

# Agenda Report

September 12, 2011

TO: Honorable Mayor and City Council

FROM: Water and Power Department

SUBJECT: AUTHORIZATION TO ENTER INTO A CONTRACT WITH SIEMENS ENERGY, INC. FOR UNIT B-3 MAJOR INSPECTION AND REPAIR AND WITH ACUREN INSPECTION, INC. FOR UNIT B-3 NONDESTRUCTIVE EXAMINATION AT THE BROADWAY PLANT

## **RECOMMENDATION:**

It is recommended that the City Council:

1. Find that entering into a contract with Siemens Energy, Inc. and Acuren Inspection, Inc. for the proposed work herein is exempt from the California Environmental Quality Act (CEQA) in accordance with Title 14, Chapter 3, Section 15301, Class 1, Existing Facilities; and Section 15302, Class 2, Replacement or Reconstruction;
2. Authorize the City Manager to enter into a contract with Siemens Energy, Inc. for inspection and repair of Unit B-3 steam turbine for an amount not-to-exceed \$795,000 without competitive bidding (City Charter Section 1002 (C), contracts for labor, material, supplies or services available from only one vendor), and grant an exemption from Competitive Selection and Purchasing Ordinance pursuant to Pasadena Municipal Code Section 4.08.049 (B), contracts for which the City's best interests are served; and
3. Authorize the City Manager to enter into a contract with Acuren Inspection, Inc. for nondestructive examination of Unit B-3 boiler for an amount not-to-exceed \$370,000 without competitive bidding (City Charter Section 1002 (F), contracts for professional or unique services).

## **EXECUTIVE SUMMARY:**

The two proposed contracts are with Siemens Energy, Inc. for Unit B-3 turbine major inspection and repair, and with Acuren Inspection, Inc. for Unit B-3 boiler nondestructive examination. The steam turbine inspection includes disassembly, inspection, replacement of worn parts and necessary repairs. The boiler nondestructive

examinations include examination of high pressure and high temperature steam headers, as well as stress analysis of high pressure steam piping. The cost of these two contracts will be \$795,000 for Siemens Energy, Inc. and \$370,000 for Acuren Inspection, Inc. including contingencies for unexpected findings.

The contracts will enable Pasadena Water and Power (PWP) to operate Unit B-3 and meet its customers' electricity demand. A failure of Unit B-3 will compromise personnel safety and Pasadena's electric system reliability. In addition a failure would also result in lost profit and revenue of approximately \$2.5 million a year.

### **BACKGROUND:**

The Integrated Resource Plan (IRP) for energy adopted in 2009 calls for the replacement of Unit B-3 with a new gas fired combined cycle facility. However, the Unit must remain operational until 2014, the planned retirement date. The change in the electricity market program of the California Independent System Operator (CAISO) is causing Unit B-3 to operate with wide and abrupt changes in unit load, and frequent start-ups and shut-downs, causing severe thermal stress to the unit. This manner of operation has an impact on the useful life of the unit. A failure of the unit may compromise personnel safety and the City of Pasadena's electric system reliability. The failure may also render the unit inoperable, which could result in lost profit and revenue of approximately \$2.5 million per year.

The major inspection, repair, and nondestructive examination will enable PWP to operate the unit safely and reliably. It is anticipated that this will be the last major inspection of Unit B-3 steam turbine before it will be retired in December 2014. This inspection decision is also influenced by what happened to Unit GT-1 last May 2010, when the power turbine exploded and the unit caught fire. The intent of the proposed work is to perform only essential repair work that will give an assurance that Unit B-3 can operate safely for the next three years and without consideration for unit efficiency improvement.

The inspection, repair, and nondestructive examination of Unit B-3 are scheduled to take place from November 2011 to January 2012 under two separate contracts. One of the contracts will be with Siemens Energy, Inc. for the inspection and repair of the steam turbine. The other contract will be with Acuren Inspection, Inc. for the nondestructive examination of the boiler. Below is the description of each work scope.

### **Unit B-3 Major Inspection and Repair**

Unit B-3 major inspection and repair is the work on the steam turbine by Siemens Energy that includes disassembly, inspection, replacement of renewable parts, routine repair, and reassembly. As the steam turbine is being disassembled, the critical turbine blades and other rotating components are visually inspected and subjected to nondestructive examination. Any worn out or damaged parts that are repairable will be shipped to Siemens facility for repair.

The last major overhaul of Unit B-3 steam turbine-generator was done by Siemens in 2002. It is recommended that the proposed contract be made also with Siemens Energy. Unit B-3 turbine-generator was originally designed and built by Allis Chalmers for which Siemens Energy has become the successor in interest. The design and turbine material composition are proprietary, and only a Siemens' Technical Field Adviser has the capability to provide advice on correct procedures and specify the critical clearance, torque, and tolerances essential to overhauling of Unit B-3 steam turbine. Therefore, the proposed contract with Siemens Energy, Inc. is exempt from competitive bidding pursuant to City Charter Section 1002 (C), contracts for labor, material, supplies or services available from only one vendor, and an exemption from Competitive Selection and Purchasing Ordinance should be granted pursuant to Pasadena Municipal Code Section 4.08.049 (B), contracts for which the City's best interests are served.

Under the proposed contract, Siemens Energy will supply certified parts that are normally replaced in the repair work and provide an onsite Technical Field Adviser for the duration of the inspection and repair work. The cost of replacement parts, Siemens technical services, and repair work is estimated to be \$726,153 based on the cost estimate outlined in Attachment A. An additional \$68,847 (less than 10%) is included in the contract for contingencies. The extent of the actual turbine-generator repair work will be determined only after the unit is disassembled and inspected. In the event an abnormal damage to critical components is discovered during inspection and condition assessment of Unit B-3, staff will reassess the safety and economics of repairing the damage and request authorization from City Council for necessary repairs under a separate Agenda Report.

Most of the Power Plant operators and maintenance crew will be utilized for Unit B-3 steam turbine work and will be assisted by an additional six (6) millwrights and a foreman to be provided by ARB, Inc. under the existing Contract No. 20,076.

#### Unit B-3 Nondestructive Examination

Unit B-3 nondestructive examinations include examination of high pressure and high temperature steam headers, as well as stress analysis of high pressure steam piping. This work will be a separate contract and must be done concurrently with Siemens work during Unit B-3 scheduled outage.

A Request for Proposal (RFP) was issued on May 12, 2011 seeking the services of a contractor that would be responsible for conducting the nondestructive examinations on Unit B-3 boiler. The RFP was distributed to four prospective bidders. The proposals received were independently evaluated by four City staff based on the criteria stated in the RFP. The result of the evaluation is as follows:

<u>BIDDERS</u>	<u>EVALUATED SCORES</u>
Acuren Inspection, Inc., Torrance, CA	78
R.F. MacDonald Co., Santa Fe Springs, CA	71
ARB, Inc., Lake Forest, CA	71
Trinity Process Solution, Inc., Anaheim, CA	55

Acuren Inspection, Inc. met the requirements of the RFP, received the highest evaluated score, and is therefore recommended for award of the proposed contract.

The proposed contract amount with Acuren Inspection, Inc. of not-to-exceed \$370,000 includes the cost of \$337,642 for the work and a contingency amount of \$32,358 (less than 10%). This proposed contract is exempt from competitive bidding pursuant to City Charter Section 1002(F), professional or unique services, and complies with the Competitive Selection and Purchasing Ordinance, Pasadena Municipal, Chapter 4.08 and the Living Wage Ordinance, Pasadena Municipal Code 4.11.

**COUNCIL POLICY CONSIDERATION:**

This project supports the City Council Strategic Goal to improve, maintain, and enhance public facilities and infrastructure. It also supports the Public Facilities Element of the General Plan by maintaining public facilities to enhance the quality of life of the community.

**ENVIRONMENTAL ANALYSIS:**

The inspection and nondestructive examination of Unit B-3 has been determined to be categorically exempt in accordance with Title 14, Chapter 3, Section 15301, Class 1, Existing Facilities and Section 2, Class 2, Replacement and Reconstruction of the California Environmental Quality Act (CEQA). Class 1 allows for the maintenance, repair, minor alteration etc. of existing facilities (including publically owned utilities that involves negligible or no expansion of use. Class 2 allows for the replacement and reconstruction of existing facilities and structures, including utility systems where the replacement structure/facility will have substantially the same purpose and capacity. There will be no expansion of use or capacity as a result of the required repairs and maintenance on the existing Unit B-3.

**FISCAL IMPACT:**

The cost of this action will be \$1,575,000 which includes the total cost of the two requested contracts of \$1,165,000 and other associated cost of \$410,000, as shown in the table below. Funding for this action will be addressed by the utilization of existing budgeted appropriations in the Power Fund 411, CIP 3148 B-3 Renewals and Replacements, account 8114-411-841200-0314-21036. Indirect and support costs such as contract administration and inspection, contract labor, and miscellaneous items are anticipated to be \$410,000 and will be addressed by the utilization of existing budgeted appropriations in account 8005-411-841200-0314-21036, B-3 Renewals and Replacements. It is anticipated that the entire cost of \$1,575,000 will be spent during the current fiscal year.

Authorization to Enter into a Contract with Siemens Energy, Inc. for Unit B-3 Major Inspection and Repair and with Acuren Inspection, Inc. for Unit B-3 Nondestructive Examination at the Broadway Plant

September 12, 2011

Page 5 of 5

The following table presents summary of the total fiscal impact:

<b>Contract with Siemens Energy, Inc.</b>	
Siemens Energy, Inc. Contract Amount	\$726,153
Contingency	\$ 68,847
<b>Sub-Total</b>	<b>\$795,000</b>
<b>Contract with Acuren Inspection, Inc.</b>	
Acuren Inspection, Inc. Contract Amount	\$337,642
Contingency	\$ 32,358
<b>Sub-Total</b>	<b>\$370,000</b>
<b>Indirect and Support Costs:</b>	
In-house Contracts Admin. and Inspection	\$ 40,000
ARB, Inc. Six Millwrights and a Foreman	\$245,000
Sandblasting and Miscellaneous Items	\$125,000
<b>Sub-Total</b>	<b>\$410,000</b>
<b>Total Fiscal Impact</b>	<b>\$1,575,000</b>

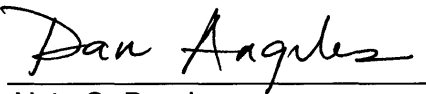
The anticipated impacts to other operational programs or capital projects as a result of this action will be minimal.

Respectfully submitted,




PHYLLIS E. CURRIE  
General Manager  
Water and Power Department

Prepared by:

for: 

Alvin S. Boyd  
Power Plant Superintendent  
Power Supply Business Unit

Approved by:



MICHAEL J. BECK  
City Manager

Attachment A – Cost Estimate

**ATTACHMENT A**  
**UNIT B-3 STEAM TURBINE MAJOR INSPECTION AND REPAIR**  
**COST ESTIMATE**

By: **Siemens Energy, Inc.** under the proposed contract

<u>WORK DESCRIPTION</u>	<u>COST ESTIMATE</u>
<b>A. Furnishing of New Replacement Parts</b>	
Thrust Bearing Shoe Assembly	\$40,500
High Pressure Cylinder Sub-assembly Seal Rings	\$174,840
Misc. Valve Parts	\$50,000
Generator Parts	\$5,000
Sales Tax	\$23,655
<b>Sub-total</b>	<b>\$293,995</b>
<b>B. Furnishing of Siemens' Field Technical Adviser</b>	
Engineer Trip to Job Site, One Way Airline Ticket: \$400	\$ 400
Engineer Travel Expense to Job Site: 8Hr (maximum) x \$230/Hr	\$1,840
Engineer Living Expenses: 3 Months x 30 Day/month x \$290/Day	\$26,100
Engineer Services: 3 Months x 21.7 Work Day/Month x 8 Hr/Work Day x \$230/Hr	\$119,784
Engineer Trips Home Every 3 <sup>rd</sup> Weekends: \$600/Round Trip x 4 Round Trips	\$2,400
Engineer Travel Expenses: 8Hr (maximum) x \$230/Hr	\$1,840
Engineer Trip Home, One Way Airline Ticket: \$400	\$ 400
<b>Sub-total</b>	<b>\$152,764</b>
<b>C. Repair Work at Broadway Plant</b>	
Removal and Replacement of Stellite Shields on Low Pressure Rotor	\$50,000
Generator Inspection and Electrical Testing by Siemens Generator Specialist	\$20,000
Nondestructive Examinations of Critical Components	\$60,000
<b>Sub-total</b>	<b>\$130,000</b>
<b>D. Repair Work at Siemens Facility</b>	
Shipment of Steam Turbine components to Siemens Facility	\$10,000
Shipment Insurance for steam turbine components	\$ 3,000
Steam Seal Packing for Reconditioning and/or Replacement	\$36,500
Inspection and Repair of High Pressure #1 Stationary Blade Ring	\$14,217
Inspection and Repair of Intermediate Pressure #1 Stationary Blade Ring	\$35,677
Nozzle Block Repair	\$50,000
<b>Sub-total</b>	<b>\$149,394</b>
<b>TOTAL</b>	<b>\$726,153</b>

By: **ARB, Inc.** under the existing Contract No. 20,067

<u>WORK DESCRIPTION</u>	<u>COST ESTIMATE</u>
<b>A. Furnishing of Six Millwrights and a Foreman</b>	
Six Millwrights: 6 x 3 Months x 21.7 Work Day/Month x 8 Hr/Work Day x \$65.21/Hr	\$203,768
One Foreman: 1 x 3 Months x 21.7 Work Day/Month x 8 Hr/Work Day x \$79.13/Hr	\$41,211
<b>TOTAL (Approx.)</b>	<b>\$245,000</b>

**Disclosure Pursuant to the  
City of Pasadena Taxpayer Protection Amendment  
Pasadena City Charter, Article XVII**

Contractor/Organization hereby discloses its trustees, directors, partners, officers, and those with more than 10% equity, participation, or revenue interest in Contractor/Organization, as follows:

*(If printing, please print legibly. Use additional sheets as necessary.)*

Siemens comments are noted in blue.

<b>1. Contractor/Organization Name:</b> Siemens Energy, Inc.
---

<b>2. Type of Entity:</b> <input checked="" type="checkbox"/> non-government <input type="checkbox"/> nonprofit 501(c)(3), (4), or (6)
---

<b>3. Name(s) of trustees, directors, partners, officers of Contractor/Organization:</b>	
Siemens Energy, Inc.	
Directors and Officers as of July 27, 2011	
<b>Directors</b>	<b>Officers</b>
Ralf Guntermann	Randy Zwirn President & CEO
Randy Zwirn	Steven Conner, Vice President & CFO
Steven Conner	Rick Mould, Executive VP
Roland Fischer	Craig Weeks, VP
Udo Niehage	Joyce Bagwell, VP HR
Klaus Stegemann	Thomas J. Herder, VP, GC & Secretary
Eric Spiegel	Dave Pacyna, VP
	Alan Gotliffe – Assist. Sec. – Tax purposes
	Russell Reader – Assistant Secretary
	Chris Flynn– Assistant Secretary
	Roger Muscedere– Assistant Secretary
	John Musone– Assistant Secretary
	Peter Pollock– Assistant Secretary
	Brenda Pence– Assistant Secretary
	Elizabeth McGeever – Assistant Secretary

<b>4. Names of those with more than a 10% equity, participation or revenue interest in Contractor/Organization:</b>
Siemens Corp.

Prepared by: Bill Conklin

To the best of my information and belief, the aforementioned information is complete and accurate.

Title: Contract Management Manager  
Legal Region North America Mods & Ups Standard Business

Phone: (407) 736-2000

Date: July 27, 2011

Rev.07.10.2007

Disclosure Pursuant to the  
City of Pasadena Taxpayer Protection Amendment of 2000  
Pasadena City Charter, Article XVII

Contractor hereby discloses its trustees, directors, partners, officers, and those with more than a 10% equity, participation, or revenue interest in Contractor, as follows:  
(If printing, please print legibly. Use additional sheets as necessary.)

1. Contractor Name: Aceview Inspection Inc

2. Name(s) of trustees, directors, partners, officers of Contractor:

<u>Peter Scannell</u>	<u>President</u>
<u>John Lockwood</u>	<u>COO</u>

3. Names of those with more than a 10% equity, participation or revenue interest in Contractor:


Prepared by: Paul J. Triguera

Title: Controller

Date: 6-30-11

For office use only

Contract No. \_\_\_\_\_