DOCKETED	
Docket Number:	21-BSTD-01
Project Title:	2022 Energy Code Update Rulemaking
TN #:	238378
Document Title:	Joint Committee on Energy and Environmental Policy Comments
Description:	Joint Committee on Energy and Environmental Policy Joint Committee on Energy and Environmental Policy Comments - Comments on Draft 2022 Energy Code Express Terms (TN # 237717) and Draft 2022 Reference Appendices Express Terms (TN# 237714)
Filer:	System
Organization:	Joint Committee on Energy and Environmental Policy
Submitter Role:	Public
Submission Date:	6/21/2021 3:51:52 PM
Docketed Date:	6/21/2021

Comment Received From: Joint Committee on Energy and Environmental Policy
Submitted On: 6/21/2021
Docket Number: 21-BSTD-01

Comments on Draft 2022 Energy Code Express Terms (TN # 237717) and Draft 2022 Reference Appendices Express Terms (TN# 237714)

Additional submitted attachment is included below.

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
520 CAPITOL MALL, SUITE 350
SACRAMENTO, CA 95814-4721
TEL: (916) 444-6201
FAX: (916) 444-6209
kjones@adamsbroadwell.com

SO. SAN FRANCISCO OFFICE
601 GATEWAY BLVD., SUITE 1000
SO. SAN FRANCISCO, CA 94080
TEL: (650) 589-1660
FAX: (650) 589-5062

DANIEL L. CARDOZO
KEVIN T. CARMICHAEL
CHRISTINA M. CARO
JAVIER J. CASTRO
THOMAS A. ENSLOW
KELILAH D. FEDERMAN
ANDREW J. GRAF
TANYA A. GULESSERIAN
KENDRA D. HARTMANN*
KYLE C. JONES
DARIEN K. KEY
RACHAEL E. KOSS
AIDAN P. MARSHALL

MARC D. JOSEPH
Of Counsel

**Not admitted in California. Licensed in Colorado.*

June 21, 2021

VIA DOCKET SUBMITTAL

Docket No. 21-BSTD-01
California Energy Commission
Dockets Office MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Comments on Draft 2022 Energy Code Express Terms (TN # 237717) and Draft 2022 Reference Appendices Express Terms (TN# 237714)

Dear Commission Staff:

The following comments are submitted on behalf of the Joint Committee on Energy and Environmental Policy ("JCEEP") in response to the Draft 2022 Energy Code Express Terms (TN # 237717) and Draft 2022 Reference Appendices Express Terms (TN# 237714), both docketed on May 6, 2021. The JCEEP is made up of the California sheet metal workers' local unions and more than 25,000 technicians working for over 600 contractors throughout California.[1] JCEEP's mission is to promote responsible environmental, indoor air quality and energy policy in California as it pertains to and impacts the heating, ventilation, and air conditioning ("HVAC") industry. JCEEP's members have over 15 training facilities throughout the State and thousands of workers being trained daily in HVAC specialties, such as testing, adjusting and balancing, commissioning, green building design, energy efficiency, sound and vibration control, and indoor air quality.

[1] The sheet metal workers unions are locals of the International Association of Sheet Metal, Air, Rail & Transportation Workers ("SMART").

The sheet metal workers' unions have long advocated for and participated in the development of building standards for mechanical systems in order to safeguard the public health, achieve energy efficiency and ensure performance and durability of systems. JCEEP was established to continue this tradition of advocacy in California. JCEEP was formed on the premise that HVAC systems need to be designed not just to manage comfort levels of indoor air, but also to protect against contaminants and health threats, to ensure reliability and quality, and to ensure energy efficiency.

I. OPPOSITION TO REMOVAL OF HIGH-RISE RESIDENTIAL BUILDINGS FROM STANDARDS APPLICABLE TO HOTEL/MOTEL BUILDINGS AND NONRESIDENTIAL BUILDINGS

The Draft 2022 Energy Code Express Terms propose a major shift in the historic format of the California Building Energy Efficiency Standards by proposing to remove high-rise residential buildings from standards applicable to hotel/motel buildings and nonresidential buildings. JCEEP opposes this format change for three reasons.

First, this change occurs in so many places in the code that it creates confusion and requires more time than the comment periods provided for stakeholders to assess whether this would result in any substantive changes in energy code requirements applicable to high-rise residential buildings. Despite our requests, Commission staff have not clearly identified to the public whether current requirements for high-rise residential buildings will change at all as a result of the format change. Prior to approval, a matrix identifying these changes must be provided. Without such disclosure, it is unclear whether the proposed format change will, in fact be a substantive change that results in increased energy use in high-rise residential buildings or would impact protection of indoor air quality in such buildings. The current COVID-19 pandemic underscores the need to maintain strong standards for high-occupancy, high-rise residential buildings. JCEEP respectfully requests that these changes be put off until the next code cycle, due to a failure of staff to provide a clear analysis of all changes in current requirements for high-rise residential buildings that this format change will create and an opportunity for stakeholder comments on these changes.

Second, the proposed format change is unnecessary and will create confusion. Currently, high-rise residential buildings, hotel/motel buildings and nonresidential buildings are subject to many of the same standards due to the fact that the HVAC, lighting control and other building systems they utilize tend to be more complex and

closer in type and size than the systems used in low-rise residential buildings. The Express Terms attempt to address the fact that high-rise residential buildings are different by including numerous new provisions in the multi-family residential building sections that add additional requirements for high-rise residential buildings. Builders in California are used to the current Energy Code format in which requirements for high-rise residential buildings are set forth separately from requirements for low-rise residential buildings. Changing the formatting now will simply cause short-term confusion with little tangible benefit.

Third, the proposed change makes it likely that energy standards for high-rise residential buildings will progress more slowly than if these standards remained connected to standards for hotel/motel buildings and nonresidential buildings. Affordable housing concerns limit the ability of the Commission to increase energy standards for low-rise residential buildings as quickly as hotel/motel buildings and nonresidential buildings. High-rise residential buildings, however, are different from low-rise residential buildings. Because of their height and high occupancy, they are already required to comply with numerous high-rise-specific provisions involving structural integrity, fire-life safety and other requirements. Because of their size, these buildings also use substantial amounts of energy and thus represent more efficient targets for energy reduction measures.

II. OPPOSITION TO REMOVAL OF BALANCING REQUIREMENTS FOR MULTIFAMILY BUILDING CENTRAL VENTILATION SYSTEMS

The previous Express Terms released during the pre-rulemaking period proposed a number of amendments to Section 120.1 (b)(2)(A)(v) (Multifamily Building Central Ventilation Systems) that deleted current requirements to balance multifamily building central ventilation systems and replaces it with requirements to "adjust" these systems. In our comments on these pre-rulemaking proposals, we opposed this change on the grounds that eliminating balancing from the requirements would reduce the efficiency and performance of these systems. The term "balance" has a specific meaning within the California Mechanical Code and in field operations and is defined at section 407.3 of the California Mechanical Code. Adjusting is only one of the procedures within the balance process. The appropriate terminology for this work should reference the term "Balance" or "Testing, Adjusting and Balancing (TAB)." By proposing to change the terms in 120.1 (b)(2)(A)(v) from "balanced" to "adjusted," the pre-rulemaking proposal eliminated critical steps in ensuring a system is running efficiently and effectively.

Rather than fixing this issue, the current Express Terms now propose to even further reduce the efficiency of HVAC systems by now eliminating both balancing and adjusting requirements. The current express terms now entirely remove all previous changes and existing balancing requirements and replace them with a "Reserved," essentially removing all balancing and adjusting requirements. This removal of requirements to balance ventilation systems will lead to an increase in wasted energy. We urge staff to return to the existing balancing standard in the 2019 Energy Code.

III. REFERENCES TO UV-RATED DRAWBANDS AND UV-RESISTANT NYLON DUCT TIES SHOULD BE DELETED TO ENSURE CONSISTENCY WITH THE 2021 UNIFORM MECHANICAL CODE

The California Building Energy Efficiency Standards contains several outdated references to the use of UV-rated drawbands and UV-resistant nylon duct ties for flex ducts. Approval of these products for this use was withdrawn in the 2021 Uniform Mechanical Code per code section 603.4. These references must be deleted in order to prevent a conflict with the 2022 California Mechanical Code, which automatically adopts all Uniform Mechanical Code provisions unless expressly modified, deleted or replaced by a state amendment.

The reason for this withdrawal was the Iain Walker/Max Sherman study from Lawrence Berkeley National Labs (LBNL) that found nylon connectors regularly failed well before their stated life expectancy after being exposed to high heat. Discoloration of the nylon strapping was observed within one month of the start of testing and straps began breaking after four months. Strap failure is a major problem, because mechanical attachment thereafter is maintained only by the duct sealant. If ducts are not well supported, significant mechanical stress can occur to cause the sealant to fail after the strap fails. In extreme cases, the duct connection may separate. Straps made of these materials may have improved high-temperature durability. As an alternative, the authors recommend metal straps because they have no temperature degradation. The UV rating of these straps did not provide any protection from this heat-related degradation.

The following sections in the California Building Energy Efficiency Standards require amendment to avoid this conflict:

A. Section 120.4(b)(2)(E)(i).

Express Terms Language:
E. **Drawbands used with flexible duct.**
i. Drawbands shall be either stainless-steel worm-drive hose clamps or UV-resistant nylon duct ties.
ii. Drawbands shall have a minimum tensile strength rating of 150 pounds.
iii. Drawbands shall be tightened as recommended by the manufacturer with an adjustable tensioning tool.

Recommended Language:
E. **Drawbands used with flexible duct.**
i. Drawbands shall be ~~either~~ stainless-steel worm-drive hose clamps ~~or UV-resistant nylon duct ties.~~
ii. Drawbands shall have a minimum tensile strength rating of 150 pounds.
iii. Drawbands shall be tightened as recommended by the manufacturer with an adjustable tensioning tool.

B. Section 150.0(m)(3)(E)

Express Terms Language:
E. Drawbands used with flexible duct.
i. Drawbands shall be either stainless-steel worm-drive hose clamps or UV-resistant nylon duct ties.
ii. Drawbands shall have a minimum tensile strength rating of 150 pounds.
iii. Drawbands shall be tightened as recommended by the manufacturer with an adjustable tensioning tool.

Recommended Language:
E. Drawbands used with flexible duct.
i. Drawbands shall be ~~either~~ stainless-steel worm-drive hose clamps ~~or UV-resistant nylon duct ties.~~
ii. Drawbands shall have a minimum tensile strength rating of 150 pounds.
iii. Drawbands shall be tightened as recommended by the manufacturer with an adjustable tensioning tool.

C. Section 160.3(b)(5)(C)(v).

Express Terms Language:

v. Drawbands used with flexible duct.
a. Drawbands shall be either stainless-steel worm-drive hose clamps or UV-resistant nylon duct ties.
b. Drawbands shall have a minimum tensile strength rating of 150 pounds.
c. Drawbands shall be tightened as recommended by the manufacturer with an adjustable tensioning tool.

Recommended Language:

v. Drawbands used with flexible duct.
a. Drawbands shall be ~~either~~ stainless-steel worm-drive hose clamps ~~or UV-resistant nylon duct ties.~~
b. Drawbands shall have a minimum tensile strength rating of 150 pounds.
c. Drawbands shall be tightened as recommended by the manufacturer with an adjustable tensioning tool.

D. Section 160.3 (c)(2)(C)(ii)(e)(I).

Express terms Language:

e. Drawbands used with flexible duct.
I. Drawbands shall be either stainless-steel worm-drive hose clamps or UV-resistant nylon duct ties.

Recommended Language:

e. Drawbands used with flexible duct.
I. Drawbands shall be ~~either~~ stainless-steel worm-drive hose clamps ~~or UV-resistant nylon duct ties~~.

E. NA7.5.3 Air Distribution Systems.

Express Terms Language:

NA7.5.3.1 Construction Inspection
Prior to Functional Testing on new duct systems, verify and document the following:

(a) Duct connections meet the requirements of Standards §120.4.
(b) Specify choice of drawbands.
(c) Flexible ducts are not constricted in any way.

(d) Duct leakage tests shall be performed before access to ductwork and connections are blocked.
(e) Joints and seams are properly sealed according to the requirements of Standards §120.4.
(f) Joints and seams are not sealed with cloth back rubber adhesive tape unless used in combination with Mastic and drawbands. Cloth backed tape may be used if tape has been approved by the CEC. Ducts are fully accessible for testing.

Recommended Language:
NA7.5.3.1 Construction Inspection
Prior to Functional Testing on new duct systems, verify and document the following:

(a) Duct connections meet the requirements of Standards §120.4.
(b) ~~Specify choice of drawbands.~~ Drawbands shall meet the requirements of the California Mechanical Code.
(c) Flexible ducts are not constricted in any way.
(d) Duct leakage tests shall be performed before access to ductwork and connections are blocked.
(e) Joints and seams are properly sealed according to the requirements of Standards §120.4.
(f) Joints and seams are not sealed with cloth back rubber adhesive tape unless used in combination with Mastic and drawbands. Cloth backed tape may be used if tape has been approved by the CEC. Ducts are fully accessible for testing.

IV. DUCT LEAK TESTING PROCEDURES SHOULD BE AMENDED FOR CLARITY AND TO AVOID IMPROPER EXEMPTION

The previously proposed Express Terms language for NA7.5.3.2 (Functional Testing) moved the Energy Code closer to the requirements of the CMC but were removed. We believe that the Energy Code should be amended to clarify that duct systems shall be tested in accordance with both CMC Section 603.10.1, including the requirements for representative testing and the requirements to use trained duct air leakage test technicians or Testing, Adjusting and Balancing technicians to perform the tests. Failing to do so encourages the inefficient and wasteful use of energy.

The current Express Terms language for NA7.5.3.2 only require conformance to the leakage standards in sections 120.4(g) and 141.0(b)2Dii, which will allow for significant leakage. Section 141.0(b)2Dii also allows for visual inspection for leak sealing verification, which is insufficient to ensure leaks will be sealed and energy savings will be realized. We are concerned that these sections contain ambiguities which allow for some systems to become improperly exempted from testing requirements. In particular, the exemption 1 provision stating that the space conditioning system serve less than 5,000 square feet could effectively exempt a 100,000 square foot building with 20 separate systems. A building of that size should not be exempted from the more robust dust testing requirements. We recommend clarifying that exemption 1 does not apply to any buildings greater than 5,000 square feet.

Section 120.4(g)

Express Terms Language:

(g) Duct Sealing. Duct systems shall comply with subsections 1 or 2 below:

1. New duct systems that meet the criteria in Subsections A, B, C, and D below shall be sealed to a leakage rate not to exceed 6 percent of the nominal air handler airflow rate as confirmed through HERS field verification and diagnostic testing, in accordance with the applicable procedures in Reference Nonresidential Appendices NA1 and NA2;

    A. The duct system does not serve a healthcare facility;

    B. The duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system;

    C. The space conditioning system serves less than 5,000 square feet of conditioned floor area; and

    D. The combined surface area of the ducts located outdoors or in unconditioned space is more than 25 percent of the total surface area of the entire duct system.

2. New duct systems that are not subject to testing under Section 120.4(g)1 shall instead meet the duct leakage testing requirements of CMC Section 603.10.1.

Recommended Language:

(g) Duct Sealing. Duct systems shall comply with subsections 1 or 2 below:

1. New duct systems that meet the criteria in Subsections A, B, C, and D below shall be sealed to a leakage rate not to exceed 6 percent of the nominal air handler airflow rate as confirmed through HERS field verification and

diagnostic testing, in accordance with the applicable procedures in Reference Nonresidential Appendices NA1 and NA2;

A. The duct system does not serve a healthcare facility;

B. The duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system;

C. The space conditioning system serves a building with less than 5,000 square feet of conditioned floor area; and

D. The combined surface area of the ducts located outdoors or in unconditioned space is more than 25 percent of the total surface area of the entire duct system.

2. New duct systems that are not subject to testing under Section 120.4(g)1 shall instead meet the duct leakage testing requirements of CMC Section 603.10.1.

Section 141.0(b)2Dii

Express Terms Language:

ii. If the new ducts are an extension of an existing duct system~~,~~ and the combined new and existing duct system meets the criteria in Subsections 1, 2, 3, and 4 below, the duct system shall be sealed to a leakage rate not to exceed 15 percent of the nominal air handler airflow rate as confirmed through HERS field verification and diagnostic testing, in accordance with the applicable procedures in Reference Nonresidential Appendices NA1 and NA2:

1. The duct system does not serve a healthcare facility;

2. The duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system;

3. The space conditioning system serves less than 5,000 square feet of conditioned floor area; and

4. The combined surface area of the ducts located outdoors or in unconditioned space is more than 25 percent of the total surface area of the entire duct system.

~~shall meet one of the following requirements:~~

~~a. The measured duct leakage shall be equal to or less than 15 percent of the system air handler airflow as confirmed by field verification and diagnostic testing utilizing the procedures in Reference Nonresidential Appendix Section NA2.1.4.2.1; or~~

~~b. If it is not possible to comply with the duct leakage criterion in Subsection 141.0(b)2Diia, then all accessible leaks shall be sealed and verified through a visual inspection and a smoke test performed by a~~

~~certified HERS Rater utilizing the methods specified in Reference Nonresidential Appendix NA2.1.4.2.2.~~

EXCEPTION 1 to Section 141.0(b)2Dii: When it is not possible to achieve the duct leakage criterion in Section 141.0(b)2Dii, then all accessible leaks shall be sealed and verified through a visual inspection and a smoke test performed by a certified HERS Rater utilizing the methods specified in Reference Nonresidential Appendix NA2.1.4.2.2.

EXCEPTION 2 to Section 141.0(b)2Dii: Duct Sealing. Existing duct systems that are extended, which are constructed, insulated or sealed with asbestos are exempt from the requirements of subsection 141.0(b)2Dii.

Recommended Language:

ii. If the new ducts are an extension of an existing duct system~~,~~ and the combined new and existing duct system meets the criteria in Subsections 1, 2, 3, and 4 below, the duct system shall be sealed to a leakage rate not to exceed 15 percent of the nominal air handler airflow rate as confirmed through HERS field verification and diagnostic testing, in accordance with the applicable procedures in Reference Nonresidential Appendices NA1 and NA2:

1. The duct system does not serve a healthcare facility;
2. The duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system;
3. The space conditioning system serves a building with less than 5,000 square feet of conditioned floor area; and
4. The combined surface area of the ducts located outdoors or in unconditioned space is more than 25 percent of the total surface area of the entire duct system.

~~shall meet one of the following requirements:~~

~~a. The measured duct leakage shall be equal to or less than 15 percent of the system air handler airflow as confirmed by field verification and diagnostic testing utilizing the procedures in Reference Nonresidential Appendix Section NA2.1.4.2.1; or~~

~~b. If it is not possible to comply with the duct leakage criterion in Subsection 141.0(b)2Diia, then all accessible leaks shall be sealed and verified through a visual inspection and a smoke test performed by a certified HERS Rater utilizing the methods specified in Reference Nonresidential Appendix NA2.1.4.2.2.~~

~~EXCEPTION 1 to Section 141.0(b)2Dii: When it is not possible to achieve the duct leakage criterion in Section 141.0(b)2Dii, then all accessible leaks shall be sealed and verified through a visual inspection and a smoke test~~

~~performed by a certified HERS Rater utilizing the methods specified in Reference Nonresidential Appendix NA2.1.4.2.2.~~
EXCEPTION 2 to Section 141.0(b)2Dii: Duct Sealing. Existing duct systems that are extended, which are constructed, insulated or sealed with asbestos are exempt from the requirements of subsection 141.0(b)2Dii.

V. ACCEPTANCE TESTING FOR MULTIFAMILY BUILDINGS SHOULD NOT REQUIRE HERS RATER FIELD VERIFICATION OR FOLLOW HERS PROCEDURE

The Express Terms language for NA7.18.1.1 and NA7.18.1.2 both require multifamily dwellings ventilation and enclosure leakage acceptance to be verified by a HERS rater. However, the Express Terms also require acceptance testing to be completed by a Certified Mechanical Acceptance Test Technician, making HERS rater-verification redundant and burdensome. The HERS program is designed for single-family residences making HERS raters inappropriate for multifamily projects. To avoid confusion and reduce unnecessary burden and energy waste, NA7.18.1.1.2 and NA7.18.1.2.2 should be removed.

Further, Section 120.5 of the Express Terms requires four new acceptance tests exclusively for multifamily dwellings, but the Express Terms Reference Appendices require the HERS method. NA7.18.3.2 should be amended to require testing in conformance with the CMC.

NA7.18.3.2

Express Terms Language:
Step 1: Measure and record environmental data at the beginning and conclusion of each test including ambient temperature, indoor temperature and barometric pressure.
Step 2: Install static pressure probe in main plenum pointing into airstream induced by the test. If the test fan is on the roof, the static pressure probe will need to be connected to the measurement device at the test site with a tube long enough to make the connection.
Step 3: If the test fan is mounted inside, with the building open to the outside, use the building as reference pressure. If the test fan is located on the roof, use the outside as the reference pressure.
Step 4: Attach the test fan to the duct system

a) For roof top and wall mounted exhaust systems, remove the fan from the curb or opening and seal the test fan to the curb following test equipment manufacturer's instructions, making sure the dampers are open (NOP).
b) Alternatively, the test fan may be applied to a grille opening on the inside of the building following test equipment manufacturer's instructions.

Step 5: Temporarily seal the system including:

a) All of the grilles on the system using masking tape and air impermeable sheeting or duck mask made for this application.
b) Air handler access door or panel (do not use permanent sealing material, metal tape is acceptable).
c) For systems with an air handler with supply and return plenums, the entire duct system including the air- handler shall be included in the test.

Step 6: Adjust the test fan speed to maintain 25 Pa or 50 Pa at the static pressure probe location.

Step 7: Record the air flow (CFM) and temperature.

Step 8: Determine the nominal fan airflow using the product specifications of the installed equipment for the design static pressure.

Step 9: Divide the duct leakage flow by the nominal fan flow and convert to a percentage. If the duct leakage flow percentage is equal to or less than the target compliance criterion of 6% leakage the system passes. The leakage test can be conducted at rough-in or after the grilles or registers are installed. If the leakage test is conduct at rough-in, the spaces between the grille or register boots and the wallboard shall be sealed, and at least one grille or register must be removed to verify proper sealing. For compliance with the leakage requirements in Section 160.2(b)2Ci, an ATT shall identify a group of up to three central ventilation duct systems in the building from which a sample will be selected for testing.

Recommended Language:

Duct systems shall meet the duct leakage testing requirements of CMC section 603.10.1

~~Step 1: Measure and record environmental data at the beginning and conclusion of each test including ambient temperature, indoor temperature and barometric pressure.~~

~~Step 2: Install static pressure probe in main plenum pointing into airstream induced by the test. If the test fan is on the roof, the static pressure probe will need to be connected to the measurement device at the test site with a tube long enough to make the connection.~~

~~Step 3: If the test fan is mounted inside, with the building open to the outside, use the building as reference pressure. If the test fan is located on the roof, use the outside as the reference pressure.~~
~~Step 4: Attach the test fan to the duct system~~
~~a) For roof top and wall mounted exhaust systems, remove the fan from the curb or opening and seal the test fan to the curb following test equipment manufacturer's instructions, making sure the dampers are open (NOP).~~
~~b) Alternatively, the test fan may be applied to a grille opening on the inside of the building following test equipment manufacturer's instructions.~~
~~Step 5: Temporarily seal the system including:~~
~~a) All of the grilles on the system using masking tape and air impermeable sheeting or duck mask made for this application.~~
~~b) Air handler access door or panel (do not use permanent sealing material, metal tape is acceptable).~~
~~c) For systems with an air handler with supply and return plenums, the entire duct system including the air- handler shall be included in the test.~~
~~Step 6: Adjust the test fan speed to maintain 25 Pa or 50 Pa at the static pressure probe location.~~
~~Step 7: Record the air flow (CFM) and temperature.~~
~~Step 8: Determine the nominal fan airflow using the product specifications of the installed equipment for the design static pressure.~~
~~Step 9: Divide the duct leakage flow by the nominal fan flow and convert to a percentage. If the duct leakage flow percentage is equal to or less than the target compliance criterion of 6% leakage the system passes. The leakage test can be conducted at rough-in or after the grilles or registers are installed. If the leakage test is conduct at rough-in, the spaces between the grille or register boots and the wallboard shall be sealed, and at least one grille or register must be removed to verify proper sealing. For compliance with the leakage requirements in Section 160.2(b)2Ci, an ATT shall identify a group of up to three central ventilation duct systems in the building from which a sample will be selected for testing.~~

VI. PROPOSED CHANGES TO ATTCP ELECTRONIC DATABASE SYSTEM REQUIREMENTS

We appreciate the changes staff made to this section from the original pre-rulemaking proposals. We support the current proposals.

VII. PROPOSED CHANGES FOR DEMAND RESPONSE

The Energy Commission is proposing to change the minimum requirements for mandating demand responsive lighting controls from a square footage requirement to a wattage requirement. We are concerned that this will allow for more buildings to escape this requirement. For example, assuming a light power density of 0.5 watts per square foot and a fixture wattage of 32,000 square feet, a building would have to be 13,000 square feet to trigger a requirement of demand responsive lighting controls. This proposal thus moves in the wrong direction and will lead to an increase of energy, rather than an increase in efficiency. The Energy Commission should instead continue with a 5,000 square foot requirement to increase adoption of demand responsive lighting controls.

Section 110.12(c)

Express Terms Language

(c) Demand Responsive Lighting Controls. Nonresidential general lighting systems subject to the requirements of Section 130.1(b) with a general lighting power of 4,000 watts or greater, shall have controls that are~~Lighting controls in nonresidential buildings larger than 10,000 square feet shall be~~ capable of automatically reducing lighting power in response to a Demand Response Signal. General lighting shall be reduced in a manner consistent with the uniform level of illumination requirements in TABLE 130.1-A.

1. For compliance testing, the lighting controls shall demonstrate a lighting power reduction in controlled spaces of a minimum of 15 percent below the total installed lighting power as described in NA7.6.3. The controls may provide additional demand responsive functions or abilities.

~~EXCEPTION 1 to 110.12(c): Spaces with a lighting power density of 0.5 watts per square foot or less are not required to install demand responsive controls and do not count toward the 10,000 square foot threshold.~~

EXCEPTION ~~2~~ to 110.12(c): Spaces where a health or life safety statute, ordinance, or regulation does not permit the general lighting to be reduced are not required to install demand responsive controls and do not count toward the ~~10,000 square foot~~4,000 watt threshold.

Recommended Changes

(c) Demand Responsive Lighting Controls. ~~Nonresidential general lighting systems subject to the requirements of Section 130.1(b) with a general lighting power of 4,000 watts or greater, shall have controls that are~~Lighting controls in

nonresidential buildings larger than 5,000 square feet shall be capable of automatically reducing lighting power in response to a Demand Response Signal. General lighting shall be reduced in a manner consistent with the uniform level of illumination requirements in TABLE 130.1-A.

1. For compliance testing, the lighting controls shall demonstrate a lighting power reduction in controlled spaces of a minimum of 15 percent below the total installed lighting power as described in NA7.6.3. The controls may provide additional demand responsive functions or abilities.

~~EXCEPTION 1 to 110.12(c): Spaces with a lighting power density of 0.5 watts per square foot or less are not required to install demand responsive controls and do not count toward the 10,000 square foot threshold.~~

EXCEPTION ~~2~~ to 110.12(c): Spaces where a health or life safety statute, ordinance, or regulation does not permit the general lighting to be reduced are not required to install demand responsive controls and do not count toward the 5,000 square foot~~4,000 watt threshold.~~

VIII. CONCLUSION

JCEEP appreciates the opportunity to provide these comments.

Sincerely,

Kyle C. Jones
Thomas A. Enslow

KCJ:ljl