

Phase II Ex Ante Review Findings

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

IOU	PGE
Application ID	2K12078269
Application Date	11/23/11
Program ID	PGE21011
Program Name	Customized Retrofit - Demand Response
Program Year	2012
Itron Project ID	X062
IOU Ex Ante Savings Date	1/11/12
ED Measure Name	UPS Retrofit
Project Description	Replacement of the existing 4,000 kVA UPS module with a 4,400 kVA UPS module
Date of ED Review(s)	Phase I: 3/19/12 Phase II: 9/5/12
Primary Reviewer and Firm	Phani Pagadala/Itron
Review Supervisor and Firm	Joseph Ball/Itron
Type of Review (Desk, On-site, Full M&V, Tool)	Desk Review
ED Recommendation	Conditional approval of ex ante savings subject to post-installation savings true up

Measure Description

The project scope, as originally submitted, has changed from installing a new 2500 kVA UPS module in an existing UPS room to the replacement of an existing UPS module with a kVA UPS module. This scope revision happened after the ED review of the original project submission.

The savings estimation methods and the project baselines were revised based on a Project Application (PA) review inspection which occurred on 3/20/2012. The actual PA review was completed by an IOU consultant on 7/20/2012 and the ED received all pertinent project documentation on 9/4/2012.

Per the revised scope, the existing UPS 1 module rated at 4,000 kVA (4 x 1,000 kVA) will be replaced with a higher rated 4,400 kVA system (4 x 1,110 kVA). The savings claim as result of this UPS retrofit is 104,354 kWh 11.9 kW of peak demand reduction. The incentive amount is estimated to be \$10,583.

Summary of Review

Included within the application packet that was received and reviewed during this Phase II review were the following: PA review form (PDF and Excel), savings calculation spreadsheet, existing and proposed system specifications and efficiencies.

Gross Impact Calculations:

Spot power readings and actual operating characteristics of the baseline UPS system were collected during the PA inspection. All assumptions about the anticipated post-retrofit operation were sufficiently explained. The IOU calculations did not account for any maintenance downtimes. ED recommends the use of actual operating data after the measure installation, as per the IOU plan, in order to improve the accuracy of the savings estimate. Savings due to HVAC interactive effects, if applicable, will also need to be calculated.

NTG Summary:

A NTG interview was completed with the participant on 5/16/2012. The calculated net to gross ratio for this project was 0.17. This project has very low program influence, and is being done to replace failing equipment and improve reliability. The customer gave the probability of installing the same equipment absent the program a 10 out of 10, i.e., absolute certainty they would have done the project outside of the program.

Conclusion: High free ridership

Review Conclusion

ED conditionally approves the savings for the proposed project and requests an opportunity to review the savings estimates after the installation work is completed. The IOU plans to collect actual operating amperages for duration of at least month after the system has been fully commissioned.

Summary of ED Requested Action by the IOU

ED requests that the IOU submit the following documentation by **9/21/12**:

1. Provide the RUL of the existing UPS modules to substantiate early replacement claim, if applicable.
2. Provide savings due to HVAC interactive effects, if applicable.

Additionally, ED requests that the IOU submit the following once the measure installation and the post-installation data collection efforts are completed:

1. Revised savings calculations after post-install IOU true-up

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)	Capacity Expansion implied – Early Replacement may apply.	Early Replacement may apply based on RUL of the existing system.
Project Cost Basis (Full Cost, Incremental Cost)	Full Cost of \$3,387,054	Full cost acceptable. Incremental costs may apply if early retirement is claimed
RUL (Early retirement projects only, otherwise N/A (not applicable))	N/A	TBD; ED requests the IOU to provide the existing equipment RUL
EUL	UPS unit EUL not provided – however, a 15 year battery replacement cycle was provided in the UPS comparison report from the original documentation	The IOU provided a manufacturer supplied battery replacement cycle of 15 years, which is an acceptable EUL for the unit
First Year kWh Savings	104,354	TBD; pending post-installation true-up
First Year Peak kW Savings	11.9 kW;	TBD; pending post-

Description	IOU Proposed Ex Ante Data	ED Recommendations
		installation true-up
First Year Therms Savings	NA	TBD; Interactive HVAC savings may be applicable
kWh Savings (RUL Period)	NA	TBD; ED requests the IOU to provide the existing equipment RUL
Peak kW Savings (RUL Period)	NA	TBD; ED requests the IOU to provide the existing equipment RUL
Therms Impact (RUL Period)	NA	TBD; Interactive HVAC savings maybe applicable
kWh Savings (EUL thru RUL Period)	NA	NA
Peak kW Savings (EUL thru RUL Period)	NA	NA
Therms Savings (EUL thru RUL Period)	NA	NA
Annual Non-IOU Fuel Impact (RUL Period)	NA	NA
Annual Non-IOU Fuel Impact (EUL thru RUL Period)	NA	NA
Net-to-Gross Ratio	Not provided	0.17 – High free ridership

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: Capacity Expansion – Replacement of existing (in situ) UPS modules.
	ED Assessment: Early Replacement may apply.
	ED Recommendation: Early Replacement may apply based on RUL of the existing system. ED requests the IOU to provide the existing equipment RUL
Project Cost Basis (for early retirement projects only, include RUL through EUL cost basis treatment)	IOU Proposal: Total cost, with cost breakdown provided in the PA review
	ED Assessment: The cost breakdown provided is acceptable
	ED recommendation: The total cost data provided is sufficient unless RUL early replacement claim is determined, then incremental costs would also apply for the after RUL period.
RUL (required for early retirement projects only, otherwise n/a)	IOU Proposal: None provided
	ED Assessment: Early replacement may apply
	ED Recommendation: ED requests the IOU to provide the existing equipment RUL.
EUL	IOU Proposal: UPS unit EUL not provided – however, a 15 year battery replacement cycle was provided in the UPS comparison report from previous IOU submissions for the same project.
	ED Assessment: The IOU provided, manufacturer supplied battery replacement cycle of 15 years is acceptable as the EUL of the unit
	ED Recommendation: The IOU provided value of 15 years for battery replacement is acceptable
Savings Assumptions	IOU Proposal: The IOU reported operating hours do not account for any maintenance time
	ED Assessment: As per the UPS comparison report provided within the original submission, every UPS unit is down for at least 60 hours each year for maintenance.
	ED Recommendation: ED recommends that the IOU use the actual UPS operating data with any

Reviewed Parameter	Analysis
	adjustments for equipment downtime.
Calculation Methods/Tool review	IOU Proposal: Spreadsheet based calculations
	ED Assessment: Calculation methodology used is acceptable.
	ED Recommendation: ED recommends the use of post-installation operating data, as the IOU plans, with the inclusion of equipment downtime, to estimate the project savings.
Pre- or Post-Installation M&V Plan	IOU Proposal: The IOU does not intend to collect actual operating amperages for duration of at least month after the system has been fully commissioned
	ED Assessment: The IOU post-installation activities are acceptable. However, ED recommends that the IOU adjust the runtime to account for equipment downtime.
	ED Recommendation: The ED does not find merit in recommending full M&V; however, use of site level information on UPS operating data and run time adjustments may be sufficient for any revision of savings.
Net-to-Gross Review	IOU Proposal: None
	ED Assessment: An NTG interview was conducted on 5/16/2012.
	ED Recommendation: NTGR: 0.17 - This project has very low program influence, and is being done to replace failing equipment and improve reliability.