DOCKETED

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Trane Comments for 2019 Title 24 Non-Residential HVAC measures

Additional submitted attachment is included below.

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June 30, 2017

California Energy Commission
Docket Unit, MS-4
Re: Docket No. 17-BTSD-01
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Docket No. 17-BTSD-01 – Non-Residential HVAC Measures for 2019 Standards

Dear Mr. Alatorre:

Thank you for the opportunity to submit comments regarding the development non-residential HVAC measures for the 2019 Title 24 Standard, presented by the California Energy Commission (CEC) on June 20, 2017.

Ingersoll Rand (NYSE:IR) advances the quality of life by creating and sustaining safe, comfortable and efficient environments. Our people and our family of brands - including Club Car, Ingersoll Rand, Thermo King and Trane - work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. Our company is helping to solve some of the world's most pressing challenges including the demand for energy resources and its impact on the environment. As such Ingersoll Rand announced in 2014 a roadmap to increase energy efficiency and reduce environmental impact from our operations and product portfolio to result in 20.85 million metric tons of CO_2e avoidance globally by 2020. Most recently, Ingersoll Rand was an original signatory to the "We Are Still In" declaration confirming our commitment to stand by plans that align with the targets set by the Paris Agreement regarding reducing carbon emissions to avert the worst effects of climate change.

Trane is a U.S. and global manufacturing leader of commercial heating, ventilation and cooling (HVAC) products. The measures covered on the June 20th call affect a number of Trane products and applications, including both HVAC equipment and controls. Collectively, these products account for a significant portion of our company's commercial and HVAC revenue.

Implementation of content from ASHRAE 90.1 standard:

In general, Ingersoll Rand fully supports incorporation of consistent requirements across all state energy codes. In this code cycle for Title 24 (2019), there are proposals to incorporate requirements from ASHRAE 90.1-2016 in the Exhaust Air Heat Recovery and Fan Power measures. However, in both cases, the requirements have been modified from those that were implemented in ASHRAE 90.1. This is problematic for manufacturers in that it requires multiple product designs to satisfy requirements across multiple states. We request that the CEC consider implementing requirements consistent with ASHRAE 90.1 in the climate zones that are represented in the state of CA.

Demand Control Ventilation Measure:

Ingersoll Rand supports this measure. However, we wanted to point out that we are unaware of any stand-alone thermostat applications that are able to satisfy these requirements. We would require some further study, but our initial review of thermostat controls readily available in the industry are not capable of performing this control sequence. A DDC control system or stand alone DDC unit controller

would be required in order to meet these requirements. We wanted to make sure that the CEC understands this and considers whether this was part of their intent for this measure.

Occupant Sensor Ventilation Measure:

For this measure, Ingersoll Rand is unaware of any existing or readily available thermostat or DDC control system that has this control sequence in place to satisfy the requirement as written. We would have to develop the algorithm specifically to execute this control sequence, and a DDC control system is the only means we would have available to satisfy it. If this measure is implemented by the CEC, we feel it is highly likely that there would be no thermostat controls available in order to meet these requirements. A DDC system would most likely be the only means of compliance.

Economizer Fault Detection and Diagnostics Measure:

Ingersoll Rand supports and is in full compliance of this measure. However, we did want to raise one issue related to a proposed change to the naming of one of the system status conditions. The new code language proposes changing the Compressor enabled status to Mechanical cooling enabled as the status name. While we have no argument against the reasoning behind the name change, our concern is that part of our controls development requires hard-coding of many things in our control software. Changes to the naming of system status as well as the names of the faults themselves could drive unplanned controls work without making any change to the functionality of the controls themselves. IR plans to comply with this new naming change (if implemented) by updating our controls documentation to note that Mechanical cooling enabled status is represented as Compressor enabled in our controls. This will be documented in both our product literature and our CEC FDD certification documents. If this means of compliance will not suffice, then we will be faced with having to dedicate resources to making a naming change in all of our control platforms, which is not a desired way to use our precious resources.

In conclusion, Ingersoll Rand has a long history of working collaboratively and constructively with the California Energy Commission and looks forward to conversations on our comments and others. We will be happy to further engage with the CEC to elaborate on our comments or provide additional background.

Sincerely,

Beth Braddy

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