



Goal 2: Residential Quality Installation Committee February 22, 2017 Meeting Notes

Call to Order

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

Roll Call

5 of 9 voting members are needed for a quorum. 5 of 9 voting members, 5 non-voting members and 2 guests/staff attended. There were 12 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	
Benningfield Group	Russ	King	Third Party Quality Assurance Provider	
DNV GL Energy Services (formerly KEMA)	Zachary	Connolly	Energy Efficiency Program Consultant	
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)	
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	
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	
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	P
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	
SDG&E (San Diego Gas & Electric)	Jeremy	Reefe	California IOU	
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	
ZONEFIRST	Richard	Foster	Controls (Manufacturer or Distributor)	
WHPA Goal 2: RQI Committee Pending Candidates				
WHPA Goal 2: RQI Committee NON-VOTING Guests				
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** +		
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	
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	
WHPA Staff				
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		P

** 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

December 14 meeting draft notes were distributed December 28. 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 Committee 2016 Work Product	Buck Taylor	Members informed that the EC adopted their 2016 work product as a WHPA document.
RQI Committee 2017 Planning – goals, milestones	Attending Members	Gain understanding of discussion regarding SCE RQI program status/future efforts; establish goals, WG formation, IOU needs from SCE, PG&E, SDG&E.
Codes to Standard Comparison work product	Buck Taylor	Gain an overview of topics discussed, impressions and any outcomes
Adaption of CI data specification to RI application	Buck Taylor and Chris Ganimian	Keep committee members aware of WHPA related subjects and issues
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

- Chandler Von Schrader announced on November 9 that he would leave EPA March 1, 2017. He expressed a strong interest in continuing his WHPA committee participation. He intended to remain engaged in the promotion of quality installation in another capacity. Casey Murphy/ICF and EPA consultant would continue to participate through April 24. Casey would act as a temporary bridge and advocate EPA/Energy Star’s continued participation in the WHPA. John Passe, Chandler’s immediate boss, and John’s boss, Carolyn Snyder, were fully committed to Energy Star Verified Installation (ESVI). The program would continue even though Chandler was leaving the EPA.

EPA directory:

Jonathan Passe 202-343-9793 passe.jonathan@epa.gov

<https://cfpub.epa.gov/locator/index.cfm>



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Carolyn Snyder - 202-343-9616 Snyder.carolyn@Epa.gov
<https://cfpub.epa.gov/locator/index.cfm>

Buck Taylor spoke for the WHPA and the entire committee in thanking Chandler for all the efforts he'd led to help establish the new standard for quality installation at the EPA and Energy Star program.

Review past Action items

NEW ACTION ITEMS:

None.

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.

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: 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

IOU RQI Program Updates – IOU Program Managers

Lori Atwater, SCE – GOOD NEWS. IOU budgets submitted the last quarter of 2016 were put on hold by the CPUC. Since they were not accompanied by the normal business plans, they were found to be pretty hard to evaluate. 120 days later, they were suspended again. No approved IOU EE program budgets by January. IOUs were authorized to use the 2016 budgets and program framework for 2017. Lori announced that she went from a Zero budget to about 30% of the 2016 budget for 2017. They were in the process of extending the contracts for their program implementers – scaled back. Contractors would be contacted shortly that program applications would be accepted starting March 1. With the limited resources, they were reaching out to their participating contractors on what program features they'd prefer.

(Staff note: Executive Committee final approval of meeting resource allocations received after this meeting – full committee approved for four (4) meetings in 2017, not 5 and a working group allocation for adaption of the CI data specification was approved for 6 meetings in 2017, not for 12.)

Lori Atwater, SCE – the team was developing a budget and program framework for 2018 which would not include active QI incentives. It would be built around and education program for contractors and stronger compliance efforts through codes and compliance efforts. State-wide administration would be led by San Diego Gas & Electric. All the IOUs would participate but they didn't really know details about what the program would entail. Lori wanted to get input from this committee regarding several options she was considering – some degree of an installation program, collection/evaluation of AMR meter data from past participating installations, AMR meter data to help create a more accurate baseline for typical and "to code" installations, consider other possible approaches regarding EUC/Home Upgrade.



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Larry Kapigian, Superior Air – indicated that an email had been sent out by program implementers, CLEAResult, the previous day. Larry was curious to know of other contractor responses.

Lori Atwater/SCE – they really needed to address the TRC cost-effectiveness that had torpedoed the program.

Larry Kapigian, Superior Air – it was crucial for the IOUs to believe and support stronger QI programs. If there wasn't IOU support and confidence in that approach, there really wasn't any way to convince contractors to get onboard adopting a QI approach. If the utilities and CPUC didn't regard the program and approach as cost-effective, how would you convince contractors and home owners?

Chandler Von Schrader, EPA/Energy Star – advocated leveraging the program and approach with verified installations making use of advanced technologies. It could reduce the burden of having a third party physical verification onsite. Long-term, their use could reduce program costs. Co-branding with Energy Star could help provide confidence to move ahead with a QI approach. Remote verification of the design system submissions would be the whole answer, but it was an improvement over current practices.

Chris Ganimian, Energy Analysis Technologies – a smart verification tool might be fine for the commissioning end of the process and remote, third party design approval was a step in the right direction. But, that didn't cover the design front end of the process. He thought there would always be a need to make site visits to confirm system design – the most complicated part of the process.

Buck Taylor, Roltay Inc. and Chair, agreed that both points had merit. But, the real reason that the RQI program was not considered cost-effective in California – Lori's main concern – was because California use a "to code" installation as baseline. What Chandler and Chris had both just discussed didn't have a major impact on how the CPUC allowed savings to be calculated and claimed by IOUs. Recent studies now confirmed that most of the savings was coming from duct design and conversion, not from the other factors. Oversizing an AC system in a dry climate didn't have the impact assumed earlier as long as you had the correct airflow/CFM. They didn't have a to deal with a lot of latent heat removal which had the greatest impact on runtime. Chandler was correct in his assertion that verification systems would help make the contractor responsible for their work and documenting their commissioning process and results. What the RQI program had discovered was that virtually all contractors needed education, feedback and assistance to learn how to properly commission a system installation. There were no short-cuts. With the insights on the importance of duct systems, what now was critical was ensuring that the ductwork was designed and installation properly to work with the selected system. That would need to involve static pressure testing and air balancing.

Chris Ganimian – once the contractors are thoroughly trained on that commissioning process, the program was accomplishing one of the most critical elements. The climate was also changing, especially through several weeks during each summer. No one really knew whether this was a result of just climate change, too many swimming pools, irrigation and massive amounts of lawn watering or whatever combination of factors.

Buck Taylor, Chair – until the way savings was calculated, claimed and approved changed, the rest of this conversation was meaningless. A moot point.

Lori Atwater, SCE – the new AB802 legislation gave IOUs the opportunity to use the existing condition as a baseline for determining energy savings. They could propose a program based on pre/post AMR home meter data and compare test in/ test out of HVAC systems.

Buck Taylor, Chair – SCE should be able to reach back to the 20,000 RQI installation jobs. That data should be what feeds into the basis for their new approach to RQI program savings going forward. A random sample of RQI jobs could be compared to results for a random sample of other jobs at large – which the CPUC previously assumed ALL



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met code. Comparison analysis would reveal whether there was any significant difference in a change of energy yours before vs. after an installation.

Buck was also concerned about one installation factor – attic insulation. Installations from 10 and 20 years before could and probably were wrapped with unprotected insulation subject to UV degradation. The thermal insulation breaks down over time and cooling efficiency is dramatically reduced by what finally gets delivered to the space. Duct design and installation should be a primary focus going forward.

Lori Atwater, SCE – described her pre-RQI program HVAC system installation issues. Hot upstairs, cool downstairs. She suggested it could be a duct or distribution issue. Contractor response: those test instruments were too expensive to use they didn't have access to the ducts, most of which were sealed in conditioned spaces. There was nothing they could do short of tearing up her walls, floors and ceiling.

Buck Taylor – Lori had stated that the contractor wasn't willing to invest in the tools, test instruments and probably training needed to further evaluate her situation to try and resolve. The contractor had, basically, said it wasn't worth it to him to invest in all of that technology and training. Buck asked what she expected the contractor to do in her circumstance since many homeowners were faced with a similar situation.

Scott Johnson, NCI – described the sort of airflow evaluation and testing which needed to be done to determine why there was a problem with the temperature differential between floors. They'd have to identify the root cause of the problem before they could inform the owner and offer any reasonable solutions and estimated costs. That's what the homeowner would need to be willing to pay for. (Staff comment – like being willing to pay a car dealer or repair shop the fee to plug in the car to their automated diagnostics to, first, determine where system operational faults existed)

Changes to CA Title 24

Jeff Henning, Mechanical Systems Design & Consulting (MSDC) – he thought they were going to keep bouncing back and forth on that subject. He wanted to interject that a recent change to Title 24 2017 stated that compliance with Manual S was no longer required. It was being left to the contractor to size the system appropriately. That meant that most contractors, even those who pulled permits for compliance, would revert back to rules of thumb sizing. It also meant that he thought an RQI program should be able to claim additional energy savings through right sizing according to Manual S. Manual J and D were still required. He couldn't fathom why Manual D (residential duct system design) would still be required if you didn't also require a Manual S. Whoever decided to no longer require Manual S had also made compliance with ACCA Standard 5 above code.

Buck Taylor – he understood all the CPUC and other studies to have concluded that most if not almost the entire potential savings was a result of duct proper design and installation, not from properly sizing the system based on load calcs. He added that utility programs needed to understand how important it was to address training whole contractor firms on what was needed to properly assess existing HVAC systems or to evaluate what was needed in equipment and probably duct systems to cut across their entire business domain for market transformation. Otherwise, there would only be a couple of sharp techs at each firm who cared and really understood and utilized those QI skills in a company. Utilities needed to stop thinking about silo programs like just a replacement or just a high efficiency equipment sale. They had to think about and design comprehensive HVAC programs. They had to train and support contractors to go out and find the problems and be capable of single or comprehensive solutions – it could be just fixing the ductwork or fixing and replacing an entire system.

2017 SCE RQI Program Options

Lori Atwater, SCE – challenged the committee to write down some of the changes the she and the other IOUs could review and maybe do something a little different from the RQI program implementation plans she'd previously been constrained by.



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Chris Ganimian – he didn't know what was holding SCE back from looking at the billing data for the 20,000 or so RQI program HVAC system installations. There was also an NCI limited study which should have had fantastic results for RQI program installations as well as the IEA Annex 36 NIST study which documented the range of fault correction potential savings. He thought the new approach could combine test in/test out evaluations combined with supporting billing data analysis for each RQI installation to prove the savings. They could also drill down on some installations to determine which parts of the comprehensive approach delivered the bulk of the savings. He knew from feedback from RQI program participants that customers were getting savings in the 40% to 60% range.

Bob Sundberg, WHPA staff – described a parallel situation discussed in the CQM Committee meeting regarding the difficulty which SCE and other IOUs faced in documenting the entire impact of savings from implementing CQM Standard 180 based maintenance practices. Their program had been evaluated only on a small number of maintenance related energy efficiency measures (only 5 or 6 of 22 identified maintenance tasks) and a couple of advanced technology upgrades in the program, not the holistic impact on HVAC system energy use and savings. Coil cleaning was not even allowed by the CPUC to be claimed as an energy savings measure because their laboratory testing results and cost assumptions deemed it not cost-effective. They were also turning their attention to doing pre/post rooftop unit performance evaluation and supplementing that with analysis of pre/post billing data under the allowed pathway of AB802. Both committees were trying to define a more effective way to document the savings they were convinced that program participants were receiving.

Swapna Nigalye, PG&E – their IOU did not currently have a full resourced program which would offer consumer rebates for quality installations like SCE had launched. They'd limited their programs to RQI contractor training and education. She understood that the reason PG&E had chosen that route was because of the challenges in claiming and then proving energy savings just discussed. The way that RQI was evaluated by the CPUC currently was not considered cost-effective as the group had just discussed. It was on their roadmap to design an RQI program that was based on actual energy use and savings. One remaining challenge was that it would seem to be based on the same existing baseline and Title 24 compliance assumptions held by the CPUC and its evaluators. But, that was the direction they were going. PG&E was staying with the training approach for 2017. But, she thought that when RQI was intended to go state-wide after that, there were opportunities to change program plans based on energy savings and dealing effectively with most of the barriers which were currently pulling the program evaluation cost-effectiveness (TRC) down. She believed that the baseline and other issues would be worked on across their HVAC program portfolio. She hoped to deliver something more concrete later in 2017 for the committee. She looked forward to the help of this committee to serve as a sounding board and provide feedback on how well they thought some of the program plans would work.

RQI Committee 2017 Planning – Buck Taylor and Bob Sundberg

Bob Sundberg, WHPA staff – confirmed that the committee had been allocated 5 meetings for 2017 and 12 meetings for a working group to adapt the CI data specification to a residential application. There had not been additional resource requested or allocated to support continued work on the 2016 Codes to Standards Comparison project which would benefit greatly with a narrative describing the importance of the overlaps and gaps between existing CA codes and ACCA Standard 5 & 9 requirements.

Lori Atwater, SCE – she'd heard loud and clearly within the IOUs that use of AB802 as a pathway to claimed savings work papers, they would be able to use existing conditions as a baseline for energy use in their cost-effectiveness and claimed savings calculations. SCE really needed this committee to support that effort. If this committee had a dedicated working group, she could have work completed to review and analyze the pre/post installation energy use data. Once personal information was removed, they should have some solid evidence regarding any pattern of reduction in energy use as a result of RQI program installations and any duct system remediation. They might even be able to ascertain which energy efficiency measures delivered most of the energy savings.

Swapna Nigalye, PG&E – she offered to help Lori and SCE toward gathering evidence of RQI program savings.



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Donald Prather, ACCA – reminded attendees of the heatpump study results regarding heat pump unit energy waste which resulted from individual as well as multiple simultaneous faults. The study found that many of the faults were “cumulative” in nature and had a much greater impact than many people anticipated. If a residential installation was completed below the minimum level, below QI, those were the degrees of energy waste which could be expected for new equipment operation.

“Sensitivity Analysis of Installation Faults on Heat Pump Performance” – IEA/Annex 36 NIST study.

<http://www.performancealliance.org/NISTReport/tabid/2461/Default.aspx>

download the study:

<http://nvlpubs.nist.gov/nistpubs/TechnicalNotes/NIST.TN.1848.pdf>

Lori Atwater, SCE – SCE could use results of that DOE/NIST/ACCA study even if it didn’t use the energy efficiency measures used in their program. The could also refer to the test in/test out contractor installation data study which Chris Ganimian referred to earlier in the meeting. SCE would need to assign someone to review those contractor installation results from about 200 jobs and compare the data to what they’d found from a sample of RQI program installations.

RQI Working Groups and Work Products

Buck Taylor, Chair – the committee would need some volunteers to help revise the codes to standard tables as well as add a narrative to help explain key differences, gaps and implications of those key issues. The next work product would a review and revision of the CQI Committee and working group’s data specification to adapt it to a residential installation application. The revision would probably need to include the current and recently approved new future standard compared to ACCA 5/9. That comparison would still need to be tied back to how IOU programs could claim savings.

Bob Sundberg, WHPA staff – believed that the CQI Committee would have very minor revisions to suggest making to their commercial installation (CI) data spec. before it could be turned over to the RQI Committee. But, the more important work of finalizing the formulas, calculations and protocols for taking measurements would be needed before a standardized system for measuring and evaluating residential installation system performance would be delivered. He thought that might be available sometime 3rdQ 2017 at the earliest. This CQI C/WG effort was being conducted in parallel with a new ASHRAE SPC 221 Committee which was just launched at the January ASHRAE Winter Session meetings.

Buck Taylor, Chair – didn’t think this committee and the formation and launch of a working group was urgent. California and the IOUs hadn’t figured out yet how to implement the AB802 pathway to claim energy savings as Lori had alluded to earlier. He’d be happy for the committee to hear back from Lori and SCE if they developed a plan to evaluate the home meter data of program participants and some for establishing baseline conditions as that developed. He was hesitant to have the committee commit to any more work product until some of these issues were resolved and there was more clear direction for IOU programs.

Buck Taylor – he added that codes and implementation was a national issue but the WHPA was a California IOU program and the focus was on the implementation in this state. His broader concern was that utilities across the US looked to California for program results. When the CPUC evaluations stated that RQI did not deliver savings, that had a detrimental impact on whether other utilities were willing to pursue designing and implementing any ACCA 5/9 based programs. CPUC insistence in using DEER calculations and that Title 24 installation was the baseline only above which savings could be claimed complicated IOUs ever being able to produce RQI program savings within those constraints. The CPUC had also been reluctant and unreceptive to research results, like the NIST study, conducted outside of their authority. Until he could see where the committee could support IOU efforts and not do the work



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which should, rightly, be contracted through other paid resources, he wasn't willing to commit the committee's limited time.

Chandler Von Schrader, EPA/Energy Star – agreed with Lori Atwater's statements about the critical need to address that Title 24 assumption of baseline performance. Also, that IOUs, including SCE, had the keys to access program participant AMR meter data both before and after the boatload of RQI installations. He asked in Lori and SCE could task CLEAResult or another appropriate consultant to gather participant pre/post meter data and conduct a preliminary review and analysis? He thought she and her IOU had the trigger and some resource to get that process started. He thought that the best thing SCE could do with their limited, 30% remaining, budget was to go after program energy use data. He thought that would be more beneficial than using all of that limited resource to crank up their contractors on a very limited basis. Those dedicated contractors were really in this for the long haul. And, for that long haul, the utilities really needed to demonstrate the savings benefits of RQI installations. That critical information was missing across the state.

Lori Atwater, SCE – understood that the WHPA committees were limited as a volunteer body from conducting time-intensive data gathering and processing. But, those committees, in her understanding, were established to help IOUs improve their energy efficiency programs. She committed to talk with the other IOUs and see if they all agreed that it would be beneficial to tackle analysis of program participants metered energy use data. To see if they could establish an existing baseline of performance, HVAC energy use from data prior to RQI installations.

Donald Prather, ACCA – another statistic that SCE might pursue would be to determine how many of their contractors were committed to continuing with RQI practices even without the IOU incentives – some proof that the program had transformed leaders in the industry which could lead to a market transformation when expanded.

Larry, Kapigian, Superior Air – his firm hadn't stopped using QI as their installation practice just because the utility program was terminated. His firm had also adopted it in all the PG&E territory where it was not offered. What he didn't understand was, why was it not a problem for EUC/Home Upgrade to get CPUC approval and incentive funding based upon those same CPUC assumptions and limitations? Based on the fact that the RQI program was gone and the EUC program was still there.

Lori Atwater, SCE – although EUC/Home Upgrade had been approved for greater incentive funding, it also wasn't turning out to be cost-effective when CPUC evaluation criteria was applied. Their program was also having big problems. But, it was a much larger scale program with many more energy efficiency measures being supported.

Larry Kapigian, Superior Air – he thought it had been determined that the software EUC had used for projecting energy use/savings was inaccurate and they were now using a different energy use modeling program.

Scott Johnson, NCI – offered to provide Lori with the history and evolution of the SCE program since he'd been directly invested in its implementation for over 11 years. Bob Sundberg, WHPA staff, had outline a two-step CPUC claimed savings approval strategy earlier.

1. Step one – conduct pre/post performance evaluation and benchmarking data analysis for each RQI program participant.
2. Conduct pre/post installation AMR meter data analysis to document and substantiate the individual performance improvement over existing conditions - using industry accepted and vetted methods to dis-aggregate HVAC energy use from all other home energy use.

Lori Atwater, SCE – agreed and added that it was critical to not only gain the approval of the CPUC for this other pathway for proving savings but to effectively convince homeowners of the savings and long-term value to them for this investment.



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Next Steps/Closing Comments/Adjournment

Buck thanked everyone for contributing. The group discussed when and on what basis they should next meet. Buck thought that an April meeting might be best to schedule. Lori and Swapna would need to have preliminary program plans determined in the March timeframe and might need committee input to gain more traction. If something happened at the IOUs earlier, he asked that the IOU members contact Bob Sundberg to pull in the meeting.

Lori Atwater asked Bob Sundberg, WHPA staff, whether there had been any meeting resource allocated for a WG of this committee to help address claimed savings and program planning. Bob Sundberg responded that the only resource requested at the end of 2016 was to support completion of the codes to standard comparison. The SCE RQI program was understood to have been terminated so there had been no additional committee resource requests to support one. Possibly, the codes to standard comparison WG resource might be split to help support another critical IOU need.

Lori Atwater asked Bob and Buck to consider how some WHPA resource might be allocated to support IOU efforts to analyze existing condition and post-RQI installation energy data. She knew that she'd need to have staff and consultants working on gathering that raw data and preliminary processing and analysis. She committed to talk with Swapna and the other IOUs offline to see what they might be able to do together. She indicated that SCE would have an incentive program starting in March but they needed to decide just how small it would be because of their very limited resources and the data gathering and analysis priority.

ACTION: Lori Atwater, SCE, committed to devoting limited 2017 RQI program resources to gathering pre-& post RQI program participant home meter data and to work with other IOU colleagues to begin preliminary processing and analysis. She asked that Buck Taylor and Bob Sundberg seek additional WHPA resource to provide WG support for WHPA assistance in evaluating that data.

Buck Taylor, Chair, indicated that the committee would more than happy to review and comment on anything Lori and the other IOUs wanted to put before them. He thought the committee could, certainly, support IOU efforts to chart a new pathway to justify claimed savings for an RQI program on a reactive basis to avoid the appearance of any conflict of interest for members. That effort could be added to what was listed for RQI Committee goals for 2017.

Lori Atwater, SCE – asked any members who wished to provide additional comments about the need and importance for SCE and the other IOUs to research program and other existing condition baseline conditions, to develop an AB802 based approach for an RQI program claimed savings work paper – to please email those comments and interest to her directly at:

Lori.Atwater@sce.com
(626) 607-7801 mobile
(626) 302-0502 office

The next meeting was planned to be held Wednesday April 19 at 10:00 am PDT

Buck Taylor adjourned the meeting at 11:21 am PST.

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Summary of Action Items and Key Decisions (from above)

February 2017 **ACTION:** Lori Atwater, SCE, committed to devoting limited 2017 RQI program resources to gathering pre- & post- RQI program participant home meter data and to work with other IOU colleagues to begin preliminary processing and analysis. She asked that Buck Taylor and Bob Sundberg seek additional WHPA resource to provide WG support for WHPA assistance in evaluating that data.



Goal 2: Residential Quality Installation Committee February 22, 2017 Meeting Notes