

**DOCKETED**

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| <b>Docket Number:</b>   | 17-EBP-01  |
| <b>Project Title:</b>   | Improving Energy Compliance of Central Air-Conditioning and Heat Pump Systems        |
| <b>TN #:</b>            | 224555   |
| <b>Document Title:</b>  | CalCERTS Comments regarding improving compliance with air conditioners and heatpumps |
| <b>Description:</b>     | N/A  |
| <b>Filer:</b>           | System   |
| <b>Organization:</b>    | Russ King  |
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*Comment Received From: Russ King*  
*Submitted On: 8/21/2018*  
*Docket Number: 17-EBP-01*

**CalCERTS Comments regarding improving compliance with air conditioners and heatpumps**

*Additional submitted attachment is included below.*

August 20, 2018

To: California Energy Resources Conservation and Development Commission

Re: CalCERTS Comments Regarding Improving Energy Compliance of Residential Air-conditioners and Heat Pumps (SB-1414). Docket # 17-EBP-01

CalCERTS, Inc. appreciates this opportunity to provide feedback to the California Energy Commission. CalCERTS, Inc. is the largest HERS Provider in the state. We train, certify, and provide quality assurance on the majority of HERS Raters in the state. HERS Raters are the third party special inspectors that provide field verification and diagnostic testing to assist in the enforcement of the Title-24, part 6, Energy Codes. Our comments here stem from our mutual goals of:

1. Improved compliance with the energy code
2. Simplified and streamlined protocols and procedures
3. Enforceability of the requirements

CalCERTS appreciates the hard work and dedication by CEC staff and consultants and their roles in meeting the above goals. We attended the CEC workshops on this topic and have read the docketed comments by others. The following discussion summarizes our positions on the important topics addressed so far.

#### **Equipment Number Registration (ENR)**

We strongly support this concept and believe that the CEC should aggressively pursue further research on implementing this important compliance tool. ENR is technologically very feasible and would be relatively simple to implement. Most importantly, ENR has the potential to make a tremendous impact on compliance. Compliance is needed to protect California homeowners and ratepayers and to fulfill the resource conservation objectives sought by the code and SB-1414. A simple and properly designed equipment number registration data base system has the potential to make a tremendous impact on HVAC compliance with the energy code. Through use of the HERS processes already in place ENR can be implemented in a simple straightforward manner.

## **HERS Rater Conflict of Interest**

Bruce Severance of Mitsubishi submitted statistics, admittedly anecdotal, related to HERS fraud and conflict of interest. We take great exception to these numbers and can empirically state that they are highly overstated. We take the integrity of the HERS process very seriously and encourage Mr. Severance, and anyone else, to notify us when they find evidence of fraud by HERS Raters.

As the state's largest HERS Provider, CalCERTS has a very active Quality Assurance (QA) program, and we have performed QA field reviews on many thousands of systems. These QA reviews involve retesting systems previously tested by the HERS Raters under our authority. Our HERS Raters are subject to a more substantial QA than any other profession in the construction industry. Every test that a HERS Rater performs has the potential to be randomly selected for retesting and by our QA department. Our QA process does uncover issues, and when we find them we take action.

Because raters are typically engaged by the HVAC contractors, there are concerns that this close working relationship has an implicit conflict of interest. While the potential for conflict of interest exists, it shouldn't be assumed, and an active Quality Assurance program can work to prevent it. In fact, we have witnessed some very real benefits to these relationships.

When the HERS program began there was a great deal of resistance from the installers. As time has passed and the energy code progressed, we have seen a shift to where installers are now looking to HERS Raters for guidance on best practices to ensure their installation will be in compliance. Raters will often meet with the technicians for an HVAC company to answer questions and review energy code requirements, and many have developed their own training materials; even YouTube videos. Although it was not the intent of the HERS program, HERS Raters have become educators in the industry.

The energy code requirements for third party verification on HVAC installs came from independent statewide studies that showed Californians suffered from extremely poor overall HVAC installation quality (duct leakage, airflow, fan watt draw, and refrigerant charge). The HERS program and the verification of these measures not only improved the overall understanding of these important installation features, but has led to improved installation quality. CalCERTS is confident that HERS Raters, through education of installers and verification of installations, have improved the industry and helped California homeowners realize the efficiency goals of Title-24.

## **Miscellaneous topics**

**Simplified HVAC design process** – Oversized equipment and undersized ducts are a huge problem in existing homes. A CEC-approved simplified design process and industry training would allow contractors to confidently bid downsizing equipment at a large cost savings and



more competitive bid. We encourage the CEC to pursue research into the area of simple downsizing of condensers as part of HVAC changeouts along with a simplified process for designing these systems.

**Additional Performance Testing** - We also highly encourage the CEC to require that the installer test and label all systems with the system TESP, the total external static pressure across the air handler. For newly installed air handlers, they should also label the manufacturers' airflow that corresponds to the measured TESP. This very simple test provides the single most informative data point that indicates the system's performance related to airflow and duct sizing. This immediate feedback will provide installers and designers with invaluable knowledge to help them improve their design and installation practices. To simplify the TESP test, we recommend that the manufacturers of the air handling equipment be incentivized to mark/label the appropriate locations on the equipment enclosures to identify approved locations for drilling the holes needed for the insertion of the static pressure probe.

**Enforce Design Requirements** - We also recommend much stricter enforcement of the *existing* requirement for qualified HVAC design (e.g., ACCA Manual J/S/D) and a new requirement that a set of HVAC design plans be submitted for all new construction projects and all cut-ins (completely new systems installed in existing homes).

**Homeowner education** – Homeowner education is essential. There is great value to be gained through homeowner education on the benefits of permitting, testing, good design, etc. Social media such as Facebook groups and Nextdoor.com can be very effective and much less expensive than traditional media. We encourage the CEC to pursue homeowner education using traditional and new media avenues.

**Permits required for utility rebates** – Permits should be required for any utility rebate or incentive program. This should be mandatory throughout the state and is necessary to legitimize the programs focused on energy efficiency. The study done by DNVGL on this topic for the CPUC that concluded that permits have no significant impact on improved compliance was highly flawed.

**Standardized online permitting for HVAC changeouts** – A statewide standardized online permitting process would have a very positive impact on energy code compliance for HVAC changeouts. Furthermore, we believe that this would be technologically feasible and relatively simple to integrate into the current HERS registration process.

**Special ICC or CALBO Certification for HVAC Changeouts** – CalCERTS encourages the CEC to work with health and safety code certification organizations to develop a special certification for HVAC changeouts. A typical code inspection involves small parts of several general code certifications, Electrical, Plumbing, Mechanical, etc. A special certification that just focuses on HVAC changeouts would allow building departments to enlist special inspectors to help focus on these types of high volume projects. HERS Raters should be allowed and encouraged to participate as special inspectors for every aspect of HVAC Changeouts in accordance with their education and their definition as 3<sup>rd</sup> party special inspectors.



**Compliance documentation** – We agree with other stakeholders’ comments that the compliance documentation is far too extensive and complicated, however, we feel that the overall principle of the CF1R/CF2R/CF3R is sound. Recent development of the Project Status Report (PSR) has tremendously simplified the documentation process and has been widely accepted by the users of the registry, including building department staff. Systems are currently in place that eliminate the need for printing of documents and allows for a fully paperless process, which saves time, resources, and encourages use of the registry. Continuing efforts are in place to increase awareness. We believe that the CF2R Certificate of Installation plays a very important role in assigning accountability. We strongly encourage the CEC take on a stated goal of reducing and simplifying the paperwork while maintaining the requirement for CF2R forms. We will continue to commit to work closely with the CEC to meet this goal. We believe that technology, well designed forms, and a well-used HERS registry can make this process very effective and efficient.

Thank you for this opportunity to comment on this important work. We look forward to continuing to work with other stakeholders to improve compliance with the energy code.

Sincerely,



Russell King, M.E.  
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CalCERTS, Inc.