Phase I Ex Ante Review Findings

Table Error! No text of specified style in document.**-1: Project Information**

IOU	PG&E
Application ID	ICRx 034
Application Date	3/29/2012 (Audit report dated 10/8/2012)
Program ID	PGE2228
Program Name	Industrial Recommissioning Program
Program Year	TBD
Itron Project ID	X256
IOU Ex Ante Savings Date	3/29/12
ED Measure Name	Compressed Air System Optimization
Project Description	Compressed air system modifications
Date of ED Review(s)	12/23/12
Primary Reviewer and Firm	Keith Rothenberg/Energy Metrics
Review Supervisor and Firm	Joseph Ball/Itron
Type of Review (Desk, On-site, Full M&V, Tool)	Desk
ED Recommendation	Ex ante savings estimates are not approved, pending fulfillment of data request for more information. ED will perform a comprehensive review following receipt of additional information for this project.

Measure Description

The application documents describe five proposed measures to optimize the operation of a compressed air system:

1. Install pressure flow controller and a 5,000 gal dry receiver, 46 kW, 403,105 kWh.

2. Install automation to control compressors and air dryers. 90.8 kW, 795,196 kWh.

3. Reduce air dryer purge rate, 119.1 kW, 1,042,920 kWh.

4. Repair 70 air leaks, 52 kW, 455,424 kWh.

5. Replace 6 timer drains, 1.4 kW, 11,826 kWh.

The total estimated impacts are 309 kW and 2,708,472 kWh with an estimated incentive of $115,160.

Summary of Review

ED selected this project for ex ante review in December 2012. The IOU provided documentation for the project on December 14, 2012. ED reviewed the IOU supplied information including the IOU's draft pre-installation calculations, the project implementation agreement, audit report, and pre installation monitoring data provided by the IOU including 7 days of air compressor amperage monitoring and system pressure data.

ED requires additional information to verify the estimated energy savings for these measures.

ED notes that the project agreement states that the 3PP will not pay incentives after 12/31/2012. ED requests that the IOU provide a status update for this project.

ED notes that the M&V plan is lacking specific detail on how the project impacts will be derived.

The documentation describes four 300 HP compressors located in one building and two 100 HP compressors located in another building. The documentation indicates that these systems are connected. ED does not understand if the 100 HP compressors are affected by any of the measures proposed in the project documentation.

ED is unable to comprehend the details of the savings analysis for the project.

The documents describe compressed air system data collected by the customer's control system. Data from this system has not been provided.

ED does not fully comprehend the program persistence requirements for the leak repair measure.

Review Conclusion

The ex ante energy savings could not be validated and are not approved pending additional information from the IOU. ED will perform a comprehensive review following receipt of additional information for this project.

Summary of ED Requested Action by the IOU

In order to complete an ex ante review the ED recommends that the IOU submit the following documentation:

1. Provide a status update for this project. Has implementation commenced, is implementation completed, etc. The project agreement states that the 3PP will not pay incentives after 12/31/2012.
2. ED notes that several measures are combined for this project: Install pressure flow controller and a 5,000 gal dry receiver, install automation to control compressors and air dryers, reduce air dryer purge rate, repair 70 air leaks, replace 6 timer drains. The different measures may have different EULs, etc. Justify why the measures should not be separated, or separate the measures and address this individually, provide the EUL for each of the measures.
3. Describe the approximate age and condition of the existing compressors. Provide manufacturer's data sheets for the compressors showing their airflow and power characteristics both loaded and unloaded.
4. The project documents state that the customer is required to enter into a three year contract with an independent vendor who will annually perform a compressed air leak audit to maintain the energy savings from this measure. Is the customer required to repair the leaks identified during this period? Will the repair of any future leaks identified as a requirement of this program be eligible for incentives?
5. ED requests that the IOU show how the two 100 HP compressors are related to the four 300 HP compressors. ED requests that all compressors be included on the existing and proposed system diagram and that the diagrams also include the location of existing and proposed flow meters and pressure transducers.
6. For each proposed measure describe what has been measured, what has been assumed, what is stipulated and what has been calculated for the savings analysis of this project in a clear, concise and logical manner.
7. Describe how the compressed air leaks were measured and the leak rate quantified. Provide supporting documentation.
8. Provide a detailed M&V plan including a description of the data and formulae that will be used to calculate the impacts of the project.

9. Provide a list of compressed air system points that are monitored by the customer's existing compressed air system control/monitoring system. At a minimum ED would like to review archived compressor status (load/unload/off), compressed air system flow and pressure data from the customer's control system to better understand the operation of the compressed air system. Provide pressure and flow data in one minute or less intervals from the customer's data acquisition system for 10/1/11-10/31/11. This period includes the project monitoring period (10/13/11-10/19/11). Provide the same data for the recent period (12/1/12-12/31/12).
10. Provide any IOU reviews of this project.
11. Describe whether or not the ex ante claims for this project will be frozen following the proposed post installation M&V, or based on the ex ante calculations alone.
12. Complete the table below. If the measures are to be considered individually, complete the table for each measure proposed for this project.

ED is likely to ask for further clarifications and additional information as the details of this project become more clearly defined. ED requests that the IOU:

1. Keep ED informed of the progress and next steps on this project.
2. Inform ED of any future site visits, in case it chooses to send a representative on-site.
3. Provide sufficient opportunity for ED to review the requested data, analysis and calculations prior to the freezing of ex ante savings impacts for this project.

Measure Number:
Measure Description:

Measure Details

Description	**IOU Proposed Ex Ante Data**
Project Baseline Type (Early Replacement, Normal Replacement, Replace on Burnout, Capacity Expansion, New Construction, Major Renovation, Add-on Measure, System Optimization)	Concise descriptions in these cells.
Project Baseline Efficiency (in situ, Title 24 (specify year), Other Code (specify), Industry Standard Practice.	
Project Cost Basis (Full Cost, Incremental Cost)	
RUL (Early retirement projects only, otherwise N/A (not applicable)	
EUL	
First Year kWh Savings	
First Year Peak kW Savings	
First Year Therms Savings	
Total kWh Savings (RUL Period)	
Peak kW Savings (RUL Period)	
Total Therms Impact (RUL Period)	
Total kWh Savings (EUL – RUL Period)	
Peak kW Savings (EUL – RUL Period)	
Total Therms Savings (EUL – RUL Period)	
Total non-IOU Fuel Impact (RUL Period)	
Total non-IOU fuel Impact (EUL – RUL Period)	
Net-to-Gross Ratio	