



## Goal 2: Commercial Quality Maintenance Committee Tuesday July 12, 2016 Meeting Notes

### Call to Order

The meeting was called to order at 10:07 am PDT by Don Langston, Chair and President of Aire Rite AC and Refrigeration. Meetings are normally scheduled for 60 minutes.

### Roll Call

Quorum for voting organizations = 7 of 12. 6 voting members, 8 non-voting members and 4 guest and 1 staff attended this meeting. A total of 19 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	Monica	Thilges	Energy Efficiency Program Consultant	P
FDSI (Field Diagnostic Services Inc.)	Dale	Rossi	Third Party Quality Assurance Providers	P
Honeywell ECC (Commercial Buildings, Trade Sales)	Mike	Lawing	Controls (Manufacturer or Distributor)	
HSGS (Honeywell Smart Grid Solutions)	Shayne	Holderby	Energy Efficiency Program Consultant	
Marina Mechanical	Denny	Mann	Contractor (Nonresidential)	
PG&E (Pacific Gas and Electric Company)	Jeanne	Duvall	California IOU	
SCE (Southern California Edison)	Scott	Higa	California IOU	
SDG&E (San Diego Gas and Electric Company)	Jeremy	Reefe	California IOU	P
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
Adrienne Thomle, Consulting **	Adrienne	Thomle +		P
ASHRAE			Engineering Society	
BELIMO Aircontrols, Inc	Darryl	DeAngelis	Controls (Manufacturer or Distributor)	
Brownson Technical School	Bill	Brown	Educator, Trainer	
BuildingMetrics Inc. (BMI)	Pete	Jacobs	Energy Efficiency Program Consultant	
Clean Energy Horizons	Norm	Stone	Energy Efficiency Program Consultant	P
CLEAResult (formerly PECE)	Michael	Blazey	Energy Efficiency Program Consultant	
CLEAResult (formerly PECE)	Steve	Clinton	Energy Efficiency Program Consultant	
CLEAResult (formerly PECE)	Gretchen	Egging	Energy Efficiency Program Consultant	P
CLEAResult (formerly PECE)	Phil	Jordan	Energy Efficiency Program Consultant	
CLEAResult (formerly PECE)	Paul	Kyllo	Energy Efficiency Program Consultant	
CLEAResult (formerly PECE)	Mike	Withers	Energy Efficiency Program Consultant	P
Richard Danks Consulting	Richard	Danks	Other Stakeholder	P
SDG&E (San Diego Gas and Electric Company)	Robert	Nacke	California IOU	
SMUD (Sacramento Municipal Utility District)	Bruce	Baccei	Publicly Owned Utility	
SCE (Southern California Edison)	Steve	Clinton	California IOU	P
SCE (Southern California Edison)	Andres	Fergadiotti	California IOU	
Transformative Wave	Joe	Schmutzler	Controls (Manufacturer of Distributor)	P
Transformative Wave	Justin	Sipe	Controls (Manufacturer of Distributor)	
Lupson and Associates	Warren	Lupson	Other Stakeholder	



**Goal 2: Commercial Quality Maintenance Committee  
Tuesday July 12, 2016 Meeting Notes**

XCSpec	Jeff	Aalfs	Controls (Manufacturer of Distributor)	
XCSpec	Janet	Peterson	Controls (Manufacturer of Distributor)	P
<b>WHPA Goal 2: CQM Committee Invited Guests and Staff</b>				<b>Roll Call</b>
AHRI	Garrett	McGuire	HVAC Manufacturer Association	
AirTest Technologies	Mike	Schell	HVAC Manufacturer	
American Commissioning Group	Craig	Hofferber	Third Party Quality Assurance Provider	
AMS (American Mechanical Services)	Marc	Pickett	Contractor (Nonresidential)	P
California Public Utilities Commission (CPUC) - Energy Division	Carmen	Best	California PUC	
California Public Utilities Commission (CPUC) - Energy Division	Pete	Skala+	California PUC	
CLEAResult	Richard	Waite	Energy Efficiency Program Consultant	
Galawish & Associates	Elsia	Galawish	Energy Efficiency Program Consultant	P
Honeywell Smart Grid Solutions (HSGS)	Steve	Varnum	Energy Efficiency Program Consultant	P
ICF (ICF International)	James	Jackson	Energy Efficiency Program Consultant	
LAUSD (Los Angeles Unified School District)	Steve	Granados	Government (Other than CPUC)	
Mark Cherniack Emeritus	Mark	Cherniack	Emeritus	
NADCA (National Air Duct Cleaners Association)	Dan	Stradford	Contractor Association	P
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	
PG&E (Pacific Gas and Electric Company)	Christian	Weber +	California IOU	
SCE (Southern California Edison)	Tara	Becnel	California IOU	
UC Davis Energy Efficiency Center	Kristin	Heinemeier	Research Organization	
<b>STAFF</b>				
BBI (Better Buildings Inc.)	Mark	Lowry	WHPA Executive Advisor/BBI COO	
BNB Consulting/WHPA Staff, host, admin. support & scribe	Bob	Sundberg	WHPA Staff	P
CLEAResult	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



**Goal 2: Commercial Quality Maintenance Committee  
Tuesday July 12, 2016 Meeting Notes**

<b>AGENDA</b>		
<b>Topic</b>	<b>Discussion Leader</b>	<b>Desired Outcome</b>
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	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	Keep members informed of recent announcements and important events
CQM Program Updates SCE/PG&E/SDG&E	Monica Thilges, Shayne Holderby, Jeremy Reefe	Gain a current understanding of IOU CQM program status, progress, developments and issues.
CQM STD 180 User Guide Working Group	Dale Rossi	Members updated on WG status and progress
CQM Committee 2016 Goals	Don Langston	Share goals and milestones submitted to Executive Committee for approval
IOU Business Plan Development	Don Langston – IOU Representatives	IOU planning status & issue raised by CPUC guidance to IOUs regarding stakeholder participation
CQM Committee 2016 Goals	Don Langston	Share goals and milestones submitted to Executive Committee for approval
CQM Committee plan for revision of CQI WG standardized data spec. for maintenance application	Don Langston	Data specification, performance evaluation protocol plan for CQM Committee
Review meeting Action Items, set next meeting date/time, adjourn	Don Langston	Set next meeting date and confirm time.

**Approve Minutes of Previous Meeting**

The July 12 meeting draft notes were distributed July 19. Approved meeting notes would be finalized and posted to the CQM Committee site.

**Review Status of Action Items from Previous Meeting**

May 2016 ACTION: Scott Higa, SCE, would provide Dale Rossi, Don Langston and Bob Sundberg with SCE staff contact information for the right parties who worked on development of their HVAC Optimization, CQM program plans, plan goal development and methods of evaluation and reporting. Completed.

May ACTION: Dale Rossi requested each IOU program manager (Jeanne Duvall/PG&E, Scott Higa/SCE, Jeremy Reefe/SDG&E) provide relevant IOU staff contact information for those responsible for Standard 180 based maintenance program design, implementation and evaluation. It would help to have any staff participate who had been responsible for contract/agreement maintenance plan development, maintenance plan goals and evaluation metrics



## **Goal 2: Commercial Quality Maintenance Committee Tuesday July 12, 2016 Meeting Notes**

established and goal progress reporting. Also, that those staff members be directed to participate and support efforts of the Standard 180 User Manual Working Group by providing current program background information and input to the user guide development.

STATUS: PG&E - Jeanne Duvall to attend or assign to other staff along with implementer. SCE to have implementers attend along with SCE staff. Completed.

### **PAST ACTION ITEMS:**

September 2015 ACTION: Scott Higa, SCE, would report progress on the testimonials and access to and analysis of customer energy data at the next monthly meeting. Ongoing.

### **Welcome New Members and Guests; Consider Pending Members**

- Gretchen Egging, CLEAResult – additional SCE program implementer support.
- Christian Weber, PG&E, requested to attend as guest by Jeanne Duvall, PG&E.

### **New Business - Don Langston & IOU Representatives**

Don Langston, Chair, informed attendees of his intention to change the format for this and future meetings. The first part of every meeting would be focused on administrative topics, news updates and the IOU program and working group updates. The balance of each meeting would be structured as a working session to further committee goals, much like a working group meeting.

### **ASHRAE/ACCA Standard 180 Committee June Meeting Summary – Don Langston**

Don Langston described the discussions which took place where the committee was trying to decide whether to devote more time revising the standard to provide more detail or to move ahead with a user manual to assist implementers.

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

Bob Sundberg, WHPA staff, reminded members and guests of the California Energy Commission (CEC) email notification for a staff workshop scheduled for July 22 which he had forwarded to everyone on this committee's mailing list. The CEC email included topic, hours and access information.

### **IOU CQM Program Updates**

#### **SCE CQM program summary (Monica Thilges of CLEAResult):**

Monica Thilges, CLEAResult, provided the monthly update. They continued to see increased participation and adoption of DCV and ADEC energy efficiency measures. There would be a few program revisions planned for rollout August 1. The kW and kWh savings at the bottom of the June summary table was based on calculations from the approved claimed savings work paper, not measured savings. Savings was only being reported once incentives had been paid out. SCE had increased their savings goal for 2016 because they were getting great demand for participation in the program.

Jeremy Reeve, SDG&E, asked Monica details about the reported savings. Whether the reported amounts were based on the work paper or upon what the CPUC allowed, those being different figures. He knew that there were statewide IOU engineering discussions about whether to go with the new HVAC-3 savings values or to stay with the mandated default values proposed in their original work papers from 2013. As expensive as the CQM programs were to implement, if the new HVAC-3 savings values were adopted, cost-effectiveness for programs would be greatly improved as a result of being able to claim much greater savings.



**Goal 2: Commercial Quality Maintenance Committee  
Tuesday July 12, 2016 Meeting Notes**

## SCE CQM HVAC – June

	Jun-16	2016 YTD
New contractors	0	3
New customers - application received	5	43
New buildings – check cut	21	74
% of units w/ economizers	70%	60%
New tonnage – check cut	2,068	5,719
Units w/ CSA – check cut	69	926
Units w/ DCV/VFD – check cut	210	594
Units w/ ADEC w/ CSA – check cut*	44	479
kWh – check cut	1,630,534	6,171,509
kW – check cut	624.94781	2374.00281

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

**PG&E CQM Program Summary (Jeanne Duvall of PG&E & Shayne Holderby of HSGS)**

Shayne Holderby, HSGS, was unable to attend. Bob Sundberg, WHPA staff, commented that several of the metrics showed a 25% or greater increase in June as paid incentives caught up with activity completed earlier in the year.

## PG&E CQM HVAC

	June 2016	2016 YTD
New/Active Contractors	2	49
New customers – Paid	63	112
New buildings – Paid	67	139
% of units w/ economizers	65%	62%
New tonnage – Paid	-	-
Units w/ CSA - Paid	203	1002
Units w/ DCV/VFD - Paid	49	178
Units w/ ADEC w/ CSA - Paid	150	602
kWh - app submitted	1028452	3966808
kW - app submitted	206	-



## Goal 2: Commercial Quality Maintenance Committee Tuesday July 12, 2016 Meeting Notes

### SDG&E CQM Program Update

Jeremy Reefe, SDG&E, commented that the CQM programs were now being thought of as gateways which led a pathway to whole building performance. A cooling tune-up should lead to CQM and onto CQR. From there, new levels would be defined by AB 758 and other legislation. One of their challenges, especially near the coast was that “it was always 72 degrees in San Diego.” Folks in that area didn’t have as great a concern about their HVAC load. His greatest concern was that the accepted and approved savings from the commercial maintenance program was not as high as the upgrade and tune-up ones. They were going to have to continue the uphill battle against the current baseline assumption that everything that was installed did and still does meet code requirements for energy efficiency and savings calculation purposes. Most buildings were still operating on a “run to fail” approach and it was very challenging to get the recognition for savings delivered when that behavior was changed.

### **CQM STD 180 User Guide Working Group Update – Dale Rossi**

Dale Rossi, FDSI and WG Chair, updated the committee on WG progress.

The group had elected to research five topics and had decided to focus on #4 and #5 this year, as time permitted:

1. Understanding performance objectives and condition indicators
2. Making a maintenance plan
3. Investigating unacceptable conditions and performance
4. Communicating the value proposition
5. Customer facing reporting

The working group was going through a process of determining what could be included in a user guide which would be the most valuable. They’d first of all reviewed sections 1 through 4 of the standard itself to come to a common understanding of its intent and level of detail. They were now focused on one of their five elected topics – the value proposition. Most of the initial work of building a framework for discussion had been provided by Pepper Hunziker who develop the first draft for a value proposition matrix.

Pepper Hunziker, Tres’ Laine Associates, oriented attendees to the goal for their Value Proposition Matrix table as well as the rows of key market segment building types and columns which would help define each segment. They hoped that the matrix would be helpful for the mostly non-technical people who would be presenting Standard 180 based maintenance on the sales side.

The key market segments they chose to focus on included

- Owner occupied buildings,
- National accounts/chains,
- MUSH – municipals, universities, schools, hospitals (public agency buildings) – common buying practices
- Landlords,
- Property management of commercial buildings

For each segment, the WG was trying to define:

- Key benefits
- Deterrents, barriers to adoption of Standard 180 practices
- Strategies to overcome barriers to adoption
- Decision-makers
- Documentation and resources that could support the sales process and presenting that value proposition



**Goal 2: Commercial Quality Maintenance Committee  
Tuesday July 12, 2016 Meeting Notes**

The group was initially going to brainstorm each box in the matrix to capture as many ideas as possible. They would then return to each segment and section to group, organize and refine the content.

Jeremy Reeve explained further that market segmentation would help contractors better understand the very different budgeting cycle time-frames and buying practices between public and different sorts of private building owners/operators.

Bob Sundberg, WHPA staff, clarified that the group had selected topics 4 & 5 because they were not dependent on revisions to the standard and were areas that had not been paid much attention but were considered critical to any major industry adoption of the standard.

Pepper Hunziker summarized by saying that the matrix they were developing was intended as a tool to help communicate the value of adopting Standard 180 based maintenance practices and also help encourage the dialogue that should occur between an owner or responsible party and a service provider.

The working group was open to greater participation and invited any members or guests to join their effort, they were especially interested to have more commercial contractors and facility managers or building owners participate at the weekly meetings to gain their perspective directly.

<b>CQM Committee 2016 Goals and Implementation Plan – Don Langston</b>
--

Don Langston

Goal #1: Launch 2016 CQM Committee				
Milestone	Owner	Deliverable	Due Date	Dependencies

Completed.

Goal #2: Define Key Performance Objectives for Commercial Maintenance Incorporating AB 802 Elements and Translate into Customer Value Propositions. This would be captured in a matrix posted to the WHPA website by December 31, 2016.				
Milestone	Owner	Deliverable	Due Date	Dependencies

Don indicated that the major focus for the committee was their effort to translate key performance objectives into more detailed customer value propositions.

Don shared that in his work with customers, it was very challenging to try and get those customers to think in terms of maintenance performance objectives, anything beyond a scope of work typical list of maintenance tasks. Customers typically didn't have direct or easy access to their repair costs or energy costs in order to set maintenance program performance objectives or the inclination. Most just wanted to see a maintenance proposal scope of work, the price and get an agreement in place and then move on to their next work item.

When Don thought of performance objectives he mostly thought of repair costs, energy usage and HVAC related energy costs.

Dan Stradford, NADCA, said he was himself a building owner and responded to tables, numbers and graphics which conveyed what could be saved if they implemented this approach. The solar industry commonly helps provide a payoff timeframe so a customer could project how long it would take to pay for their investment. A return rate on that investment. In order to prove this approach is worthwhile to clients, they'd probably need before/after energy use studies to show the change. That would show what clients could typically expect. Quantification was critical.



## Goal 2: Commercial Quality Maintenance Committee Tuesday July 12, 2016 Meeting Notes

Don thought that was a good example of an investment which brought energy bills front and center. There was a clear cost for the solar panels which would reduce their conventional energy usage by a projected amount to allow calculating a payback period. Visual aids would be helpful to introduce proposed changes in repair and utility costs. In HVAC there is a dispute with regulators even recognizing that there is value in measures such as condenser or evaporator coil cleaning. That they have any significant impact on airflow or refrigeration cycle efficiency. Proving that these measures improve energy efficiency was still a barrier.

Jeremy Reefer, SDG&E, shared that they had an energy savings calculator posted to their cooling program website. It provided a simple payback return on investment (ROI) for equipment incentives. He imagined that in time they could come up with an averaged savings calculator matrix by climate zone, building type and other key variables.

<https://www.premiumcooling.com/commercial/> Program site  
<https://www.premiumcooling.com/commercial/calculators.php> Calculators found on left side of program site

Dale Rossi, FDSI, thought that there were probably a finite number of key performance objectives. For each one, whether energy related or otherwise, there needed to be a data source. If a data source could be located, they could then move forward to define metrics for determining whether an objective was being reached or not. He wondered whether building such a matrix was an achievable goal within the timeframe and limited meetings which the full committee had? He thought it would take at least as much effort and time as his working group was committed to deliver. He thought that weekly meetings were the magnitude of effort required to achieve that objective.

Jeremy Reefer thought that getting a strawman structure for those matrices established was an achievable goal. Whatever could be accomplished this year would benefit not only the IOUs but also the legislature and regulators. The IOUs were on a parallel path focused on changing building owner behavior. A value proposition matrix could inform and support the sales process. This could help support program design in the future. These matrices will help regulators and implementers better understand how the marketplace works.

Don Langston agreed with the possible uses for a VP matrix. He also agreed with Dale Rossi's statements about the need for a separate working group, chair and dedicated time. But, would just have to see where that effort would lead.

Richard Danks, Richard Danks Consulting, commented along the lines of overall performance objectives that you could have the greatest maintenance program in the world but still wouldn't realize much savings unless the building was being operated properly. Conversely, a lot of HVAC equipment shutdowns and failures would actually save a lot of energy, at a price. He asked 1) how you intended to integrate proper building operation when you discussed maintenance with customers and 2) if maintenance had traditionally been focused on avoiding equipment failure, how could it address the three goals of Standard 180?

Don Langston responded that many of his clients served customers or employees who dined in or worked in the building. If they weren't comfortable, they wouldn't stay or come back. He was always trying to access energy bills to discuss with customers so they could talk about potential energy savings that would result from maintaining the equipment. Beyond that, it was a struggle to get their attention to even address those sorts of goals.

Pepper and the working group's effort was highlighting that different building types had different audiences. What was critical to each would vary greatly. For a blood bank, equipment uptime might be far more critical than utility costs.

Richard Danks suggested that there might be parts of current performance contracting practices which would be valuable to capture. Guaranteed savings was not only dependent upon specific energy savings measures but also there were guidelines established for building operations. He offered to look into this practice to see what might be relevant.





## **Goal 2: Commercial Quality Maintenance Committee Tuesday July 12, 2016 Meeting Notes**

Jeremy Reeve suggested that pre/post audits which could establish the percentage of estimated or projected savings was actually achieved would be a good model to follow.

Don Langston responded that a major barrier seemed to be the regulators who persisted with insisting on a deemed savings approach to program claimed savings rather than on measured performance. Whatever simple measurements could be taken would lend themselves to metrics which could be compared over time to show progress. He'd proposed putting equipment performance measurement into program contracts for some time. That program participants agree to sitting down to review their current energy usage against past records to determine, once the data was weather normalized, did they save any energy. If saving energy was a driver for these utility programs, it only made sense to him to require an evaluation of energy usage to participate.

Jeremy Reeve agreed and added that you could then weave in the other objectives, like indoor air quality, which were in line with CEC installation requirements.

Adrienne Thomle commented that she thought what Don and Jeremy were addressing was all covered in ASHRAE Standard 100. The most recent revision was published either in 2013 or 2014. She asked whether they were aware of this standard? It covered putting targets out for buildings on energy usage and measuring against the goal. If goals were not achieved, they were then required to take on additional energy efficiency change measures to try and achieve their targets. They might even be required to take audits of different levels. She was confused with what this committee was trying to achieve when compared to what Pepper and the CQM User Guide WG was already doing. She thought that a lot of the work had already been done but needed to be pulled together. She encouraged all to get and read Standard 100.

Bob Sundberg, WHPA staff, agreed and stated that one major step which the committee needed to take was clarifying how its effort could complement but not duplicate efforts of its working group.

Don Langston agreed. The next step was to address what the committee could do without another working group resource that would complement the working group's efforts with only about one-half hour per meeting. That was something that could be carried on with an email discussion in preparation for the next monthly meeting.

Bob Sundberg suggested that the WG might compare their goal to what the full committee had discussed and suggested what the full committee could focus on to support the WG effort.

### **IOU Business Development Planning Process & recent CPUC/ED Guidance – IOU Representatives**

No news.

### **California Legislative Assembly Bill 802 & Senate Bill 350**

No discussion.

### **Closing Comments/Adjournment**

Don Langston commented that he knew he would be traveling on their normal 2<sup>nd</sup> Tuesday in August. He should know within the week and would contact Bob Sundberg to propose the date for the next meeting.

Don also held an after meeting discussion with Marc Pickett about how to include larger end users to get their feedback and still respect their limited time. Possibly to work on a short list of specific questions and invite them to attend only a part of a future meeting.



## Goal 2: Commercial Quality Maintenance Committee Tuesday July 12, 2016 Meeting Notes

Tentative agenda items:

- ADMIN
  - New business
  - Industry/IOU/Regulator News
  - IOU program monthly updates
  - CQM User Guide Working Group update – Value Proposition Matrix
  - Check on SCE report of program customer energy usage and analysis and
  - IOU business plan development – committee/individual involvement and committee input update
- Working Session
  - Goal #2 – Translating performance objectives into customer value propositions –
  - How to coordinate full committee efforts with WG effort
- Confirm next meeting date/time, ACTION items, agenda, adjourn

The meeting was formally adjourned at 11:11 am PDT.

\* \* \* \* \*

### **ACTION Items List – next page**

<b>Summary of NEW Action Items and Key Decisions</b>
--

NEW July 12 ACTION Items – none.

#### PAST ACTION ITEMS:

September 2015 ACTION: Scott Higa, SCE, would report progress on the testimonials and access to and analysis of customer energy data at the next monthly meeting. Ongoing.