CPUC Staff Ex Ante Review

CPUC Staff Project ID Number	PGE_23_T_I_895_PRJ - 04547876_CompAir
CMPA Directory Link	https://deeresources.info/cmpa/projects/21015
PA	PGE
PA Application ID	PRJ - 04547876
PA Application Executed Date	
PA Program ID	PGE_Ind_002
PA Program Name	CLEAResult - Business Energy Performance Ind - Customized Retrofit
PA Program Year	
Date of CPUC Staff Review:	10/24/2023
PA CMPA Upload Dates Included in this review:	
First PA Upload	8/24/2023
Second PA Upload	9/26/2023
Third PA Upload	N/A
Fourth PA Upload	
Fifth PA Upload	
Sixth PA Upload	
Seventh PA Upload	
Eighth PA Upload	
PA Measure Description(s):	
Measure 1	missing
Measure 2	
Measure 3	
Measure 4	
Measure 5	
Measure 6	
Measure 7	
Measure 8	
Measure 9	
Measure 10	
PA Project Description:	CMPA Project Description Phasing previously approved project that replace a total of [redacted] Diaphragm Pulse valves and solenoids with top-of-the-line MAC valves to mitigate the loss of compressed air and lower the compressor system energy usage where phase 1 consists of installing [redacted] valves in 2023 and phase 2 consists of installing [redacted] valves in 2024
Bi-Monthly Upload kW Demand Reduction	161.2
Bi-Monthly Upload Annual kWh Impacts	1,189,897.0
Bi-Monthly Upload Therm Impacts	0.0
PA Proposed Incentive $ (to Customer)	$150,235.10
Project Documentation kW Demand Reduction	161.2
Project Documentation Annual kWh Impacts	1,189,897.2
Project Documentation Annual Therm Impacts	0.0
Project Documentation Incentive $ (to Customer)	$150,235.09
CPUC Staff Primary Reviewer Name	[redacted]
CPUC Staff Primary Reviewer Firm	Quantum Energy Analytics
CPUC Staff Review Supervisor Name	[redacted]
CPUC Staff Review Supervisor Firm	Quantum Energy Analytics
PA Primary Reviewer Name	[redacted]
PA Primary Reviewer Firm	
CPUC Staff Project Manager	[redacted]
CPUC Staff Policy Authorization (as needed)	
CPUC Staff Recommendation:	**Application ready to proceed with exception(s), as noted**
For rejection, action required:	N/A
M&V Review:	Post M&V Review (M&V Results and Final Calculations) Required

Action Number:	**Summary of CPUC Staff Required Action by the PA:**	**Action Category**	**PA Response**	**ED Resolution**

1	This review pertains to the second phase of the previously reviewed project (CPR 724). We are providing details of the project scope change here, as this was not clearly laid out in the project files. **Please correct the quarterly submissions for project 724 and 895 based on the revised scope, ensuring that each project package has the correct associated calculations and project feasibility reports.** This facility consists of [redacted] baghouses with a total of [redacted] diaphragm pulse valves, each of which is equipped with an attached solenoid. Currently, valves operation for this cleaning process is controlled by a timer board at each baghouse. Each baghouse's timing board is connected to groups of [redacted] solenoids. The current design has the diaphragm pulse valves running continuously on a timer, regardless of whether cleaning is actually needed. The current design of the pulse valves also involves a small amount of blow-by of compressed air. The project proposes to replace the existing diaphragm pulse valves and solenoids with MAC valves of the corresponding size. MAC valves can help reduce energy consumption by providing precise control over the opening and closing of the valves. This means that the valves will only operate when needed, potentially reducing air waste for the cleaning process including the compressor blow-by. The customer initially implemented this measure at a facility located outside of California and originally had plans to undertake a partial replacement of the existing diaphragm pulse valves with MAC valves at the facility under consideration for this project. From the project files, it appears that program's influence led the customer to expand the scope of replacement, encompassing all of the [redacted] operational pulse valves (thus increasing the original scope from [redacted] valves). Our review of the CPR application for this project, CPR 724, took place in February 2022. Subsequently, the customer decided to implement the project in two phases, with the installation of 255 valves scheduled for 2023 and the remaining valves in 2024. PG&E proposed to utilize CPR 724 for phase 1 in 2023, while this application, CPR 895, encompasses the review of the project focusing on the replacement of the remaining valves scheduled for phase 2 in 2024.	Other 1		
2	This project is a Normal Replacement project, and the PA assumed that the baseline comprises the existing diaphragm pulse valves. The PA conducted interviews with three vendors to gain insights into how frequently MAC valves are recommended compared to diaphragm pulse valves. However, there are other viable options available in the market that could potentially result in more efficient operation of diaphragm pulse valves with solenoids. For instance, these valves can incorporate pressure differential sensing for on-demand control systems by utilizing pressure sensors or differential pressure gauges across the filter media. These sensors continuously monitor the pressure drop across the filter bags or cartridges and trigger cleaning cycles only when necessary. This alternative was not considered in the evaluation of the feasible valve options. We acknowledge that this was not part of the previous review (724 disposition) but emphasis that this type of research shall include all options that would be feasible to implement.	Baseline		
3	According to the provided information, it appears that the assumed EUL of 10 years for the MAC valves may be higher than necessary, especially considering the replacement intervals of existing valves (2-4 years) and the typical lifespan of MAC valves in the harsh outdoor environment of mining/mineral plants as stated by Vendor #3. To address this issue, we recommend the PA to conduct research to determine the more accurate EUL for MAC valves based on their performance in similar industrial settings. This research may involve reviewing manufacturer specifications, consulting with MAC valve vendors, and considering the specific operating conditions and maintenance practices at the mining/mineral plants where these valves will be used.	EUL/RUL		
4	Considering that the M&V plan aims to estimate baseline consumption for a Normal Replacement project based on the existing operation, it is important for the PA to ensure that all existing valves are in operational condition and able to meet the level of service during the baseline measurements. For instance, if diaphragm pulse valves fail in the open position, they continuously release compressed air into the system, even when filter cleaning is unnecessary. This constant air consumption can result in significantly elevated energy usage because the air compressors are forced to operate harder to maintain the required pressure. It is worth noting that the customer's baseline data, along with input from the MAC valve representative, were used in identifying malfunctioning valves that failed to pulse as expected. This underscores the need to ensure that baseline measurements accurately represent the operational state of the equipment meeting service level requirements.	Baseline		

Note or Instruction Number:	CPUC Staff Notes or Instructions:	Instruction Category	PA Response	ED Resolution
1	Project savings are estimated based on rough estimates that can change savings significantly after verification. One of these assumptions is the PA using a 20% reduction in pulsation time compared to 40%-50% expectation from other projects with similar measures. In response to our SDR asking about this assumption, the PA provided an article showing the same customer's out-of-state pilot program for the similar measure. According to the article, savings can go up to 40%. Although, PA's assumption of 20% savings may appear conservative on the surface, it impacts program influence. Using PA's estimated savings, the project pays back in 2.4 years without incentives. The customer indicated that they have a simple payback requirement of 3 years but prioritize projects with simple paybacks less than 2 years. Using higher % savings assumptions could easily bring the project payback below 2 years. Note that the customer has already installed this measure at other facilities, brought this measure to the PA/project developer, and performed the engineering analysis and data collection to measure the flow reduction as a result of this measure	Program influence		

CPUC Staff Recommendation Definitions	
CPUC Staff Recommendation	**Definition**
Application ready to proceed without exception	The PA will continue to upload application documents to the CMPA directory through the implementation and claims phases of the project. The PA may proceed to approve the project without waiting for CPUC Staff response. A project is waived from further review at the post-installation stage by CPUC staff, but the PA is responsible for post-installation (IR) review. There will not be conditional approval.
Application ready to proceed with exception(s), as noted	The PA must make revisions or changes as noted in CPUC Staff's review comments before signed agreement with customer. The PA will continue to upload application documents to the CMPA directory through the implementation and claims phases of the project. The PA may proceed to approve the project without waiting for CPUC Staff response. If CPUC Staff decides to perform IR review of a project, CPUC Staff will notify the PA. The scope will be limited to determine if the project was carried out consistent with the application and notes provided during pre-installation review and to obtain information pertaining to whether the eligibility criteria or metrics should be revised. Unless the scope of work presented in project application has changed at IR review, the project will not be reviewed again in the areas specified below. Scope change is defined by substantial changes include significant modifications to the proposed equipment type, size, quantity, configuration, the expansion of a project to include additional retrofits, or the splitting of a project into multiple phases. The following areas will not be reviewed again by CPUC Staff: • Calculation Tool • Calculation Methodology • M&V Plan • Baseline • Eligibility • EUL/RUL • Measure Type • Program Influence
Application rejected.	The application is rejected as submitted. The PA shall promptly inform the applicant as to the reasons why the project was rejected and the specific recommendations for the conditions under which the project would be approved. CPUC Staff shall provide the reasons for the rejection or request for modification, including each basis as to why the project is rejected, or modification is requested. In addition, CPUC Staff shall provide specific recommendations for the conditions under which the project would be approved. If any party to the project is unsatisfied with the Commission's directions for the project, a dispute resolution process may be initiated by that party. The Commission shall adopt rules for the conduct of the dispute resolution process. – Section 381.2 (g) (3) (F)
Advisory.	The PA is not formally required to follow instructions or recommendations given in an Advisory review. However, issues found will affect ESPI scoring and may come up again in Ex-Post review.