

Phase III FINAL Ex Ante Review Findings

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

IOU	PG&E
Application ID	Ecos-295
Application Date	Audit report dated 10/8/2012
Program ID	PGE2224
Program Name	Industrial Compressed Air
Program Year	2012
Itron Project ID	X217
IOU Ex Ante Savings Date	11/20/12
ED Measure Name	Compressed Air Retrofit
Project Description	Compressed air system modifications
Date of ED Review(s)	11/30/12, 10/21/2013, 11/7/2013
Primary Reviewer / Firm	Keith Rothenberg/Energy Metrics
Review Supervisor / Firm	Joseph Ball/Itron
ED Project Manager	████████████████████ ████████████████████
ED Policy Authorization (as needed)	
Type of Review (Desk, On-site, Full M&V, Tool)	On-Site
ED Recommendation	The following ED-adjusted ex ante savings values are approved: 33.6 kW peak demand reduction and 294,107 annual kWh savings for the RUL period; and 21.2 kW peak demand reduction and 185,518 annual kWh savings for the EUL-RUL period.

Measure Description

Install a new 200 HP, two stage, oil-free rotary screw, variable frequency drive (VFD) controlled air compressor, replace two heatless desiccant dryers with two heated purge desiccant dryers. The new VFD compressor operates as the plant's "trim" air compressor. Place an additional heatless desiccant dryer in standby to reduce purge losses.

Summary of Review

This document is ED's final review for the project. The Investor-Owned-Utility (IOU) submitted the following documents on 11/1/2013 for this Phase III review:

- Revised Final Project Report dated 10/30/2013

ED reviewed the post installation documents submitted on 9/18/2013 and noted that the IOU's analysis did not conform to the ED approved M&V plan for the project. ED contacted the IOU representatives and requested that the analysis be resubmitted. The IOU resubmitted the analysis on 10/14/2013. ED noted that the IOU's revised analysis still did not conform to the M&V plan.

ED performed its own analysis of the project impacts using compressor performance data provided by the IOU and power data that ED collected during the post project M&V period. The IOU did not provide analysis for the EUL-RUL period as was requested in the Phase 1 EAR dated 12/4/2012. ED concluded that there are no claimable savings for the VFD compressor in the EUL-RUL period since this measure appears to be required by the 2013 Title 24 Standards which become effective on 1/1/2014. In the previous submissions, the IOU did not provide the EUL or RUL for the project as was requested in the Phase 1 EAR dated 12/4/2012. The proposed incentive for the project and how it is derived was not clearly shown in the documentation. ED's analysis was summarized the Phase II review for the project.

The IOU submitted a revised final report for the project on 11/1/2013 that satisfactorily addresses these issues.

Review Conclusion

The ex ante savings are approved at the ED estimated values of 33.6 kW peak demand reduction and 294,107 annual kWh savings for the RUL period; and 21.2 kW peak demand reduction and 185,518 annual kWh savings for the EUL-RUL period.

Summary of ED Requested Action by the IOU

None

Table 1-2 Review Findings

Reviewed Parameter	Analysis
Project Baseline Type (Early Replacement, Normal Replacement, Capacity Expansion, New Construction, System Optimization, Add-on Measures, Major Renovation) Note: For early retirement projects only, include RUL through EUL baseline)	IOU Proposal: Early retirement
	ED Assessment: Accept
	ED Recommendation: None
Project Baseline Technology (in situ equipment, Title 24 (specify year), other code or other efficiency level (specify), industry standard practice - ISP)	IOU Proposal: In situ for the air dryers, AIRMaster+ minimum efficiency for the air compressors
	ED Assessment: Accept in situ for the RUL period.
	ED Recommendation: The VFD air compressor impacts for the EUL-RUL period are zero, since this measure appears to be required by the 2013 Title 24 code which becomes effective on 1/1/2014.
Project Cost Basis (Full Incremental, or Both. Note: For early retirement projects, include RUL through EUL cost basis treatment)	IOU Proposal: Full cost of both measures for the RUL period. Full cost of the air dryers only for the EUL-RUL period.
	ED Assessment: Accept
	ED Recommendation: None
RUL (required for early retirement projects only, otherwise N/A)	IOU Proposal: 5 years
	ED Assessment: Accept
	ED recommendation: None
EUL (for each measure)	IOU Proposal: 15 years
	ED Assessment: Accept
	ED recommendation: None
Savings Assumptions	IOU Proposal: Accepted ED proposed M&V plan based on measured data stipulated values.
	ED Assessment: Final IOU report correctly shows ED calculated project impacts.
	ED Recommendation: None.
Calculation Methods/Tool review	IOU Proposal: Spreadsheet analysis using ED calculated values.
	ED Assessment: Final IOU report correctly shows ED calculation

Reviewed Parameter	Analysis
	methodology.
	ED Recommendation: None
Pre- or Post-Installation M&V Plan	IOU Proposal: Pre installation monitoring data provided by the IOU including 7 days of air compressor amperage monitoring and system pressure data. 14 days+ post installation monitoring data of air compressor amperage monitoring and system pressure.
	ED Assessment: The M&V plan was proposed by ED and accepted by the IOU following the Phase 1 EAR in December 2012.
	ED Recommendation: None
Net-to-Gross Review	IOU Proposal: Not addressed
	ED Assessment: TBD
	ED Recommendation: TBD

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

Description	IOU Ex Ante Claim	ED Recommendations
First Year kWh Savings	294,107	Accept
First Year Peak kW Savings	33.6	Accept
First Year Therms Savings	0	Accept
kWh Savings (RUL Period)	294,107	Accept
Peak kW Savings (RUL Period)	33.6	Accept
Therms Impact (RUL Period)	0	Accept
kWh Savings (RUL thru EUL Period)	185,518	Accept
Peak kW Savings (RUL thru EUL Period)	21.2	Accept
Therms Savings (RUL thru EUL Period)	0	Accept
Annual Non-IOU Fuel Impact (RUL Period)	NA	NA
Annual Non-IOU Fuel Impact (RUL thru EUL Period)	NA	NA
Project Costs for Baseline #1 (RUL or EUL)	\$180,999.52	Accept
Project Costs for Baseline #2 (EUL	\$57,748	Accept

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Description	IOU Ex Ante Claim	ED Recommendations
minus RUL period)		
Project Incentive Amount	\$29,830	Accept