



## Goal 2: Residential Quality Installation Committee October 19, 2016 Meeting Notes

### Call to Order

The meeting was called to order at 10:04 am PDT by Buck Taylor, Chair, Roltay, Inc.

### Roll Call

5 of 9 voting members are needed for a quorum. 9 of 9 voting members, 9 non-voting members and 2 guests/staff attended. There were 20 total attendees at this meeting. Bob Sundberg facilitated the online Webex and call conference, recorded the meeting and produced summary meeting notes.

| WHPA Goal 2: RQI Committee VOTING Members  |          |                |  | Roll Call |
|--|----------|----------------|--|-----------|
| ACCA (Air Conditioning Contractors of America)   | Wes      | Davis          | Contractor Association                 | P         |
| Benningfield Group   | Russ     | King           | Third Party Quality Assurance Provider | P         |
| DNV GL Energy Services (formerly KEMA)   | Zachary  | Connolly       | Energy Efficiency Program Consultant   | P         |
| Energy Analysis Technologies   | Chris    | Ganimian       | Third Party Quality Assurance Provider | P         |
| Mechanical Systems Design & Consulting (MSDC)  | Jeff     | Henning        | Educator, Trainer                      | P         |
| NCI (National Comfort Institute)   | Scott    | Johnson        | Educator, Trainer                      | P         |
| Henry Bush Plumbing, Heating and Air Conditioning and Home Energy Solutions (Redlands Plumbing & Heating & AC) | Tyler    | Miner          | Contractor (Residential)               | P         |
| Roltay Inc.  | Buck     | Taylor (Chair) | Other Stakeholder                      | P         |
| Superior Air   | Larry    | Kapigian       | Contractor (Residential)               | P         |
| WHPA Goal 2: RQI Committee NON-VOTING Members  |          |                |  |           |
| Air Conditioning Contractors of America (ACCA)   | Glenn    | Hourahan       | Contractor Association                 |           |
| Air Conditioning Contractors of America (ACCA)   | Donald   | Prather        | Contractor Association                 | P         |
| Air Conditioning Contractors of America (ACCA)   | Todd     | Washam         | Contractor Association                 |           |
| ASHRAE   |          |                | Engineering Society                    |           |
| BuildingMetrics  | Pete     | Jacobs         | Energy Efficiency Program Consultant   | P         |
| Building Performance Institute   | Jeremy   | O'Brien        | Certifying Body                        |           |
| CEC (California Energy Commission)   | Jeff     | Miller         | Government                             |           |
| CPUC/ED (California Public Utilities Commission - Energy Division)   |          |                | California PUC                         |           |
| Clean Energy Horizons, LLC   | Norm     | Stone          | Energy Efficiency Program Consultant   |           |
| Davis Energy Group   | David    | Springer       | Energy Efficiency Organization         | P         |
| EPA/ENERGY STAR  | Chandler | Von Schrader   | Government (Other than CPUC)           | P         |
| ICF International  | Casey    | Murphy         | Energy Efficiency Program Consultant   |           |
| Misti Bruceri & Associates, LLC  | Misti    | Bruceri        | Energy Efficiency Program Consultant   |           |
| PG&E (Pacific Gas and Electric Company)  | David    | Bates          | California IOU                         |           |
| PG&E (Pacific Gas and Electric Company)  | Marshall | Hunt           | California IOU                         |           |
| PG&E (Pacific Gas and Electric Company)  | Swapna   | Nigalye        | California IOU                         |           |
| Quinn-Murphy Consulting LLC  | Patrick  | Murphy         | Educator, Trainer                      |           |



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|   |                |                 |  |   |
|---|----------------|-----------------|--|---|
| Sacramento Municipal Utility District (SMUD)                    | Ravi           | Patel           | Publicly Owned Utility                 |   |
| SDG&E (San Diego Gas & Electric)                                | Collin         | Smith           | California IOU                         | P |
| SDG&E (San Diego Gas & Electric)                                | Jeremy         | Reefe           | California IOU                         | P |
| SCE (Southern California Edison)                                | Lori           | Atwater         | California IOU                         | P |
| SCE (Southern California Edison)                                | Anne Marie     | Blankenship     | California IOU                         |   |
| SCE (Southern California Edison)                                | Scott          | Higa            | California IOU                         |   |
| SCE (Southern California Edison)                                | Steve          | Clinton         | California IOU                         | P |
| SCE (Southern California Edison)                                | Jarred         | Ross            | California IOU                         |   |
| SoCalGas (Southern California Gas Company)                      | Harvey         | Bringas         | California IOU                         | P |
| ZONEFIRST   | Richard        | Foster          | Controls (Manufacturer or Distributor) |   |
| <b>WHPA Goal 2: RQI Committee Pending Candidates</b>            |                |                 |  |   |
| <b>WHPA Goal 2: RQI Committee NON-VOTING Guests</b>             |                |                 |  |   |
| Aire Rite Air Conditioning and Refrigeration                    | Don            | Langston        | Contractor (Nonresidential)            |   |
| Benningfield Group  | Lynn           | Benningfield    |  |   |
| Building Performance Institute                                  | John           | Jones           | Certifying Body                        |   |
| California Public Utilities Commission (CPUC) - Energy Division | Pete           | Skala           | California PUC                         |   |
| CDH Energy  | Hugh           | Henderson       | Energy Efficiency Organization         |   |
| CLEAResult (formerly PECE)                                      | Michael        | Blazey          | Energy Efficiency Program Consultant   |   |
| CLEAResult (formerly CSG)                                       | Mike           | Withers         | Energy Efficiency Program Consultant   |   |
| Field Diagnostic Services                                       | Dale           | Rossi           | Third Party Quality Assurance Provider |   |
| Galawish Consulting   | Elsia          | Galawish        | Energy Efficiency Program Consultant   |   |
| ICF International   | Ben            | Bunker          | Energy Efficiency Program Consultant   |   |
| Johnson Consulting**  | Katherine      | Johnson+        |  |   |
| Johnson Controls Inc. (JCI)                                     | Bryan          | Rocky           | HVAC Manufacturer                      |   |
| National Comfort Institute                                      | Rob            | Falke           | Educator, Trainer                      |   |
| NIST (National Institute of Standards and Technology)           | Piotr          | Domanski**<br>+ |  |   |
| NIST (National Institute of Standards and Technology)           | Vance          | Payne**+        |  |   |
| PG&E (Pacific Gas and Electric Company)                         | Mary           | Anderson+       | California IOU                         |   |
| PG&E (Pacific Gas and Electric Company)                         | Sam            | Choe+           | California IOU                         |   |
| PG&E (Pacific Gas and Electric Company)                         | Robert         | Davis           | California IOU                         |   |
| PG&E (Pacific Gas and Electric Company)                         | Leif           | Magnuson        | California IOU                         |   |
| Research Products (Aprilaire)                                   | Eric           | Brodsky         | HVAC Manufacturer                      |   |
| SCE (Southern California Edison)                                | Joseph "Dario" | Moreno          | California IOU                         | P |
| SCE (Southern California Edison)                                | Andres         | Fergadiotti+    | California IOU                         |   |
| SCE (Southern California Edison)                                | Sean           | Gouw            | California IOU                         |   |
| Tre' Laine Associates   | Pepper         | Hunziker        | Energy Efficiency Program Consultant   |   |
| <b>WHPA Staff</b>   |                |                 |  |   |
| BBI (Better Buildings Inc.)                                     | Mark           | Lowry           | WHPA Executive Advisor/BBI COO         |   |
| BNB Consulting/WHPA staff support                               | Bob            | Sundberg        | Energy Efficiency Program              | P |



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|                     |      |           |                  |  |
|---------------------|------|-----------|------------------|--|
|                     |      |           | Consultant       |  |
| Empowered LLC       | Shea | Dibble    | WHPA Co-Director |  |
| WHPA emeritus staff | Mark | Cherniack |                  |  |
|                     |      |           |                  |  |

*\*\* Organization is Not a Member of the WHPA; + Individual is NOT Registered with the WHPA  
(P) following 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; the individual names of meeting participants will be used.*

**Approve Minutes of Previous Meeting**

September 21 meeting draft notes were distributed September 22. Revisions received were incorporated into the notes. Finalized meeting notes would be posted to the WHPA site under the RQI Committee.

**AGENDA**

| Topic  | Discussion Leader            | Desired Outcome  |
|--|------------------------------|--|
| Welcome, roll call, previous meeting minutes, welcome new members/candidates and guests, approval of past meeting notes, new business topics, meeting agenda | Buck Taylor and Bob Sundberg | Produce an accurate record of all attendees, finalize and approve past meeting minutes, welcome new members and guests, identify new business. |
| Review previous Action items and meeting agenda  | Buck Taylor                  | Resolve older items, determine status of current action items, finalize meeting agenda items.  |
| RQI Program 2017 Status  | Buck Taylor and Lori Atwater | Keep committee members aware of WHPA related subjects and issues   |
| WHPA In-Person Nov. meeting – Chair proxy/representative   | Buck Taylor                  | A member would volunteer to represent the committee at the WHPA In-Person Nov. meetings.   |
| Working Session: review proposed work product and suggestions – Code to Standard 5/9 comparison table  | Buck Taylor                  | Progress on approach to comparison and comparison table.   |
| Set next meeting date, time and tentative agenda items   | Buck Taylor and Bob Sundberg | Meetings are normally scheduled the third Wednesday of each month.   |

**Welcome New Members and New Guests; consider new member candidates**

- Research Products (Aprilaire), Eric Brodsky, Engineering, HVAC Manufacturer. Eric was not able to attend due to another meeting commitment. He would be welcomed at the next committee meeting.

**Review past Action items**

**NEW ACTION ITEMS:**

August 2016 ACTION: Buck Taylor volunteered to draft an explanatory introductory paragraph for the proposed code/standards informative comparison table the committee would develop. Completed.

**PREVIOUS ACTION ITEMS:**

July 2016 ACTION: WHPA staff would like to request CEC staff assistance for this committee in locating where at the CEC site a case initiative report could be located which would reveal the cost attributed to a HERS inspection for a new residential system. Samuel Lerman and Jeff Miller were asked for assistance. Ongoing.



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STATUS: No response to date.

July ACTION: Jeff Miller, CEC, would help identify other staff members more involved with policy and implementation based on AB 802 and provide the Chair and committee staff with contact information. Ongoing.

April 2016 ACTION: Lori Atwater, SCE, committed to having the IOU leads provide the RQI Committee members with a summary of the IOUs HVAC ResQI strategy. Completed.

April 2016 ACTION: IOU program leads (Lori Atwater/SCE, Swapna Nigalye and Leif Magnuson/PG&E, Collin Smith/SDG&E) would provide committee chair and staff with IOU HU program manager and HU Working Group contact information as well as other key HU representatives (ICF or another implementer staff) going forward. Ongoing.

April 2016 ACTION: Once provided with HU/Advanced HU contact information, Chris Ganimian would contact the HU Working Group co-directors to request attending a future RQI Committee meetings and coordinate RQI Committee members possibly attending HU program related meetings. Pending

### **New Business**

#### **November 17/18 WHPA In-Person Leadership meeting in Pasadena, CA**

Buck Taylor indicated that the only way for WHPA committee chairs to participate was in person. He was not going to be able to attend in person and didn't believe that the meetings would be made available for remote attendance. He asked whether there were any members in the state who would probably be attending IHACI the previous data who would consider representing the committee and attending in his place. Several members were considering the offer. They were asked to contact Buck and Bob if they would consider attending as the RQI C. representative.

### **RQI Program 2017 Status – Buck Taylor and Lori Atwater**

Lori Atwater, SCE, indicated that her team was still in the process of completing their business plan. The IOU state-wide team had been discussing the future of RQI based programs for well over a year and trying to decide what program efforts for 2017 would look like. Lori provided a memo from SCE specifically for the WHPA and this committee regarding their RQI program which was distributed to all members and guests prior to the meeting.

Bob Sundberg, WHPA staff, asked Lori to paraphrase the sequence of events which led up to SCE issuing their October 17 memo which addressed program status.

Lori stated that the IOUs were constrained by CPUC policies. They'd recently gone through changes in how programs were funded and how that funding was approved. They'd previously had a three-year program cycle, most recently 2013 through 2015. A new strategy was introduced called business plan development intended to look at a much longer program cycle. 2017 business plans were originally intended to be completed by September 2016, the same time as the IOU program budgets were to be finalized so that they could be presented in sync. But, the finalization of IOU business plans had been delayed until January of 2017. But, the budgets were still required to be submitted in September. Her knowing that they intended to not have the RQI program extended into 2017 as it had previously been funded, they needed to submit a budget in September which reflected zero funding for a 2017 RQI program.

On September 2 SCE asked their RQI program implementer, CLEAResult, to issue a memo to participating contractors to explain how they were going to ramp down the program would need to have CPUC approval of the business plan before SCE could proceed with any new RQI program. She didn't anticipate there being any approval expected before the end of spring 2017. There would be a gap even if SCE was successful in being able to re-launch an RQI program. She apologized for that delay and the confusion but stated that the process was mostly out of her control.



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She continued by addressing the “why” behind the need to sunset the program at this time. The current RQI program had been determined to not be cost-effective according to current CPUC policy and approved methods for determining savings and load reduction on the grid. Basically, the cost for operating the program compared against the energy savings it was evaluated by the CPUC to have achieved. For years the residential HVAC program had to report that unacceptable cost-effectiveness level. Their efforts to achieve savings was so far from the necessary goals given their current approach toward claiming savings that they needed to look for an entirely different approach.

Lori indicated that there were items bulleted in the memo, in addition to the low cost-effectiveness level, which contributed to their decisions, which were:

- a limited number of contractors who are able to implement the ACCA 5/9 industry standard for HVAC quality installation
- a low percentage of HVAC contractors complying with the energy code
- lack and deficient knowledge among HVAC customers of the need for and benefits derived from HVAC quality installation
- poor program uptake

Even though she thought their program was very strong and had implemented an industry leading implementation of the ACCA Standards 5 & 9 based program recognized across the country for its accomplishments, they’d had an impact on a low percentage of California HVAC contractors for a number of reasons. Because of the low CPUC recognized savings the way they’d chosen to make savings claims, their incentives were substantially lower than those available to contractors through the EUC/Home Upgrade state-wide 2nd party program. Both programs incentivized residential installations to code (beyond code for RQI), the methods for claiming savings were different and the EUC/Home Upgrade approach somehow was able to justify much greater incentives for substantially the same HVAC installation. As a result, many RQI contractors had migrated to the EUC/Home Upgrade program to receive higher rebates for a less demanding installation.

She added that the CPUC market characterization studies had concluded that customers served by RQI program contractors still had a limited understanding of the benefits they received from an RQI based installation. When competing with contractors not providing the RQI/ACCA 5/9 based installation approach, RQI contractors, the studies concluded, couldn’t compete effectively with the lower cost approach of the “to code” EUC/Home Upgrade contractors.

A final major factor in the decision to sunset the program at this time was a conclusion that only a very small percentage of contractors complied with Title 24 “to code” installations. The RQI program had not changed that situation after running for a number of years. There were estimates that as many as 90% of current residential HVAC installations were based on the lowest installation cost, not on system long-term performance, and those installations were not permitted or in compliance with code requirements.

Buck Taylor, Roltay Inc. and Chair, noticed that Lori had mentioned that the utility needed to look at another way to approach energy savings. He asked what direction were the utilities considering? Was there a future for RQI in California, given what was going on? Should this committee stay committed to the RQI mission or just step aside and stop meeting?

Lori Atwater responded that they needed to find a way to continue RQI, possibly incorporating AB 802 and another approach using existing conditions as the baseline to measuring and claiming program savings. The method for claiming savings needed to change. AB 802 could allow a test in/test out approach to base savings against the home’s



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past utility bills. But, SCE would have to develop another claimed savings work paper which was not a quick or easy process and would still require CPUC approval before a program could be developed and implemented. A new approach not based on Title 24 claimed compliance and an assumed “to code” installation baseline. Her counterpart, Scott Higa, was completing a new approach, based on a HOPS pathway, to claim savings based on system performance on the commercial side. They’ll be watch carefully as that approach went through the CPUC approval process as another possible pathway. The current approach to claimed savings did not take into account Smartmeter billing data or what the AB 802 legislation might allow or incorporating remote diagnostics. They had to find a more effective approach to reach well beyond the 5% range of the current RQI program. They had to reach the 90% of homes that had lowest cost, non-compliant installations which were certain to have created system and performance issues in most cases. Some of that information could be mined from Smartmeter data which was available for virtually all homes in their territory.

She thought that 2017 was the year SCE needed to study these issues and options to develop an approach that would take advantage of all the new tools and legislation.

Lori added that they were also faced with the impact of Senate Bill 1414 (SB 1414) according to which they could not pay out incentives or rebates unless and until they could validate that the HVAC installation permits were issued and closed out. That would be a new and pretty large barrier compared to what the RQI and other HVAC programs had been allowed. That would add to lowering the program cost-effectiveness and delay any rebates which would have an impact on customer interest and participation now having to wait until after that final inspection.

Jeremy Reefer, SDG&E, thanked Lori for providing such a helpful summary. He added that the SDG&E program would remain the same for 2017 and that past PG&E RQI program efforts had been based on providing information and training which were parallel paths to SCE efforts.

He added that ways that the state-wide team attempts to innovate, outside of the WHPA input, involved pilot efforts like Scott Higa had been following with a CQR/CQI HOPS based pilot performance approach as well as the IDEEA 365 process approach where vendors are invited to present new, innovative approaches, cradle to grave and normally implement via 3<sup>rd</sup> parties. That was considered by the CPUC as a great way to have the marketplace develop products. Another way they tried to innovate was through emerging technologies, new widgets.

<http://www.sdge.com/IDEEA365>

Jeremy said that the big legislative passage they were currently examining was SB 793 which included a whole building control system. It focused on smart thermostats and building automation which would allow them to address residential quality installation at the same time. It would still compete with the EUC/Home Upgrade program which got most of its savings from the HVAC claims. He suggested they think of 2017 as the year in which AB 802 would become operationalized. He wanted RQI members to look at the bigger picture and those who might be able to offer cradle to grave energy efficiency solutions to investigate the IDEEA 365 process. The IOUs wanted to create a next steps roadmap together with RQI members. There had to be something more from their efforts to address the whole building. It would need to be a more calculated approach like Scott Higa was pursuing. RQI would be part of the process which would include installing smart thermostats and other related solutions. Together, those would combine to bring the TRC, the program cost-effectiveness ratio, up.

Buck Taylor still didn’t see what they, as a committee, could do. The committee couldn’t participate as a third party to develop new programs, according to the CPUC advisory notice. And if the past program planning process was really dead with the new business development planning and cycle excluding WHPA committee participation, he didn’t see a role this committee could really play. He wasn’t confident that they could “legislate” their way into a new era of cost-effectiveness. Current compliance requirements, basic installation compliance, wasn’t even happening. He’d also concluded that the issues related to how program cost-effectiveness was currently being determined had not been



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adequately addressed. He saw all these changes as just a means to get out of the current way those problems were being dealt with and not resolved.

Lori Atwater, since she took over this program, had focused on how the forty participating contractors could compete on a more level playing field against other contractors who were installing systems for significantly lower prices by avoiding code compliance and how she could increase the number of contractors who played this game like the RQI contractors were. She needed committee member help to figure out how to identify who was not playing, how to approach them to get them to the table.

Buck Taylor responded that there were basic economic factors in marketplace characterization. Many families simply could not afford this sort of enhanced installation. How to make this possible was part of the role IOUs needed to perform. If the RQI approach was not considered cost-effective for utilities to run programs, according to current regulator evaluation methods, why should they spend effort trying to force consumers to adopt this approach, to install systems to this standard?

Chris Ganimian, Energy Analysis Technologies, added that he thought the program was not considered cost-effective because of the way energy savings was being required to be calculated.

Buck Taylor agreed. But, if those current methods for determining cost-effectiveness weren't going to be addressed and corrected, if new legislative direction was going to avoid dealing with attempts to correct those methods and just point to some new ways to begin considering savings, it wasn't clear to him how a program could proceed any time soon.

Tyler Miner, Henry Bush Plbg., stated that those who are saying the RQI program didn't work and wasn't cost-effective, that was all BS. He'd been involved with the program since inception in 2010 and knew that conclusion was all wrong. Yes, it was awkward and required a lot of documentation but he had customers who would swear by the savings they saw. Contractors who had never pulled permits before were now doing so because of the competition in his area. No, contractors hadn't communicated all of the RQI benefits to owners. Partly because there hadn't been that sort of IOU marketing support for years. He compared that to the EUC/Home Upgrade program which had a constant barrage of marketing messages, somehow. But, the reality was that he could get a customer \$6000 in rebates through EUC while only doing ½ of the work RQI required. Why wouldn't contractors migrate to EUC. You couldn't and shouldn't have two competing programs offered in the same area where they one that required less, delivered less actually paid out more in incentives. He found that sort of conflict very frustrating.

Wes Davis, ACCA, supported Tyler's statement about RQI contractors being able to deliver and explain the main benefits to home owners. He was interested to here further from Lori about what the committee could do moving forward.

Lori Atwater wanted the committee to capture its comments about the lack of QI in the EUC program. If EUC contractors blew the HVAC installation in their whole house approach, they blew delivering the largest portion their savings. As RQI went away as a stand-alone program, RQI practices needed to be incorporated into EUC/Home Upgrade. This committee needed to articulate what that would mean, what would need to happen. They'd run a small pilot with a small number of contractors participate in EUC/Advanced Home Upgrade. That meant that they needed to upload their D, S and J calculations, all that the RQI program required, as well as all the requirements for the Advanced Home Upgrade. But, those customers were really committed to the impact of proper modeling on the resulting installation. If they could incorporate the AB 802 approach with all of their programs, existing condition being the baseline, they would see energy savings go up. To be successful at attracting more contractors, they'd have to also find ways to reduce the time required in the home. All the trips to meet with the customer, coordinate an installation, inspections and verifying it was all done correctly.



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Buck Taylor took issue with Lori's approach. He didn't have an issue with the time a contractor had to spend with the customer and the job. He argued that RQI contractors needed a level playing field to compete. Code and compliance was not accomplishing making competition occur equally. If the only thing you were trying to accomplish was a cost-effective market transformation, you hire a limited number of highly trained contractors, help them hire the best techs, forget the free market approach and turn them loose on targeted energy wasting homes to propose the most cost-effective installations. An IOU should be able to uncover every customer who needed HVAC help through all the Smartmeter billing data without any need to market to everyone. If that was your goal, a direct-install approach would be the most effective.

Lori responded with an example of the years she'd worked in San Luis Obispo on implementing non-smoking ordinances and stopping all drive-through restaurants. It was accomplished through promotion to and education of consumers. Regarding the RQI program, their marketing efforts included email blasts, circulars and more about how important it was to their comfort and air quality as well as energy efficiency to have a properly installed HVAC system. This committee could lobby for increased IOU marketing resources and efforts so that more potential customers even know that an RQI installation even exists. Write a letter or memo to the right parties that increased marketing was critical. Jeremy Reefe knew more about how that could be done effectively. But, massive marketing campaigns were needed. Industry opinions were very important to be heard outside of and beyond the WHPA.

Bob Sundberg, WHPA staff, agreed that more marketing was important. But, the missing element to date in the marketing message was providing the home owner with proof that an RQI based installation provided significantly greater benefits in terms of reducing energy use than either a "to code" approach or the more typical low ball price approach to equipment selection, system design neglect and less rigorous installation with no verification. This committee had already recommended at a number of meetings that the new direction for delivering that proof was readily available from Smartmeter data comparisons of RQI vs. EUC/Home Upgrade installations and energy usage at all other homes.

Chris Ganimian thought that the answer for what needed to be done was obvious. EUC had done massive marketing for their state-wide program. One answer would be to require that ALL installations under the EUC whole house programs had to be RQI based installations. The other answer would be to have EnergyStar back and advertise their support for that program. EnergyStar had more name brand recognition than all the rest put together.

Chandler von Schrader, EPA/EnergyStar recounted that he and Lori had been talking for quite a while about how his organization could be leveraged to support their RQI program. He reminded attendees about their ESVI EnergyStar Verified approach which advocated the use of some advanced technologies to try and reduce verification costs. He hoped that these systems might become recognized as permit/installation verification.

Tyler Miner, Henry Bush Plbg., wanted to respond to a comment Lori made suggesting adding RQI into EUC. He understood her to say a major barrier was all the paperwork, collecting and uploading data in the DMS system and all. He was one contractor who'd done both an RQI and EUC/Home Upgrade on the same job. The major barrier was not the additional paperwork and administration. The greatest barrier was simply dollars and cents. Under EUC for a whole lot less effort he could get the homeowner a \$3000 rebate. Doing a whole lot more for an RQI compliant installation would only net \$750 more. The incentives were weighted absolutely wrong, backwards. If duct leakage and design along with improperly selected equipment size didn't really matter, then the EUC approach was just fine. If those elements were really so important to a properly installed system, RQI installations should pay out \$3000 while a EUC installation would only qualify for \$750. The marketplace would respond by making the right choice. Right now there was a greater reward for a poorer installation and a marketplace penalty for contractors who wanted to do the right kind of installation. The incentives were driving contractors and homeowners to the EUC program. It didn't take mass marketing to accomplish that choice. It was that simple. Why did he go ahead and actually deliver an RQI installation for only \$750 more? He knew that homeowner would be vastly more satisfied with the installation his firm delivered.





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Tyler Miner added that he hadn't found it difficult to sell RQI. They brought in a binder to show the homeowner just what they would get. If a low ball competitor came it, the homeowner would see that difference and start asking about the load calculations, duct evaluation and design, how they would determine system capacity and the rest. In his marketplace, market transformation had just about completely been accomplished. He was now competing apples to apples with other RQI contractors. It wasn't the large number of contractors they'd like to see but he was convinced that the RQI program process worked. For much broader adoption, the permit process really needed to be streamlined. He described the typical back and forth, all too frequent multiple trip scenario. You couldn't correct the permit process with any IOU program or by passing and not enforcing another set of regulations.

Donald Prather, ACCA, reminded attendees that Standards 5 and 9 were minimum requirements. Not the major barrier which some people characterized it as. The NIST study had proven the amount of energy which faulty installations wasted. They couldn't correct poor installations unless they succeeded in changing the culture away from the lowest first cost approach. It might take a whole generation.

Tyler Miner added that he was personally very disappointed that the RQI program was folding. It bothered him that he would just fall back on the EUC program and approach. RQI was really the right approach, something revered as good. It was disturbing that it failed not because of program ineffectiveness but because of a faulty method for calculating savings.

Buck Taylor reminded attendees that the primary purpose for state codes was safety, not energy efficiency or comfort. California had taken Title 24 energy codes well beyond safety and that was where most code officials focused their efforts. Not on comfort or energy efficiency. Many could care less about those. They were far more worried about whether a contractor's work would kill one of their clients. That's why they would get sued. Safety was mostly what they were being evaluated on. Any focus on energy efficiency and system performance was an entirely different discipline which required different training and expertise. Either the code compliance process had to go through drastic changes to accommodate energy efficiency compliance, like a centralized engineering evaluation function to support code officials, or some other way to provide the needed expertise. He didn't believe there could be an automated system which could guarantee safety like there were no carbon monoxide issues or side clearance ones.

The group discussed the degree to which automated systems could or couldn't prove safety compliance, let alone HVAC installation code compliance.

Buck Taylor reminded members that, in his opinion, it was not installation validation which was the major issue here. It was the CPUC assumptions and methods for calculating savings, issues like the assumptions around total permit compliance as the basis for the baseline, which were the major barrier for recognition of greater RQI delivered savings. And, if the utilities were so hamstrung, so constrained by current methods for determining program savings, he didn't know what value there was to continuing to operate this committee.

Lori Atwater clarified that the decision regarding the RQI program was a company decision in order to retain a cost-effectiveness ratio and hit total portfolio savings goals. PG&E still had a program and was experimenting with a performance based approach to residential installations. SDG&E still had a program and SoCalGas was also doing QI.

Buck Taylor acknowledged the other attempts at supporting an RQI approach. He went on to describing the difference and additional dimensions ACCA Standards 5 & 9 provided since the residential marketplace, unlike the commercial, didn't currently require engineered solutions through code prescribed installation requirements. The ACCA standards did insist that you did need to deliver an engineered solution because of variables like psychrometric and climatic variables as well as highly variable home construction which combined to produced widely different design operating conditions. The other major issue is that he believed there was little to no engineering practices in the residential HVAC industry. The marketplace, looking for a lowest initial cost solution, wouldn't pay for it. And, even efforts to



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enforce correct engineering practices with checklists and form papers, that sort of system was no guarantee that all of the necessary information was even correctly determined. People did make mistakes or take shortcuts, if allowed. Buck also described a streamlined process whereby if construction blueprints for all homes were on file for building officials, doing accurate load calcs could also be streamlined. Engineering automation, he called it. Just one idea.

Jeff Henning, MSDC, agreed and stated that those same issues had been argued over five years before when this committee authored its white paper which identified and described the major barriers to widespread adoption of RQI practices by industry and recognition of its value by homeowners. The exact same barriers still existed with almost no progress.

Bob Sundberg, WHPA staff, reminded the group of there only being a few minutes left in their meeting. Decisions still needed to be made about whether to hold a November committee meeting as well as the need for a committee representative to attend the WHPA In-Person meetings November 17 and 18 where these topics and goals for 2017 would be discussed.

Lori Atwater asked Bob if he knew which days or parts of days at which the RQI program and future plans might be discussed. She wanted to try and have staff from codes and standards attend those portions of the In-Person meeting in order to hear the discussion and help plan what SCE would do next.

Bob Sundberg replied that normally there was a breakout meeting for each major committee on day 2, Friday November 18. He was pretty certain that there wouldn't be a panel discussion on this one topic, possibly on larger and more strategic overarching subjects like implementation of AB 802. The agenda was just being finalized by staff and the Executive Committee co-chairs.

### **RQI Representative at WHPA In-Person Meetings November 17 and 18**

Lori Atwater extended an invitation to Buck Taylor to attend the WHPA meetings as well as IHACI the preceding day. SCE was sponsoring an RQI forum discussion from 8 am to 10:30 am the morning of November 16. Contractors were being asked to share lessons learned while participating in the SCE program. She also wanted to extend the invitation to all other committee members to participate to whatever degree they could.

Scott Johnson, NCI, indicated that he intended to join the RQI forum since he planned to attend IHACI.

Buck asked whether anyone who was planning to attend IHACI could also represent the RQI Committee at the In-Person two days of meetings following IHACI. No direct responses.

### **RQI Work Session – Buck Taylor**

#### **Codes & Standards comparison work product introductory document**

Not discussed.

### **Next Steps/Closing Comments/Adjournment**

It was decided to not hold a November meeting with IHACI being held Wednesday November 16 and the WHPA In-Person meeting already scheduled for November 17 and 18. They would wait to see what came out of the In-Person meetings and planned to hold the next meeting on Wednesday December 14 at 10:00 to 11:30 am PST - for 1.5-hour. Meetings are normally scheduled for the 3rd Wednesday of each month.

The December agenda would include outcomes from the IHACI RQI forum and an update on the WHPA In-Person meetings. With no November committee meeting, their work product would probably have to be completed and voted on during November in order to deliver an approved version to the Executive Committee (EC) at their December meeting. Committee goals had been revised to be multiple year projects. However, a final draft of what had been



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accomplished to date in 2016 needed to be provided to the EC. Since the effort had not been entirely completed, its completion could be proposed as one of the goals for 2017. Buck Taylor and Bob Sundberg would circulate a final 2016 draft for a voting member vote.

Buck Taylor adjourned the meeting at 11:36 am PDT.

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ACTION Item summary below.

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| <b>Summary of Action Items and Key Decisions (from above)</b> |
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