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**International Energy Conservation Code**

**E4C-HVACR Subcommittee**

 **Meeting Minutes**

June 2, 2022

11:00 AM EDT to 2:00 PM EDT

[Webex](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Ficcsafe.webex.com%2Ficcsafe%2Fj.php%3FMTID%3Dmd61bac5350edc4b3607fe75c4681847c&data=05%7C01%7Cjohnbade%402050partners.com%7C3fa0b203478449ac67bc08da3441f854%7C22b1750a3e784e6ab5765f144276bd19%7C1%7C0%7C637879755204453508%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=3PjdUDUPONAxklHwEeaxUyZ80Jaal93IINcDqGwiHtI%3D&reserved=0) Link

**Committee Chair:** John Bade, representing the California Investor Owned Utilities

**Committee Vice Chair:** Blake Shelide, Oregon Department of Energy

Summary of proposal action votes at this meeting:

* CEPI-084-21 Dehumidification Horticulture (Diana Burk), approved as modified, 11-0-0
* CEPI-78-21 Air handler insulation (Anthony Palucci), disapproved, 10-0-2
* CEPI-129 Heat pump water heaters in R-1 and R-2 (Evan Green) (Returned from the E4C), tabled till June 9, 11-0-1
* CEPI-099-21 A/M Grid Integrated Thermostat Controls (Kim Cheslak), approved as modified 9-2-2
* CEPI-218-21 Part I Alterations fuel gas pipe testing (Sean Denniston), disapproved, 11-0-2
* CEPI-219-21 Alteration Duct Testing (Sean Denniston), approved as modified, 5-2-4.

1. **Call to order**-Chair or vice-chair

* Called to order by John Bade

2**. Meeting Conduct**. Staff

a. Identification of Representation/Conflict of Interest

b. ICC [Council Policy 7](https://www.iccsafe.org/wp-content/uploads/CP07-04.pdf) Committees: Section 5.1.10 Representation of Interests

c. ICC [Code of Ethics](https://www.iccsafe.org/wp-content/uploads/CodeOfEthics.pdf): ICC advocates commitment to a standard of professional behavior that exemplifies the highest ideals and principles of ethical conduct which include integrity, honesty, and fairness. As part of this commitment, it is expected that participants shall act with courtesy, competence and respect for others.

3. **Roll Call** – Establish Quorum- John Bade

Quorum was established with 12 voting member present at the start of the meeting.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **First Name** | **Last Name** | **Category** | **Company** |
|[ ]  Christopher | Arnold | Consumer | Grand forks Public Schools |
|[x]  John | Bade | Utility | 2050 Partners |
|[ ]  Ellen | Eggerton | Gov. Regulator | City of Alexandria |
|[ ]  Drake | Erbe | Standards Promulgator | ASHRAE |
|[x]  Henry | Ernst | Manufacturer | Daiken |
|[x]  Mark | Heizer | Gov. Regulator | Oregon Bldg Codes Div |
|[ ]  Adrian | Jones | Gov. Regulator | City of Lawrence |
|[x]  Gary | Klein | User | Self |
|[x]  Jeff | Kleiss | Manufacturer | Lochinvar (AO Smith) |
|[x]  Benjamin | Levie | Consumer | UCSF |
|[x]  Dick | Lord | Manufacturer | Carrier |
|[x]  Frank | Morrison | Manufacturer | Baltimore Aircoil |
|[x]  Christopher | Perry | Gov. Regulator | US DOE |
|[x]  Daniel | Nall | Gov. Regulator | Dan Nall Consultant/ AIA |
|[x]  Laura | Petrillo-Groh | Manufacturer | AHRI |
|[x]  Kevin | Rose | Public Segment | NEEA |
|[x]  Thomas | Schultz | Utility | Spire and American Gas Assoc. |
|[x]  Blake | Shelide | Gov. Regulator | Oregon Dept of Energy |
|[ ]  Amin | Tohmaz | Gov. Regulator | City of San Antonio |
|[ ]  Doug | Tucker | Manufacturer | Mitsubishi |
|[ ]  Jeremy | Williams | Gov. Regulator | US DOE |
|[x]  James | Yeoman | Gov. Regulator | City of Orem |

4. **Approval of Minutes** Approval of May 26, 2022 Minutes.

* Minutes of previous meeting will be voted next meeting.

5. **Approval of Agenda**

* Move CEPI-099 to the end.
* Moved as modified by Jim Yeoman, seconded by Jeff Kleiss.
* Minutes approved 11-0-0.
	+ John Bade, the chair, not voting

6. **Old Business**

 a. Items forwarded to other committees for review or completion.

7. **Action Items**. (We will hear as many of these as possible. Any proposal not heard in this meeting will be moved to the next meeting's agenda)

1. CEPI-084-21 Dehumidification Horticulture (Diana Burk)

Proponent Diana Burk presents the proposal as modified.

* + - Diana Burk (NBI)
	+ The purpose of this code amendment is to reduce that energy use of indoor agriculture and green houses.
	+ Due to legalization of medical and recreational marijuana, indoor agriculture is projected to grow significantly nationwide recently.
	+ The energy simplicity of these facilities are on par with data centers .and they're quite energy intensive and it's primarily delighting in the HVAC loads means facilities.
	+ In 2017, a total of 20 million square feet of building space was dedicated to growing crops indoors. The energy simplicity of these facilities are on par with data centers which are quite energy intensive.
	+ HVAC systems need a certain efficiency threshold, but there is no requirement for requiring certain efficiencies for the dehumidification systems.
	+ The proposed language is in a range of efficient dehumidification strategies. Indoor grow facilities can install dehumidifiers that meet federal minimum requirements.
	+ The proposal provides options for solid or liquid desiccant dehumidification systems, for utilizing recover energy and integrated HVAC systems, and for chilled water systems that can meet humidification making needs.
	+ This proposal is primarily based largely on the requirements in Title 24 2022 It's currently being considered at Washington state.
		- Mark Heizer (Oregon Bldg Codes Div)
* The proposal is limited to consumer level plug in portable appliances products that are covered under DOE 10 CFR 430.
* Questioned whether the proposal is excluding larger units.
	+ - Diana Burk (NBI)
* The regulation covers is primarily aimed at consumer duplication products, which includes dehumidification installed on the central HVAC system. They can be larger units.
* California found that the majority growth facilities install the standalone dehumidifiers and most of them fall under consumer category.
	+ - John Bade (California Investor Owned Utilities)
* Was involved in this at the very end of Title 24.
* The proposal can be applicable for larger systems as long as it meets the definition of integrated HVAC system (operating sensible heat ratio 0.65 or less). Packaged rooftops don't provide the required dehumidification which caused over cooling and wasting a lot of energy.
* DX DOAS with reheats coil potentially is considered as integrated HVAC system. A controlled environmental horticulture produces a lot of hours with lights out, when the plants are creating a lot of humidity. The problem is if a conventional air conditioner (like no hot gas reheat) is used, it ends up cooling the air to get the dehumidification level and then using separate primary needs to keep the space back up. Conventional air conditioners need very less primary heat.
	+ - Mark Heizer (Oregon Bldg Codes Div)
			* Industrial unit will be tied with the integrated HVAC system.
		- John Bade (California Investor Owned Utilities)
* DOE regulates the humidifiers of consumer size.
* The large industrial dehumidifiers do not have to be any performance of the regulation from the federal government, but they have to be tested.
* Mark Heizer (Oregon Bldg Codes Div)
* Proposed to include that tested in accordance with the procedure listed would cover all the humidifiers
* John Bade (California Investor Owned Utilities)
* All humidifiers are regulated as they must test per the test procedures.
* There's no energy conservation standard for industrial units.
* Skip Ernst (Daiken)
* Raised concerns of two challenges-
	+ Those products are limited to roughly 60 ton compressors. What will happen above that?
	+ There is not a final rule yet on DX DOAS yet. So not sure how this equipment will be interpreted.
* John Bade (California Investor Owned Utilities)
* Confirmed that DX DOAs will be integrated in HVAC system.
* Shared the definition of dehumidifier- which is poorly defined.
	+ It applies to any air conditioner which has a compressor or has a coil that that remove humidity from the air and has a fan.
* Proposed to removing DOE 10 CFR 430 reference from #1 in C403.15.
* Mark Heizer (Oregon Bldg Codes Div)
* Agreed as it doesn't reference the minimum level.
* Diana Burk agreed with the change.
* Skip Ernst (Daiken)
	+ #2 is another compliance path. Questioned about 75% of the annual energy for dehumidification.
* John Bade (California Investor Owned Utilities)
* Confirmed that it is dehumidification of reheat.
* Greg Johnson (National Multifamily Housing Council)
	+ Proposed code language
* Diana Burk (NBI)
	+ Agreed with the proposed change.
* Laura Petrillo-Groh (AHRI)
* Integrated HVAC system defined as dehumidifier/DOAS as both designed to sample sensitive and latent heat removal. As DOE is covering a broader category, it doesn't have to perform both functions.
* John Bade (California Investor Owned Utilities)
* DOAS unit that has no reheat unit in it and then somewhere else in the system will recover the heat.
* Water cooled DOAS unit may send condenser water either to reheat coil that's downstream of the DOAs or it could send condenser water outside.
* Integrated HVAC system may not be one piece of equipment.
* Laura Petrillo-Groh (AHRI)
* Questioned about the cost justification of 75% of annual energy for dehumidification?
* Preferred clear language for DOAs. Cleaner for public review process as clarity.
* John Bade (California Investor Owned Utilities)
* HVAC system doesn't have to have a single equipment.
* Chris Perry (US DOE)
	+ Proposed the following sentences- "Building spaces that require dehumidification for plant growth and maintenance shall be served by one of the following."
* Greg Johnson (National Multifamily Housing Council)
* Preferred to leave it as it is.
* John Bade (California Investor Owned Utilities)
* Since there is a separate test procedure and energy conservation standard for portable air conditioners room air conditioners package, DOE definition of dehumidifier includes the exception of other equipment.
* Frank Morison (Baltimore Aircoil)
* Dehumidifier is used for plant growth and maintenance. Wondered whether space is defined.
* Title 24- defined controlled environmental or horticultural space
* CEH space doesn't include building space where plants are grown solely to decorate the same space.
* Diana Burk (NBI)
* Similar proposal for lighting covers that.
* Frank Morrison (Baltimore Aircoil)
	+ Shared the definition of CEH Space in chat and proposed to delete irrigation.
* Diana Burk (NBI)
* Shared 90.1's definition of indoor grow.
* John Bade (California Investor Owned Utilities)
* Shared 90.1 and Title 24 and preferred Title 24 definition.
* Laura Petrillo-Groh (AHRI)
* Title 24 definition is much boarder.
* Diana Burk (NBI)
	+ Proposed to use Indoor grow space over controlled environment,
* Greg Johnson (National Multifamily Housing Council)
	+ Preferred (strongly) not to introduce different definition in IECC then what is used in IGCC. It may be problematic, as this topic was discussed and voted in 189.1.
* Laura Petrillo-Groh (AHRI)
* Strongly support the consisitency in language between IECC, IEGC, 90.1 and 189.1.
* Questioned whether 75% of the annual energy for the humidification reheat is clear to a designer.
* John Bade (California Investor Owned Utilities)
* The reheat means bringing the air up, but not more than back to neutral.
* Move to approve as modifed by Mark Heizer, Dan Nall seconded
* Greg Johnson (National Multifamily Housing Council)
	+ Concerned that a humidifier may be more than one kind of dehumdifier.
* John Bade made the changes as proposed to avoid misinterpretation.
* Mark Heizer and Dan Nall agreed with the modification.
* Moved to approved as modified passes 11-0-0
	+ John Bade, the chair, not voting
* Stand on and reference reason statement in original proposal
1. CEPI-78-21 Air handler insulation (Anthony Palucci)

Proponent Anthony Palucci presents the proposal as modified.

* Anthony Palucci
* Air handlers and rooftops don't have to be insulated as well as ductwork.
* The code requires R-8 ductwork climate zone 0 from 4 and R12 from results 5 through 8. It was increased several years ago. EPACT regulates units up to 60 tons for both heat and cooling. The goal of this proposal to make requirements consistent for air handlers.
* R-13 is standard for many manufacturers.
* John Bade (California Investor Owned Utilities)
	+ Suggested to create the definition of fan coiled units.
* Laura Petrillo-Groh (AHRI)
	+ - Building insulation cost is justified over a 40 year. 15 years cost justification for equipment.
* Asked for justification cost and energy savings.
* John Bade (California Investor Owned Utilities)
* The exemption list includes federally regulated equipment, and it includes everything with a cooling capacity of less than 760,000 BTU/h. In addition, DX DOAS, which is not regulated yet, has no limit. If equipment brings in 100% outside air, insulation requirements may not be justified.
* Skip Ernst (Daiken)
* 2" foam insulation or 3" -4" of fiberglass insulation doesn't work for very long. It may require double-wall construction. It will cost extra for insulation, and the sheet metal to encapsulate it. It will raise the cost of buying the capital equipment. Some products may go out of business.
* Regulating a component in a regulated product may force manufacturers and it might not achieve the best energy savings for the invested time and effort.
* The test procedure of the products represents insulation losses. It may not be perfectly represented, but it is represented.
* Dick Lord (Carrier)
* Agreed with Laura and Skip Ernst. It will require redesign and a significant cost increase.
* The heat loss and heat gain through the casing of the rooftop are relatively small.
* He disagreed that the rooftop unit surface area is larger than the ductwork.
* He does support the proposal without seeing the detailed cost justification.
* Regional requirements for low volume product range will be complicated.
* Mark Heizer (Oregon Bldg Codes Div)
	+ The proposal is confusing for the building officials.From the building official's standpoint, especially when working in different climate zones.
	+ Could not support it without seeing detailing energy savings and cost analysis.
* John Bade (California Investor Owned Utilities)
	+ The requirement for duct insulation varies with zones.
* Anthony Palucci
* To be consistent, duct and equipment should be of the same R-value.
* Dick Lord (Carrier)
* Duct insulation is justified over 40 years, but the equipment is justified over 15 years - that's a significant difference in the cost justification.
* Doubted the cost of two levels of insulation would be justified.
* Mike Fulton (Western Energy Associates)
	+ - Instead of having two levels of insulation, he suggested using R-8 for all, which would is standard for zone 0 through 4.
* Laura Petrillo-Groh (AHRI) made motion to disapprove, Dick Lord seconded.
* Moved to disapproved passed 10-0-2.
	+ Chair not voting
* Reason statement: Concerned over cost justification and energy saving.
1. CEPI-129 Heat pump water heaters in R-1 and R-2 (Evan Green) (Returned from the E4C)

Proponent Mark Frankel presents the proposal as modified.

* Mark Frankel
* This subcommittee voted the proposal down by one vote and went to the main committee.
* The proposal is applied to building types R1 and R2 with central hot water systems
* Focused on multifamily buildings using central systems and simplifying the logistics.
* 80% of annual building service hot water capacity has changed to 80% of service hot water capacity. Talked about the capacity of the system.
* Condensing boilers serving a single zone is not needed.
* Made the necessary changes as high-efficiency pump water heaters will be replaced by CEPI 193.
* 40-degree rating point is not a rating point of equipment efficiency. It's a capacity based on the performance curve of the equipment, and it is the changeover point for supplemental heating systems.
* The equipment performs across the temperature range, supplemental heat is needed for super low temperatures, so this proposal is just identifying the point at which the changeover when capacity occurs.
* Laura Petrillo-Groh (AHRI)
* Substantial changes were made to a contentious proposal, and it was not distributed in advance.
* Not clear to how the proposal functions with some of the other proposals (CEPI 128 and CEPI 77) voted recently.
* Thomas Schulz (SPIRE and American Gas Association)
* This proposal will dramatically increase the cost of construction.
* Asked for detailed cost justification for this proposal as this proposal includes multiple skidded components controls, complicated multiple large storage tank systems, highly complicated custom installation system, simplified module natural gas piping system or a condensing boiler system.
* Greg Johnson (National Multifamily Housing Council)
	+ - Preferred to have detailed cost justification and more time needed to review the extensive technical changes.
		- Questioned on definition of Primary service water equipment.
* Mark Frankel
* A lot of time circulating loop that keeps the water hot and in heat pump system that is a separate system.
* The proposal focused on the primary water which is the incoming water to the building and have 80% of that be heat pump driven. The reason it is not 100% as it is not cost-effective to connect the remote system to the central system. The remote system might have its own separate system- a small tank or electric system. It is more efficient to separate the temperature maintenance, or it might be a separate heat pump.
* If the entering water is too cold, a supplemental capacity electric resistance or any sort of backup is needed for a gas heat pump.
* Ted Williams (National propane gas association)
* Asked for cost justification
* Ecotope 2016 report is available. Looking for more recent design guidelines and standardized service information
* Was not aware of any guidance from DOE on addressing these kinds of requirements.
* Question on the design certification equipment certification. There's no guidance on what kind of heat pump itself would satisfy these requirements.
* The reference for equipment standards, design reequipments information and guidelines, and test methods for efficiency of both systems and equipment are crucial for the requirements are to be enforceable.
* John Bade (California Investor Owned Utilities)
* The proposal stating central service water heating systems serving four or more dwelling or sleeping units can still be served with consumer products. Concerned that there may be preemption issues around.
* DOE has two very large groups of regulation appliances. For example, the purpose of electric water heaters or heat pump water heater is less than 24 amps or less and 250 volts for less. For gas, it's up to 75,000 BTU. There is a specific test requirement for consumer products. Not sured that these products will run down to 40 degrees
* Mark Frankel
* Confirmed that California has the requirements for the performance curves to be submitted as part of their code requirements for water heaters.
* Regardless of commercial or consumer equipment, it is a central system in this application.
* John Bade (California Investor Owned Utilities)
* Raised concern that the consumer heat pumps will not run down to 40 degrees.
* Mark Frankel
* The code is adopted in Seattle and is soon to be adopted code in Washington state.
* Thomas Schulz (SPIRE and American Gas Association)
* Agreed with the previous commenter about cost justification. Suggested considering adding an appendix.
* Dick Lord (Carrier)
* Concerned about the low number of manufacturers that make these products.
* Mark Frankel
* Confirmed that five manufacturers are covered.
* Referenced to Exception #3.
* Steve Rosenstock (Edison Electric Institute)
	+ - Preferred to be technology independent.
		- Questioned about #2 (gas-fired heat pump water heaters) whether COP>1.0 is at any particular temperature, as COP varies with temperature.

* Mark Frankel
* Not familiar with gas absorption heat pumps. He asked for suggestions.
* Dick Lord (Carrier)
* Not sure whether it would be limited to absorption. Some other cycles are much more efficient. Preferred not to limit to any particular technology.
* Thomas Schulz motioned to table till June 9 and request from the proponents a detailed cost justification report and to allow the committee remembers to prepare better before handing it back to the main committee. Jim Yeoman seconded.
* Laura Petrillo-Groh (AHRI)
* Asked for cross justification needs to be in a few days in advance
* Moved to approved as modified passed 11-0-1
	+ - Mark Heizer abstained and chair not voting
* Stand on and reference reason statement in original proposal
* The meeting resumed after 5 mins break.
* Quorum met after the break.
1. CEPI-099-21 A/M Grid Integrated Thermostat Controls (Kim Cheslak)

Proponent Alix Miller (NBI) presents the proposal as modified.

* Alix Miller (NBI)
* The proposal has to do with demand-responsive HVAC controls.
* Coordinated closely and achieve consensus between NBI, DOE, and AHRI and REPI-70 and REPI-71. REPI- 70 is from DOE and REPI-71 is from NBI. Both are related with thermostats for residential.
* Made changes to align with AHRI's concerns, but it is not formally represent official consensus as it has not fully been through all their membership
* To ensure buildings that use in EMS can comply without necessarily having every single thermostat that is the DR functionality can be at the system level.
* The Control system can adjust the operating cooling setpoint by a minimum of four degrees. You don't actually have to do it.
* Based on AHRI feedback, 2 degrees precooling or 2-degree preheating capability requirement was dropped out.
* To keep it simple and based on other feedback, a requirement to ramp up and ramp down logic to prevent building peak demand from exceeding what would have happened without the DR implementation has been removed.
* C4034.6.1 covers the systems that can be covered by AHRI 1380. C4034.6.2 covers the communications protocols are aligned with Title 24 which covers CTA 2045A. The communication protocol may be used that if you are served by utility that has a DR program, or if you have an aggregator other server service provider who's DR program doesn't use one of those options.
* Added several exceptions: health care and assisted living facilities, data centers, and applications requiring precision indoor temperature control which is approved by the code official.
* Steve Rosenstock (Edison Electric Institute)
	+ - Asked when a demand response signal is not available whether controls shall be performing of every single function.
* Alexi Miller (NBI)
	+ - If users have a thermostat and it does not communicate with the utility, there is no DR signal. The intent is to make sure it is still a thermostat.
* Laura Petrillo-Groh (AHRI)
	+ - Appreciate the close coordination to resolve many issues.
		- Wanted to make sure that this proposal would not make fossil fuel equipment and controls impermissible since they would not modify electrical consumption.
		- Asked to include fossil fuel as an exception.
* John Bade (California Investor Owned Utilities)
* Whether to change "electricity" to "energy" in scope
* Laura Petrillo-Groh (AHRI)
* Not sure whether there would be any benefit. Not sure if any utilities run DR gas programs.
* Steve Rosenstock (Edison Electric Institute)
	+ There is a gas DR program in utilities (chat message)
* Mark Heizer (Oregon Bldg Codes Div)
* Asking for clarification: if the local utility doesn't have a DR program or a time of or a time of use rate, is this still required?
* Alexi Miller (NBI)
* Confirmed that this would be required. The user doesn't have to participate in the program or sign up for a time of use rate.
* Mark Heizer (Oregon Bldg Codes Div)
	+ - Not know of any IOUs (other than IOUs in Oregon) that have a time of use rate or send DR. Concerned on cost justification.
		- Would prefer to be an exception.
* Alexi Miller (NBI)
	+ - Learned for utilities that they don't run programs as they don't have enough critical mass of participating equipment that will make it worth running program.
* Chris Perry (US DOE)
	+ - In favor with the proposal. Supportive of changing energy consumption in scope.
* Dick Lord (Carrier)
	+ - DR on commercial for 25 years with sophisticated approaches. However, this approach is grown up from a residential approach.
		- Discussed with Steve Taylor. Concerned that a lot of commercial thermostats communicate with single setpoint have a fixed deadband. Steve has a proposed addendum for 90.1 to maintaining a minimum 4 degree deadband.
		- To encourage thermal storage which is a better solution, proposed to include as an exemption.
		- How to address peak demand when the units is set back.
* John Bade (California Investor Owned Utilities)
	+ - This doesn't require anybody to actually use demand response.
* Steve Rosenstock (Edison Electric Institute)
* The building may lower the thermostat (raising a setpoint on the thermostat) on its own to save energy irrespective of the system (electric system, gas system, propane system, or fuel oil system). Savings is based on that system efficiency.
* Neutral on changing electricity to energy in scope.
* Alexi Miller (NBI)
	+ - Changing from electricity to energy to be considered as a friendly amendment.
		- Since this proposal is mirrored in four other proposals, chaing in scop may be inconsistent with others. Maybe this proposal is limited to electrical systems.
* Ted Williams (NGCLLC)
	+ - There are DR programs for gas utilities for different purposes. Though in some cases, they are not called demand response programs, but there are critical issues. For example, some circumstances with reduced pipeline delivery, or extraordinary demands on the system that may affect pressure on the system deliverability. Agreed with Steve to emphasize on idea of saving energy both in deliver gas and deliver electricity.
* John Bade (California Investor Owned Utilities)
	+ - Change electricity to energy in the other proposal before it gets to the full committee.
* Sean Dennison (NBI)
* Utilities are bringing on more renewable energy resources and demand response is getting more and more attention. Peaker plants tend to be the most carbon-intensive production. Through load shaping, the load is moved away so that peaker plants don't have to be brought online. Utilities are trying to meet these lower carbon standards.
* Since greenhouse gas reductions is one of the purposes of this code, this proposal is one of the ways to support it.
* There will always be small utilities that may oppose this.. You may load shifting through storage. Demand response isn't just about shedding the load. It's about soaking up load sometimes.
* Agreed with John changing to energy now.
* Laura Petrillo-Groh (AHRI)
	+ - Preferred to discuss with manufacturers about the possibility and implications of requiring demand responsive controls on fossil fuel equipment before voting.
* Mark Heizer (Oregon Bldg Codes Div)
* A majority of non-profit utilities don't have time of use rates. They will not have a demand response rate because it's a five-mile run to somebody meter. So, the cost increase that is represented by the proposal is not paying back in those locations yet.
* Alexi Miller (NBI)
* Clarified is that this is potentially useful for both vertical aggregation and horizontal aggregation. Some of the utilities may not have the bandwidth or the organizational capacity, or potentially the economic driver to launch the program. But the website encourages conserving energy.
* Agreed with Steve Taylor to include a deadband fix to make sure that that we're not driving systems into eating by changing the cooling setpoint. Preferred to bring to the public comment due to the time constraint.
* Greg Johnson (National Multifamily Housing Council)
	+ - Proposed changes to improve the language.
* John Bade made the necessary reference changes with the agreement from Alexi Miller.
* Laura Petrillo-Groh (AHRI)
	+ - Proposed to include fossil fuel thermostat control as an exception.
* Alexi Miller (NBI)
	+ Proposed to change electricity to energy in the definition.
* Laura Petrillo-Groh (AHRI)
	+ - Can't vote without discussing with manufacturers.
		- Proposed to include controls of fossil fuel as exceptions.
* Greg Johnson (National Multifamily Housing Council)
* Concerned whether manufacturers certify the equipment.
* John Bade (California Investor Owned Utilities)
* "Certified by the manufacturer" is already used in code. It means that the manufacturer is claiming that the equipment is certified.
* Alexi Miller (NBI)
	+ - Agreed with Laura's recommendation
			* Demand response to energy from electricity
			* Added exception for control that serves only fossil fuel equipment
* Skip Ernst (Daiken)
	+ - Wanted to know if the exception on thermostorage will be considered.
* Dick Lord (Carrier)
	+ - Preferred to do during the public comment
* Alexi Miller (NBI)
* Open to figuring out how to address thermostorage and deadband.
* Steve Rosenstock (Edison Electric Institute)
* Though electricity is the primary focus, it has been discussed there are areas where there's a gas infrastructure. He asked to think outside the box a little bit to enlarge the horizon.
* This type of equipment is helpful in Europe.
* Chris Perry (US DOE)
* Proposed to include "only fossil fuel heating equipment" as an exception.
* Thomas Schulz (SPIRE and American Gas Association)
* CEPI-203 came from the main committee, which is envelope consideration. Specific metering protocol to gain the hourly metering data for electrical site. Must complicated to metering gas site.
* Preferred cross discussion with CEPI-203.
* Ted Williams (NGLLC)
* Electrical monitoring is not part of the electrical certification equipment. It may not be approved by the local authority having jurisdiction.
* Instantaneous or tankless water heaters are far away be higher instantaneous demand than the heating system.
* John Bade (California Investor Owned Utilities)
	+ - Stated that this proposal is not related to energy monitoring.
* Jeff Kleiss (Lochinvar)
	+ - DOE requirements on residential gas refer to automatic means of temperature adjustment. Would this be affected or be affected federal preemption?
* John Bade (California Investor Owned Utilities)
* Confirmed that this will not be. Because this proposal is about the control that has nothing to do with what's going on inside, just sending a signal to the unit to turn off or turn on, or maybe stage control.
* Steve Rosenstock (Edison Electric Institute)
* Referring to Ted William's point, it's not for furnaces. It's only for boilers.
* Referring to Thomas Schulz's concern, CEPI 203 is about metering.
* John Bade (California Investor Owned Utilities)
	+ - CEPI 203 is about metering. This proposal is about control and changing set points. There is no overlap.
* Laura Petrillo-Groh (AHRI) motioned to approve as modified, and Chris Perry (US DOE) seconded
* Moved to approve passed 9-2-2
	+ - Jeff Kleiss and Jim Yeoman voted no.
		- Mark Heizer and Dick Lord abstained.
* John Bade will make the necessary changes to the proposal.
* Stand on and reference the reason statement in original proposal
1. CEPI-218-21 Part I Alterations fuel gas pipe testing (Sean Denniston)

Proponent Sean Denniston presents the proposal as modified.

* Sean Denniston (NBI)
* Stand on the reason statement
* Ted Williams (NGLLC)
* The two exceptions allow a system that has been pressure tested up to five years before the alteration doesn't have to be tested, which is in direct conflict with the fuel gas code. This is a big loophole.
* This should be done through International Fuel Gas Code. The recent statement looks at joint leakage from joints in the piping system. Not all systems have that leakage problem. There are material and pipe design differences in terms of any presumption of leakage overtime. Preferred to be spelled out what should not meet the requirement.
* Mark Heizer (Oregon Bldg Codes Div)
* Raised concerns about the proposal. This is reading that if one appliance is changed, the shutoff valves at other equipment are not allowed to be used to hold pressure for a pressure test. So that would mean that every appliance needs to be disconnected, capped under pressure test on the whole system, and then reconnected. Didn't agree with the proposal.
* Mark Heizer motioned to disapprove, and Laura Petrillo-Groh (AHRI) seconded
* Vote 11-0-2
	+ - Gary Johnson and Chris Perry abstained.
	+ Reason statement: The proposal belongs to IFGC.
1. CEPI-219-21 Alteration Duct Testing (Sean Denniston)

Proponent Sean Denniston presents the proposal as modified.

* Sean Denniston (NBI)
* Made changes to this proposal aligning with a similar proposal went through the residential subcommittee.
* Major issue in the monogram- which is purely informative. It is limited only to high-pressure ducts which are the commercial ducts that are required to be tested in the code. Low and medium-pressure ducts aren't to be tested on this code.
* This proposal wouldn't prevent anyone from just continuing to use an existing duct system. It would only be triggered when extensive changes are made to an existing duct system, and then it would need to meet this performance criterion.
* The rest of the language is meant to mirror what's in there in the new construction.
* Skip Ernst (Daiken)
* How does this proposal address if a tenant moves out from a fairly big unit (serving on a floor or two) or fails the test?
* Sean Denniston (NBI)
* A really big tenant of a central system to present 25% of threshold.
* If they failed to meet the performance criteria, then they would need to go about duct tightening. In commercial, usually, ducts are exposed ducts or is exposed as part of a major renovation. For commercial buildings, the duct is more readily accessible than in residential where it might be drywall.
* John Bade (California Investor Owned Utilities)
* Rereferred aerosol system
* Three inches is a lot. There is a discussion in 90.1 about lowering the threshold as the three-inch threshold doesn't affect whole lot of ducts.
* Mark Heizer (Oregon Bldg Codes Div)
	+ Registers don't operate at 3 inches. He prefers to see more analysis on this, especially on multi-story commercial buildings that have a central air handler going down. Will the change be involved on the specific floor being renovated?
* Sean Denniston (NBI)
* This is applied to
	+ - high-pressure systems which is a limited subset of the systems where pressure testing is already required in the code and
		- if someone is making substantial changes to a duct system.
* A substantial change to the duct system triggers this to ensure that the leakage in the ducts is not terrible.
* Mark Heizer (Oregon Bldg Codes Div)
	+ Wanted clarity about where it's an alteration of 3 inches duct system versus moving some diffusers.
* Greg Johnson (National Multifamily Housing Council)
* Proposed to use documentation shall be available rather than furnished or where requested by the code official, documentation shall be provided.
* John Bade (California Investor Owned Utilities)
	+ Disagreed with Greg's point, but changed the language.
* Sean Denniston and John Bade made necessary changes.
* Gary Johnson moved as modified; Jim Yeoman seconded
* Moved to approve as modified passed 5-2-4
	+ Frank Morrison and Thomas Schultz voted no.
* Stand on the reason statement in the original proposal
1. CEPI-227-21 Alterations HVAC controls (Sean Denniston)

Will be discussed next meeting.

1. CEPI-228-21 Alterations sizing HVAC equipment (Sean Denniston)

Will be discussed next meeting.

9. **Other business**.

Remaining proposals:

1. Identify and schedule discussion dates for proposals that were sent to us from other subcommittees, if applicable.

11. **Upcoming meetings**.

 a. Second and fourth Thursday of each month, 11:00am – 2:00pm Eastern Time

 Next meeting is TBD, as we expect to complete all business for the first public review at this meeting.

12. **Adjourn**.

* Jim Yeoman motioned to adjourn and Gary Johnson seconded

FOR FURTHER INFORMATION BE SURE TO VISIT THE ICC WEBSITE:

[ICC Energy webpage](https://www.iccsafe.org/products-and-services/codes-standards/energy/)

[Code Change Monograph](https://www.iccsafe.org/wp-content/uploads/2021-Public-Input-Complete-Monograph.pdf)

FOR ADDITIONAL INFORMATION, PLEASE CONTACT EITHER

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