PUBLIC UTILITIES COMMISSION
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Date: July 23, 2019

To: Southern California Edison Company (SCE)

From: Peter Biermayer, California Public Utilities Commission

Cc: R.12-01-005 and R.13-11-005 Service Lists

Subject: Mid-Year Feedback – 2019 Efficiency Savings and Performance Incentive (ESPI) Expected Savings Review

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Pursuant to Decision (D).13-09-023, D.15-10-028 and D.16-08-019, the California Public Utilities Commission (CPUC) Staff and consultants are providing mid-year feedback on the program administrators' (PAs') activities producing expected (aka ex ante)savings estimates in the January 1 through June 30, 2019, timeframe (the review period). The mid-year feedback focuses on specific issues and concerns with the expected savings estimates of custom projects[1] and workpapers.[2] This feedback will help the PAs address these issues for the remainder of the year.

I. CPUC Staff Findings on 2019 Expected Savings Activities

The following sections provide a description of the findings, including areas of achievement and areas requiring improvement.

A. Custom Projects Review Overview

The CPUC selected a new contractor to assist Staff with the custom projects expected savings review and expects to commence review activity in the third quarter of 2019. No custom projects were selected for expected savings review in the first two quarters of 2019, so there is no custom project feedback at this time.

B. Deemed Workpapers Review Overview

1. Summary of 2019 Mid-Year Achievements

For the 2019 mid-year review, the CPUC Staff observed improvements in SCE's development and management of workpaper submissions in the following areas:

- SCE, in collaboration with the other PAs, has managed the revision and/or development of a high volume of workpapers during the review period. The CPUC commends SCE's leadership in making this submission cycle successful and timely.
- SCE has demonstrated effective workpaper leadership, managing the submissions for more complex measures including screw-in lighting, smart communicating thermostat electric savings, refrigeration measures, and pool pumps.
- SCE has shown forward thinking in its piloting of a third party workpaper complaint log and in its analysis of the changes in the contribution of deemed measures to the portfolio with the diminishment of lighting measures.

2. Summary of Areas of Improvement

The Staff highlights the following recommendations for improvement:

- SCE, in collaboration with the other PAs, should plan workpaper updates holistically, with research activities coordinated across workpapers of the same end-use.

[1] Custom projects are energy efficiency efforts for which the customer financial incentive and expected energy savings estimates are determined using site-specific analysis of the customer's facility. See D.13-09-023, Section 7.4.

[2] "Deemed" measures are individual energy efficiency measures with predetermined, or "deemed," savings estimates. They represent all portfolio savings from programs other than custom projects or codes & standards advocacy programs.

- SCE, in collaboration with the other PAs, should identify disruptive issues earlier and propose methods for their orderly resolution.
- Workpaper plans should include detailed schedules and they should allocate adequate subject matter expert review time and adequate stakeholder notification.

II. DISCUSSION

A. Custom Projects Expected Savings Review Discussion

As stated in Section I, no custom projects were reviewed in the first two quarters of 2019.

B. Deemed Workpapers Expected Savings Review Discussion

SCE submitted forty-five workpapers in the first half of 2019, of which nine were statewide workpapers. SCE is also the lead for six workpapers in the workpaper plan development stage. This high volume is due to workpaper revisions in response to the 2018 DEER Update Resolution E-4952 update and the consolidation of PA-specific workpapers into single statewide workpapers.

The comments below are organized by the five scoring metric areas created in D.16-08-019.[3] The narrative includes observations common to multiple workpapers and feedback related to the workpaper development process. Specific workpaper feedback is provided in tables in Attachment A, at the end of this document. The Workpaper Detailed Review Table provides feedback on specific workpapers. The Workpaper Submissions Table lists all workpapers submitted by SCE during the review period. Workpapers that were led by SCE and were either disposed or reached approval status during the review period were selected for feedback. The Staff acknowledges that workpaper development may have been supported by multiple PAs; however, at the time of this mid-year review, there is no mechanism for apportioning feedback among PAs. Therefore, feedback is only provided for the submitting PA, with the assumption that they are the lead PA.

1. Timing and Timeliness of Submittals

SCE has met deadlines for submission of statewide workpapers in the review period, which was an accomplishment considering the volume of workpaper submissions and the challenges of the consolidation process. There are, however, improvements that can be made in this metric.

Large numbers of scheduled workpapers were submitted just in time to meet a deadline. The Staff and consultants would appreciate it if SCE distributed submissions over several weeks before the deadline, rather than as a batch right at the deadline. SCE took this approach with the 2019 Phase 1 workpapers, with multiple submissions through June and November. The 2020 Phase 1 workpapers, however, were usually submitted in a single batch at the end of the month.

The Staff has appreciated the quality of recent workpaper plan submissions. However, the Staff and consultants expect that workpaper plans will include at least a target workpaper submission date early in the development cycle. As the development cycle advances, the schedule should become more detailed with itemized tasks, interim deliverables, and Staff review milestones with projected due dates. A detailed workplan schedule allows the Staff to monitor the progress of the workpaper development and to schedule subject matter experts to review deliverables. The Food

[3] See D.16-08-019 at 87.

Services workpaper plan includes a schedule that can be used as a template for future workpaper plan detailed schedules.

Staff requests that the PA joint Work Paper Plan required by D.15-10-028, and typically submitted in October, include all planned workpaper submissions, including Phase 2, resubmitted Phase 2, and PA adoption workpapers, as well as 2020 Phase 1 workpapers.

2. Content, Completeness, and Quality of Submittals

The content, completeness, and quality of workpapers has generally met standards. From the Staff perspective, the consolidation process has gone well, considering the volume of workpapers, the coordination that has been required, and the difficulties acquiring all the reference building prototypes.

PAs have an important responsibility to identify new technologies and delivery methods, and to develop workpapers where a deemed option makes sense. SCE has three workpapers in development. The CPUC encourages the continued development of new measure workpapers to ensure innovative measures. SCE has taken the initiative to explore screw-in lamp niche markets using the retail shelf survey data collected by evaluators. SCE is analyzing the data to determine the distribution of lighting products sold today and to identify gaps in the market that might be served by programs.

The CPUC encourages planning workpaper updates more comprehensively and by end-use, borrowing elements from the workpaper consolidation planning. Planning by end-use (such as lighting or refrigeration), provides an opportunity to leverage research activities across multiple measures and workpapers. The CPUC notes that the catalog of potential areas of improvement by end-use is also very useful and should be continuously updated as issues arise.

Rather than single workpaper or workpaper parameter updates, the CPUC encourages comprehensive updates by workpaper groupings, like the in-progress update of five food services workpapers. The plan for updating these five workpapers includes standard practice research, equipment testing, customer surveys, hours of operation measurements, and updated compilation of product characteristics. Updating the uncertain and impactful parameters means these workpapers should not require updating again for a significant period. The CPUC encourages a proposal from the PAs for updating workpapers grouped by end-use, spaced over a multi-year time horizon.

Workpapers are focused on defining well-supported savings and cost estimates, but measures are delivered in a program and regulatory context that is not described in the workpapers. The Staff finds it useful to hear PA views on program and regulatory issues and encourages briefings when appropriate. As an example, the SCG smart communicating thermostat program manager described to the Staff and consultants the measure's role in multiple co-offerings with other PA programs. Also, SCE presented to the Staff and consultants a data-rich analysis of workpaper trends and their potential impact on the portfolio savings and cost-effectiveness. Both presentations were excellent, and the CPUC encourages similar communication of thoughtful and data-rich program and regulatory perspectives on important issues.

3. Proactive Initiative of Collaboration

The CPUC recognizes that the consolidation of workpapers into single, statewide workpapers has required considerable coordination and collaboration between the PAs, and the PAs are to be commended.

SCE has provided the Staff with updates and preliminary work products on upcoming workpapers via the workpaper plan process. For example, SCE arranged a conference call to discuss proposed responses to manufacturer inquiries regarding the development of a workpaper. SCE also collaborated with the other PAs and the Staff to present a Third Party Workpaper Q&A webinar on April 11.

4. PA's Due Diligence and Quality Assurance/Quality Control Effectiveness

Of the forty-five workpapers submitted, SCE was the lead for the thirty workpapers listed in the submitted table in Attachment A, at the end of this document. Leading this workpaper development taxes PA resources, and the CPUC acknowledges and commends PAs taking on this work. SCE has provided excellent leadership in the review period. The Staff and consultants have regularly and productively engaged with SCE and have come to rely on them to provide answers for the electric measure workpapers.

The Staff expects that the PAs manage workpaper development well, including the submission of a workpaper plan and schedule early in the development process, as noted in Section 1, and that the schedules are managed to meet deadlines. SCE has three workpapers under development. All of them have workpaper plans, although two do not include schedules. The Staff also expects that the lead PA will coordinate with other PAs to ensure each submission is complete from the perspective of all PAs.

5. PA's Responsiveness to Needs for Process and Program Improvements

SCE partnered with the Staff and other PAs to resolve common issues and implement process improvements. Examples of these include:

- Development of a solution for implementing the new measure application types (MAT).
- Implementation of a workpaper cover page. All workpaper submissions from SCE have included a complete cover page since its rollout.

While there have been some procedural improvements, PAs have been deficient in anticipating and acting to resolve looming issues, such as the MAT implementation and defining the workpaper references for the September Annual Budget Advice Letters. As a group, the PAs need to better manage potential problems, first by articulating issues early and then by developing action plans to resolve them in an orderly fashion. The Staff requests that the monthly joint meeting include a standing agenda item to inventory upcoming issues and to begin formulating action plans to address them. The CPUC expects PAs to volunteer to take leads on high-priority issues.

The California Technical Forum (CalTF), who is consolidating measure workpapers, proposed eTRM,[4] new third-party contracting process, and implications of Resolution E-4939[5] all set the stage for rethinking workpaper processes. It is incumbent upon the PAs to provide their vision of what these processes might be, although other stakeholders will also have important input on the final processes. There has been limited progress on developing a communications plan that fully meets the needs of all stakeholders. The Staff will seek organized and thoughtful input on this

[4] The eTRM, or electronic Technical Reference Manual, is an online relational database intended to be a repository for all statewide deemed measures. The development was sponsored by PAs and managed by the California Technical Forum, known as CalTF.

[5] Resolution E-4939 sets forth principles for regular updates of measure baselines.

topic. SCE's initiative in piloting a mechanism for stakeholders to formally log workpaper complaints is the kind of thinking the CPUC encourages.

The DEER team has requested that all DEER-related support questions be issued to DEERsupport@dnvgl.com . The Staff notes that compliance is good but seeks full compliance.

Questions or comments about the feedback or final scores should be directed to Peter Biermayer at Peter.Biermayer@cpuc.ca.gov . Note that pursuant to D.13-09-023, the Staff will schedule a conference call meeting with SCE to discuss and answer clarifying questions from this memorandum.

ATTACHMENT A: WORKPAPER FEEDBACK

The table below lists workpaper submissions by ID number, revision number, and title. The qualitative scores shown will be combined into a single score in the final expected savings review performance memorandum. Each category's total score will be equally weighted in the final total score for the metric. The PA may refer to the individual dispositions for more detailed descriptions of the specific actions the Staff required for each workpaper.

The ESPI Metric Columns in the tables correspond to the metrics described below:

Metric #	Metric Description
1	Timing and timeliness of submittals
2	Content, completeness, and quality of submittals
3	Proactive initiative of collaboration
4	PA's due diligence and quality assurance/quality control effectiveness
5	PA's responsiveness to needs for process and program improvements

The qualitative scores are designated as follows:

+ indicates a positive (from midpoint) scoring impact on a metric.

- indicates a negative (from midpoint) scoring impact on a metric.

yes indicates a neutral (midpoint) scoring impact on a metric (meeting expectations).

no indicates that the review feedback is not applicable to a metric.

Workpaper Detailed Reviews: SCE				ESPI Metrics				
WP ID	**Rev**	**Title**	**Comments**	**1**	**2**	**3**	**4**	**5**
SCE17LG119	1	LED Residential Exterior Fixtures	This workpaper updated wattage reduction ratios to reflect the CPUC Resolution E-4952 DEER 2019, measure costs, and NTG values. In addition, it added solution codes to match DEER measure wattages. These updates were appropriate and calculated correctly. The operating hours and interactive effects for all impacts were taken from the most applicable and updated DEER data. The workpaper is in conformance with previous direction, including Lamp Savings Methods Disposition (March 2018) and Resolution E-4952 (October 2018). The WP was submitted well ahead of the due date.	+	yes	no	yes	+
SCE17LG129	2	LED Candelabra Replacements	See comments for SCE17LG119	+	yes	no	yes	+
SCE17LG130	2	LED globe: < 3 Watts	See comments for SCE17LG119	+	yes	no	yes	+
SCE17LG109	2	Exterior LED Lamp Replacement	See comments for SCE17LG119	+	yes	no	yes	+
SCE17LG103	2	Interior LED Downlight Fixtures	See comments for SCE17LG119	+	yes	no	yes	+
SWFS007	1	Comm Insul Hot Food Hold Cab	A disposition was issued requiring revisions with resubmission by September 1, 2019, to facilitate the disposition review and approval cycle for 2020 implementation. Additional information and analysis are required to support the expected savings values. The critical issues are: • Update the equipment performance data • Ensure that calculations and assumptions align with Energy Star	yes	-	yes	yes	+

Workpaper Detailed Reviews: SCE				ESPI Metrics				
WP ID	**Rev**	**Title**	**Comments**	**1**	**2**	**3**	**4**	**5**
SCE17WP008	2	Com VS Pool Pump	The measure savings was reduced for a replace on burnout measure using revised research that improved characterized pool operation and size. The reduction was substantial, but is consistent with the data and calculations. A new accelerated replacement measure was introduced that proposes preponderance of evidence (PoE) data collection. When the statewide workpapers are submitted, CPUC Staff will issue a request for and consider proof of PoE. Otherwise, the review looks good.	yes	-	yes	yes	+
SWWH014	1	Heat Pump Water Heater	Negative: Costs were updated using the old costing report from Itron. It is preferable to use recent costing data research. Positive: Participated in conversations regarding revisions to water heater calculator. Took the lead on gathering electric water heater data with SCG.	yes	-	yes	yes	+
SCE17HC007	1	High Efficiency PTACHP[6] 24kBtuh	Timely submittal of Phase 1 workpaper.	yes	yes	yes	yes	+
SWCA001	1	Air Compressor VFD Retrofit	Low rigor review was complete without any issues. The work paper addressed previously raised issues. The utilized method is clearly explained.	yes	yes	no	yes	+
SCE17HC029	3	Residential HVAC Quality Maintenance (QM)	Submittal was very late in the year. It is preferable to have submittals spaced out through the year.	yes	yes	no	yes	+
SCE17LG117	1	LED Tubes	This non-DEER workpaper was updated for the 2019 program cycle with updated cost data, a revised NTG, and a new version of the calculation template. This workpaper was submitted well in advance of the Phase 1 due date.	+	yes	no	yes	+

[6] Packaged Terminal Air Conditioner and Heat Pump

Workpaper Submissions			
WP ID	**Rev**	**Title**	**Lead or Adopt**
SCE17HC039	2	VFD Central Plant Final Package	Lead
SCE17HC060	1	Classroom HVAC Occupancy Sensor Final	Lead
SCE17LG119	1	LED Residential Exterior Fixtures	Lead
SCE17LG129	2	LED Candelabra Replacements	Lead
SCE17LG130	2	LED globe: <3 Watts	Lead
SCE17LG131	3	LED R-BR: <11 Watts	Lead
SCE17LG109	2	Exterior LED Lamp Replacement	Lead
SCE17LG117	1	LED Tubes	Lead
SCE17HC052	0	Efficient Fan Controller for Res AC	Lead
SCE17WP004	2	Faucet Aerators and Low Flow Showerheads	Lead
SWFS010	1	Comm Hand Wrap Machine	Lead
SWFS009	1	Comm Electric Deck Oven	Lead
SWFS007	1	Comm Insulated Hot Food Hold Cab	Lead
SCE17RN003	2	Insulation of Bare Refrigeration Suction Lines	Lead
SCE17LG103	2	Interior LED Downlight Fixtures	Lead
SCE17CS005	1	Beverage Merchandise Controller	Lead
SCE17CC012	1	Commercial Electric Deck Oven	Lead
SCE17CC018	0	Undercounter Commercial Dishwasher	Adopt
SCE17HC028	1	BFM ResCentralAC	Lead
SCE17WP008	2	Com VS Pool Pump	Lead
SCE17HC029	3	Residential HVAC Quality Maintenance (QM)	Lead
PGE3PHVC151	1	Economizer Repair 2018	Adopt
PGE3PHVC151	2	Economizer Repair 2019	Adopt
PGE3PHVC152	2	Economizer Control 2019	Adopt
PGE3PHVC152	1	Economizer Control 2018	Adopt
PGE3PHVC156	1	Condenser Coil Cleaning 2018	Adopt

Workpaper Submissions			
WP ID	**Rev**	**Title**	**Lead**
PGE3PHVC156	2	Condenser Coil Cleaning 2019	Adopt
PGE3PHVC157	2	Unoccupied Supply Fan Control 2019	Adopt
PGE3PHVC157	1	Unoccupied Supply Fan Control 2018	Adopt
PGE3PHVC158	1	Evaporator Coil Cleaning 2018	Adopt
PGE3PHVC158	2	Evaporator Coil Cleaning 2019	Adopt
PGE3PHVC160	1	Refrigerant Charge Adjustment 2018	Adopt
PGE3PHVC160	2	Refrigerant Charge Adjustment 2019	Adopt
SCE17HC045	0	Enhanced Ventilation and VFD 2019	Adopt
SCE17HC061	1	Demand Controlled Ventilation 2019	Adopt
SWAP011	1	Vending and Beverage Merchandise Controller	Lead
SWCR010	1	Bare Suction Pipe Insulation	Lead
SWFS012	1	Exhaust Hood DCV	Lead
SCE17PR005	1	Air Compressor VFD	Lead
SCE17HC007	1	High Efficiency PTACHP 24kBtuh	Lead
SCE17HC013	1	Direct Evaporative Coolers	Lead
SWWH014	1	Heat Pump Water Heater	Lead
SCE13HC050	4	VSD on HVAC Fan Control	Lead
SWCA001	1	Air Compressor VFD Retrofit	Lead
SWPR004	1	Circulating Block Heater	Lead