



Goal 2: Commercial Quality Maintenance Committee Tuesday June 13, 2017 Meeting Notes

Call to Order

The meeting was called to order at 10:02 am PDT by Don Langston, Chair and President of Aire Rite AC and Refrigeration. Meetings are normally scheduled for 60 minutes. This meeting was scheduled for 90 minutes because of the longer agenda.

Roll Call

Quorum for voting organizations = 7 of 11. 6 voting members, 8 non-voting members and 1 guest and 1 staff attended this meeting. A total of 16 members, guests and staff attended.

P = present at meeting

A = absent voting member; if proxy has been assigned it will be noted below.

WHPA Goal 2: CQM Committee VOTING Members				Roll Call
ACCA (Air Conditioning Contractors of America)	Donald	Prather	Contractor Association	P
Aire Rite AC & Refrigeration	Don	Langston	Contractor (Nonresidential)	P
CLEAResult	Gretchen	Egging	Energy Efficiency Program Consultant	P
FDSI (Field Diagnostic Services Inc.)	Dale	Rossi	Third Party Quality Assurance Providers	P
Honeywell E&ES (Energy & Environmental Solutions)	Mike	Lawing	Controls (Manufacturer or Distributor)	
HSE (Honeywell Smart Energy)	Shayne	Holderby	Energy Efficiency Program Consultant	
PG&E (Pacific Gas and Electric Company)	Christian	Weber	California IOU	
SCE (Southern California Edison)	Scott	Higa	California IOU	P
SDG&E (San Diego Gas and Electric Company)	Paul	Thomas	California IOU	
Tre' Laine Associates	Pepper	Hunziker	Energy Efficiency Program Consultant	P
Western Allied Corporation	Mike	Gallagher	Contractor (Nonresidential)	
WHPA Goal 2: CQM Committee NON-VOTING Members				Roll Call
ASHRAE			Engineering Society	
BELIMO Aircontrols, Inc	Darryl	DeAngelis	Controls (Manufacturer or Distributor)	
Brownson Technical School	Bill	Brown	Educator, Trainer	P
BuildingMetrics Inc. (BMI)	Pete	Jacobs	Energy Efficiency Program Consultant	P
Clean Energy Horizons	Norm	Stone	Energy Efficiency Program Consultant	P
CLEAResult (formerly PECEI)	Michael	Blazey	Energy Efficiency Program Consultant	
CLEAResult (formerly PECEI)	Phil	Jordan	Energy Efficiency Program Consultant	
CLEAResult (formerly PECEI)	Paul	Kyllo	Energy Efficiency Program Consultant	
CLEAResult (formerly PECEI)	Todd	Van Osdol	Energy Efficiency Program Consultant	
CLEAResult (formerly PECEI)	Mike	Withers	Energy Efficiency Program Consultant	
Marina Mechanical	Denny	Mann	Contractor (Nonresidential)	
HSE (Honeywell Smart Energy)	Steve	Varnum	Energy Efficiency Program Consultant	P
Lupson and Associates	Warren	Lupson	Other Stakeholder	P
Richard Danks Consulting	Richard	Danks	Other Stakeholder	P
SCE (Southern California Edison)	Steve	Clinton	California IOU	P
SDG&E (San Diego Gas and Electric Company)	Robert	Nacke	California IOU	
SMUD (Sacramento Municipal Utility District)	Bruce	Baccei	Publicly Owned Utility	
Transformative Wave	Joe	Schmutzler	Controls (Manufacturer or Distributor)	
Transformative Wave	Justin	Sipe	Controls (Manufacturer or Distributor)	



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Western Allied Corporation	Mike	Gallagher	Contractor (Nonresidential)	
XCSpec	Jeff	Aalfs	Controls (Manufacturer or Distributor)	
XCSpec	Janet	Peterson	Controls (Manufacturer or Distributor)	P
WHPA Goal 2: CQM Committee NON-VOTING Guests				Roll Call
Adrienne Thomle, Consulting **	Adrienne	Thomle +		
AHRI	Garrett	McGuire	HVAC Manufacturer Association	
Air Management Industries	April	Yungen	Contractor (nonresidential)	
AirTest Technologies	Mike	Schell	HVAC Manufacturer	
All Pro Plumbing, Heating & AC	Michael	Greany	Contractor (nonresidential)	
American Commissioning Group	Craig	Hofferber	Third Party Quality Assurance Provider	
AMS (American Mechanical Services)	Marc	Pickett	Contractor (Nonresidential)	
B2B Sales Excellence**	James	Graening+		
California Public Utilities Commission (CPUC) - Energy Division			California PUC	
California Public Utilities Commission (CPUC) - Energy Division	Pete	Skala+	California PUC	
CLEARresult	David	Cantanese+	Energy Efficiency Program Consultant	P
CLEARresult	Richard	Waite	Energy Efficiency Program Consultant	
Fieldpiece Instruments	Russ	Harju	HVAC Manufacturer	
Fieldpiece Instruments	Kennedy	Kong+	HVAC Manufacturer	
Galawish & Associates	Elsia	Galawish	Energy Efficiency Program Consultant	
HVACRedu.com	Chris	Compton	Educator / Trainer	
ICF (ICF International)	James	Jackson	Energy Efficiency Program Consultant	
Mark Cherniack Emeritus	Mark	Cherniack	Emeritus	
NADCA (National Air Duct Cleaners Association)	Dan	Stradford	Contractor Association	
NCI (National Comfort Institute)	Rob	Falke	Educator / Trainer	
Pax-Sun Engineering, Inc.	Tom	Paxson	Other Stakeholder	
PG&E (Pacific Gas and Electric Company)	Robert	Davis	California IOU	
SCE (Southern California Edison)	Andres	Fergadiotti+	California IOU	
SCE (Southern California Edison)	Sean	Gouw	California IOU	
ServTEC Air Conditioning	George	Rodriguez	Contractor (Nonresidential)	
UC Davis Energy Efficiency Center	Kristin	Heinemeier	Research Organization	
STAFF				
BBI (Better Buildings Inc.)	Mark	Lowry	WHPA Executive Advisor/BBI COO	
BNB Consulting/WHPA Staff, host, admin. support & scribe	Bob	Sundberg	WHPA Staff	P
CLEARresult	Paul	Kyllo+	WHPA Senior Advisor	
Empowered LLC	Shea	Dibble	WHPA Co-Director	

** Organization is Not a Member of the WHPA; + Individual is NOT Registered with the WHPA;

(P) after last name = Member/Registrant is Pending Approval from the WHPA Executive Committee



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AGENDA

Topic	Discussion Leader	Desired Outcome
Welcome, roll call, review agenda, approve past meeting minutes and ACTION items	Don Langston and Bob Sundberg/staff	Record meeting attendees, finalize past meeting minutes, review status of meeting action items.
Welcome new members & guests, review new candidates	Don Langston and Bob Sundberg/staff	New members and invited guests welcomed. Decision made on suggested revisions to candidate options and the review process.
NEWS – Regulatory and Legislative Updates	Don Langston, CPUC/ED, CEC & IOU Representatives	Members and guests are kept informed about new regulatory and legislative actions, events and announcements.
CQM Program Updates SCE/PG&E/SDG&E	Gretchen Egging, Shayne Holderby, Paul Thomas	Gain a current understanding of IOU CQM program status, progress, developments and issues.
CQM STD 180 User Guide WG	Don Langston and attendees	Update members on WG progress.
CQM Committee Planning & Committee Goals	Don Langston	Overview of planning and leadership for CQM Committee
CQM WG Planning: 1) STD 180 User Guide; 2) CM SF Data Spec.; 3) STD 180 Customer Communications for User Guide	Don Langston	Update members/guests on WG status
IOU Billing Analysis Study update	Christian Weber (PG&E) and Scott Higa (SCE)	Energy billing data analysis method and any preliminary results on savings from CQM programs
PG&E HVAC Optimization program participant User Manual	Shayne Holderby	Provide members/guests with an introduction to the new 2017 participant user manual developed for the PG&E commercial HVAC program
Review meeting Action Items, set next meeting date/time, adjourn	Don Langston	Set next meeting date and confirm time.

Approve Minutes of Previous Meeting

April 18 meeting draft notes were distributed May 1. Approved meeting notes would be finalized and posted to the CQM Committee site.

Review Status of Action Items from Previous Meeting

April 18 ACTION: Bob Sundberg, WHPA staff, would send Tom Paxson several recent CQM Committee work products and a link to all WHPA work products. Completed.

February 14 ACTION: Christian Weber, PG&E and Scott Higa, SCE, would report on the IOU billing analysis study at the March 2017 meeting. Ongoing.

Background: A study was being conducted, led by PG&E, regarding billing analysis for HVAC which would include CQM, CQR and Upstream program participants. The goal of the study was to produce a quantitative



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model capable of predicting energy usage of a customer's building before and after a program intervention. It was not, for example, assessing the impact of CQM program participation on a customer's metered energy usage.

February 14 ACTION – Don Langston wanted the committee to develop achievable goals around working more closely with related WHPA committees like CQI and FDD. Ongoing.

February 14 ACTION: Christian Weber, PG&E would reach out to PG&E CQM program contractors to get feedback about their possible participation on this committee and its working groups. Ongoing.

February 14 ACTION: Scott Higa, SCE – consider ways to inform participating contractors about the WHPA, this committee and its working groups and ways they could become involved. Ongoing.

Welcome New Members and Guests; Consider Pending Members

- David Catanese, CLEAResult – SDG&E commercial programs implementation team supporting Paul Thomas, SDG&E.
- James Graening, B2B Sales Excellence – interested to support customer communications user guide WG effort. Invited to join and participate by Don Langston.

New Business - Don Langston & IOU Representatives

ASHRAE/ACCA Standard 180 Committee meeting Friday June 23.

Don wanted to remind everyone that the Standard 180 Committee will meet in Long Beach on Friday, June 23. Any interested WHPA/CQM Committee and working group members are invited to attend as guests. You'll be able to observe and even participate in discussions around revisions to the standard being considered. Get a taste for where the standard is going and consider joining the effort to improve its usefulness and implementation.

If you were not able to attend as an observer in person, you could attend "remotely" on a call via GO TO MEETING. They encouraged interested parties to consider future membership. Rick Danks, Richard Danks Consulting & SPC 180 member, offered to provide the committee with the access information, once it was made available. More detailed meeting and remote access information would be sent out to all members/guests prior to Friday June 23.

Committee Name	SPC 180 Standard Practice for Inspection and Maintenance of HVAC Systems
(Members/Guests)	(20/10)
Date	Friday, June 23, 2017
Start Time	2:00 PM
End Time	6:00 PM
Room	Bixby 5
Venue Floor	Renaissance (2)

<http://www.performancealliance.org/HowtoApplytoJoinStandard180Revision/tabid/453/Default.aspx>

NEWS Updates -Regulatory and Legislative - Don Langston, CPUC/ED, CEC & IOU Representatives

- Annual DEER Update Process - request for public comments
- <http://www.performancealliance.org/RegulatoryPolicy/tabid/451/Default.aspx>



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Don Langston – you had to scroll through the linked document to page 5 to locate information about this update process. Then, they’d provided 294 pages of details. He’d found a few nuggets which suggested a more holistic approach rather than the past approach of only looking at individual energy efficiency measures, like RCA adjustments (refrigerant charge adjustments).

IOU CQM Program Updates

SCE CQM program summary (Scott Higa of SCE & Gretchen Egging of CLEAResult):

Gretchen Egging, CLEAResult – there had been a policy change regarding VFD installation energy savings and HVAC Optimization program incentives. Building owners could now take advantage of those technology upgrade incentives even after they’d graduated from the three-year program. Program staff was ramping up efforts to support contractor out-reach to their customers to inform them about this extended opportunity. Other news:

- A HUGE % increase in new participating units which had economizers
- Looked to be on-track to meet the increased energy savings goals for 2017

SCE CQM HVAC – May

	May-17	2017 YTD
New contractors	0	0
New customers - application received	2	30
New buildings – check cut	9	262
% of units w/ economizers	89%	80%
New tonnage – check cut	1,234	16,679
Units w/ CSA – check cut	478	1798
Units w/ DCV/VFD – check cut	0	64
Units w/ ADEC w/ CSA – check cut*	288	770
kWh – check cut	822,000	2,449,260
kW – check cut	358.10	1,087.51

*does not count units with ADEC pre-existing at CSA or units where ADEC is installed at DCV

Scott Higa, SCE – the VFD upgrade was one of the most cost-effective energy efficiency measures in their program. Also, a large % of advanced digital economizer control upgrades were completed without VFD upgrades. They saw a great opportunity to reach back to past program participants and extend this opportunity to build on their previous upgrade, even beyond the time limit of the original program to have an even greater impact on all the units the program had originally touched.

Don Langston – asked whether the economizer upgrades included DCV (demand control ventilation) or for the great majority of those upgrades.



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Scott Higa – the DCV component was evaluated by the CPUC and designated a TRC (total resource cost) of < 1 for many building types and applications as a standalone measure. This measure was, to the regulators, not cost-effective enough to approve any additional incentives for that additional feature. DCV was also required by code for certain building types.

Dale Rossi, FDSI – his firm had been involved with many buildings which considered VFD upgrades. Not because of the incentives but more related to the actual upgrade cost and estimated ROI. He asked what had changed to now make that upgrade more cost-effective for customers? His customers had chosen the ADEC – advanced digital economizer control – option rather than the Catalyst option, which included an integrated VFD, because of the incentive to cost comparison. Why would it be more attractive now? What message could they deliver to their past program customers?

Gretchen Egging, CLEAResult – she'd been informed that contractors were going back to past program participants because they sensed sales and profits to existing customers who were now outside the program.

Scott Higa – didn't have a ready answer but indicated they'd know pretty quickly whether the market would react favorably to the extended offer.

Don Langston – he asked Scott to follow-up with Bob Sundberg with an update on how and why this program extension would seem to make more, new sense to customers who had earlier chosen just the ADEC upgrade rather than the digital economizer upgrade with integrated VFD installation based on an evaluation of cost and incentives for each offering.

ACTION: Scott Higa and Gretchen Egging would follow-up to provide Bob Sundberg details about why their program had extended incentives to customers to upgrade to the integrated VFD/ADEC option (Catalyst) beyond the program three-year limit when those same customers had earlier chosen the ADEC alone option based on their earlier evaluation of costs and incentives for each offering.

PG&E CQM Program Summary (PG&E staff to be designated & Shayne Holderby of HSE)

Shayne Holderby, Honeywell Smart Energy – Shayne was unable to attend. Steve Varnum, HSE, provided an update.

- Program was going well
- Unit participation and kWh savings were both on target
- Proctor Engineering was providing field quality control (assurance) service, site inspections in addition to those provided directly by PG&E

SDG&E CQM Program Summary (Paul Thomas, SDG&E, David Cantanese, CLEAResult)

David Cantanese, CLEAResult – he was attending his first WHPA meeting and would work with Gretchen Egging to bring future program updates closer to the format used by SCE and PG&E.

- Commercial maintenance was a part of their commercial offering under the overall program title Premium Efficiency Cooling. It accounted for about 10% of that program budget.
- Off to a slow start in 2017
- Implementers were busy attempting to recruit new contractors to participate
- Very little was changed from the suite of offerings in 2016



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Don Langston, Chair, welcomed David to the committee and looked forward to SDG&E regular participation.

CQM Committee 2017 Working Groups – Don Langston

Three different working groups were planned for 2017 to make greater progress outside of the full committee meetings.

Standard 180 User Guide – technical implementation

- The WG met on April 27 and reached agreement to focus on Section 4 Maintenance Plan Implementation for the user guide
- At the April 27 meeting, Shayne Holderby, HSE, presented and led discussion on the User Manual developed for PG&E HVAC Optimization program participants. The WG got a thorough tour of the manual and the contents directed both at implementing contractors and their staff as well as their customers.
- The WG was scheduled to meet again Tuesday June 20.
- Don Langston, who was temporarily leading the group, emphasized the need for a WG member to step up and help lead this group. The chair position didn't need to be permanent and could be rotated between WG members.

Standard 180 User Guide – customer communications (interview process to establish program goals, metrics and defining the value proposition)

Jan Peterson, XCSpec - James Graening, B2B Sales Excellence, had provided WG members with an overview of his commercial contractor sales training. He introduced the concept that establishing a maintenance agreement, from the sales perspective, was a process with well-defined stages. The service provider needed to understand who controlled this decision, past maintenance practices and client expectations/goals, the budgets available to support any proposed work as well as the decision-making phases and that meeting agendas needed to be presented and agreed to with the prospective client. They also needed to define metrics which would define the degree of program success. James focused on the initial structured meetings that were expected to not exceed 30 to 45 minutes. These meetings were intended to determine the degree of customer motivation (qualifying) to consider more comprehensive approaches to maintenance, determine which decision-makers needed to be involved, get at customer issues/pain points and important goals and a commitment to move ahead with further meetings to form a suitable maintenance program and contract for work.

One WG goal was to develop a draft narrative of those initial discussions/sales meetings. Jan planned to have the draft completed and distributed prior to the Standard 180 meeting Friday June 23 or early in July.

Don Langston thanked Jan for stepping up and leading this WG. He'd worked with James for several years and believed his skills and talents would be very valuable to the WG.

Commercial maintenance data specification (measurements required to calculate performance evaluation/scoring)

Don Langston – this WG had not yet been formed. The intent was to refine, revise and finalize a data specification initially developed for commercial installations by the CQI Committee. The data spec. would be



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adapted to a commercial maintenance application and used as the basis for developing a means to evaluate unit/system performance to score and track the impact of more comprehensive maintenance practices.

IOU Billing Analysis Study – Christian Weber (PG&E) and Scott Higa (SCE)

Scott Higa, SCE – PG&E was leading this study and Christian was unavailable to attend this meeting. Scott shared what he knew of the study.

- AMI Billing Analysis Study – phase 1 was for residential HVAC. Phase 2, which was in process, was focused on commercial HVAC programs. Billing data was drawn from the SCE HVAC Optimization (QM) program as well as data which would be provided within a few weeks from the SCE commercial installation/renovation project. The CI data was primarily from NCI's study database. Billing analysis would be performed by Evergreen Consulting, PG&E's contractor. Evergreen was developing a random coefficients model to disaggregate energy use at the building meter to more specific loads, like all HVAC use. Their goal was to look at the actual change in HVAC energy use before vs. after a program intervention.
- Don Langston, Chair, asked when results might be expected. Scott Higa indicated that preliminary results were expected by the end of 2017.
- The SCE QI project collected data from 9 locations and from about 50 monitored packaged units. This submetered HVAC energy use was not readily available from other commercial HVAC/QM programs. That level of data collection had been out of scope for most energy efficiency programs. That was the detailed energy use at the HVAC unit data which SCE was providing the PG&E consultant for comparison with the disaggregated energy use modeling.

ACTION: Christian Weber, PG&E, and Scott Higa, SCE, would report on preliminary results of the AMI Billing Analysis Study. Preliminary results were expected by the end of 2017.

Closing Comments/Adjournment

Don Langston wanted to hold off scheduling the next full CQM Committee meeting until after the ASHRAE/ACCA SPC Standard 180 meeting. The meeting might be held in July or postponed to August.

The meeting was formally adjourned at 10:46 am PDT.

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Summary of NEW Action Items and Key Decisions

June 13 **ACTION:** Scott Higa and Gretchen Egging would follow-up to provide Bob Sundberg details about why their program had extended incentives to customers to upgrade to the integrated VFD/ADEC option (Catalyst) beyond the program three-year limit when those same customers had earlier chosen the ADEC alone option based on their earlier evaluation of costs and incentives for each offering.

June 13 **ACTION:** Christian Weber, PG&E, and Scott Higa, SCE, would report on preliminary results of the AMI Billing Analysis Study. Preliminary results were expected by the end of 2017.



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