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Project Title:	2019 Building Energy Efficiency Standards PreRulemaking
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Document Title:	Daikin Applied Comments on Title 24 - 2019 Pre-Rulemaking 06-20-17 Staff Workshop - Non-Residential Mechanical Proposals
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Comment Received From: Henry[Skip] Ernst representing Daikin Applied
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Docket # EERE-2013-BT-STD-0006, RIN 1904-AC55

Additional submitted attachment is included below.

July 7, 2017

California Energy Commission
Docket Unit, MS-4
Re: Docket No. 17-AAER-06
1516 Ninth Street
Sacramento, California 95814-5512

Re: Daikin Applied Comments – Title 24-2019 Pre-Rulemaking June 20, 2017 Staff Workshop – Non-residential Mechanical Proposals [Docket No. 17-BTSTD-01]

Dear CEC Staff:

These comments are submitted in response to the California Energy Commission (CEC) Staff Workshop on 2019 Nonresidential Energy Standards held on Tuesday, June 20, 2017, and the draft Codes and Standards Enhancement (CASE) report regarding proposals to update nonresidential measures in California's Building Energy Efficiency Standards (Title 24, Part 6). Daikin Applied is headquartered in Plymouth, Minnesota, manufactures commercial HVAC equipment, employs over 5000 people, and is a division of Daikin Industries.

ASHRAE 90.1 Measures

Daikin Applied supports California adopting ASHRAE 90.1 content in a consistent and harmonized manner. Unfortunately 2 proposals stray far from the intent of the ASHRAE 90.1 and, if implemented, would negatively impact manufacturers of HVAC equipment and California consumers.

Fan System Power

Daikin Applied supports updating the fan allowances to be consistent with 90.1 but the minimum BHP / CFM should be harmonized with 90.1. Your proposal only allows 0.82 BHP / 1000 CFM for CAV applications and 90.1 requirements are 0.95. A similar variation exists on VAV applications. The 90.1 minimums are challenging for packaged rooftop systems requiring EAFs or RAFs that operate at design conditions. If rooftops are not available with compliant fans then an alternative system would be required and your study does not consider these consequential costs. This would be extremely problematic on replacement applications. Also, the base case in the CEC technical document assumes a MERV 9 filter, but this is not consistent with the CEC's indoor air quality proposal where MERV 13 filters are being proposed.

Waterside Economizers

The proposed language inhibits the use of efficient, water cooled, unitary equipment because these typical water economizers may only provide a little more than 50% of

design cooling capacity at 49 degrees F. ambient wet bulb. We have provided confidential, supporting documents to Stefan Gracik. If the unitary water economizer cannot provide sufficient capacity then an alternative system would be required. Some alternative systems would consume more energy and others would require much greater cost premiums than your studies have considered. This could be extremely problematic on replacement applications. These water economizers should at least be exempted until complete studies have been made.

Sincerely,

Henry [Skip] Ernst
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