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Proposed VCHP Compliance Option Specifications are Misaligned with Product Specifications and Applications

Comments by Bruce Severance, Mitsubishi Electric US, on the Proposed VCHP Compliance Option
October 9, 2019, CEC Docket Number: 19-BSTD-02

Dear Commissioner McAllister and CEC Staff,

I greatly appreciate your concern for equity and the vision you have brought to the CEC as it charts a course to strengthen the California economy while addressing climate change impacts. In June 2019, Mitsubishi Electric published "Environmental Sustainability Vision 2050" to clarify the company's stance on addressing long-term environmental issues. This corporate vision asserts that "The Mitsubishi Electric Group shall utilize diverse technological assets throughout wide-ranging business areas to solve various environmental issues, including climate change." We consider ourselves partners in this effort.

We are concerned about the specification misalignments built into the current draft of the VCHP Compliance Option. Only in the last few weeks has the CEC staff confirmed in writing that the VCHP Compliance Option requires MERV 13 filtration, but no CEC test data is available to substantiate the ability of low-static systems to provide MERV 13 filtration while also meeting the flow and static pressure requirements of the compliance option. While there are reports of some contractors configuring low-static systems with MERV 13 filtration, it is not at all clear that the rest of the VCHP Compliance Option requirements can be met while also meeting this requirement. The high-MERV requirement combined with the low-static pressure provided by these systems is inherently contradictory and difficult for these systems to meet.

We encourage the Commission to consider including mid-static ducted systems (up to .65" w.c. ESP) within the VCHP compliance option before the final vote in November. The current draft of the compliance option excludes mid-static systems that provide the static pressure required to more efficiently deliver MERV 13 filtration while serving several rooms or an entire home with one unit. These mid-static systems can have the same compact air handler design as our low-static products so they can easily fit in a drop ceiling, but are far better suited for this high-MERV application. It appears that the elimination of this more suitable technology was the result of a misassumption that the mid-static systems are less efficient, when this is not the case. Mitsubishi Electric's mid-static PEAD-model systems are more efficient than our low-static systems, and the installed efficiency of our low static systems are likely to be negatively impacted by the restricted air flow that MERV 13 filtration imposes. They are clearly not designed for this application. We have cause to question the reasons for excluding mid-static air handlers and hope that you consider allowing them to receive EDR credit through the VCHP Compliance Option, because they are more appropriately matched to the specifications you are requiring.

The VCHP Compliance Option requirements in their current form represent a misalignment with low-static systems in several ways. It would be best to consider minor revision to a few specifications to better align the compliance option with the high-efficiency product currently available. Certainly, some low static systems will happen to have the right combination of cfm/ton, ESP and have fan speed jumper settings that allow them to be "certifiable low-static equipment" while also providing MERV 13 filtration. Many low-static systems on the market will not meet this narrow set of requirements which we do not believe promote higher installed efficiencies. We believe the specification misalignment will unfairly disqualify a range of products on the market, or require manufacturers to redesign product to meet narrow specifications which do not promote higher delivered efficiency.

We would like CEC to consider the following:

1) Allow mid-static air handlers (up to .65" w.c.) to qualify for the VCHP compliance credit provided they meet a higher minimum SEER/HSPF. Doing so would avoid implementation of the MERV13 requirement only on low-static systems, for which there will be unresolved questions for engineers, architects and their system designers regarding return grill areas and compliance with ESP and flow requirements. Allowing mid-static product to qualify under the compliance option avoids training, support and installation problems which are likely to arise from the lack of field test data to confirm whether the VCHP Compliance Option will work across a range of low-static systems.

2) Clarify the definition of "certified low-static equipment" in the current draft of the VCHP Compliance Option. Some products cross over between low-static and mid-static flow and static pressure definitions due to adjustable global fan speed settings (jumpers or "dip-switches"). Does a "certified low static product" exclude product that crosses these definition thresholds due to speed settings provided it is configured to meet the low-static definition as installed; or, do "certified low-static products" only include products that meet the low-static criteria in all of their possible speed settings? If the VCHP Compliance Option requires HERS verification of compliance with flow and ESP requirements, is it not reasonable to include products that can operate as mid-static product provided they are commissioned and HERS verified to meet the VCHP requirements?

3) Allow the current air-flow specification of 350-400cfm/ton a broader tolerance of 350 to 475cfm/ton in recognition of Rick Chitwood's data indicating that higher flows (up to 600cfm/ton) are more effective in California's mostly dry climate where latent loads are minimal and dehumidification plays a less significant role in residential applications. It may be very difficult for low static systems to be adjusted to fall within the narrower tolerance while also meeting other VCHP compliance option requirements.

4) Offer a level playing field for DICS credit and grant the same EDR compliance credit as is afforded any technology that eliminates ducts in the attic. There is no reason that DICS credit should be coupled or contingent upon the rest of the VCHP Compliance Option requirements, and such coupled requirements are not required of other technologies that receive DICS compliance credit. A level playing field for VCHP technology is reasonable.

The underrating of variable capacity equipment efficiencies and the difficulty obtaining compliance credit over the past several years have made VCHP equipment far less competitive against gas appliances. It puts VCHP product at a disadvantage due to misassumptions and conclusions that merit further evaluation. The VCHP Compliance Option misalignment raises critical issues in need of careful evaluation and corrective action. It is our hope that CEC staff remains open to this feedback, which we have consistently expressed over the months since the draft VCHP Compliance Option was first released in February 2019.

In the absence of data showing that MERV 13 filtration can be combined with a range of low-static systems while still meeting the ESP and flow requirements of the VCHP Compliance Option, a rush to approve a misaligned standard could create many unnecessary policy implementation headaches, including difficulty training system designers on untested configurations, and HERS verification problems arising from a lack of supporting data. Contractors, trainers and system designers may be entirely unprepared as they attempt to implement this compliance option in January without a framework for doing so. If the CEC provided field test data to support the proposed compliance option, many concerns would be alleviated.

We have been assured by CEC staff that comments submitted by October 13th will be addressed during or before the November 13th business meeting. Your feedback regarding our concerns is greatly appreciated.

Sincerely,

Bruce Severance
Regulatory Compliance Engineer
Government and Industry Relations
Mitsubishi Electric US, Cooling and Heating