

## Phase 1 Ex Ante Review Findings

**Table 1-1: Project Information**

<b>PA</b>	PG&E
<b>Application ID</b>	ICRx 080
<b>Application Date</b>	Not provided
<b>Program ID</b>	PGE210210
<b>Program Name</b>	Industrial Recommissioning Program
<b>Program Year</b>	2014
<b>CPUC Project ID</b>	X533
<b>PA Ex Ante Savings Date</b>	Not provided
<b>Measure Name</b>	Compressed air system modifications
<b>Project Description</b>	Replace air compressor sequencing controller, repair air leaks, adjust system pressure set points, and replace timer drains with no loss drains.
<b>Date of CPUC Staff Review</b>	1/26/2015
<b>Primary Reviewer / Firm</b>	Keith Rothenberg/Energy Metrics
<b>Review Supervisor / Firm</b>	Jeff Hirsch/JJH & Associates
<b>CPUC Staff Project Manager</b>	██████████ / California Public Utilities Commission, Energy Division
<b>CPUC Staff Policy Authorization (as needed)</b>	
<b>Type of Review (Desk, On-site, Full M&amp;V, Tool)</b>	Desk
<b>CPUC Staff Recommendation</b>	The ex ante savings are not approved. CPUC staff will continue to review this project pending the PA's response to CPUC staff requirements listed below.

## Measure Description

The following compressed air system measures are proposed for the project:

- Replace existing air compressor controls which control compressors based on the rate of pressure rise/decay with new controls which will ensure the most efficient compressor operation sequences, fully utilize the existing 50,000 gallons of storage and pressure flow control valve.
- Reduce compressor discharge pressure from 110 psig to 95 psig for base loaded Quincy compressors downstream of the pressure flow controller; reduce the discharge pressure of the Kaeser compressors upstream of the pressure control valve to 100 psig.
- Tune compressor #4 to resolve problems with loaded operations.
- Reduce compressed air demand through leak repairs.
- Reduce compressed air demand by replacing seven timer drains with no air loss drains.

The PA ex ante savings estimates are 565,596 kWh annually and 106.1 kW demand reduction. The project cost is estimated to be \$112,853 and the incentive is estimated to be \$56,427.

## Summary of Review

The Program Administrator (PA) submitted the following documents on 12/8/2014 for this Phase 1 review:

- Air Compressor Savings Calculator Methodology.pdf;
- IRCx 080 – [CUSTOMER NAME] PPA Report\_v5.docx; and
- IRCx-080 Checklist 120514apf3.xlsx.

The CPUC staff review has identified potential “show stopper issues” that must be addressed before further CPUC staff review of this project is performed:

The project documents state that the existing compressed air system is controlled by a Pneu-Logic system. The Pneu-Logic system is proposed to be replaced with a new control system. Replacing an existing control system with a new control system is a retrofit measure, not an RCx measure. The project appears to be a normal replacement, and the correct baseline is a properly function control system, not a poorly functioning control system. The PA did not provide the baseline air compressor raw measurement data, however CPUC staff note that graphs provided in the project documentation appear to indicate that there are periods of time when more than one air compressor is operating unloaded. Using the in situ, poorly operating control system constitutes a regressive baseline which is not allowed by CPUC policy. The PA must address the regressive baseline issue for this project.

Additionally, the age and condition of all compressed air system equipment must be provided along with a statement regarding the recent replacement or addition of air compressors or air dryers to the facility.

A cursory review of the proposed M&V plan indicates additional issues that will need to be addressed in a future review for this project. In general, simply measuring the power before and after a project is implemented is not an acceptable approach to determine savings impacts for compressed air projects. CPUC Staff have issued several dispositions addressing this issue in the past.

CPUC Staff view the repair of compressed air leaks as normal maintenance, a measure that is ineligible for Program participation. CPUC Staff expect that the PA will advise the customer that compressed air leak repair and a compressed air leak maintenance program are recommended standard practices.

A signed, countersigned and dated program application has not been provided. The PA technical review was not provided.

### **Review Conclusion**

The ex ante savings are not approved. CPUC staff will continue to review this project pending the PA's response to CPUC staff requirements listed below.

### **Summary of CPUC Staff Required Action by the PA**

For this project:

CPUC Staff require that the PA take the following action **due on 2/13/2015 (or 14 days from submittal date to PA):**

1. CPUC staff advise that replacing the air compressor sequencing controller that is not functioning properly is normal maintenance and replacement of like equipment in order to maintain the intended level of service is not energy efficiency. These are not retro-commissioning measures. Installation of like equipment under the non-regressive baseline rule has no system impact and results in zero gross savings. CPUC staff require that eligible technologies should be more efficient than standard practice and more efficient than existing equipment being removed. The PA must demonstrate that the proposed air compressor system controller is more efficient than standard practice and more efficient than the properly functioning existing compressor system controller being removed. If the PA is not able to provide this demonstration, then this measure should be removed from the project. This measure, if found eligible should be a retrofit measure, not an RCx measure. The measure type should be correctly classified and the proper baseline established.

2. Replacing timer drains with no loss drains appears to be a retrofit measure. Provide justification for including this measure in a retro-commissioning program.
3. Provide the raw measured data that were used for the analysis.
4. Describe what tuning compressor #4 to resolve problems with loaded operations entails. Provide justification of why this is not normal maintenance.
5. Provide live calculation spreadsheets.
6. Provide the age and condition of all compressed air system components including air compressors, air dryers, and the air compressor sequencing controller.
7. Provide statement from describing air compressor system component replacement or additions in the past 18 months.
8. The project measure and saving analysis must be revised to remove ineligible measures and to use the correct baselines for eligible measures.
9. A signed, countersigned and dated application must be provided.
10. The PA's technical review has not been provided. Provide the PA technical review for this project.
11. CPUC Staff view the repair of compressed air leaks as normal maintenance, a measure that is ineligible for Program participation. CPUC Staff expect that the PA will advise the customer that compressed air leak repair and a compressed air leak maintenance program are recommended standard practices.

***For all future projects (submitted after receipt of this review) Commission staff require that the PA:***

1. For all future projects, the PA should be diligent in following Commission guidance, seeking clarification where guidance is unclear, and not deviate from guidance without approval from Commission staff.

For this project, replacing the air compressor sequencing controller that is not functioning properly is normal maintenance and replacement of like equipment in order to maintain the intended level of service is not energy efficiency. These are not retro-commissioning measures. Installation of like equipment under the non-regressive baseline rule has no system impact and results in zero gross savings. CPUC staff require that eligible technologies should be more efficient than standard practice and more efficient than existing equipment being removed.

2. For all future projects, the PA should be diligent in assessing measure eligibility, determining the correct project type and establishing the proper baseline.

For this project it appears that the PA has incorrectly classified retrofit measures and maintenance measures as retro-commissioning. The incorrect classification of measures leads to improper baseline selection and ex ante savings estimates that are not in conformance with Commission policy requirements.

3. For future projects, the PA should carefully compile documents for submission to CPUC Staff to ensure that they are complete and concise.

For this project, the PA did not provide live calculation spreadsheets or raw data that were used for the analysis. A signed, countersigned, and dated application has not been provided. Measure EULs have not been provided. The PA technical review has not been provided. Incomplete submissions result in inefficient use of time for both the PA and CPUC Staff.

**Table 1-3 Energy Savings Summary, Project Costs & Incentive**

<b>Description</b>	<b>PA Ex Ante Claim</b>	<b>CPUC Staff Recommendations</b>
<b>First Year kWh Savings</b>	565,596	TBD
<b>First Year Peak kW Savings</b>	106.1	TBD
<b>First Year Therms Savings</b>	0	TBD
<b>kWh Savings (RUL Period)</b>	NA	TBD
<b>Peak kW Savings (RUL Period)</b>	NA	TBD
<b>Therms Impact (RUL Period)</b>	NA	TBD
<b>kWh Savings (RUL thru EUL Period)</b>	565,596	TBD
<b>Peak kW Savings (RUL thru EUL Period)</b>	106.1	TBD
<b>Therms Savings (RUL thru EUL Period)</b>	0	TBD
<b>Annual Non-PA Fuel Impact (RUL Period)</b>	NA	TBD
<b>Annual Non-PA Fuel Impact (RUL thru EUL Period)</b>	NA	TBD
<b>Project Costs for Baseline #1 (RUL or EUL)</b>	\$112,853	TBD
<b>Project Costs for Baseline #2 (EUL minus RUL period)</b>	NA	TBD
<b>Project Incentive Amount</b>	\$56,426.50	TBD