

Final Phase III Ex Ante Review Findings

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

IOU	PG&E
Application ID	1106-06
Application Date	11/14/2012
Program ID	PGE2223
Program Name	Heavy Industry Energy Efficiency Program
Program Year	2012
CPUC Review Project ID	X240
IOU Ex Ante Savings Date	9/8/2013
CPUC Staff Measure Name	Bio-Filter Bypass
Project Description	Install a new bio-filter bypass and controls
Date of CPUC Staff Review(s)	1/17/2013 & 03/31/2013 & 12/23/2013
Primary Reviewer and Firm	Kunal Desai/Itron
Review Supervisor and Firm	Joseph Ball/Itron
Type of Review (Desk, On-site, Full M&V, Tool)	Desk Review
CPUC Staff Recommendation	Staff approves final savings of 146.56 kW and 1,105,988 kWh/yr. Staff noticed that the motor name plate data were not provided as photographic evidence to verify the motor make and its performance parameters. Since the removed motors are essentially the measure, specifications of the motors removed should be maintained in the

	project file as cut sheets or name plate photos. Considering the urgency in claiming savings from this project, staff is not holding up this disposition pending the submission of motor name plate evidence. The motor voltage or power factor were not spot-metered nor was the true power measured. Going forward, staff recommends that PG&E take true power measurements for large savers such as this project.
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Measure Description

The facility is changing its resin which was UREA-based and proposing to use a benzene-based resin. The proposed resin will not have any emission problems that were associated with the UREA resin. The result of using this new resin is that the plant will be able to bypass the bio filter that was installed in 2008.

Summary of Review

Staff reviewed the following IOU provided documentation for Phase III review: Bio filter Bypass Energy analysis calculations, PIIP report, pre and post production records, project cost summary, project invoices, facility electrical usage, and bio-filter bypass power usage excel sheet.

IOU confirmed that the bio filter bypass has been decommissioned. Once the facility received the permit to eliminate the bio-filter from Amador Air Quality Board on October 28th, 2013, the participant immediately decommissioned the bio-filter. A new duct has been installed that bypasses the bio-filter. In addition, new bags were installed in the bag house to insure that any particles formerly removed in the bio-filter were removed. Two weeks of pre-installation monitoring was performed per staff direction and the amperage measurements that were logged were used for final calculations.

IOU claimed that the bio-filter bypass works for 24 hours a day and 7 days a week in the post installation PIIP report. However, this claim was not supported by the SCADA and logged data. The data showed zeros or no power draw at regular intervals in all SCADA and logged data sets. This shows that the system was operating on demand and not 24/7. Staff consultants calculated annualized operating hours as 5,982 from the monitored data.

IOU calculated the peak demand without filtering for periods when the motors were not operating. This oversight was corrected by staff consultants and savings were recalculated using

a previous version of the savings calculations spreadsheet PG&E provided. A review of the 2013 SCADA system data showed that the system is not always operating during CPUC-defined peak demand periods. Peak demand calculations were adjusted to account for the discontinuous operation. Staff revised the calculations with all the above mentioned factors and recalculated the peak demand and energy savings for the project which resulted in increased the energy savings claim as compared to those claimed in the PA review.

The demand reduction per the CPUC definition and electrical savings for this project are 146.56 KW and 1,105,988 kWh, which were calculated using average power draw of 188 KW from the monitored data and extrapolated annual operating hours of 5,982. The calculated incentive for this project is \$47,937, capped at 50% of the project cost. Invoices were provided for staff review. The project cost to implement the bypass for the Bio Filter was \$95,873. The breakdown for equipment and labor cost is \$21,855 & \$74,018 respectively.

Review Conclusion

Staff approves final annual energy savings of 1,105,988 kWh and peak demand reduction of 146.56 kW. Staff noticed that the motor name plate data were not provided as photographic evidence to verify the motor make and its performance parameters. Since the removed motors are essentially the measure, specifications of the motors removed should be maintained in the project file as cut sheets or name plate photos. Considering the urgency in claiming savings from this project, staff is not holding up this disposition pending the submission of motor name plate evidence. The motor voltage or power factor were not spot-metered nor was true power measured. Going forward, staff recommends that PG&E take true power measurements for large savers such as this project. Staff also recommends that PG&E ensure that the final set of documents submitted after completion of projects include revised calculation spreadsheet and evidence of the installed and removed equipment.

Table 1-2 Review Findings

Reviewed Parameter	Analysis
<p>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)</p>	IOU Proposal: System Optimization
	CPUC Staff Assessment: System Optimization
	CPUC Staff Recommendation: None
<p>Project Baseline Technology (in situ equipment, Title 24 (specify year), other code or other efficiency level (specify), industry standard practice - ISP)</p>	IOU Proposal: In situ
	CPUC Staff Assessment: In situ
	CPUC Staff Recommendation: None
<p>Project Cost Basis (Full Incremental, or Both. Note: For early retirement projects, include RUL through EUL cost basis treatment)</p>	IOU Proposal: Full cost
	CPUC Staff Assessment: Full cost
	CPUC Staff Recommendation: None
<p>RUL (required for early retirement projects only, otherwise N/A)</p>	IOU Proposal: N/A
	CPUC Staff Assessment: N/A
	CPUC Staff Recommendation: N/A
<p>EUL (for each measure)</p>	IOU Proposal: Not provided
	CPUC Staff Assessment: 15 years for new bypass controls
	CPUC Staff Recommendation: 15 years
<p>Savings Assumptions</p>	IOU Proposal: Plant operates 8760 hours per year
	CPUC Staff Assessment: IOU made an incorrect assumption for plant operation. The logged and SCADA data recorded no power draw on multiple occasions. This shows that the biofilter was operating with demand based operation than continuous operation. DEER peak demand was also calculated incorrectly.

Reviewed Parameter	Analysis
	CPUC Staff Recommendation: Logged and SCADA data should be used to calculate DEER peak demand. True power factor and voltage measurements should be made and not estimated.
Calculation Methods/Tool review	IOU Proposal: A live final energy-savings spreadsheet was not provided for ED review
	CPUC Staff Assessment: The spreadsheet did not consider the peak demand reduction appropriately per the CPUC definition.
	CPUC Staff Recommendation: CPUC-defined peak periods should be used for the peak coincident demand claim.
Pre- or Post-Installation M&V Plan	IOU Proposal: Not provided
	CPUC Staff Assessment: Staff recommended M&V plan for this project.
	CPUC Staff Recommendation: IOU did follow staff recommendation and conducted two weeks of M&V for the baseline. Power factor and voltage measurements should be taken or power draw should be measured on all three phases during the monitored period. Evidence of the removed measure should be maintained in the project file, for example, pictures of the motor nameplate data or motor cut sheets.
Net-to-Gross Review	IOU Proposal: Not provided
	CPUC Staff Assessment: No assessment
	CPUC Staff Recommendation: None

Table 1-2: Detailed Review Findings

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

Description	IOU Ex Ante Claim	CPUC Staff Recommendations
First Year kWh Savings	1,103,381	1,105,988
First Year Peak kW Savings	125.96	146.56
First Year Therms Savings	N/A	N/A
kWh Savings (RUL Period)	N/A	N/A
Peak kW Savings (RUL Period)	N/A	N/A
Therms Impact (RUL Period)	N/A	N/A
kWh Savings (RUL thru EUL Period)	1,103,381	1,105,988
Peak kWh Savings (RUL thru EUL Period)	125.96	146.56
Therms Savings (RUL thru EUL Period)	N/A	N/A
Annual Non-IOU Fuel Impact (RUL Period)	N/A	N/A
Annual Non-IOU Fuel Impact (RUL thru EUL Period)	N/A	N/A
Project Costs for Baseline #1 (RUL or EUL)	\$95,873	\$95,873
Project Costs for Baseline #2 (EUL minus RUL period)	N/A	N/A

Description	IOU Ex Ante Claim	CPUC Staff Recommendations
Project Incentive Amount	\$47,937	\$47,937