



WHPA Goal 2: CQM Standard 180 User Guide Working Group Thursday August 18, 2016 Meeting Notes

Call to Order

The meeting was called to order at 10:04 am PDT by Dale Rossi, Chair of this working group and a representative of Field Diagnostic Services Inc. (FDSI).

Roll Call

The Chair considered one member of each organization to be a voting member for this new working group, He intended to work toward consensus on all decisions. 11 of 20 voting members in attendance would constitute a quorum. 6 voting members, 1 non-voting members, 0 guests and 1 staff were present for a total of 8 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.				
CQM User Guide Working Group Voting Members				
ACCA (Air Conditioning Contractors of America)	Donald	Prather	Contractor Association	P
Aire Rite AC & Refrigeration	Don	Langston	Contractor (Nonresidential)	
AMS (American Mechanical Services)	Marc	Pickett	Contractor (Nonresidential)	P
BELIMO	Darryl	DeAngelis	Controls (Manufacturer or Distributor)	
BMI (BuildingMetrics, Inc.)	Pete	Jacobs	Energy Efficiency Program Consultant	P
Charles Segerstrom, Energy Efficiency Consulting	Charles	Segerstrom	Energy Efficiency Program Consultant	P
CLEARresult (formerly PECEI)	Michael	Blazey	Energy Efficiency Program Consultant	
FDSI (Field Diagnostic Services Inc.)	Dale	Rossi	Third Party Quality Assurance Providers	P
GWP (Goodheart-Willcox Publisher)	Sandy	Clark	Educator, Trainer	
Honeywell ECC, Commercial Buildings, Trade	Michael	Lawing	Controls (Manufacturer or Distributor)	
HSGS (Honeywell Smart Grid Solutions)	Shayne	Holderby	Energy Efficiency Program Consultant	
Marina Mechanical	Denny	Mann	Contractor (Nonresidential)	
NADCA	April	Yungen	Contractor (Nonresidential)	P
National Comfort Institute	Jeff	Sturgeon	Educator, Trainer	
Richard Danks Consulting - FacilityPro	Richard	Danks	Other Stakeholder	
SCE (Southern California Edison)	Steve	Clinton	California IOU	
Tre' Laine Associates	Pepper	Hunziker	Energy Efficiency Program Consultant	
UC Davis EEC (Energy Efficiency Center)	Kristin	Heinemeier	Research Organization	
Western Allied Corporation	Mike	Gallagher	Contractor (Nonresidential)	
Warren Lupson and Associates	Warren	Lupson	Other Stakeholder	
CQM User Guide Working Group Non-Voting Members				
CLEARresult	Mike	Withers	Energy Efficiency Program Consultant	
HSGS (Honeywell Smart Grid Solutions)	Steve	Varnum	Energy Efficiency Program Consultant	
SCE (Southern California Edison)	Todd	Van Osdol	California IOU	P
SCE (Southern California Edison)	Scott	Higa	California IOU	
CQM User Guide Working Group Guests				
Adrienne Thomle, Consulting**	Adrienne	Thomle+		
Fresno Unified School District	Frank	DiLiddo		
Little Caesar's **	Wendy	Gallo+		
WHPA Staff (Non-Voting)				
BBI (Better Buildings Inc.)	Mark	Lowry	WHPA Executive Advisor/BBI COO	
BNB Consulting/WHPA Staff	Bob	Sundberg	Energy Efficiency Program Consultant	P (scribe)
Empowered Solutions/WHPA Staff (WHPA Co-Director)	Shea	Dibble	Energy Efficiency Organization	

** 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

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

Welcome April Yungen, Air Management Industries, as a new voting member of this WG. She is also a director for the NADCA, National Air Duct Cleaners Association, and a colleague of Dan Stradford/NADCA board members. Here firm started in 1997 with air duct cleaning and added air balancing services in 2000. Their focus was on indoor air quality, occupant comfort and improving system energy efficiency.

Approve Previous Meeting Draft Notes

The August 11 meeting draft notes were distributed August 14. Finalized meeting notes would be posted to the WHPA website by Bob Sundberg.

ACTION Items

May 26 ACTION: Todd Van Osdol, SCE, agreed to get together with Scott Higa to locate and provide the group with examples of the reporting tools which the program provided customers and examples of reports delivered to customers. To be provided at WG meeting dealing with customer facing reporting, topic #5. Completed.

June 30 Key Decision: should the WG develop a second, parallel table of benefits to contracting firms that would result from their proposing maintenance based on Standard 180. Dale Rossi suggested they see if time permitted their addressing this additional market segment player.

STATUS: Not resolved.

August 11 Key Decision: the working group reached consensus that they would limit their 2016 effort by focusing on three key market segments (owner occupied, national accounts, MUSH/institutional) and develop others only as future time allowed. Completed.

August 11 ACTION: remaining meeting attendees concluded that schools and each of the MUSH market segments should probably be grouped but given their own rows as the group collected more detailed information on each. The VP Matrix should be revised to reflect these sub-segments. Ongoing.

New Business – reference to the Standard 180 term “inventory”

Richard Danks concern over use of the ASHRAE STD 180 term “inventory.”

” I have noticed in your comprehensive working group notes a tendency for committee members to offer an opinion on what Standard 180 means without properly vetting the opinion to verify it is correct. Case in point: there was a discussion a month or so ago regarding equipment inventory and whether an asset could be left off the inventory. It is unclear whether the conversation was referring to the ASHRAE/ACCA/ANSI standard or the WHPA version of the standard; and this would make a difference

I do not agree with the opinion voiced. I am aware that the ASHRAE Committee leadership is working on a related issue that includes what is to be included in the inventory. Granted, the current 180 text requires "components that impact HVAC system performance shall be inventoried," or words to that effect. The literal interpretation would say this includes every pipe joint, union, damper, sheet metal screw, flexible duct connection, etc. needs to be listed. Clearly this is very impractical and unreasonable. This implies there are assets that should not be listed in the inventory. In fact, some users call this "the inventory of items to be inspected and maintained." Also there are certain devices that cannot be maintained but should be inspected.

If the reference is to the WHPA version, then I withdraw my concern. If the reference is the ASHRAE standard, then please know that there is a process to request an official interpretation through ASHRAE channels.

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Not to add to the bureaucracy, but I am concerned with correct information being disseminated, not just opinion.”

This new business topic was not addressed at the August 18 meeting.

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.
Review 8/11 VP Matrix – characterizing market segments	Dale Rossi	All members would understand what was discussed and/or decided at the previous meeting and provide final revisions or corrections.
VP Matrix – organize and refine	Dale Rossi	Simplify, combine redundant comments, re-group, organize for improved clarity, consider prioritizing most important comments roughly in priority top to bottom
Standard 180 – investigating unacceptable conditions and performance		Clarify intentions of Standard 180 terms
Set next meeting date/time, assign actions and proposed agenda and adjourn.	Dale Rossi, WHPA Staff	Clear understanding of member responsibilities for the next meeting. Next meeting date/time established.

User Guide Topics – Dale Rossi

This working group (WG) decided that it would explore the following Standard 180 related topics. The WG intended to select one highest priority topic to focus on for most of 2016. When completed, they would select a next highest priority topic to pursue during the balance of 2016 or into 2017 dependent on WHPA allocated resources.

1. Understanding performance objectives and condition indicators
2. Making a maintenance plan
3. Investigating unacceptable conditions and performance
4. **Communicating the value proposition – selected as primary deep dive topic for 2016**
5. Customer facing reporting

Working Group meeting resource status – Bob Sundberg

Bob reported that after this meeting there would be four remaining WG meetings. Dale planned to devote two meetings to refining the VP Matrix and the final two meetings focused on finalizing their work product. Dale hoped to hold future WG discussions with more end users representing several market segments if/when additional WG resource was made available. The next meeting was planned to focus on the VP Matrix Best Practices column.

Review previous WG meeting focused on school market segment – Dale Rossi

The VP Matrix had not been updated since the August 11 meeting with Frank DiLiddo, school market segment representative, by Dale or Pepper Hunziker because of other work demands and work travel.

Organize and refine VP Matrix

Owner Occupied Market Segment discussion – Small vs. Large

Dale Rossi had split this market segment into two portions, small and large.

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- Small referred to most situations where the owner paid for and managed any HVAC maintenance themselves and paid for all facility and energy costs. A small business with a limited number of locations. Examples: single or a few restaurants; single of limited number of paint or hardware stores; a landlord owner who leased out space but was responsible for all facility, HVAC and energy costs and replacing failed equipment.
- Large intended to refer to situations where there were many buildings or locations and full time professional facility management was usually contracted. Large owner occupied also paid all of the maintenance and energy bill and replacing failed equipment.

Pete Jacobs, BuildingMetrics, agreed. He liked the distinction being made based on responsibilities and decision making process rather than strictly on size, square feet, which was often used.

National Account market segment

- Tended to be large corporations with hundreds or thousands of locations.
- Wide geographic distribution of locations.
- Used corporate professional or professional property management services.
- Used many contracting firms to deliver maintenance, repair, replacement services.
- Some exceptions like Macy's or Walmart which used in-house crews supplemented with contracted services.
- Might make use of brokers for HVAC services
- Have dedicated, separate capx – capital expense accounts

Pete Jacobs added that a portion of the national account segment had strong, centralized energy management and facility management services and decision-making. Others did not, were broken up by regional management.

Dale Rossi agreed. Some even had what he termed “perverse incentives.” An energy manager had no input into the maintenance program and a facility manager who had no responsibility for energy use. (Barrier)

Marc Pickett, AMS, agreed and had even run into fairly substantial national accounts which had those two mentioned and another construction department in addition. (Barrier)

Todd van Osdol stated that they'd run into this quite often in their SCE program where facilities and construction departments didn't know what energy management was doing. Equipment was being replaced but not coordinated with which units were being serviced. Each didn't know what the other was doing. (Barrier)

Todd added that some customers had multiple contractors who didn't necessarily communicate. One firm for maintenance services and another for emergency service or replacement. He asked if others were aware of similar arrangements.

Dale Rossi offered that he knew that Walmart used in-house crews for most of their work but contracted out some emergency response and larger project work. Sometimes contracted out limited services like filter change or coil cleaning only services. The standard only required the owner to document who was responsible for which specific maintenance tasks.

MUSH Market Segment – municipal, university, school, hospital, federal and state government

Dale Rossi asked whether this was the market segment most likely to have in-house maintenance and HVAC crews. This segment might include other government entities like military facilities, all levels of government. He wasn't certain about municipals but thought the other three did. He asked what else would characterize this segment.

- Required to get multiple bids, many layers of decision-making often separated by fixed dollar limits
- Strict rules around how they were allowed to spend taxpayer money
- Strong interest in equipment longevity – plan to own the facility for a very long time
- Open to long term performance contracts (15 to 39 years in length)

- Often a strong union presence

User Guide Outline document – Topic 3 - Investigating unacceptable condition and performance

Dale Rossi paraphrased Standard 180 Section 4 which stated that if unacceptable conditions or performance was found during investigation of inspections, the responsible party was obligated to determine why and take appropriate action.

ASHRAE/ACCA/ANSI Standard 180 revised 2012, Section 4.2.2.d

4.2.2.d Inspection and Maintenance Task Frequencies.

Frequency of *inspection* and *maintenance tasks* for inventoried equipment and systems shall be established. If unacceptable condition indicators or unacceptable *performance* is found during two successive *inspections*, the owner, or owner’s designated representative, shall investigate and analyze possible causes. At a minimum, the following possible causes shall be investigated.

Based on the analysis, the *inspection frequency* or the *maintenance task* shall be modified to resolve the deficiency.

Dale indicated that this was the current 2012 standard for which they were developing the user guide. The issue - the 2012 version of the standard still retained language in Section 5 that maintenance tasks included component repair and replacement. A previous CQM Committee working group had provided the Standard 180 Committee with recommended revisions which would separate repairs and replacement from being considered maintenance tasks. There hadn’t yet been any action taken on those suggestions. This suggestion was made because when maintenance was outsourced, contractors could not just proceed with repairs or equipment replacement like some in-house staffs could. Contractors needed to propose this work and get approval. It was extremely rare that any repairs above modest limits or equipment replacement would ever be part of a fixed price maintenance agreement. The standard appeared to have been written from a facility managers perspective and not account for contracted service circumstances.

Standard 180 Section 5, TABLE 5-22 Rooftop Units

TABLE 5-22 Rooftop Units

Inspection/Maintenance Task	Frequency*
a Check for particulate accumulation on filters. Clean or replace as necessary to ensure proper operation.	Quarterly
b Check ultraviolet lamp. Clean or replace as needed to ensure proper operation.	Quarterly
c Check steam system traps, pumps, and controls. Clean or replace as needed to ensure proper operation.	Semiannually
d Check control system and devices for evidence of improper operation. Clean, lubricate, repair, adjust, or replace components as needed to ensure proper operation.	Semiannually
e Check P-trap. Prime as needed to ensure proper operation.	Semiannually
f Check fan belt tension. Check for belt wear and replace if necessary to ensure proper operation. Check sheaves for evidence of improper alignment or evidence of wear and correct as needed.	Semiannually
g Check variable-frequency drive for proper operation. Correct as needed.	Semiannually
h Check for evidence of buildup or fouling on heat exchange surfaces. Restore as needed to ensure proper operation.	Semiannually
i Check for proper operation of cooling coil, heating coil, or heat exchangers and for damage or evidence of leaks. Clean, restore or replace as required.	Semiannually
j Check air filter fit and housing seal integrity. Correct as needed.	Annually
k Check control box for dirt, debris, and/or loose terminations. Clean and tighten as needed.	Annually
l Check motor contactor for pitting or other signs of damage. Repair or replace as needed.	Annually
m Check fan blades and fan housing. Clean, repair, or replace as needed to ensure proper operation.	Annually
n Check refrigerant system temperatures. If outside of recommended levels, find cause, repair, and adjust refrigerant charge to achieve optimal operating levels.	Annually

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Dale asked contractors on the call what would be the situation if they proposed increased task frequency or repairs? For example, if the coil cleaning frequency was insufficient to maintain proper heat transfer. How would that discussion go in relation to Standard 180 requirements? Under a utility program?

Marc Pickett, AMS, said they applied the standard as they understood it. They would propose the additional work but it could be turned down for budget, timing or other reasons.

Dale concluded that the CA utility programs didn't really apply this SHALL requirement part of the standard. To comply with the standard, action must be taken to resolve the deficiency. You were absolutely required to fix the situation.

The group discussed several possible revision suggestions and the use of the terms "may" as well as "shall." The Standard 180 Committee would hesitate making the standard more onerous but might not be fully aware of the implications that required repair or replacement in the current standard. The WG might need to request a formal interpretation of this issue. Whether failed components MUST be either repaired or replaced to be in compliance with the standard's requirements.

Dale Rossi explained that the user guide this group was developing would never be a direct part of the standard itself. Like the foreword and appendices, a user guide would be a supplemental document to the standard. It was intended to provide explanations and interpretations of the standard but would not be considered authoritative until adopted in part or whole by the Standard 180 Committee.

Dale thought that their user guide might have some impact on IOU program design. He asked attendees and implementers how they'd like to have the standard worded and the user guide explain? How contractors and owners should deal with unacceptable conditions and performance?

Todd van Osdol, CLEAResult, thought that there needed to be some engagement with the customer to discuss the issue and action taken to remediate it. Their utility program did have provisions for contractors to adjust maintenance tasks or frequency to be in accordance with the standard. It wasn't really enforced in the program, but the option was there. But, that was a good question which he intended to run by Scott Higa, SCE program manager.

Dale Rossi posed the situation the utilities might be facing shortly. He thought that if AB 802 legislation implementation plans were finalized in September or relatively soon, that would have some impact on a move from deemed to meter based energy savings claims. Wouldn't that have some impact on program requirements based on some new way to claim program savings? He asked Todd to talk with Scott about that likelihood and what would they like to see in program changes to more fully comply with standard requirements. How could it improve program implementation or help achieve greater savings. He suggested they try to imagine if a customer had an energy use related performance objective to reduce HVAC energy consumption by 10% and a metric was established to track this. You'd have to conduct this investigation analysis to determine whether you were achieving the performance objective. For that kind of scenario, how would the program like that to play out?

Todd mentioned that customer reports which he'd provided to Bob Sundberg for the group did prompt contractors to revisit the maintenance plan with their customers and make changes they'd agree on regarding frequency and tasks. But, it wasn't much more than an invitation presently. It was encouraging closer examination of whether performance objectives were being met more so than specific condition indicators. He didn't have any answer for how they might like the scenario which Dale described to play out. He'd have to talk that over with Scott Higa.

ACTION: Todd van Osdol would talk with Scott Higa about how they thought the implementation of AB 802 might have an impact on their program and also about how they might consider addressing the energy use reduction sort of performance objective which Dale Rossi described.



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ACTION: Bob Sundberg would make sure that the customer reports provided by SCE were distributed to members/guests.

Closing Comments/Adjournment

The next meeting was scheduled for Thursday August 25 at 10 am PDT. The agenda would be to focus on the column for Best Practices for communicating the value proposition. He asked them to think about what kind of evidence or documentation they thought would be useful and effective.

The meeting was adjourned at 11:03 am PDT.

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Action Items and Key Decisions

June 30 Key Decision: should the WG develop a second, parallel table of benefits to contracting firms that would result from their proposing maintenance based on Standard 180. Dale Rossi suggested they see if time permitted their addressing this additional market segment player.

STATUS: Not resolved.

August 11 ACTION: remaining meeting attendees concluded that schools and each of the MUSH market segments should probably be grouped but given their own rows as the group collected more detailed information on each. The VP Matrix should be revised to reflect these sub-segments. Ongoing.

August 18 ACTION: Bob Sundberg would make sure that the customer reports provided by SCE were distributed to members/guests. (to be sent out with August 18 meeting notes)

July 18 ACTION: Todd van Osdol would talk with Scott Higa about how they thought the implementation of AB 802 might have an impact on their program and also about how they might consider addressing the energy use reduction sort of performance objective which Dale Rossi described.