,855	\$ 1,414,400	\$ 1,414,400	\$ 1,414,400	\$ 0	\$ 0	\$ 0	\$ 1,414,400	\$ 0	\$ (1,417,400)					
Air Funding	\$ 685,407	\$ 685,407	\$ 80,000	\$ 0	\$ 0	\$ 80,000	\$ 80,000	\$ 80,000	\$ 0	\$ 0	\$ 0	\$ 80,000	\$ 0	\$ 805,407					
Local Healthy Local - CBA	\$ 0	\$ 0	\$ 10,000	\$ 74,999	\$ 0	\$ 84,999	\$ 84,999	\$ 84,999	\$ 0	\$ 0	\$ 0	\$ 84,999	\$ 1,520	\$ (83,479)					
AQMD Fees	\$ 1,500,000	\$ 1,500,000	\$ 87,790	\$ 0	\$ 0	\$ 87,790	\$ 87,790	\$ 87,790	\$ 0	\$ 0	\$ 0	\$ 87,790	\$ 0	\$ 1,412,210					
PWP Labor and Materials	\$ 1,892,400	\$ 1,892,400	\$ 1,892,400	\$ 0	\$ 0	\$ 1,892,400	\$ 1,892,400	\$ 1,892,400	\$ 0	\$ 0	\$ 0	\$ 1,892,400	\$ 0	\$ 0					
Subtotal: Other Contracts and Miscellaneous	\$ 4,277,807	\$ 4,277,807	\$ 5,443,071	\$ 146,896	\$ 128,855	\$ 5,718,822	\$ 0	\$ 5,718,822	\$ 0	\$ 0	\$ 0	\$ 5,718,822	\$ 898,091	\$ (881,924)					
Project Subtotal	\$ 122,479,225	\$ 122,479,225	\$ 127,910,163	\$ 372,803	\$ 1,846,965	\$ 130,118,931	\$ 814,204	\$ 130,933,135	\$ 318,466	\$ 1,000,000	\$ 866,685	\$ 132,919,820	\$ 589,091	\$ (11,050,615)					
Contingency	\$ 9,424,958	\$ 14,424,958	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 3,374,343					
Totals	\$ 131,904,183	\$ 136,904,183	\$ 127,910,163	\$ 372,803	\$ 1,846,965	\$ 130,118,931	\$ 814,204	\$ 130,933,135	\$ 318,466	\$ 1,000,000	\$ 866,685	\$ 132,919,820	\$ 589,091	\$ 0					
Contingency Reconciliation	Approved Budget	Revised Budget (9/29/14)	Used	Potential Remaining	Comments														
Budget Contingency	\$ 9,424,958	\$ 14,424,958	\$ 11,050,615	\$ 3,374,343	Reflects legal expenses and settlement for CEQA lawsuit.														
Project Contingency	\$ 4,000,000	\$ 4,000,000	\$ 1,986,685	\$ 814,204	"Potential" expected future change orders in the amount of \$714,203.64 plus \$100,000 for PCR Services.														

Uncommitted contingency balance

EXHIBIT - 1: Financial Summary
 Glenam Repowering Project (GT-5) Status Report For MSC on September 22, 2015

Table 2 - Repowering Project Payments

Reporting Through Aug 15, 2015	Remaining Commitments With Contingencies		Payments			S
	O	P	Q	R	% of Total Awarded and Approved Contract Amount (P + F)	
Description	Total Awarded, Potential Changes & Project Contingency Available Savings realized (L - M)	Spent through 8/15/15	Amount Spent Between Last Report Period (8/20/15) and 8/15/15		Pending Invoices	
Major Contracts						
PIE Contract - GE Packaged Power	\$ 61,870,529	\$ 47,897,622	\$ 118,148	77.4%	\$ 0	
PM/CM Contract - PROU	\$ 3,304,000	\$ 1,186,388	\$ 356,411	35.9%	\$ 303,302	
Air Permit -Wolsey Parsons	\$ 330,500	\$ 307,172	\$ 0	92.9%	\$ 0	
CEOAEIR - PCR Services	\$ 333,107	\$ 227,737	\$ 0	97.7%	\$ 0	
BOP Contract - ARB	\$ 58,362,861	\$ 33,892,461	\$ 5,496,055	60.9%	\$ 3,573,601	
OE Contract - Power Engineers	\$ 3,000,000	\$ 2,895,495	\$ 29,222	96.5%	\$ 28,640	
Subtotal: Major Contracts	\$ 127,200,897	\$ 86,386,834	\$ 5,899,835	69.4%	\$ 3,905,542	
Other Contracts and Miscellaneous						
PMP & Other Dept. PO's	\$ 781,797	\$ 789,784	\$ (206,377)	56.2%	\$ 0	
Legal Expenses 1	\$ 786,695	\$ 236,866	\$ 236,866		\$ 0	
Natural Gas Pipeline/Meter Upgrades - Southern California Gas Company	\$ 1,417,400	\$ 1,286,545	\$ 0	90.9%	\$ 0	
AH Funding	\$ 80,000	\$ 79,156	\$ 0	98.9%	\$ 0	
Local Hire/By Local - CBA	\$ 83,479	\$ 28,895	\$ 0	34.0%	\$ 18,450	
AGMD Fees	\$ 87,760	\$ 87,760	\$ 0	100.0%	\$ 0	
PMP Labor and Materials	\$ 1,892,400	\$ 1,365,542	\$ (21,268)	72.2%	\$ 0	
Subtotal: Other Contracts and Miscellaneous	\$ 5,128,731	\$ 3,867,548	\$ 7,201	67.5%	\$ 16,650	
Project Subtotal	\$ 132,330,729	\$ 90,244,382	\$ 5,917,036	69.4%	\$ 3,923,992	
Totals	\$ 132,330,729	\$ 90,244,382	\$ 5,917,036	69.4%	\$ 3,923,992	

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Table 3 - Repowering Project Contingency

Reporting Through Aug 15, 2015	Contract Contingency			Project Contingency (\$4 million)			Update: September 11, 2015		
	Contracted (T + U)	Used (U + V)	Remaining (T - U)	Approved Committed Change Orders (W)	Used (X)	Remaining (W - X)	Contracted and Allocated (T + W)	Used (U + X)	Remaining (Z - AA)
Major Contracts	T	U	V	W	X	Y	Z	AA	AB
PIE Contract - GE Packaged Power	\$ 1,376,000	\$ 302,726	\$ 1,073,274	\$ 0	\$ 0	\$ 0	\$ 1,376,000	\$ 302,726	
PM/CM Contract - PROU	\$ 300,000	\$ 0	\$ 300,000	\$ 0	\$ 0	\$ 0	\$ 300,000	\$ 0	
Air Permit -Wolsey Parsons	\$ 20,000	\$ 0	\$ 20,000	\$ 0	\$ 0	\$ 0	\$ 20,000	\$ 0	
CEOAEIR - PCR Services	\$ 21,110	\$ 15,740	\$ 5,370	\$ 1,886,685	\$ 1,886,685	\$ 0	\$ 1,886,685	\$ 1,886,685	
BOP Contract - ARB				\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	
OE Contract - Power Engineers				\$ 1,886,685	\$ 1,886,685	\$ 0	\$ 0	\$ 0	
Subtotal: Major Contracts	\$ 1,717,110	\$ 318,466	\$ 1,398,644	\$ 1,886,685	\$ 1,886,685	\$ 0	\$ 3,703,795	\$ 2,395,151	\$ 1,308,644

Exhibit 2

City of Pasadena Department of Finance, Purchasing Division

Pasadena First Buy Local Local Participation Plan Update For the Glenarm Repowering Project (Project)

As of September 10, 2015

- 1) The status of the Local Participation Plan (Plan) is covered in weekly meetings with the contractors to maintain focus on the Local Participation goals. The Plan calls for 15% local subcontracting and procurement. The Project is reporting **\$1,383,228.32 or 26.1% of its subcontracting and procurement** has been spent with Pasadena businesses.
- 2) The Project Labor Agreement calls for 25% of the payroll to be satisfied by Pasadena residents. Staff has been monitoring the onsite certified payroll on an ongoing basis since the start of the Project, and advising the Prime and Project Team on strategies that will enable the Project to meet or exceed the local hiring goal. ARB and their subcontractors are reporting **\$1,132,268.48 in payroll to Pasadena residents, which represents 31.7%** of the total payroll for the Project. A labor wage summary report is attached for review.
- 3) Staff provided a “late certified payroll” report to the Project Team, the Prime and subcontractors. The purpose of this report was to inform the team of the contractor’s certified payroll submittals that were more than 14 days late. Staff has recommended that contractors be required to be current with their payroll reports prior to processing their Pay Applications.
- 4) As August was expected to be a peak workforce, staff has recommended going forward, that the Project maintains its Pasadena residents where ever practical and appropriate to do so. The purchase of this recommendation is to ensure that the local hiring percentages are maintained even while the Project reduces its workforce.
- 5) Staff facilitates ongoing follow up on requests made from ARB and their subcontractors to the Union halls.
- 6) Staff continued its outreach to local organizations to request contact information for potential Pasadena apprentices to be included in the City’s local hiring database. The purpose of this effort is to ensure that Pasadena residents seeking apprenticeship and employment opportunities are included in the recruitment and referral process.