Phase I Ex Ante Review Findings

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

IOU	PGE
Application ID	IRCx-044
Application Date	11/6/2012
Program ID	PGE2228
Program Name	Industrial Retrocommissioning Program
Program Year	2012
Itron Project ID	X257
IOU Ex Ante Savings Date	TBD
ED Measure Name	Steam Header Pipe Insulation Replacement
Project Description	Replace asbestos and fiber glass insulation on 975 feet of 800# steam header and 975 feet of 150# steam header with new 30mm and 20mm Pyrogel XT insulation
Date of ED Review(s)	12/20/2012 & 02/06/2013
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
ED Recommendation	The project is conditionally approved pending post-implementation M&V data collection and savings true-up

Measure Description

This energy savings project involves replacing the existing asbestos and fiber glass insulation on 975 feet of 800# steam header and 975 feet of 150# steam header with 30mm (1.18") and 20mm(0.79") Pyrogel XT insulation respectively. By installing the new insulation significant thermal energy is saved due to reduced heat loss through the pipe surface.

Summary of Review

ED reviewed the following IOU provided documentation: Energy Efficiency OIR DR_ED_307 EEGA 2548 word document, Live fully function energy savings calculation spreadsheet Project Implementation agreement and data response 2548 document.

The measure is to remove and replace the existing asbestos and fiber glass insulation on 975 feet of 800# steam header and 975 feet of 150# steam header with 30mm (1.18") and 20mm (0.79") Pyrogel XT insulation respectively. The existing insulation is 4" of asbestos cement sheets with 2" of fiber glass. The project implementation plan describes the existing insulation to be aged and in bad shape. Surface runoff has washed silt up against the header and jacketing is damaged or missing over the headers. ED considers project baseline to be replace on burn out or normal replacement based on the above explanation derived from project application. PG&E's data response clarified that the facility used Calcium Silicate for insulation due to availability and lower cost and Pyrogel exceeds the baseline practice at this facility. ED reviewed the M&V plan submitted by PG&E. ED recommends that M&V plan be revised to include verification of pipe size, pipe length, process temperature and annual running hours. Boiler test for the current year should also be collected as a part of post M&V verification to verify boiler efficiency.

Preliminary estimates of gas savings are 24,817 therms / yr. The total project cost is anticipated to be $272,000, however, for normal replacement baseline; incremental costs will be the project cost basis. ED requests PG&E to provide incremental cost. The estimated incentive for this project is $24,817.

Review Conclusion

The project is conditionally approved subject to post-implementation M&V data collection and savings true-up.

Summary of ED Requested Action by the IOU

ED requests that PG&E submit the following documentation upon completion of the post-implementation M&V data collection and determination of the trued-up savings estimates:

1. A breakdown of project and measure costs, including equipment and labor, supported with contractor invoices.

2. Revise the post installation M&V plan to include verification of pipe size, pipe length, process temperature and annual running hours. Boiler test should also be collected as a part of post M&V verification.

3. Calculate and submit incremental cost for the project. Provide incremental cost prior to project installation.

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 implied; in situ condition is claimed as baseline, even though the equipment is aged, deteriorated and beyond its effective useful life.	Normal Replacement; ISP or code baseline; the in situ condition is not appropriate baseline
Project Cost Basis (Full Cost, Incremental Cost)	Total cost – 272,000	Incremental costs apply for normal replacement
RUL (Early retirement projects only, otherwise N/A (not applicable))	0	0
EUL	Not provided	11 years based on DEER 2008 database
First Year kWh Savings	N/A	N/A
First Year Peak kW Savings	N/A	N/A
First Year Therms Savings	24,817	TBD
kWh Savings (RUL Period)	N/A	N/A
Peak kW Savings (RUL Period)	N/A	N/A
Therms Impact (RUL Period)	0	0
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)	24,817	TBD
Annual Non-IOU Fuel Impact (RUL	N/A	N/A

Description	IOU Proposed Ex Ante Data	ED Recommendations
Period)		
Annual Non-IOU Fuel Impact (EUL thru RUL Period)	N/A	N/A
Net-to-Gross Ratio	Not provided	No NTG interview needed

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: Early Replacement
	ED Assessment: Normal Replacement applicable
	ED Recommendation: None
Project Cost Basis (for early retirement projects only, include RUL through EUL cost basis treatment)	IOU Proposal: Full cost provided
	ED Assessment: Incremental cost required
	ED recommendation: Incremental cost required for normal replacement projects
RUL (required for early retirement projects only, otherwise n/a)	IOU Proposal: N/A
	ED Assessment: N/A
	ED recommendation: N/A
EUL	IOU Proposal: Not Provided
	ED Assessment: 11 years based on DEER 2008 database
	ED Recommendation: 11 years
Savings Assumptions	IOU Proposal: Listed in live fully functioning calculation spreadsheets.
	ED Assessment: Post installation surface temperature, Boiler efficiency, annual running hours, pipe size needs to be verified in the post installation phase
	ED Recommendation: TBD during post installation M&V
Calculation Methods/Tool review	IOU Proposal: Energy savings calculation spreadsheet based on NAIMA 3Eplus calculator.
	ED Assessment: Method is appropriate.
	ED Recommendation: None
Pre- or Post-Installation M&V Plan	IOU Proposal: M&V plan submitted for ED review
	ED Assessment: M&V plan does not include verification of pipe size, pipe length, process temperature and annual running hours
	ED Recommendation: Revise the post installation M&V plan to include verification of pipe size, pipe length, process temperature and annual running hours. Boiler test should also be collected as a part of post M&V verification

Reviewed Parameter	Analysis
Net-to-Gross Review	IOU Proposal: Not provided
	ED Assessment: NTG interview will not be conducted
	ED Recommendation: NTG interview is not recommended