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# Commission Staff Report - Amended

DATE: January 14, 2019

COMMISSION MEETING DATE: January 17, 2019

SUBJECT: CT1 Lodi Turbine Maintenance Project; Applicable to the following projects:  
NCPA CT1 Facility.

AGENDA CATEGORY: Discussion/Action

<b>FROM:</b> Ken Speer <i>KS</i>	<b>METHOD OF SELECTION:</b>
Assistant General Manager	<i>Competitive Pricing Process</i>
Division: Generation Services	
Department: Combustion Turbines	

<b>IMPACTED MEMBERS:</b>		
All Members <input type="checkbox"/>	City of Lodi <input checked="" type="checkbox"/>	City of Shasta Lake <input type="checkbox"/>
Alameda Municipal Power <input checked="" type="checkbox"/>	City of Lompoc <input checked="" type="checkbox"/>	City of Ukiah <input checked="" type="checkbox"/>
Bay Area Rapid Transit <input type="checkbox"/>	City of Palo Alto <input type="checkbox"/>	Plumas-Sierra REC <input checked="" type="checkbox"/>
City of Biggs <input checked="" type="checkbox"/>	City of Redding <input type="checkbox"/>	Port of Oakland <input type="checkbox"/>
City of Gridley <input checked="" type="checkbox"/>	City of Roseville <input checked="" type="checkbox"/>	Truckee Donner PUD <input type="checkbox"/>
City of Healdsburg <input checked="" type="checkbox"/>	City of Santa Clara <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
<i>If other, please specify</i>		
_____		
_____		

## **RECOMMENDATION:**

Approval of Resolution 19-08 authorizing the CT1 Lodi Turbine Maintenance Project and delegating authority to the General Manager or his designee to award bids, enter into agreements, and issue purchase orders for the Project in accordance with NCPA Purchasing Policies and Procedures without further approval by the Commission, for a total cost not to exceed \$1,500,000, and to increase the CT1 FY19 budget, with an estimated return to service date of February 13, 2019.

## **BACKGROUND:**

During normal operations of a combustion turbine, when the unit is shut down, the shaft must slowly rotate to prevent a bow from forming, causing rubs and sticking points. The CT1 projects employ a ratcheting system that rotates the combustion turbine on shutdown. If for some reason the ratchet doesn't operate within 45 minutes of shutdown, the machine must sit idle for 48 hours to cool naturally.

During operations in June of 2018, Lodi CT began having problems with the ratcheting system where it would randomly fail to rotate the combustion turbine on shutdown. When this occurred, the unit had to sit idle for the 48 hour cool down. This problem continued to randomly occur throughout the summer and fall. Plant staff attempted to troubleshoot the problem, but were unable to identify the cause.

In December of 2018, after the second run for the day, the unit failed to rotate on shutdown. However, this time, after the 48 hour cool down, it would not rotate as it had in the past. A special type of borescope inspection was ordered and it revealed rubs on the rotor due to clearance problems between the stationary and rotating parts of the combustion turbine. Ethos had overhauled the unit in May of 2016. NCPA had previously submitted a warranty claim to Ethos due to damage found during a routine inspection.

Ethos was contacted to disassemble the machine to make the necessary repairs under a warranty claim. Upon disassembly, Ethos has accepted responsibility for most of the work under the warranty claim. Discussions with Ethos are ongoing as to whether or not some of the parts need to be replaced. Staff continues to pursue replacement of these parts as a warranty claim.

Upon inspection of the unit for the warranty work, the exhaust flex seal has been found to be failing. This component is completely unrelated to any work that Ethos has performed. In the 33 years of operation of this machine, it has never been disassembled enough to get at this part to replace it. If this machine is reassembled without replacing this component, it will fall out very soon. This is the same problem that Alameda experienced last January. Because the machine has been partially disassembled under warranty, it is less expensive now to replace this component. However, to replace this component, the rotor has to be removed. Also, while the rotor is out, that will provide an opportunity to perform minor repairs to the compressor blades.

Staff is recommending the unit be completely disassembled to replace the flex seal and to complete minor repairs to the compressor section.

**FISCAL IMPACT:**

The cost to perform the necessary work is \$1,500,000. The funds for this are not budgeted and budget supplement will need to be approved to fund this work. It is estimated that the unit will be out of service until February 13, 2019.

**SELECTION PROCESS:**

Ethos was selected to perform the work because they were already on-site performing warranty work.

**ENVIRONMENTAL ANALYSIS:**

These activities are categorically exempt under Class 1 from the provisions of the California Environmental Quality Act pursuant to Section 15301 of the CEQA Guidelines for routine operation, repair, maintenance, or minor alteration of existing structures or facilities not expanding existing uses at NCPA power plants. A Notice of Exemption was approved by the NCPA Commission on September 27, 2013, by Resolution 13-97 (SR 215:13 for reference) for this class of work and was filed in San Joaquin County.

**COMMITTEE REVIEW:**

The recommendation above was reviewed by the Facilities Committee on January 3, 2019, and was recommended for Commission approval as a Discussion/Action Item.

Respectfully submitted,



RANDY S. HOWARD  
General Manager

Attachments (1):

- Resolution

RESOLUTION 19-08

RESOLUTION OF THE NORTHERN CALIFORNIA POWER AGENCY FOR RECOMMENDED CT1 LODI TURBINE MAINTENANCE PROJECT

(reference Staff Report #111:19)

WHEREAS, the Northern California Power Agency (NCPA) operates and maintains the CT1 Lodi facility on behalf of the project participants; and

WHEREAS, during routine operations and borescope inspections, numerous issues have been identified with various elements and parts of the combustion turbine which will require corrective maintenance; and

WHEREAS, NCPA staff is now recommending maintenance of the identified items to be completed in order to ensure continued operation of the unit; and

WHEREAS, these activities are categorically exempt under Class 1 from the provisions of the California Environmental Quality Act pursuant to Section 15301 of the CEQA Guidelines for routine operation, repair, maintenance, or minor alteration of existing structures or facilities not expanding existing uses at NCPA power plants. A Notice of Exemption was approved by the NCPA Commission on September 27, 2013, by Resolution 13-97 (SR 215:13 for reference) for this class of work and was filed in San Joaquin County; and

NOW, THEREFORE BE IT RESOLVED, that the Commission of the Northern California Power Agency authorizes the CT1 Lodi Turbine Maintenance Project and delegates authority to the General Manager or his designee to award bids, enter into agreements, and to issue purchase orders for the Project in accordance with NCPA Purchasing Policies and Procedures without further approval by the Commission, for a total not to exceed project cost of \$1,500,000, and to increase the CT1 FY19 budget.

PASSED, ADOPTED and APPROVED this \_\_\_\_ day of \_\_\_\_\_, 2019 by the following vote on roll call:

Table with 4 columns: Name, Vote, Abstained, Absent. Lists 17 locations: Alameda, San Francisco BART, Biggs, Gridley, Healdsburg, Lodi, Lompoc, Palo Alto, Port of Oakland, Redding, Roseville, Santa Clara, Shasta Lake, Truckee Donner, Ukiah, Plumas-Sierra.

ROGER FRITH CHAIR

ATTEST:

CARY A. PADGETT ASSISTANT SECRETARY