



Goal 2: Commercial Quality Installation Committee Meeting Minutes
Friday, March 17, 2017

Call to Order

The meeting was called to order at 12:04 p.m. PDT by Chair Rob Falke, President of National Comfort Institute. Meetings are normally scheduled for 60 minutes.

Agenda

Topic	Discussion Leader	Desired Outcome
Welcome, Roll Call, Review Agenda, Approve Minutes of Previous Meeting, and ACTION Items	Bob Sundberg and Rob Falke	Record meeting attendees, finalize past meeting minutes, confirm agenda, and review status of meeting action items.
New Business	Rob Falke	Committee informed on new business topics and recent developments.
Review of the Data Spec WG Goals and 2017 Proposed Milestones	Pete Jacobs	Discuss plan for sequence of data spec modifications for RI and CM application and development of performance evaluation protocols and scoring method.
Proposed Goal 2 – AB 802 Field Measured Individual System Baseline Work Product	Ben Lipscomb	Review of white paper on how the HVAC industry could implement AB 802 in the field and solicitation of volunteers to work on the document.
Proposed Goal 6 – Typical California HVAC System Performance Work Product	Rob Falke	Overview of the objectives of the white paper and solicitation of volunteers to develop the white paper.
Review of the CI Goals and Proposed Progress Milestones for 2017	Rob Falke	Overview of 2017 Goals and Implementation Plan.
Summarize Meeting, Assignments, ACTION Items, Set Next Meeting Date and Time, and Adjourn	Rob Falke and Bob Sundberg	Review meeting, ACTION items, and set next meeting date, and adjourn.



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Roll Call

P = present at meeting			A = absent at meeting	
Voting Members				
Air-Tro	Bob	Helbing	Contractor (Nonresidential)	P
All Pro Plbg., Htg. & AC	Michael	Greany	Contractor (Nonresidential)	P
BMI (BuildingMetrics)	Pete	Jacobs	Energy Efficiency Program Consultant	P
GLM (Green Link Mechanical)	Jerry	Hernandez	Contractor (Nonresidential)	A
Lincus-Solaris	Brian	Mauleon	Energy Efficiency Program Consultant	P
NCI (National Comfort Institute)	Rob	Falke	Educator, Trainer	P
SCE (Southern California Edison)	Sean	Gouw	California IOU	P
Tre' Laine Associates	Pepper	Hunziker	Other Stakeholder	P
Non-Voting Members				
AMS	Marc	Pickett	Contractor (Nonresidential)	P
NCI (National Comfort Institute)	Ben	Lipscomb	Educator, Trainer	P
Guests				
Big Ass Solutions	Don	Dodd	HVAC Manufacturer	P
Staff				
BNB Consulting (Staff Support/Host)	Bob	Sundberg	WHPA Staff	P
Galawish Consulting (Scribe)	Elsia	Galawish	WHPA Staff	P

Approve Minutes of Previous Meeting

The February 17 meeting notes were distributed March 1. The minutes were finalized, approved, and would be posted to this Committee's location at the WHPA website.

Review Status of ACTION Items from Previous Meeting

- February 17 ACTION: Rob Falke (NCI) committed to authoring a summary of what a work product paper to accomplish Goal #2 and #6 could look like. The outline/summary would be sent out to the entire Committee to solicit volunteers to work on completing that project.
- February 17 ACTION: Committee members were to review the work product outline/summary drafted by Rob Falke (NCI) for Goals #2 and #6 and were to indicate by email which goal they were willing to support and work to accomplish.
- February 17 ACTION: Once the 2017 proposed Goals and Implementation Plan were completed, they would be distributed to members for discussion at the March 17 meeting.

New Business – New CQI Committee Facilitator

Chair Rob Falke (NCI) – With mixed emotions, I report that, given Bob Sundberg’s (Staff) success with his various Committees and Working Groups, his workload has grown exponentially and Bob will now focus on facilitating those other Committees and Working Groups. I thank him for all he has done for the CQI efforts and I congratulate him on how he has held the groups together. Bob will be passing the baton for facilitating the CQI efforts to Elsia Galawish (Staff).

Over the past five years, Elsia has worked as a consultant to SCE program managers focusing on HVAC program strategies and providing legislative and regulatory guidance. Previous to that, she worked as an energy consultant at Itron, Inc., managed the Energy Efficiency EM&V group at PG&E, and worked as an International Economist at the

World Bank and in the central banking arena. Elsia currently facilitates the ASHRAE SPC 221 Committee and the WHPA FDD Committee. She looks forward to working with the CQI Committee.

Review of the Data Spec WG Goals and 2017 Proposed Milestones

CQI SFDS Working Group Chair Pete Jacobs (BMI) – The next step for the Data Spec WG is to transform the approved version published last year into a version that would be applicable to both commercial maintenance and residential installation programs. A draft of the Residential Maintenance (RM) spec is currently circulating and will be distributed to the WG this week. A meeting of the WG will be scheduled shortly. The strategy is for the WG to review and modify the RM-applicable specs and then send to the RI Committee for their consideration.

Rob Falke (NCI) – Is there was a specific date the RQI Committee was looking for their spec?

Bob Sundberg (Staff) – The next scheduled RQI Committee meeting is 4/19/17. Given the downturn of the SCE program and its re-emergence in a much smaller form this year, the RI Committee and its WG have been allocated fewer meetings for 2017. Therefore, delivering the RI modified data specs prior to the 4/19 meeting would allow time for review. In case the WG does not have enough time between now and 4/19 to address the RI data spec and the formula and the calculations for scoring and performance evaluation methodology, Pete Jacobs (BMI) should provide a status update to either Working Group Chair Buck Taylor (Roltay) or Elsia Galawish (Staff) prior to the 4/19 meeting.

Proposed Goal 2: AB 802 Field Measured Individual System Baseline Work Product

Ben Lipscomb (NCI) – For Goal 2, the group is tasked with drafting a white paper (*attached on page 6*) to communicate how we think AB 802 can be implemented in the field. AB 802 states that the CPUC, and by extension the IOUs, should start looking for savings relative to existing baselines that will show up at the meter. The Committee’s goal is to figure out the “boots on the ground” to make that happen. The draft white paper is a first cut at describing the current situation and some of the gaps in (a) AB 802 as legislated, (b) AB 802 as interpreted by the CPUC, and (c) the actual “boots on the ground” that will get the work done. Table on page 1-2 of the 4-page draft white paper shows barriers and potential solutions for addressing those barriers in order to close the gaps. Initial barriers include:

- Looking at which customers need energy upgrades – Figuring out how to target customers who can benefit the most from the HVAC system improvements.
- Determining which upgrades are needed – Targeting the customers who could benefit is potentially something that can be done using metered data. However, it is our opinion that as you move into the building and system in more detail, figuring out which upgrade is specifically needed cannot be accomplished using metered data for most buildings.
- Customer education.
- Creating the actual scope of work.
- Training the workforce to make these measurements performance.
- Expected savings estimation.
- Pre- and post-baseline outside the meter – Input into savings estimates.
- Unknown incentive amount.

Overarching issue:

Ben Lipscomb (NCI) – One cannot go to a customer and propose lots of work that should save energy and inform the customer that he/she will be paid a year later. That value proposition will not work with most business and residential customers. Customers want the incentive at the time they make the decision. The white paper seeks to address this overarching issue – trying to “ground” the lofty ideas of AB 802.

Next Steps

Rob Falke (NCI) – I solicit volunteers to work on the Goal 2 white paper with me. All comments and feedback should be sent to me at robf@ncihvac.com. I need your ideas to take the initial concepts and formalize them into an AB 802 guidance paper that WHPA can distribute to regulators and legislators – guidance for IOUs to build programs that will be compliant with AB 802.

Bob Helbing (Air-Tro) – From a contractor’s perspective, no customer will wait a year to be paid. There is currently frustration with the long lead times to get incentives to customers under existing programs. Incentives depend on real savings, and that creates uncertainty. One solution would be to target (qualified leads) customers with poorly performing HVAC systems.

Rob Falke (NCI) – Can someone explain how the IOUs use smart meters to pinpoint customers who have poorly operating HVAC systems?

Sean Gouw (SCE) – There are products in the market with algorithms that attempt to disaggregate end uses from metered data at the residential sector only. We are still evaluating the effectiveness of those products. It also depends a lot on how much they can train their systems to recognize the different operating modes and end uses. Basically, there is no simple answer. Meter cannot find the fault.

Pete Jacobs (BMI) – A way to tie the pieces together is presumably, if an estimate of the annual cooling energy can be derived from the algorithm, marrying that with the TI/TO efficiency would be a nice way to project savings from short-term instantaneous values. In other words, if there is 1000 kWh cooling with 20% improvement, the results would project out to 200 kWh of savings.

Bob Sundberg (Staff) – SB 1414 is a California directive that regulators must follow, so it may take more than policy guidance. The Bill may have to be changed. The Bill requires a customer or contractor receiving a rebate or incentive offered by a public utility for purchasing or installing central air conditioning or a heat pump and their related fans to additionally provide a proof of permit closure. The Bill further states that in order to receive a rebate or incentive offered by a public utility for an energy efficiency improvement or for the installation of energy efficient components, equipment, or appliances in buildings, the recipient is required to certify that the improvement or installation complied with applicable permitting requirements, that the contractor performed the installation or improvement, and that the contractor holds the appropriate license for the work performed.

Pete Jacobs (BMI) – From a contractor’s perspective, can you set up a pay-for-performance strategy with the contractor taking the risk? Will contractors wait until the end of year to collect incentives?

Bob Helbing (Air-Tro) – Contractors are unable to wait a year for incentives; they cannot finance anything while working on a progress-billing model. The issues are what the long process lead time is and what happens when there is an error and things are tied up. Basically, you will see a drop off in participation (uptake) if you make it difficult for contractors to make a living.

Ben Lipscomb (NCI) – Introduced the issue of influence (POE) – If you are trying to offer the perk of an incentive that is going to come a year down the road and the incentive is at risk based on actual energy savings at meter, you have to wonder how much influence the program is having on the incentive to move forward with the project. For the program to clearly influence the decision, incentive needs to be upfront with minimum risks.

Bob Sundberg (Staff) – Bob Helbing (Air-Tro) mentioned a barrier for most contracting firms that needs to be distinguished for regulators – not having a business model for financing. Regulators need to understand that about 90 percent of the HVAC market is not like ESCOs who develop large energy efficiency projects for customers where they assume financing for a share of the incentives on guaranteed savings. Goal 2 white paper can provide an education to regulators regarding the barriers for most contractors.

Proposed Goal 6: Typical California HVAC System Performance Work Product

Rob Falke (NCI) – The Committee is tasked with determining the calculation methods for developing a standardized, repeatable, performance-based method for system evaluation. I will take the first step at publishing a draft white paper with data about typical CA HVAC systems performance. This white paper is planned for distribution later in the year. I would like some volunteers to assist me in developing this white paper to document the level of performance of a typical system in California.

With regulators looking toward performance of AB 802, they will need real data on how systems really work in California. Our data specs do not specify that a system has to be operating at 72% to be code compliant. In recent meetings with the CEC – the building compliance group – they were extremely interested in how HVAC systems work in California; and with this new scoring method, how does one specify and what is a good/bad system? Is a 75% system good?

1. Sources of Data: There are currently about 3K contractors gathering data on HVAC systems using test methods that the draft SPC 221 data spec describes.
2. There is an interest at the CEC via the Electric Program Investment Charge (EPIC) to provide funds for contractors who would have to provide data on the performance of HVAC systems in both the residential and the commercial sectors.
 - a. Using CQI data spec, we can pinpoint how well the equipment is working and how well the system is working, and we can also identify the kind of defects that are contributing to the deterioration of HVAC systems' performances in California.
 - b. The CEC is also interested in how well current T24 systems are actually functioning? CEC does not have data on this. Maybe T24 systems are another opportunity for gathering data.

Bob Helbing (Air-Tro) – What about the HERS reports the CEC has been collecting since 2008? Isn't that data? The value of performance data could shed light on HVAC systems operations.

Pete Jacobs (BMI) – The raw data is there. The HERS data go into a database (registry); it is not performance-based but more duct blaster tests, etc. Projecting that type of data to performance would require some calculations. DNV GL recently released draft of the HVAC-6 Study-Market Assessment to identify Baselines and Barriers for Existing HVAC Conditions, Building Permit, and Title 24 Compliance. The preliminary report delves into permitting and compliance rates for residential rates; what fraction of the jobs pull and close permits; for sites permitted, what fraction of potential savings did the jobs achieve; for jobs that did not pull permits, what savings did they achieve? The two-volume permitting report for your review can be found at https://pda.energydataweb.com/api/downloads/1598/HVAC6%20Market%20Assessment%20of%20Residential%20HVAC%20Installations%20Results%20Phase%20One_FINAL.pdf.

Marc Pickett (AMS) – I agree with Bob Helbing (Air-Tro) that customers and contractors are not willing to wait a year for incentives. I will continue to participate in the Committee to see how things progress. Until someone is willing to pay the customer to go to a higher level, they are not going to do it.

Don Dodd (Big Ass Solutions) – I echo the same sentiment. Incentives are only good if the payment is timely. We cannot expect contractors to buy in without some assurance that these programs are valid and will be administered effectively.

Pepper Hunziker (Tre' Laine Associates) – I want to follow up on SB 1414 public comments relating to time period for pulling and closing the permit. In addition, I am assessing how WE&T fits into AB 802. I will update the Committee on SB 1414 at the 4/21 meeting.

Summarize Meeting, Assignments, ACTION Items, Set Next Meeting Date and Time, and Adjourn

March 17 ACTION Items:

1. **Solicitation of volunteers** to work on the Goal 2 white paper. Members are requested to review the draft Goal 2 white paper below and indicate by email their willingness to work on this project. All comments and feedback should be sent to Rob Falke at robf@ncihvac.com.



Taking AB 802 into
the Field.pdf

2. **Solicitation of volunteers** to assist in developing a white paper that documents the level of performance of a typical system in California. Members are requested to review the draft Goal 2 white paper (Typical CA HVAC System Performance) below and indicate by email their willingness to work on this project. All comments and feedback should be sent to Rob Falke at robf@ncihvac.com.



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3. **At the 4/21 meeting, Pepper Hunziker (Tre'Laine) will provide a SB 1414 update** – the impact of this law on the future of participation by contractors and consumers in utility programs after January 1, 2019. Link to SB 1414: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB1414

Next Meeting: Friday, April 21, 2017, at 10:00 a.m. PDT.

The meeting was adjourned at 1:04 pm PDT.

Submitted Elsia Galawish, WHPA Staff
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