RTR Appendix

Southern California Edison, Pacific Gas and Electric, Southern California Gas, and San Diego Gas and Electric ("Joint Utilities" or "Joint IOUs") developed Responses to Recommendations (RTR) contained in the evaluation studies of the 2010-2012 Energy Efficiency Program Cycle. This Appendix contains the Responses to Recommendations in the report:

Southern California Edison HVAC Quality Maintenance Program Rapid Feedback Process Evaluation
(2014, EMI, Calmac ID# SCE0344.01)

The RTR reports demonstrate the Joint Utilities' plans and activities to incorporate EM&V evaluation recommendations into programs to improve performance and operations, where applicable. The Joint IOUs' approach is consistent with the 2013-2014 Energy Division-Investor Owned Utility Energy Efficiency Evaluation, Measurement and Verification (EM&V) Plan (version 3) [1] and CPUC Decision (D.) 07-09-043[2].

Individual RTR reports consist of a spreadsheet for each evaluation study. Recommendations were copied verbatim from each evaluation's "Recommendations" section.[3] In cases where reports do not contain a section for recommendations, the Joint IOUs attempted to identify recommendations contained within the evaluation. Responses to the recommendations were made on a statewide basis when possible, and when that was not appropriate (e.g., due to utility-specific recommendations), the Joint IOUs responded individually and clearly indicated the authorship of the response.

The Joint IOUs are proud of this opportunity to publicly demonstrate how programs are taking advantage of evaluation recommendations, while providing transparency to stakeholders on the "positive feedback loop" between program design, implementation, and evaluation. This feedback loop can also provide guidance to the evaluation community on the types and structure of recommendations that are most relevant and helpful to program managers. The Joint IOUs believe this feedback will help improve both programs and future evaluation reports.

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[1] Page 336,"Within 60 days of public release of a final report, the program administrators will respond in writing to the final report findings and recommendations indicating what action, if any, will be taken as a result of study findings. The IOU responses will be posted on the public document website." The Plan is available at http://www.energydataweb.com/cpucFiles/pdaHomeDocs/2/2013-2014_Energy_Efficiency_EMV_Plan.zip (visited on 10/1/14).

[2] Attachment 7, p.4, "Within 60 days of public release, program administrators will respond in writing to the final report findings and recommendations indicating what action, if any, will be taken as a result of study findings as they relate to potential changes to the programs. Energy Division can choose to extend the 60 day limit if the administrator presents a compelling case that more time is needed and the delay will not cause any problems in the implementation schedule, and may shorten the time on a case-by-case basis if necessary to avoid delays in the schedule."

[3] Recommendations may have also made to the CPUC, the CEC, and evaluators. Responses to these recommendations will be made by Energy Division at a later time and posted separately.

EM&V Impact, Process, Market Assessment Study Recommendations
Study Title: Southern California Edison HVAC Quality Maintenance Program - Rapid Feedback Process Evaluation (SCE0344.01); Published January 23, 2014
Program: Commercial HVAC Quality Maintenance Program
Author: EMI Consulting

Item #	Page	Findings	Best Practice / Recommendations	Recommendation Recipient	Disposition (Accepted, Rejected, or Other)	Disposition Notes (e.g. Description of Specific Program Change or Reason for Rejection or Under Further Review)
1	ES 2; Section 4.1 p.63	Contractors need to know what changes are coming, when, and what impact it will have on their current and future contracts; The program has taken a lot of actions to be responsive, yet those actions are not situated in in relation to an overarching program development strategy	**Linking Program Strategy with Continuous Improvement:** the program should develop a strategy for implementing desired changes over the coming year. The idea is to do more, less often, with improved communication around the changes. The strategy would ideally: (1) tie to the program's logic model, listing critical issues and questions that affect connections between resources, activities, outputs, and outcomes; (2) identify and vet plausible solutions and alternatives; (3) name likely impacts on key stakeholders and steps taken to assist with their adjustment to changes; and (4) place changes on a schedule that can be shared externally as part of a stakeholder communication plan	SCE	Accepted	SCE agrees that a cogent strategy that "does more less often" is needed. This is excellent feedback. Modifications to the program model that will address issues identified in studies to date and prepare the program for long term success. SCE is seeking to implement for 2015 and 2016, as well as, we are looking to have two "change" windows with ample pre-communication time for education and contractor planning.
2	ES 2; Section 4.2 p. 63	In an effort to reinforce the contractor/customer relationship, the baseline criteria methods, tools and precision of measurement were not clearly defined.	**Refine Baseline Criteria, Set Performance/ Measurement Standards, and Strengthen Basis for Assessing Savings Claims:** Revisit which Standard 180 tasks can be agreed upon and standardized across HVAC units in terms of measurement best practices (including the use of FDD), performance parameters, and incentives for better-than-baseline performance based on the concerns below.	SCE	Accepted	SCE agrees that standardization of performance measurement and FDD would improve the ability to both implement and verify measures and savings. The industry can assist with standardization and the timeline for standards development is typically measured in years. Participation with industry stakeholders with WHPA is getting us closer to realizing these goals.

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3	ES 3; Section 4.3 p. 65	Contractor and technician selection and monitoring criteria must be strengthened to keep unethical contractors out, to ensure highly skilled technicians are invited in, and that staff are empowered to remove contractors or technicians if warranted	**Strengthen Contractor and Technician Selection Criteria**: (a) Increase the depth of the post-training assessment to ensure not only that technicians understand how to work with the MPS to enter information, but also to make sure technicians are able to perform the tasks to standards set and monitored by the program. (b) add to the escalation policy some additional protections for program implementation staff against unprofessional conduct.	SCE	Accepted	Current training format: Technician participation requirements **TECHNICIAN REQUIREMENTS FOR LEVEL 2 TECHNICIAN: FULLY-QUALIFIED TECHNICIAN** a. Requirements: Full service technicians assigned to maintain mechanical systems under the Program must meet the following requirements: i. A minimum of five (5) years Heating, Ventilation & Air Conditioning service experience; AND ii. Hold a valid Refrigerant Transition and Recovery Certification, Type II or Universal, as required by 40 CFR Part 82, Subpart F of Section 608 of the Clean Air Act of 1990. Valid 608 technician certifications must be issued under a Program approved by the U.S. Environmental Protection Agency; AND iii. Hold appropriate certification from recognized industry certification bodies. 1. Recognized providers shall include those with ANSI 17024 recognition providing commercial HVACR certification that is highly related to HVAC service and system maintenance. At a minimum, the certification credential must include refrigerant cycle fundamentals, troubleshooting and optimization, electrical fundamentals, troubleshooting and optimization and air side fundamentals, troubleshooting and optimization focused on commercial HVAC systems. 2. Credentials that are currently accepted include: (UA HVACR S.T.A.R. – HVACR Service and/or Mastery) (NATE Heat Pump Service, Air Conditioning Service or HVAC Efficiency Analyst), (HVAC Excellence Light Commercial, Air Conditioning, Heat Pump Service or Master Specialist Certification), (RSES CM, CMS in any designation with CM, or SM in only Commercial Air Conditioning, or Heat Pump without a CM), (Journeymen- HVAC Mechanic) **TECHNICIAN REQUIREMENTS FOR LEVEL 1 TECHNICIAN: LESS-QUALIFIED TECHNICIAN** a. Requirements: Level 1 Technicians assigned to assist fully-certified technicians in maintaining mechanical systems under the Program must meet the following requirements: i. Be currently employed by the contractor; ii. Have a minimum of twelve (12) months experience in the HVAC industry field ; iii. Hold an active EPA Card; iv. Work under the direct supervision of a Program-certified technician; v. Submit a signed Level 1 Technician Application documenting their sincere commitment to continued HVAC education; vi. Be currently involved in an approved HVAC education program with the commitment of becoming a fully-certified technician; 1. Approved HVAC education Programs include: a. www.itsaboutq.com. i. ItsAboutQ.com is sponsored by SCE and will provide an opportunity for technicians to advance their HVAC knowledge and expertise, and it is also a place for them to learn more about professional development and career advancement opportunities. b. Registered Apprenticeship Program c. IHACI NATE Certification Training Series d. Accredited Trade/Career Tech Training Programs 2. If a technician is not enrolled in one of the 4 items listed above but is enrolled in another HVAC education Program, the SCE HVAC Optimization Program will consider those individuals on a case-by- case basis. b. Level 1 Technicians will only perform work related to the SCE HVAC Optimization Program while under the direct supervision of a mentor that is a Program-approved Level 2 Technician. i. Level 1 Technicians will have a login with limited privileges and visibility; ii. The certified technician with the MPS login is responsible for all work completed on any HVAC systems under their supervision. All accountability falls on the Program-qualified technician onsite; iii. We will allow no more than two (2) Level 1 Technicians to work under one (1) Level 2 Technician. This 2:1 ratio is designed to ensure quality work, while also creating an environment conducive to training and workforce development. (Additionally) • Computer Equipped and Literate to the ability level to enter data in online data bases…(very subjective but necessary) • Computer Equipped and Literate to access WE&T materials online High-level targets and/or performance objectives for training (MPS, technical) (How detailed do we want to get, and at what point? This can get quite detailed depending on how far we drill down in describing and defining the skill competencies) • Standard 180 level maintenance tasks for RTU • Demonstrate competency of measuring basic refrigeration cycle checks • Demonstrate competency of determining adequate air flow & heat transfer • Demonstrate competency of maintenance electrical checks

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4	ES 3; Section 4.4 p. 65	The program should ensure those doing the work are those who are trained and establish training boundaries with clear, measurable goals and objectives	**Establish Training Criteria:** (a) Ensure the Account Managers and Field Service Technicians (FSTs) train the staff who will sell the maintenance agreements and conduct work documented in the MPS. This may be as simple as ensuring that contractors understand up front that all staff who are accepted into the program must attend training in order to have work approved in the MPS; (b) Technician Maintenance Skills: Program must clearly define its training responsibilities, the standards that will be used to maximize energy savings, and the approach for teaching technicians how to do their work in order to bring technician's knowledge, skills, and abilities up to similar levels across the industry.	SCE	Accepted	**TECHNICIAN REQUIREMENT FOR LEVEL 1 TECHNICIAN: LESS-QUALIFIED TECHNICIANS** Training partners • HVACRedu.net for CQM Program Specific Technical Training Instructional format (days, style, resources) • For CQM Required Tech Training - 3 days o Days 1&2 at EEC with F2F Theory Classroom / Hands on practical in lab o Day 3 in the field with Field Training Coaches (collaborators –CLEAResult for MPS, HVACRedu, FDSI for SA Mobile) • Blended Online & F2F Assessments • Hand-written (past), Online assessment in line with level of competency (present) • Observed assessment of hands on tasks – documented online in technicians' training files Rapid feedback mechanisms for continuous improvement • Instructional staff does continuous improvement via lessons learned in training session • Student survey at exit • Pre Test • Post Test • OSV data assists in identifying correlations – opportunities for retraining/mentoring implemented Tracking • ItstaboutQ uses LMS (learning management system) to track and archive student records and performance for the CQM Program • Program documentation resides with CLEAResult (CQM Program Implementer) Scaffolding learning and development opportunities connected to CQM Program - (i.e. relevant and applicable stackable credentials) The SCE CQM program has evolved to include an ascending pathway for technicians as the Program has grown in complexity. 1. CQM Technician training – required of all Program technician participants 2. ADEC – required for ADEC incentive • Trainings offered through SCE's WE&T efforts (HVACRedu, IHACI, NCI and JJATC Apprenticeship Program at Local 250) • Curricula has been recently updated to include DCV w/VFD components per Program specifications – vetted with Engineering, Codes/Standards Team, CPUC, Industry Training Organizations 3. ADEC + DCV w/VFD – required for incentives; specifically • Setup/install of ADEC + DCV w/VFD training required - offered through SCE's WE&T efforts are the same as specified above (Those previously trained with ADEC coursework through itsaboutq.net are required to take the additional DCV module) 4. ADEC + DCV w/ VFD measure for Final Functional Test - Testing and Balancing Certification required – credentials recognized include NEBB, TABB, AABC, ATT, NBC, NCI Light Commercial Industry Recognized Technician Training Partners • IHACI, HVACRedu.net, NCI, JJATC Local 250 for SCE's HVAC WE&T stackable credentials as required by CQM Program for specific measures (ex. ADEC w/ DCV)

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5	ES 3; Section 4.5 p. 66-67	There are a few additional ways the program could progress towards its market transformation goals	**Tailor the Program to Sell and Continue the Customer Relationship**: (a) Consider developing offerings that will yield a return on investment for small units, whether that is through a modified series of steps to servicing smaller units or through a different incentive structure. (b) In order to really expand the program and work toward market transformation, the program should increase marketing by developing targeted campaigns aimed at educating the customer with real-life testimonials (case studies) of companies that have saved money by participating in the program. (c) For current customers that have not yet enrolled all units in the maintenance agreement, the periodic performance reports the program has developed should be tailored to convey how units are performing, what more can be done to save money, and the likely savings to be had from enrolling additional units;	SCE	Accepted	Addressing small units cost effectively with any level of intervention is a challenge, but this recommendation is well taken. (b) and (c) have been implemented as of 2015. Development of vertical data sheets and case studies in 2014 will be continued into 2015 with solicitations for program participants to engage with marketing to track key metrics compelling to customer decision making in adopting energy measures and maintenance plans.
6	ES 4; Section 4.6 p.67	Contractors have significant concerns with incentive processing time.	**Reduce Incentive Approval and Processing Time**: The program should immediately reduces the incentive approval and processing time, consider reducing redundant reviews, by implementing a more finely tuned sampling procedure, and hiring additional staff to reduce the time it takes for customers to receive incentive checks. It does not reflect well on the program to demand timely service and not deliver timely rewards.	SCE	Accepted	With a focus on continuous improvement and processing efficiency the HVAC Optimization team was able to improve average processing times by over 50% from 2013 to 2014. Examples of improvements made include maintenance incentive analysis streamlining, contractor change process improvements, automation of incentive calculator, reduction of reviews needed for processing, increased staffing. In the past six months, the program has received the following feedback from contractors: Redline Air said they started receiving payments within the month of doing the job. That is extremely helpful since they are a small business and they don't have to float the time and material costs as long. Ontario Refrigeration said they have seen a huge improvement in the processing time and they are not "reminded" by their accounting department to inquire on payments. It makes it so much easier on them when they don't have to track down incentive payments. Tri-Pacific had inquired about the application status for Fairway Center and Refuge Calvary Chapel, which was processed earlier/quicker than anticipated. Rebates are processed in about half the time. With the improved cash flow, contractors have sought training for four more technicians to ramp up their expansion of the program in 2015.