



**Goal 2: Commercial Quality Installation Committee Meeting Minutes**  
**Friday April 21, 2017**

**Call to Order**

The meeting was called to order at 10:04 a.m. PDT by Chair Rob Falke, President of National Comfort Institute. Meetings are normally scheduled for 60 minutes.

**Agenda**

ITEM	AGENDA TOPICS 4/21/17	FACILITATOR
5 min.	Welcome and Roll Call	Rob Falke Elsia Galawish
5 min.	Approval of 3/17/2017 Meeting Notes Review Agenda	Elsia Galawish Rob Falke
5 min.	Update on SCE and CPUC Commercial Installation Programs: 1. The response to the CQR Engineering Paper 2. The results of the CQI Monitoring Project 3. Prospects for future CQI Programs	Scott Higa
10 min	Proposed Goal 2 – AB 802 Application on the Street Work Paper	Rob Falke
10 min	Report and Discussion about Comments Submitted for SB 1414: All System Receiving Incentives Shall Have Building Permits	Elsia Galawish
10 min	Progress Report on Data Spec Working Group: Commercial Maintenance and Residential Data Specs	Pete Jacobs
10 min	Proposed Goal 6 Working Group Members: Typical California HVAC System Performance Work Product	Rob Falke
3 min.	New Business	All
2 min.	Closing Comments/Adjournment	Rob Falke
	Next Meeting: May 19, 2017, 10:00-11:00 a.m. PDT	Elsia Galawish

**Roll Call**

P = present at meeting		A = absent voting member		
Voting Members				
Air-Tro	Bob	Helbing	Contractor (Nonresidential)	P
All Pro Plumbing, Heating & A/C	Michael	Greany	Contractor (Nonresidential)	A
BuildingMetrics	Pete	Jacobs	Energy Efficiency Program Consultant	P
GLM (Green Link Mechanical)	Jerry	Hernandez	Contractor (Nonresidential)	P
Lincus-Solaris	Brian	Mauleon	Energy Efficiency Program Consultant	A
NCI (National Comfort Institute)	Rob	Falke	Educator, Trainer	P
SCE (Southern California Edison)	Sean	Gouw	California IOU	A
Tre' Laine Associates	Pepper	Hunziker	Contractor (Nonresidential)	A
Non-Voting Members				
AMS (American Mechanical Services)	Marc	Pickett	Contractor (Nonresidential)	P
NCI (National Comfort Institute)	Ben	Lipscomb	Educator, Trainer	P
SDG&E (San Diego Gas & Electric)	Paul	Thomas	California IOU	P
Guests				
Big Ass Solutions	Don	Dodd	HVAC Manufacturer	P
Staff				
Galawish Consulting (facilitator and presenter)	Elsia	Galawish	Energy Efficiency Program Consultant	P

**Approval of 3/17/17 Meeting Notes**

Jerry Hernandez (GLM) made the motion to approve the minutes. There was not a voting quorum for approval of the March 17, 2017, CQI Committee Meeting minutes, so an email request for a “second” and final approval has been sent to members. *NOTE: The motion passed on May 12 by email vote of 6 Ayes, 0 Nays, 1 Abstention, and 1 member unavailable to vote.*

**Update on SCE and CPUC Commercial Installation Programs**

Most of the meeting was spent discussing this agenda item presented by Scott Higa (SCE):

- **CQI Program Development:** SCE has been working on developing a deemed work paper (WP) for CQI Program so that it can be launched with savings that could be claimed a deemed approach. This approach is a way to claim savings on a per unit basis, and that unit can be tons or to make savings claim based on level of improvement on field energy efficiency ratio that was measured and calculated with field data.
- **Current Activities:** SCE developed a proposed High Opportunity Potential Program (HOPPs – AB 802-related) and the Comprehensive Value Chain HVAC Program that was submitted last year to the CPUC. This proposed program was reviewed by the CPUC, and their feedback essentially guided SCE to provide more documentation to show that the savings are developed using typical (representative) values seen in the field. The data that was collected via CQR (part of CQI development phase) needs to be supplemented with additional information—typical field values.
- The way that WPs are developed for the deemed program requires strong evidence that they are appropriate for typical HVAC systems—industry standard practice or what is the typical condition of what can be seen in the field. It means that an appropriate sample size needs to be obtained to make a statistical assumption of what is typical. This is costly and challenging.

- SCE's approach to developing a method of savings estimation is to leverage work done by the CQI WG. We took the methods (for field data specs) that this group developed as well as ongoing development of savings calculation estimates based on collected data and applied this work to developing the new CVC HVAC approach that we proposed to CPUC. We have been collecting additional information and are continuing to build a database of existing conditions. This information will not only be used in this new program but may also further advance the development of a deemed WP approach.

Bob Helbing (Air-Tro) – Does the new program require that permits be pulled to participate in the rebates?

Scott Higa (SCE) – It depends. SCE's policy group interpretation of the law (SB 1414) is that, if an HVAC unit is installed and receives an incentive for installation, a proof of closed permit must be received prior to incentive being provided by the utility. For the potential new program (CVC HVAC) offering, if an activity that does not include installation or replacement of a new unit but may include renovation of duct system or an upgrade to existing unit retrofitting with upgrade on components, those upgrades and renovations do not necessarily need a closed permit to receive an incentive. The law focuses primarily on the HVAC unit installation.

Bob Helbing (Air-Tro) – With the closed-permit requirement in 2017, our Early Retirement (ER) customers have stopped participating. Customers do not want an inspector on the job site. Has SCE seen a change in participation in the program since the new rule?

Scott Higa (SCE) – The ER program was suspended last year and has not reopened. This is due to the closed-permit requirements as well as the preponderance of evidence requirement showing influence POE from the program.

NOTE: Many Committee members noted the negative impact that closed permits will have on the CQI Program and Scott Higa (SCE) acknowledged that it is a huge concern for SCE. He also noted that he has been receiving feedback that the SB 1414 requirement will inhibit participation.

Paul Thomas (SDG&E) – I concur with Scott Higa (SCE) that (a) SB 1414 applies to the unit and not the system and (b) there are potential negative participation impacts to the program. But it is the law and the IOUs have to comply. He reiterated that the IOUs do not want to be compliance officers.

Jerry Hernandez (GLM) – Are the savings only for RTUs and up to what tonnage?

Scott Higa (SCE) – For the CVC HVAC program, RTUs only – single zone unit. Unsure of tonnage requirements.

Rob Falke (NCI) – The CPUC is asking for more data that is more representative of a typical “system.” What does that mean?

Scott Higa (SCE) – CPUC is asking for data that is more representative of units. What would be representative across factors contributing to the population? Major factors would be building type and climate zone. It is an average of a population, and this is the challenge. SCE proposed a method using TI/TO values of a specific site and then translated this site-specific info vs. CPUC's feedback of comparing to a typical average value across the populations of buildings.

Rob Falke (NCI) – The real question is what real performance data does the CPUC have to compare against the data set provided by SCE?

Scott Higa (SCE) – What was proposed was clearly innovative and a different way to claim savings against the population—a different model.

Jerry Hernandez (GLM) – If TI/TO data is not sufficient, the only alternative is bin data on the minute or hour interval. This is then compared to the weather patterns of that bin, and calculations are developed using psychometric charts, etc.—the number of BTUs used. Is this what would be required?

Scott Higa (SCE) – Part of the approach SCE was taking on its WP development was bridging the gap between the site-specific data and a way to estimate energy savings. The results would be specific to a building. The challenge is how do you take the results from a specific site and compare it against what would typically be seen across a population of buildings? One option would be to do that for an entire population of buildings and see what the average typical performance of HVAC systems are. However, as Jerry Hernandez (GLM) pointed out, this method has its challenges because HVAC systems on buildings perform differently under same conditions. Given the many different climates around buildings, benchmarking buildings is difficult. There will be issues with climate zones, building vintages, and building types when attempting to find the typical values for each bucket. However, it could be done by possibly using EnergyStar benchmarking tools with different climate zones and building vintages. I would like to ask for industry input on this topic.

Rob Falke (NCI) – We are striving for savings at the meter – that would be the end-all of what savings is. The deemed WP approach, large samples, and comparisons against the population have nothing to do with savings at the meter. Seems like you are talking about things that are not relevant much longer and not consistent with the direction the state is requiring us to go. There are TI/TO data and measurements for improvements of system performance that are consistent with savings that will show up at the meter. Feedback from the CPUC sounds like noise from old programs and old ways of looking at savings calculation methods. How do they propose to get from that old way of thinking to savings at the meter?

Scott Higa (SCE) – The proposed HVAC CVC Program will utilize a metered-based approach. AB 802 allows the IOUs another vehicle to claim savings based on savings measured at the meter as Rob Falke (NCI) described. The intent is that the new program would measure pre- and post-meter data usage before and after some intervention on the system with continued maintenance to ensure persistence of savings. That approach is intended to confirm energy savings that were achieved by the HVAC interventions. It is not only a new way and a new method to claim savings, but also a method to help validate and confirm the actual energy savings that are being achieved via interventions rather than the average and estimated savings calculated through work papers.

Perspective: Although the meter-based approach intended to be more the actual energy savings being achieved through energy efficiency measures, there is a necessary analysis step that has to be performed on the pre/post data to finalize the savings calculation. For the metered-based approach, IOUs are required to take one year of pre-intervention meter performance data and compare this to one-year of post-intervention metered performance data and look at the difference.

There is a benefit to having WP calculations estimates in the sense that you can do intervention and have a quick estimate of savings. This would reduce admin burden to estimating those savings. There are pros and cons to both approaches, and the IOUs hope to leverage both approaches. The meter-based data will validate the work paper calculations estimate that we estimate for potential deemed approach.

In addition, the work of CQI Field Data collection specification is intended to roll into methods used in the HVAC CVC Program calculation methodology, and part of that calculation approach is to estimate savings at the time of intervention. Some work is still needed to solidify that savings estimate. Work does not end here; there will be continued refinement to get to a high level of confidence in estimating pre/post intervention energy savings.

Don Dodd (Big Ass Solutions) – I agree with Rob Falke (NCI) regarding “showing the savings with TI/TO data at the meter.” How is the building being run? What is driving the energy usage at the site? What about the issue of plug loads impacting HVAC energy usage and the difficulty in finding ways to decouple plug loads to show the retrofit savings at the unit? Plug loads could be a factor driving the HVAC system’s energy usage to increase.

Scott Higa (SCE) – Plug loads will be accounted for in the pre-intervention data – energy usage baseline.

### **Proposed Goal 2: AB 802 Application on the Street Work Paper**

Chair Rob Falke (NCI) – Last meeting, this skeleton white paper was introduced to the group for discussion. It is theoretical and attempts to describe the current situation, some of the gaps between AB 802 regulations and interpretations, what is done in the field, any associated barriers, and to develop solutions for addressing barriers and closing the gaps. I will produce the first draft with the three of us who have volunteered so far: Michael Greany (All Pro) for the sales perspective, Pepper Hunziker (Tre’Laine) for the training perspective, and me for the testing perspective. We are still looking for a volunteer for the customer perspective. The intent is to take the initial concepts and formalize them into an AB 802 guidance paper that WHPA can distribute to regulators and legislators and that could provide guidance for IOUs to build programs that will be compliant with AB 802.

### **Report and Discussion about Comments Submitted for SB 1414: Closed Permit Requirements**

Elsia Galawish (Staff) – Updated the group on SB 1414 and its impact on the future of participation by contractors and consumers in utility programs after January 1, 2019.

Summary of SB 1414 – This is a California directive that regulators must follow beginning January 1, 2019:

- Directs the California Energy Commission (CEC) to develop a plan by 2019—in consultation with the Contractors State License Board (CSLB), local building officials, and other stakeholders—to promote the installation of central air conditioning and heat pumps in compliance with Part 6 of Title 24 of the California Code of Regulations.
- Prohibits an investor-owned utility (IOU) from paying out a rebate or incentive for energy efficiency upgrades unless the recipient proves closure of regulatory permitting and compliance with any requirements of the state's building standards for energy efficiency.

*“Under the act, 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 any applicable permitting requirements and, if a contractor performed the installation or improvement, that the contractor holds the appropriate license for the work performed.”*

*(b) (1) If a customer or contractor is the recipient of a rebate or incentive offered by a public utility for an energy efficiency improvement or installation of energy efficient components, equipment, or appliances in a building, the public utility shall provide the rebate or incentive only if the customer or contractor certifies that the improvement or installation has complied with any applicable permitting requirements, including any applicable specifications or requirements set forth in the California Building Standards Code (Title 24 of the California Code of Regulations), and, if a contractor performed the installation or improvement, that the contractor holds the appropriate license for the work performed.*

*(2) In addition to the requirements of paragraph (1), if a customer or contractor is the recipient of a rebate or incentive offered by a public utility for the purchase or installation of central air-conditioning or a heat pump, and their related fans, the public utility shall provide the rebate or incentive*

*only if the customer or contractor provides proof of permit closure. The public utility is not responsible for verifying the proof of permit closure documentation provided by the customer or contractor.*

Link to SB 1414: [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201520160SB1414](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB1414)

Rob Falke (NCI) – Here are two perspectives:

Perspective 1: At the industry level—at best 5% code compliance level on retrofit work—it appears that this legislation is an attempt to increase that failure rate. Is there any salvation for code compliance out there? Some customers will not comply with the code, and that is the typical response from the industry.

Perspective 2: Several contractors pull 100% permits and won't do a job without a permit. Few of these are commercial and this is only about 1%-2% of the market. What influence will this Bill will have on the IOUs' commercial programs?

Jerry Hernandez (GLM) – There are customers not complying with SB 1414 due to the “can of worms” that the Bill could open relating to non-compliance with ADA. Customers have been cited for violation of ADA when inspectors (who do not understand the HVAC system) were sent to inspect HVAC systems.

#### **Progress Report on Data Spec Working Group: Commercial Maintenance and Residential Data Specs**

Pete Jacobs (BMI) – At the 4/6/17 CQI SFDS Working Group Meeting, the group reviewed and discussed the draft adaptation of the Commercial Standard Field Data Specs for Residential systems. Members provided feedback and comments that were incorporated into the draft, and the proposed Residential Specifications were sent to the RQI Committee.

RQI Committee Chair Buck Taylor (Roltay) will decide whether he will convene another working group or keep it in the core Committee for discussion and approval.

Next Step: Adaptation of CI spec for CM. Schedule a meeting to review a draft and take comments.

#### **Proposed Goal 6 – Working Group Members: 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. Sources of Data: There are currently about 3k contractors gathering data on HVAC systems using test. Using CQI data spec, we can pinpoint how well the equipment is working.

#### **New Business/Closing Comments/Adjournment**

Next CQI Committee Meeting is Friday, May 19, 2017, at 10:00 a.m. PDT.

The CQI Committee Meeting was adjourned at 11:02 a.m. PDT.

**ACTION ITEMS**

1. **Goal 2 Work Product – AB 802 White Paper:** Subgroup of members to work on taking the initial concepts and formalizing them into an AB 802 guidance paper. All comments and feedback should be sent to Rob Falke at robf@ncihvac.com.



Taking AB 802 into  
the Field.pdf

2. **Goal 6 Work Product – Typical California HVAC System Performance White Paper:** The Committee is tasked with determining the calculation methods for developing a standardized, repeatable, performance-based method for system evaluation. Rob Falke (NCI) is soliciting volunteers to assist in developing this white paper that documents the level of performance of a typical system in California. Members are requested to review the draft Goal 4 white paper below (Typical CA HVAC System Performance) 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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