



**WHPA Goal 2: CQM Standard 180 User Guide Working Group**  
**Thursday April 27, 2017 Meeting Notes**

**Call to Order**

The meeting was called to order at 10:04 am PDT by Don Langston, CQM Committee Chair.

**Roll Call**

The Chair considered one member of each organization to be a voting member for this working group. 9 of 17 voting members in attendance would constitute a quorum. 8 voting members, 3 non-voting members, 3 guests and 1 staff were present for a total of 15 attendees.

P = Present at meeting				
A = Absent from meeting; if proxy has been assigned it will be noted below.				
Although Voting Members have been designated by Staff, this group acts primarily by consensus.				
<b>CQM User Guide Working Group Voting Members</b>				
ACCA (Air Conditioning Contractors of America)	Donald	Prather	Contractor Association	
Air Management Industries	April	Yungen	Contractor (Nonresidential)	
Aire Rite AC & Refrigeration	Don	Langston	Contractor (Nonresidential)	P
AMS (American Mechanical Services)	Marc	Pickett	Contractor (Nonresidential)	P
Charles Segerstrom, Energy Efficiency Consulting	Charles	Segerstrom	Energy Efficiency Program Consultant	P
CLEAResult (formerly PECEI)	Todd	Van Osdol	California IOU	P
FDSI (Field Diagnostic Services Inc.)	Dale	Rossi	Third Party Quality Assurance Providers	
GWP (Goodheart-Willcox Publisher)	Sandy	Clark	Educator, Trainer	P
Honeywell E&ES, Commercial Buildings, Trade	Michael	Lawing	Controls (Manufacturer or Distributor)	
HSE (Honeywell Smart Energy Solutions)	Shayne	Holderby	Energy Efficiency Program Consultant	P
Marina Mechanical	Denny	Mann	Contractor (Nonresidential)	
National Comfort Institute	Jeff	Sturgeon	Educator, Trainer	
Richard Danks Consulting - FacilityPro	Rick	Danks	Other Stakeholder	
SCE (Southern California Edison)	Scott	Higa	California IOU	
Tre' Laine Associates	Pepper	Hunziker	Energy Efficiency Program Consultant	P
Western Allied Corporation	Mike	Gallagher	Contractor (Nonresidential)	
Warren Lupson and Associates	Warren	Lupson	Other Stakeholder	P
<b>CQM User Guide Working Group Non-Voting Members</b>				
BELIMO	Darryl	DeAngelis	Controls (Manufacturer or Distributor)	
BMI (BuildingMetrics, Inc.)	Pete	Jacobs	Energy Efficiency Program Consultant	
Brownson Technical School	Bill	Brown	Educator, Trainer	
CLEAResult (formerly PECEI)	Michael	Blazey	Energy Efficiency Program Consultant	
HSGS (Honeywell Smart Grid Solutions)	Steve	Varnum	Energy Efficiency Program Consultant	
PG&E	Christian	Weber	California IOU	P
SCE (Southern California Edison)	Steve	Clinton	California IOU	P
SMUD (Sacramento Municipal Utility District)	Bruce	Baccei	Publicly Owned Utility	
XCSpec	Janet	Peterson	Controls (Manufacturer or Distributor)	P
Adrienne Thomle, Consulting**	Adrienne	Thomle+		P
AirTest Technologies	Mike	Schell	HVAC Manufacturer	
HVACRedu.net	Chris	Compton	Educator, Trainer	P
Little Caesar's **	Wendy	Gallo+		P
<b>WHPA Staff (Non-Voting)</b>				
BBi (Better Buildings Inc.)	Mark	Lowry	WHPA Executive Advisor/BBi COO	
BNB Consulting/WHPA Staff	Bob	Sundberg	Energy Efficiency Program Consultant	P (scribe)



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Empowered Solutions/WHPA Staff (WHPA Co-Director)	Shea	Dibble	Energy Efficiency Organization	
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*\*\* Organization is Not a Member of the WHPA; + Individual is NOT Registered with the WHPA; <sup>(P)</sup> after last name = Member/Registrant is Pending Approval from the WHPA Executive Committee*

*To avoid repetition, the name of the member organization will not be repeated in the body of the minutes past the first identification with the name of the representative participant.*

**Welcoming and Member Introductions**

No new members or guests.

**Approve Previous Meeting Draft Notes**

The April 20 meeting draft notes were distributed April 25. Members were asked to provide any additional suggested revisions or corrections after which finalized meeting notes would be posted to the WHPA website by Bob Sundberg.

**ACTION Items**

None.

**New Business – Don Langston**

Don Langston, Chair – thanked Jan Peterson and the small group of initial members for their meeting the previous day. He noted that they recognized that they were lacking participation in the group by an actual property owner. It was critical to have the group obtain that participation for there to be meaningful understanding of that perspective. Members of the building owners and managers association (BOMA) or the international facilities management association (IFMA) would, certainly, be welcomed. He requested attendees to forward good candidates to himself, Bob Sundberg or Jan Peterson.

Jan Peterson, XCSpec - confirmed the meeting of the User Guide Customer Communications Working Group (WG) had met the previous day to develop their WG goal, objectives and final 2017 work product was intended to be. She agreed with Don's statement about the need for building owner participation to bring credibility to the WG output. It was very helpful to have James Graening, B2B Sales Excellence, participate and bring his experience training contractors on selling commercial maintenance agreements to the group.

**AGENDA**

Topic	Discussion Leader	Desired Outcome
Welcome, Roll Call, Member Introduction, Approve Past Meeting Notes, Review Action Items, New Business, Meeting Agenda	Chair, WHPA Staff	Record attendees, welcome any new members, approve previous meeting minutes, review status of any open Action items, planned agenda and bring up any new business items for the WG to consider addressing.
WG goals, scope, direction and leadership	Don Langston	Members share a clear understanding for the goals of this WG and determine WG Chair
ASHRAE Standard 62.1 User Manual preview	Rick Danks	As time permitted, look together at an example of another standard user manual to better understand ASHRAE approach and common structure
PG&E HVAC Optimization program participant user manual	Shayne Holderby	As time permitted, examine the participant user manual PG&E staff and implementers had developed for 2017
Confirm next meeting date/time, assign actions and proposed agenda and adjourn.	Don Langston, WHPA Staff	Clear understanding of member responsibilities for the next meeting. Next meeting date/time established.



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### ASHRAE Standard 62.1 User Manual preview doc – Don Langston (Rick Danks unable to attend)

Don Langston led a discussion about this ASHRAE user manual as an example of how ASHRAE committees typically structured their manuals. He admitted to having little experience with ASHRAE user manuals since the Standard 180 Committee was the first ASHRAE committee he'd been involved with.

#### 1. Purpose

Intended to establish minimum indoor air ventilation rates and measurements intended to provide acceptable indoor air quality conditions.

#### 2. Scope

Only addressed commercial (non-residential) buildings. Residential dwellings were addressed in Standard 62.2.

Don suggested the WG and the work product they'd produce be limited in scope to commercial buildings predominantly served by packaged and split systems, not built up larger commercial systems with chillers and boilers. Don and Warren Lupson agreed that this packaged equipment provided heating and cooling for some 75% to 80% of commercial buildings.

Warren Lupson, Lupson & Associates – he added that the user guide should be more focused on Standard 180 Section 4 and the maintenance program plan and development than on Section 5 and what specific equipment was delivering the heating and cooling.

Todd Van Osdol, CLEAResult – agreed and thought the WG should focus more on Section 4 and a philosophy of maintenance than Section 5 and the equipment that delivered comfort conditions. He also thought the work product, user guide, would benefit from including comments on the scope of Standard 180 itself. That the standard applied strictly for comfort cooling, not process cooling or other industrial processes. Include comments about the intent of the standard and where it was applicable.

Adrienne Thomle, independent consultant – she reminded the group from her past ASHRAE participation, that ASHRAE standards were written in code usable language which stated requirements and was intended to be followed precisely, to the letter. A standard, by its nature, could not include comments, Q&A, explanations or examples. The user guides were developed to help explain how they intended the standard to be used. To provide an explanation for why the standard was written the way it was. User guides, generally, followed the standard section by section.

Bob Sundberg, WHPA staff – he'd previously distributed the ASHRAE Standard 61.1 no charge preview obtained from the ASHRAE techstreet.com download/purchase sight and provided links to the location to all WG members/guests.

### PG&E HVAC Optimization program participant user manual – Shayne Holderby, Honeywell Smart Energy

Shayne Holderby, Honeywell Smart Energy – this guide had evolved since inception in 2011. The guide was developed to both explain what the standard wanted done and the PG&E commercial maintenance program which was based on the standard. The current version had been distributed about two months prior.

#### Sections 1 through 5

Fully, a third of the guide was developed to engage the customer. Another large portion of the guide was intended for participating contractors, their role and responsibilities. The balance of the guide provided an explanation and requirements of the utility program participation, both for the customer as well as for the contractor/service provider.



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### Section 6

Customer program task description. Customers were provided with a quick reference section and overview description intended to help those less familiar with their HVAC system and its key components and subsystems. Why that portion of the system was important and the potential negative impact if it operated improperly. Not intended to replace the owner/contractor more detailed discussion that needed to take place. But, to provide a brief overview for those less familiar with HVAC systems. This section identified which portions of the system would have great impact on energy efficiency, thermal comfort and indoor air quality (IAQ).

This user guide, along with the customer's log-in credentials and procedure to access the Portal, is bundled and sent together to each customer. A class would be offered quarterly for customers on Portal access, resources and information contained in the user guide.

Don Langston congratulated the PG&E program team for getting a guide out there to improve customer communication. He asked whether there was anything in the works to help draw out customer information, get an idea about their maintenance "pain" and feedback or to establish owner proposed maintenance program goals?

Shayne Holderby – one of the advances made with the updated Portal was in the area of goal setting as well as the need to update those goals yearly. In addition, each of the required tasks as well as needed repairs would be recorded by the contractor at the Portal and automatically added to be part of the annual review. The customer did not have the ability to make data updates without communication with their contractor, in advance. Nor to adjust, for example, inspection intervals. Some event had to occur to drive that inspection interval change or other maintenance program modification. Whether adding a new unit or wanting to make changes in the direction or details of their maintenance program, the Portal directed a customer to meet and discuss the issues, first, with their contractor.

Bob Sundberg, WHPA staff – he asked about how the customer was encouraged to propose maintenance program goals in the program.

Shayne Holderby – Section 3 provided sort of a "service map of possible issues and goal topics. He said they hadn't yet gone into great detail on how, exactly, they could go about building that maintenance plan or set of maintenance program goals. He'd learned over the five years with the program that contractors tended to hold firm opinions about how they preferred to go to market. Also, an equally strong resistance to a utility program trying to tell them how they needed to go to market. The user guide and program tried to highlight key points, but left that to individual contractors and their customers on how they'd organize those goal topics into their own program. It was not something their staff and program thought they should provide or require.

Bob Sundberg, WHPA staff – were customers and contractors encouraged to review energy use, HVAC portions, consider past and current use comparisons, to try and arrive at possible savings, for example? Trends of energy bill tracking over the three years? Attempt to go beyond maintenance tasks to their impact on maintenance program costs which would provide some evidence in support of continuing the program approach after program incentives expired? To try and establish the value delivered by the program's approach.

Shayne Holderby – Section 9.2 of the guide dealt with the maintenance plan which didn't go into that degree of detail. This section did not define goals related to thermal comfort, energy use, savings, efficiency or indoor air quality improvement. Those were that stated purpose of the standard but the guide did not provide guidance on how to establish program goals around those stated purposes or related goals. He was aware that Don and others had brought up that it would greatly help customer continuation after the program if there was a solid way to define how much energy use had improved (savings proven). He was cautious about goals being set based on energy use/savings. Some units might be repaired and brought back online and operate very efficiently. But, they would increase, rather than reduce, building energy use. In the past, they might have had all their outdoor air louvers closed to restrict outdoor air in violation of Title 24 installation requirements. Having outdoor air dampers and economizer systems returned to proper operation could increase energy use rather than produce energy savings. Measures to increase energy efficiency



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and reduce energy consumption could have a negative impact on IAQ. These goals all have trade-offs and what improves one might well harm or reduce results for another goal.

Shayne Holderby - thought they could add some suggestions under the maintenance plan area to consider thinking about, like reviewing energy bills. He didn't think it was their place to try and drive customers in a direction regarding goals.

Don Langston – he thought energy use was one goal that could be emphasized since there was baseline information available for comparison over time. He realized that some customer goals might not be referred to directly in Standard 180, only inferred. He asked Shayne if the user guide contained any references to other goals, like equipment reliability, where tracking uptime or repairs might reveal a trend?

Shayne Holderby – no, they'd not gone beyond those goal topics listed in Section 9.2 in the user guide.

Don Langston – he thought that the user manual including some suggestive survey questions might be helpful to start meaningful contractor/customer conversations. That would be especially valuable for customers who didn't have a track record of understanding HVAC system maintenance needs and the downside to not having a good program in place. It would involve a cultural change that would need to also address how to communicate the value of better maintenance with their upper management decision-makers.

Shayne Holderby – he agreed and thought that including a graphic of a goal survey list of questions might be valuable. He also thought the guide could go further into ROI since, by that time, customers were already enrolled. It would provide a reminder to consider goals and tracking around ROI at the first year and later reviews.

Jan Peterson, XCSpec – there were ROI “hard number” figures that were more easily quantified, like energy use. Establishing metrics for other “soft benefits” like IAQ were more difficult. Employee productivity, absenteeism, occupant space level of complaints by customers or employees were tougher than reviewing energy bills. She asked how Shayne might approach those types of goals and pain points. How would he approach some specific “returns on investment?”

Shayne Holderby – defining specific goal metrics were, he thought, strongly avoided by IOUs. He cautioned contractors from attempts to define specific goal metrics, as well because there were so many factors that effected each one. He considered setting goals like “you're going to save 22% on your energy use” to be dangerous. Considering more specific ROI goals and metrics, HVAC equipment capital expenditures was one of the most ignored. Common practice was to run it, fix it, run it, fix it, run it to fail – replace it. The replacement cost for that unit, in many organizations, fell into an entirely different part of the budget from operations and maintenance costs. The contractor would be in a good place to help customers compare the cost of replacement to cost of maintenance over the expected life of packaged equipment. Life expectancy would be different for each practice. Possibly 15 years if under maintenance and only 7 to 8 years if operated in a “run-to-fail” mode. They'd need to determine whether the loss and replacement cost for a unit was worth the expense of maintaining the original unit over its expected life. Examples of that sort of comparison, projected ROI, would be relatively easy to lay out. Any more granular detailed ROI might leave the customer thinking they were misled if the specific goal target was not achieved. He also cautioned that when greater results were achieved than projected or than established as a goal, customers would be disappointed if that same level of achievement was not repeated. Exceeding a goal could set contractors up for disappointing their customer the next year if lesser savings was achieved.

Jan Peterson thought that Shayne's discussion and examples were very helpful and meaningful.



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**Closing Comments/Adjournment**

Don Langston, Chair – he reminded the group that they still needed someone to step forward and help lead, shepherd this group going forward. Rick Danks had agreed to help and participate when he could, but not to lead this team on a full-time basis. Don even suggested other working group members should consider becoming the WG chair on an interim or temporary basis. Rotating WG leadership from different perspectives could prove valuable since there were WG members with such varied work experience. He asked that anyone interested contact him and also alert Bob Sundberg to their willingness to help lead the group for a period of time.

Don was committed during the next three weeks but thought they should next meet near the end of May.

The next meeting was scheduled for Thursday May 25 at 10:00 am PDT.

The meeting was adjourned at 11:06 am PDT.

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**Action Items and Key Decisions**