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Joint Comments C&I Fans and Blowers 15-Day Additional Comments

Additional submitted attachment is included below.

August 29, 2022

Alejandro Galdamez
Efficiency Division
California Energy Commission
715 P Street
Sacramento, CA 95814

Docket Number: 22-AAER-01
TN Number: 241470

Dear Mr. Galdamez:

This letter comprises the comments of the Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE) in response to the California Energy Commission (Energy Commission) new regulatory language regarding commercial and industrial fans and blowers.

The signatories of this letter, collectively referred to herein as the California Investor-Owned Utilities (CA IOUs), represent some of the largest utility companies in the Western U.S., serving over 32 million customers. As energy companies, we understand the potential of appliance efficiency standards to cut costs and reduce consumption while maintaining or increasing consumer utility of products. We have a responsibility to our customers to advocate for standards that accurately reflect the climate and conditions of our respective service areas.

The CA IOUs are submitting the following editorial comments after discussions with stakeholders. Some of these comments differ from our previous suggestions for Table X, so please consider these instead.[1]

1. **We recommend that CEC make the following changes to the reporting requirements in Table X of the New Regulatory Language to improve clarity and reduce complexity.**

    a. We recommend reporting the types of motor and controller rather than specific model numbers. For many types of motors, particularly induction motors, a motor with a given performance from the same manufacturer may be sold with different model numbers because they have slightly different features. Further, regulated polyphase motors are interchangeable, and fan manufacturers will use multiple suppliers for functionally identical products. The same applies to variable frequency drives. We believe a requirement to report specific model numbers would result in continual updates to the

[1] https://efiling.energy.ca.gov/GetDocument.aspx?tn=244200&DocumentContentId=78125

Modernized Appliance Efficiency Database System for the same fan, and would be a significant burden to both CEC and manufacturers with little added value.

To guide users as to the appropriate response for "type of motor," We suggest standardizing the possible entries:

- None
- Single-phase induction
- Polyphase induction
- Synchronous DC, including ECM
- Permanent Magnet AC
- Other

For "type of controller," We suggest these three choices:

- None
- Variable Frequency Drive
- Other

b. We suggest that manufacturers be required to report the motor nameplate horsepower for motors on fans used to calculate the fan electrical power per Section 6.4 of AMCA 214-2021: Test Procedure for Calculating Fan Energy Index (FEI) for Commercial and Industrial Fans and Blowers (AMCA 214-2021). Section 6.4 requires calculating the efficiency of the motor, which, in turn, is used for calculating the actual fan electrical power (FEP_{act}).

c. We recommend adding a reporting requirement for whether the fan was rated using static or total pressure. This information is critical to CEC in determining whether the Fan Energy Index (FEI) was calculated correctly.

d. Unlike air conditioner test procedures, AMCA test methods do not correct the airflow measured during testing to standard cubic feet per minute (SCFM) and report the measured pressure. Instead, fan test procedures report the measured airflow and correct the pressure to standard air density. We have indicated in the table where SCFM should be changed to CFM and where standard air density should be noted.

e. We suggest changing "Method used to determine FEP_{act} of test method in section 1604(d)(2)" to reference AMCA 214-2021 rather than section 1604(d)(2). The different methods for determining the Fan Electrical Power are not mentioned in section 1604(d)(2), and a reader might not realize they can find the information in AMCA 214-2021.

Figure 1 below is a marked-up version of Table X of the New Regulatory Language posted by CEC on July 11, 2022. Strike through and double strike through deletions (~~example~~, ~~example~~) and underlined and double-underlined additions (<u>example</u>, <u>example</u>) in black text are original. Our recommended changes are indicated in red (~~example~~, <u>example</u>).

Figure 1: Table X Showing Proposed Changes in Red

Appliance	Required Information	Permissible Answers
Commercial and Industrial Fans and Blowers manufactured after August 10, 2023	Fan type	Centrifugal housed, centrifugal inline, centrifugal unhoused, centrifugal PRV supply, centrifugal PRV exhaust, axial inline, axial PRV, inline mixed-flow, power roof/wall ventilators, axial panel, radial housed
	Fan impeller diameter (in.)	
	~~Motor model number~~ Type of motor sold with fan ~~(if fan is sold with a motor) certified with a motor)~~	1. None 2. Single-phase induction 3. Polyphase induction 4. Synchronous DC, including ECM 5. Permanent Magnet AC 6. Other
	Motor nameplate horsepower (if FEP_{act} is calculated per Section 6.4 of AMCA-214-2021)	
	Transmission type (if fan is sold with a transmission)	Direct, V-belt, synchronous- belt, flexible coupling, none
	~~Controller model number~~ Type of controller sold with fan ~~(if fan is sold with a controller) certified with a motor)~~	1. None 2. Variable Frequency Drive 3. Other
	Pressure Type	"S" for fans rated using static pressure or "T" for fans rated using total pressure.
	Maximum fan speed (RPM)~~at FEI=1.0~~	
	~~Maximum pressure (inches waster gauge) at FEI=1.0~~ Airflow at maximum fan speed (~~S~~CFM)	

	~~Maximum compliant air flow (SCFM) at FEI=1.0~~ Pressure at maximum fan speed (inches water gauge converted to standard air density)	
	FEPact at maximum fan speed (kW converted to standard air density)	~~Tested, Calculated~~
	~~Associated Series Tested Fan Model Number (if calculated)~~ FEPref at maximum fan speed (kW)	~~Fan product line and model, (N/A if tested)~~
	~~Method of FEPact determination~~ Maximum pressure (inches water gauge converted to standard air density)	~~Section 6.1, 6.2, 6.3, 6.4, or 6.5 of the test method~~
	~~FEPref at FEI=1.0~~ Airflow at maximum pressure (~~S~~CFM)	~~Reference fan electrical power (kW)~~
	~~FEPact at FEI=1.0~~ Fan speed at maximum pressure (RPM)	~~Actual fan electrical power (kW)~~
	FEPact at maximum pressure (kW converted to standard air density)	
	FEPref at maximum pressure (kW)	
	Maximum air flow (~~S~~CFM)	
	Pressure at maximum airflow (inches water gauge converted to standard air density)	
	Fan speed at maximum airflow (RPM)	
	FEPact at maximum airflow (kW converted to standard air density)	
	FEPref at maximum airflow (kW)	

	Is the model a Series tested fan?	Yes, No
	Associated Series Tested Fan Model Number (if not a series tested fan)	Fan product line and model, (Field is N/A if it is a Series tested fan)
	Method from AMCA 214-2021 used to determine FEPact ~~of test method in section 1604(d)(2)~~	~~Section~~ 6.1, 6.2, 6.3, 6.4, or 6.5 ~~of the test method in section 1604(d)(2)~~

2. We recommend the following changes to the labeling requirements in § 1607. Marking of Appliances. (shown in red).

To align with our comment above, we recommend that the CEC require the label for commercial and industrial fans and blowers to show if "maximum pressure" refers to total or static pressure. We also recommend that CEC change the labeling requirement for maximum airflow to be in CFM rather than SCFM.

(A) ~~The label shall include the following information:~~ For Commercial and Industrial fans and blowers the label shall include the following information:

Fan Energy Index ≥ 1.00 Efficiency boundaries

a. maximum air flow (~~S~~CFM);

b. maximum fan speed (RPM);

c. maximum pressure (inches water gauge).

d. pressure type ("Static" or "Total")

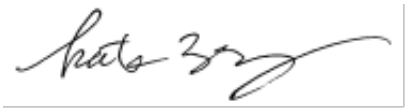
NOTE: Operation outside of these boundaries will result in an energy inefficient operation.

In conclusion, we would like to reiterate our support of CEC's new regulatory language for Commercial and Industrial Fans and Blowers. We thank CEC for the opportunity to be involved in this process.

Sincerely,

Patrick Eilert
Manager, Codes & Standards
Pacific Gas and Electric Company

Michelle Thomas
Principal Manager, Building Electrification
Customer Programs & Services
Southern California Edison



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