

Ex Ante Review Findings

Table 1-1: Project Information

IOU	PGE
Application ID	1466-06
Application Date	11/14/2012
Program ID	PGE2223
Program Name	Heavy Industry Energy Efficiency Program
Program Year	2012
Itron Project ID	X248
IOU Ex Ante Savings Date	Pending
ED Measure Name	Rapid Close Doors
Project Description	In this project, three manually operated freezer warehouse doors are to be retrofitted with automatic rapid close doors.
Date of ED Review(s)	01/04/2013
Primary Reviewer and Firm	Doug Maddox, James J. Hirsch & Associates
Review Supervisor and Firm	Nikhil Gandhi/ Strategic Energy Technologies, Inc.
Type of Review (Desk, On-site, Full M&V, Tool)	Desk Review
ED Recommendation	Not approved

Measure Description

The measure involves the replacement of three manually operated exterior freezer doors with automatic rapid close doors. The freezers are operated at -10°F, and the doors range in size from 7 ft by 9 ft to 10 ft by 10 ft. The doorways have no secondary protective devices such as curtains to reduce infiltration when the doors are open.

Summary of Review

The following documents submitted by the Investor Owned Utility (IOU) were used in this review:

- 1466-06 XXXX Arvin Speed Doors PCIP Rev1_12.14.12.doc – Complete report describing measure, related building data, analysis and results.

Energy savings were predicted using the Customized Calculation Tool 2011. Key inputs to this tool include door sizes, freezer temperature, type of secondary protective device, and operation scenarios for the existing and new doors. Outputs include annual kWh, peak kW and annual dollar savings. The tool appears to have been used correctly for the analysis.

Certain key issues regarding the use of the doors that have not been adequately described in the report are:

1. The report mentions that there are currently no secondary doorway protective devices (such as strip curtains) to reduce infiltration when the doors are open. Have these doorways ever had strip curtains? If so, why were they removed?
2. No mention is made of the electrical consumption of the automatic doors. The Customized Calculation Tool does not appear to account for this additional energy usage.
3. Since this project appears to have been proposed as early replacement, the remaining useful life (RUL) of the existing doors must be considered. It must be determined whether a different baseline is needed for the period after the RUL, and whether early replacement a valid claim.
4. The report indicates that the doors are all located at the loading dock. This implies that there are truck trailers backed up to the doorways at times, which would tend to reduce the infiltration compared with the assumption of a wide open doorway. If this is the case, some effort must be made to estimate the fraction of time trailers are docked, and the portion of the doorway that is blocked by a trailer.

5. The basis of the estimates of open/close times for the automatic doors is not explained. If there are periods where trucks are docked at the doors, then these likely need to be lengthened.
6. The report describes post-retrofit M&V activities, which include monitoring the number of passes per hour for each door and the average open time for each door. No explanation is given of how these measurements will be made, or over what time period.

Review Conclusion

Additional information is required before this project can be approved.

Summary of ED Requested Action by the IOU

ED would like to contact the building owner to clarify the points below. IOU should provide owner contact information.

ED requests and recommends the following changes to the analysis:

1. Account for electrical consumption of the automatic doors.
2. If docking operation is significant, then a separate analysis must be conducted for docking operation in which the doorway area is reduced to represent the leakage area between the back of the docked trailer and the doorway.
3. Conduct RUL/EUL analysis and present estimates.
4. Provide explanation of the source of the open/close times for the automatic doors. Explain the mechanism that triggers opening and closing (e.g., hand-held controller or motion sensor).
5. Provide additional detail describing the methods that will be used to measure door operation post-installation. The monitoring period for post-installation M&V should be at least one week.
6. Submittal of post-installation M&V results and modified energy savings, where appropriate.

Table 1-2: Project Overview

Description	IOU Proposed Ex Ante Data	ED Recommendations
Project Baseline Type (Early Replacement, Normal Replacement, Capacity Expansion, New Construction, System Optimization, Add-on Measures)	Early Replacement	TBD
Project Cost Basis (Full Cost, Incremental Cost)	\$64,220	Provide invoices upon completion. Incremental cost would apply if the project is not determined as early replacement.
RUL (Early retirement projects only, otherwise N/A (not applicable))	N/A	Provide RUL for ER claim
EUL	Not provided	8 years
First Year kWh Savings	1,303,682	TBD
First Year Peak kW Savings	180	TBD
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 (EUL thru RUL Period)	N/A	N/A
Peak kW Savings (EUL thru RUL Period)	N/A	N/A
Therms Savings (EUL thru RUL Period)	N/A	N/A
Annual Non-IOU Fuel Impact (RUL Period)	N/A	N/A
Annual Non-IOU Fuel Impact (EUL thru RUL Period)	N/A	N/A
Net-to-Gross Ratio	Not provided	NTG interview may be conducted

Table 1-3: Detailed Review Findings

Reviewed Parameter	Analysis
Project Gross Savings Baseline (for early retirement projects only, include RUL through EUL baseline)	IOU Proposal: Baseline of 15 minutes per hour is proposed as a conservative assumption based on testimony of building manager and limited observation during energy audit. Expectation is that doors are open “most of the time”. With 17 door openings per hour, this corresponds to 25 seconds per opening.
	ED Assessment: Need to evaluate whether strip curtains should be included in the baseline. Also, need to address whether trailers are docked at the doors and include these effects, if appropriate.
	ED Recommendation: Not accepted
Project Cost Basis (for early retirement projects only, include RUL through EUL cost basis treatment)	IOU Proposal: \$64,220
	ED Assessment: Appears reasonable as full cost estimate. Incremental cost will apply if the measure is determined as ROB.
	ED recommendation: Provide invoices upon completion.
RUL (required for early retirement projects only, otherwise n/a)	IOU Proposal: Not provided
	ED Assessment: May be applicable.
	ED recommendation: Assess RUL
EUL	IOU Proposal: None provided
	ED Assessment: 8 years
	ED Recommendation: Use 2008 published DEER EUL value.
Savings Assumptions	IOU Proposal: Measure assumes 6 seconds per opening for large door and 5.5 seconds per opening for smaller doors.
	ED Assessment: Need explanation of these assumptions
	ED Recommendation: Not accepted.
Calculation Methods/Tool review	IOU Proposal: Input and output from Customized Calculation Tools were submitted
	ED Assessment: Values appear to be entered accurately into the tool. May need second analysis to account for docked trucks.
	ED Recommendation: TBD
Pre- or Post-Installation M&V Plan	IOU Proposal: Monitor door openings per hour and average open time for each door post retrofit.
	ED Assessment: Monitoring period should be at least one week. Monitoring method and instrumentation should be described.
	ED Recommendation: Submit M&V plan.
Net-to-Gross Review	IOU Proposal: Note stated
	ED Assessment: None

Ex Ante Review Findings

Reviewed Parameter	Analysis
	ED Recommendation: NTG interview may be conducted.