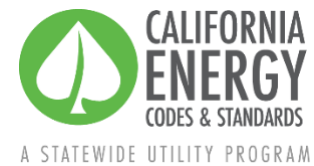


Meeting Notes

Posted April 2023



Notes from 2025 Title 24, Part 6 Code Cycle Utility-Sponsored Stakeholder Meeting for:

Nonresidential Industrial Insulation, Laboratories, Refrigeration, Elevators

Meeting Information

Meeting Date: 1/31/2023

Meeting Time: 8:30 am – 1:00 pm

Meeting Host: California Statewide Utility Codes and Standards Team

Meeting Agenda

Time	Topic	Presenter
8:30 AM	Welcome and Meeting Directions	Cosimina Panetti Javier Perez Kelly Cunningham
9:00 AM	Process Load Pipe Insulation	Abed Alkhatib, Energy Solutions
9:45 AM	Break	
9:55 AM	Laboratories	Abed Alkhatib, Energy Solutions
11:10 AM	Break	
11:25 AM	Refrigeration	Kyle Larson, VaCom Technologies
11:55 AM	Break	
12:05 AM	Elevators	Jeff Stein, Taylor Engineers
12:50 AM	Discussion and wrap-up	All
1:00 AM	Meeting adjourned	

Members of the CASE Team

Statewide Utility Codes and Standards Team – Utility Staff

Name	Email Address	Affiliation
Kelly Cunningham	kelly.cunningham@pge.com	PG&E
Mark Alatorre	mark.alatorre@pge.com	PG&E
Thomas Mertens	thomas.mertens@pge.com	PG&E
Jeremy Reeve	JMReefe@sdge.com	SDG&E
Dom Michaud	dmichaud@sdge.com	SDG&E
Jay Madden	jay.madden@sce.com	SCE
Jim Kemper	james.kemper@ladwp.com	LADWP
Joshua Rasin	joshua.rasin@smud.org	SMUD

Statewide Utility Codes and Standards Team – Codes and Standards Enhancement (CASE) Team Members

Name	Email Address	Affiliation
Maria Ellingson	mellingson@energy-solution.com	Energy Solutions
Cosimina Panetti	cpanetti@energy-solution.com	Energy Solutions
Heidi Werner	hwerner@energy-solution.com	Energy Solutions
Nikki Westfall	nwestfall@energy-solution.com	Energy Solutions
Abed Alkhatib	aalkhatib@energy-solution.com	Energy Solutions
Shafi Amoni	shafi.amoni@cascadeenergy.com	Cascade Energy
Jeff Stein	jstein@taylorengineers.com	Taylor Engineers
Kyle Larson	klarson@vacomtech.com	VaCom Technologies
DJ Joh	djoh@energy-solution.com	Energy Solutions
Eileen Eaton	eeaton@energy-solution.com	Energy Solutions
Aru Sau	asau@energy-solution.com	Energy Solutions
Jon McHugh	jon@mchughenergy.com	McHugh Energy

California Energy Commission Staff Contacts for 2025 Code Cycle

Name	Email Address
Michael Shewmaker	michael.shewmaker@energy.ca.gov
Javier Perez	javier.perez@energy.ca.gov
Will Vicent	will.vicent@energy.ca.gov

Meeting Participants (available upon request by emailing info@title24stakeholders.com)

Action Items from Meeting

- The Statewide CASE TEAM followed up on all questions or comments that required a response and were not discussed during the meeting.

Key Points from Meeting

These proposals for **Process Load Pipe Insulation, Laboratories, Refrigeration, Elevators** are important because:

- The proposed nonresidential process loads insulation and verification would reduce the energy use of process load systems by adding mandatory requirement for pipe insulation and installation verification.
- The Laboratories proposed code update would reduce energy use by requiring turn-down when labs are unoccupied, make heat recovery mandatory, and offer another pathway for compliance for reducing fan power loads, but still provide exceptions for health and safety considerations.

- The Refrigeration CASE effort is an addendum to the 2022 CASE report in which we reintroduced the evaporator specific efficiency requirement, which had positive impacts for statewide GHG reduction and energy savings.
- The Elevators proposal would provide a more rigorous mandatory requirement for energy savings that goes beyond the lighting and ventilation requirements of the current code.

MEETING NOTES

During the meeting, questions and comments were submitted in three distinct formats which are provided in these meeting notes in these [hyperlinked for quick access] sections:

1. **In-Meeting Questions / Comments:** Questions and comments submitted verbally during the meeting via the ‘raise hand’ function in GoTo Webinar, where participants were unmuted to speak, or in some cases, comments submitted in writing were discussed verbally during the meeting (in which case the person that commented may not be identified in these notes).
2. **Questions / Comments Submitted Via GoTo Webinar:** See this section for questions and comments submitted in written format via the GoTo Webinar question pane.
3. **Public Input Submitted Via Mentimeter :** This section includes public comments and questions, including screen shots of the polls that were conducted during the meeting, and responses to those polls.

Not all written questions and comments were discussed during the meeting but all have responses available in these meeting notes.

In-Meeting Questions / Comments

Process Load Industrial Pipe Insulation, Abed Alkhatib, Energy Solutions

1. **Question submitted in Mentimeter by Haile: Is this only focusing on insulation for distribution system and not for process equipment?**
 - a. CASE Team response (Abed Alkhatib): The main focus is process systems.
2. **Question submitted in Mentimeter by Haile: How will addition and alterations requirements affect existing pipe (i.e lines that are not being touched as part of the addition/alteration)?**
 - a. CASE Team response (Abed Alkhatib): We are looking into it. Any existing project would touch on the pipes that are within the areas of the construction. It would not touch all pipes in an existing building unless the construction project touches the entire building. Only pipes that are in the areas that are included in the construction project.

- 3. Question submitted in Mentimeter anonymously: Are horticulture facilities included?**
- CASE Team response (Abed Alkhatib): I would need to double check; the goal is to target any facility that is applicable to T24 and has covered processes. Answer is yes, but need to double check the details to see if there's anything that would make horticulture exempt.
- 4. Question submitted in Mentimeter anonymously: For the methodology, assumption stated was that storage tanks were not insulated or under insulated. Were the Federal minimums for water storage tanks accounted for?**
- CASE Team response (Abed Alkhatib): No, but that's a great question. The federal minimum requirements for storage tank insulation. I wasn't aware of fed requirements. We will look into it and see how it relates to our work.
- 5. Verbal question asked by Sam Esterman, Thermaxx:** We have a hard time following the code because the R-values proposed don't seem to match up with the thicknesses in the codes. Building these jackets and insulating to R-value and thickness and getting the desired energy savings is all we spend our time doing, but the proposals don't seem to follow anything we understand. The thicknesses and R-values are an overreach for the basic performance. Beyond the initial layer, the ½ inch of thickness for insulation that you find on things like pipes, the thermal through put savings after that initial layer are minimal or negligible in some cases. In order to reach those desired thicknesses and R-values proposed here, the cost that is imposed on the customer makes the project possibly untenable and greatly increases the wastefulness and unnecessary consumption of materials. It also reduces affordability and makes it inequitable, which goes against the very nature of the law that was put in place in 1974. We think that the code, as proposed, needs a revamp in the calculations. We'd be happy to provide further feedback and calcs to whoever.
- CASE Team response (Abed Alkhatib): This is the challenge we are trying to solve. I've heard feedback before on this. We don't have the answers to this now, but we are going to find an answer. The goal is to offer things that are cost-effective and reduce energy consumption. These are things we're looking at and I appreciate you bringing this up. We will get in touch.
 - CASE Team response (DJ Joh): There will be a contact list after this presentation for people you can get in touch with. We would be happy to hear from you.

Laboratories, Abed Alkhatib, Energy Solutions

- 6. Question submitted in Mentimeter anonymously: Will there be specific heat recovery requirements for labs? Or will the standard heat recovery requirements in 140.4(q) be the baseline?**
- CASE Team Response (Jeff Stein): It's a combination of both. Basically, that section currently has an exemption for labs. We're removing that exemption and putting in

some specifics for labs. Labs will have a different heat recovery requirement. There's one other req, I'll show specific change later. In terms of size, CFM thresholds, those are the same as for other systems. So it'll only be required for certain sizes and will depend on climate zones.

7. Question submitted in Mentimeter anonymously: By removing the by-pass damper you minimize the ability of the system to correct if for some reason over pressurizing occurs. How will this be handled with no by-pass?

- a. CASE Team Response (Jeff Stein): That's a good question. My first reaction is I would think that any correction that would've been done for pressure control at the bypass could just as easily be done at the exhaust fan using the variable speed drive. Pressure control typically is managed at the zone level using the supply and exhaust fan valve, using either direct pressure control or CFM offsets. So, typically as long as you maintain the balance with the valves at the zone level, the 'valve authority' is being provided by the exhaust fan maintaining this shaft at the negative pressure. Whether the bypass damper or the variable speed drive, as long as you have the negative pressure in the exhaust shaft and the positive pressure in the supply, you should be able to do the pressurization of the zone. The proposal to remove the by-pass is not a requirement. If that's something you don't want to do on your project you are not obligated in any way.

8. Comment submitted in Mentimeter anonymously: Consider requiring energy recovery chillers for labs similar to those that 90.1 requires for large hospitals.

- a. CASE Team Response (Jeff Stein): Yes, that's a great suggestion. That is being considered not just for labs but for all commercial buildings as part of the Space Heating CASE Report. That will be presented in a couple of weeks.

9. Question submitted in Mentimeter anonymously: By-pass damper will be required to meet the wind velocity metering demand unless you are able to change the static and CFM from the building?

- a. CASE Team Response (Jeff Stein): I'm not sure I follow that. Removing the by-pass is not something we're requiring. It's only going to be possible where you can bury the volume and momentum. There are still some other requirements where you need to do some analysis to prove you can safely bury the volume.

10. Comment submitted in Mentimeter anonymously: We often use enthalpy wheels for general exhaust and runaround coils for fume hoods. You may be able to be more aggressive with general exhaust recover efficiencies

- a. CASE Team Response (Jeff Stein): Yes, that's a good point. This schematic shows both the fume hood and general exhaust being served by the same exhaust system. If your general exhaust was ducted separately then you would have the potential for making greater recovery efficiency. It's something to consider, my initial reaction is

this doesn't preclude it. We're setting a minimum floor for heat recovery. I would struggle to figure out how to put this into code language.

11. Question submitted via GoTo Webinar Question pane: Can you please define ACH (Are you referring to outdoor air or recirculated/filtered air?)

- a. CASE Team Response (Jeff Stein): ACH stands for air changes per hour. It's how many times air is turned over in the space. It's typically going to be outside air. If the fume hoods are closed then you'll open some valves to maintain a minimum air change rate in the space. We're trying to minimize the heating and cooling when nobody's there.

12. Question submitted via GoTo Webinar Question pane: In mild climates (like the bay area) we've found that a run around loop for heat recovery does not always result in an energy savings as the preheating/precooling savings does not offset the increased fan energy because of added pressure drop and added pumping energy. Will there be exemptions based on climate if the modeling demonstrates this is not an energy savings?

- a. CASE Team Response (Jeff Stein): Good point. As I show on the next slide there are different ways to do it. Short answer- there isn't an exception specifically for the energy if it's not saving energy, except that there is in the performance approach. You can trade off anything if you can show better energy performance. The minimum CFM are a function of climate zones.

13. Question submitted via GoTo Webinar Question pane: Will the CBECC software actually be updated to be able to model these complexities added to the mechanical systems? At this time we cannot even properly model heat recovery chillers and now we are proposing to add heat recovery to the exhaust air stream? Will there be the ability to model the controls for bypass and also to shut energy recovery valves when the outside air temperature calls for it. i.e. when the outside air temperature is 70 degF but the exhaust air is 75 degF, we do not want to heat the outside air. Will there be the ability to schedule the disabling of the heat recovery loop? I'm skeptical the CBECC software will be updated quickly enough to properly model these proposals.

- a. CASE Team Response (Jeff Stein): We're not talking about heat recovery chillers today.
- b. CASE Team response (Abed Alkhatib): I agree with you, none of the proposed changes touch on heat recovery chillers.
- c. CASE Team response (DJ Joh): And the CBECC model will be updated to do this?
- d. CASE Team response (Abed Alkhatib): Yes, this is doable in EnergyPlus.

14. Question submitted in Mentimeter anonymously: Cooling at the zone level does allow for some reheat, but are there any concerns with condensate at the zone level?

- a. CASE Team Response (Jeff Stein): That's why we're including the cost of removing the condensate. There's no concern beyond that, there's plenty of systems that have 4-pipe systems, VRF, etc. that would have condensate at the zone level. Just making sure we capture the costs associated with this.

15. Question submitted via GoTo Webinar Question pane: The values in the "Incremental cost slide" are potentially misleading without additional information on the sample building. Can the building description be shared?

- a. CASE Team Response (Jeff Stein): Yes. The incremental cost were based on recent lab construction projects in the state of California.

16. Question submitted via GoTo Webinar Question pane: Why are exceptions for hazardous airstreams removed?

- a. CASE Team Response (Jeff Stein): Even though it's removed, it's still allowed by the language. The language says you need to turn down to whatever the H&S says.

17. Question submitted via GoTo Webinar Question pane: Does this change in exhaust fan control language allow for "simple turndown" exhaust systems (i.e. no wind responsive, but have a single lowest exhaust flow for all wind conditions)? Specifically for systems that have extreme turndown options such that bypass air would be required for nighttime unoccupied setback to adequately reduce entrainment, but otherwise are able to stay at building load?

- a. CASE Team Response (Jeff Stein): That's a fair point. At this point there wasn't any language that would allow you to still use the bypass at normal operation. That's certainly worth considering.

18. Question submitted via GoTo Webinar Question pane: The proposed language under 140.9(c) 3E is in conflict with the Title 8 & ANSI Z9.5. Was this coordinated with the stack velocity requirements of those codes?

- a. We have revised the proposed code language change to avoid conflicts; the updated code language will be presented in the second round.

Refrigeration, Kyle Larson, VaCom Technologies

19. Question submitted in Mentimeter anonymously: Is there a potential to allow an exception from the specific efficiency requirement should a DOE certified evaporator be used in a Walk-in cooler or Freezer that is larger than 3,000 sq ft

- a. CASE Team Response (Kyle Larson): I can't comment on this right now. I need to research. We have thrown out the idea if there needs to be a minimum capacity where the requirements come into play. DOE requirements are typically on the lower

side, there shouldn't be overlap, but please provide feedback so we can make the code language appropriate.

20. Question submitted in Mentimeter anonymously: Are there clear definitions for Direct Expansion and Liquid Recirculated? There are cases where the distinctions traditional definitions can get blurry.

- a. CASE Team Response (Kyle Larson): No that hasn't been; there is a valid point to provide more clarity around that. That's noted and specific code language proposal will be reviewed to avoid confusion.

21. Question submitted in Mentimeter anonymously: Currently, variable speed is a mandatory requirement. Can this study work to identify specific efficiency where variable speed is no longer cost-justified, and provide a low-power compliance option?

- a. CASE Team Response (Kyle Larson): This was not planned for as part of the code improvement process this cycle. The topic of a performance path for refrigeration compliance has been discussed previously, but nothing actively being developed at this time. If there are low enough power evaporators it could be a future compliance path, as long as there were savings exceeding the variable speed requirements. This could be considered for future code and beyond if there are low enough power units to comply with that. The industry has gotten used to variable speed for these larger units in refrigerated warehouses as the Title 24 mandatory requirements have been in place for a decade or longer, so it would be of interest to hear from stakeholders if this is an area for study in the future code cycles.

22. Comment submitted in Mentimeter anonymously: AHRI is the standard for certification, but certification is not very common for industrial evaporators.

- a. CASE Team Response (Kyle Larson): This is noted in the 2022 CASE report. While it is out there not everyone is using it. Key portion is how to rate the input power, which is the most variable factor.

Elevators, Jeff Stein, Taylor Engineers

23. Question submitted via GoTo Webinar Question pane by John Kleine, Otis Elevator. The cost of regen needs to include static loads within the building to use the usable energy created from the regeneration of the elevator. Elevator regen drives and systems are not typically IEEE1547 known as a DER so we need the building load.

- a. CASE Team Response (DJ Joh): Understood, we will make sure that the cost of regenerative systems include static building loads.

24. Comment submitted in Mentimeter anonymously: Side note: I find most elevator equipment rooms are conditioned, but engineers feel since they are exempt from

envelope and HVAC requirements since it is a process load. Maybe we can make that very clear with changes.

- a. CASE Team Response (Jeff Boldt): Most elevator rooms I see are ventilated, or heated/ventilated. Rarely see one that is air conditioned. This probably depends on your climate zone. Have to keep below 104 degrees F.

25. Question submitted in Mentimeter anonymously: For ease of compliance would it make sense to require a regenerative drive or ISO Class B elevator? This provides simplicity (regen drive) and flexibility (different ways to comply with ISO Class B)

- a. CASE Team Response (Jeff Boldt): For ease of compliance, yes. We just have to show that it is economically viable. That's the only obstacle.
- b. CASE Team Response (other): Our measure has evolved away from ISO class energy ratings to requiring regen motors and defining specific energy efficiency classes for those electric motors.

26. Question submitted via GoTo Webinar Question pane: Inspection phase: initial turnover or throughout lifecycle?

- a. CASE Team Response (Jeff Boldt): I don't know. It depends on how CA handles it.
- b. CASE Team Response (DJ Joh): initial turnover.

Wrap-Up

- All Draft CASE Reports will be posted March through June at title24stakeholders.com
- Round 2 meetings begin in April
- Many meetings between now and end of February. Keep in touch!
- Meeting adjourned at 1:00 pm PST

Questions / Comments Submitted Via GoTo Webinar

The questions and comments below are provided verbatim (as-submitted) in the GoTo Webinar Question pane.

Name	Time Asked	Question/Comment	Response
Wayne Alldredge	12:18:27 PM	LEDs like turning on and off, so it can be as short as you want. Using an occupancy sensor could keep the lights off all the time except when someone is in the cab.	Thank you for your the comment. We are taking all comments into consideration and will follow up as needed.
Wayne Alldredge	12:34:34 PM	AC is required in CA	Thank you for the insight, Wayne.
Wayne Alldredge	12:35:16 PM	Particularly if they're outside	Thank you for your input.
Wayne Alldredge	12:52:37 PM	Just include it into the lighting acceptance testing requirements	Thank you for the input. We are taking all comments into consideration and will follow up as needed.
Haile Bucaneg	12:20:18 PM	If exceptions for healthcare facilities is removed, need to get HCAI's input. (Haile)	Hey Haile, at the moment we're not looking to touch upon any healthcare exceptions for elevators.
John Carter	10:38:43 AM	This may not be the correct venue, but what is the methodology to ensure the appropriate modeling has been conducted. In our discussions with design teams and owners, it does not appear anyone actually verifies the modeling has been done	Thank you for the question. The CASE team will do our best to respond to this comment during the even. If we do not have time, we will respond in the meeting notes.
John Carter	10:41:11 AM	The modeling question above refers to the dispersion modeling, not energy modeling. Thanks.	Thank you for the question. The CASE team will do our best to respond to this comment during the even. If we do not have time, we will respond in the meeting notes.
Blaine Conner	10:08:35 AM	The proposed zone changeover coils would require custom 8-row coils, and proprietary (e.g. Konvecta) exhaust heat recovery coils to actual generate valuable energy extraction in mild climates. Could we get additional commentary on what components and temperatures were used to achieve the stated energy savings?	We will run energy analysis in all of California's 16 climate zones. We will only include those measures in climate zones that show good benefit cost ratio (BCR). For heat recovery, we used a .55 sensible heat recovery effectiveness at 100% flow and .65 sensible heat recovery effectiveness at 75% flow.
Blaine Conner	10:10:57 AM	The single lines showing heat recovery coils in the exhaust airstream don't fully represent the difficulties in physically fitting this type of equipment into a high-rise laboratory with typical floor plates. Will there be an exception for roofs that cannot accommodate this approach (similar to the SARA exceptions?)	Yes, we have added language to the code allowing for exceptions based on exhaust rates to roof area.

Name	Time Asked	Question/Comment	Response
Blaine Conner	10:15:03 AM	The values in the "Incremental cost slide" are potentially misleading without additional information on the sample building. Can the building description be shared?	Thank you for the question. The CASE team will do our best to respond to this comment during this event. If we do not have time, we will respond in the meeting notes. The incremental cost were based on recent lab construction projects in the state of California.
Blaine Conner	10:25:59 AM	Why are exceptions for hazardous airstreams removed?	Thank you for the question. The CASE team will do our best to respond to this comment during the event. If we do not have time, we will respond in the meeting notes. If this is for 140.9c1, we haven't removed it, we've just moved it elsewhere in the section.
Blaine Conner	10:29:50 AM	The proposed language under 140.9(c) 3E is in conflict with the Title 8 & ANSI Z9.5. Was this coordinated with the stack velocity requirements of those codes?	Thank you for the question. The CASE team will do our best to respond to this comment during the event. If we do not have time, we will respond in the meeting notes.
Jim Coogan	09:57:48 AM	Does the code address how ventilation rates are selected for the occupied or unoccupied condition?	Yes the CASE draft will address the turndown rates.
Jim Coogan	10:24:53 AM	Is there any mention of the situations or reasons where setback should not be applies?	We allow exceptions for health and safety reasons.
Jim Coogan	10:40:05 AM	Page 5 says "effectively requiring heating and cooling at each zone". Is it actually required or effectively?	Thank you for the question. The CASE team will do our best to respond to this comment during the event. If we do not have time, we will respond in the meeting notes.
Sam Esterman	09:15:08 AM	i have a comment about the proposed codes, if we could bring that chart back up.	Thank you for your input. The CASE Team will do our best to respond to this comment during the event. If we do not have time to address during the event, we will respond in the meeting notes.
Megan Hardman	09:54:27 AM	In mild climates (like the bay area) we've found that a run around loop for heat recovery does not always result in an energy savings as the preheating/precooling savings does not offset the increased fan energy because of added pressure drop and added pumping energy. Will there be exemptions based on climate if the modeling demonstrates this is not an energy savings?	Thank you for your input. The CASE Team will do our best to respond to this comment during the event. If we do not have time to address during the event, we will respond in the meeting notes.

Name	Time Asked	Question/Comment	Response
Megan Hardman	10:00:04 AM	Will the CBECC software actually be updated to be able to model these complexities added to the mechanical systems? At this time we cannot even properly model heat recovery chillers and now we are proposing to add heat recovery to the exhaust air stream? Will there be the ability to model the controls for bypass and also to shut energy recovery valves when the outside air temperature calls for it. i.e. when the outside air temperature is 70 degF but the exhaust air is 75 degF, we do not want to heat the outside air. Will there be the ability to schedule the disabling of the heat recovery loop? I'm skeptical the CBECC software will be updated quickly enough to properly model these proposals.	Thank you for your input. The goal is to update the CBECC functionality to model the proposed changes. Right now we don't see any issue in accomplishing that as Energy Plus, CBECC engine is able to model all the proposed changes so this is do-able.
Megan Hardman	10:10:58 AM	Will CBECC-Com be updated to include the ability to model air to water heat pumps? Presently you cannot model heat pumps/heat recovery chillers. These proposals to add additional requirements for heat recovery before the 2022 software allows you to even model electrified heating other than electric boilers or packaged heat pumps. Has this been considered?	Thank you for the question. Our CASE report does not include air to water heat pumps as a measure, so we're not aware of any efforts to include air to water heat pumps.
Megan Hardman	10:16:04 AM	Just a comment: for a fume hood dense laboratory, this incremental cost example with 4 pipe VAV and heat recovery is not reasonable with a real world project. In the Bay Area we would not see those types of equipment capacity decreases. This needs to have a larger deep dive discussion with practitioners who are actually modeling and designing these systems.	Thank you for the comment. The CASE report team will discuss this further.
Maribella Ibarra	09:42:50 AM	Can you please define ACH (Are you referring to outdoor air or recirculated/filtered air?)	Thank you for your input. The minimum ACH can be a combination of outdoor air and recirculated air (provided air classification requirements are met).
John Kleine	12:13:10 PM	This is John Kleine from Otis Elevator. The cost of regen needs to include static loads within the building to use the usable energy created from the regeneration of the elevator. Elevator regen drives and systems are not typically IEEE1547 known as a DER so we need the building load.	Thank you for your comment. We are taking all comments into consideration and will follow up as needed.
John Kleine	12:18:41 PM	Yes we do know that it stuck, the only time we shut lights off if the car is idle and not in a fault condition or in a shutdown mode.	Thank you for the input.

Name	Time Asked	Question/Comment	Response
John Kleine	12:22:50 PM	Hydro meant for ADA compliance in low rise buildings.	Thank you for your comment. We are taking all comments into consideration and will follow up as needed.
John Kleine	12:24:04 PM	equipment sits on rails or on a bedplate within hoist way	Thank you for your comment. We are taking all comments into consideration and will follow up as needed.
John Kleine	12:28:22 PM	Yes, there are moments within a motoring run that during decel can create regenerative power	Thank you for your comment. We are taking all comments into consideration and will follow up as needed.
John Kleine	12:34:28 PM	We have environmental conditions building must meet	Thank you for your comment. We are taking all comments into consideration and will follow up as needed.
John Kleine	12:45:54 PM	Inspection phase: initial turnover or throughout lifecycle?	Thank you for the question, which we discussed during the webinar.
John Kleine	12:47:44 PM	building could change occupants and cause elevator usage change, so looking at this as HVAC style to say the unit is X class	Thank you for the input; we are noting all for follow-up if we don't get to it during this meeting.
John Kleine	12:48:22 PM	Many elevators have parameters settings to show inspectors that the function works	Thank you for the input.
John Kleine	12:52:25 PM	most elevator control systems have clocks and can be set to 30 seconds to inspector	Thank you for the input.
John Kleine	12:53:01 PM	ASME A17.1/B44 safety code	Thank you.
Kurt Liebendorfer	11:38:27 AM	AHRI 420 is the rating standard	The AHRI 420 rating standard will be investigated further to see how current version is applicable for reference to the proposed mandatory requirements for refrigerated warehouses.
Ryan Parker	10:29:22 AM	Does this change in exhaust fan control language allow for "simple turndown" exhaust systems (i.e. no wind responsive, but have a single lowest exhaust flow for all wind conditions)? Specifically for systems that have extreme turndown options such that bypass air would be required for nighttime unoccupied setback to adequately reduce reintraintment, but otherwise are able to stay at building load?	Thank you for the question. The CASE team will do our best to respond to this comment during the event. If we do not have time, we will respond in the meeting notes.

Name	Time Asked	Question/Comment	Response
Gina Rodda	10:07:18 AM	What do you mean by "standard"? That is prescriptive?	Thank you for your input. The CASE Team will do our best to respond to this comment during the event. If we do not have time to address during the event, we will respond in the meeting notes
Gina Rodda	12:46:35 PM	Elevators almost ALWAYS deferred submittal making enforcement difficult	Thank you for the insight, Gina.
Gina Rodda	12:48:44 PM	We have acceptance testing of elevator controls currently	Thank you for the input; we are noting all for follow-up if we don't get to it during this meeting. Feel free to raise your hand if you'd like to be unmuted to talk.
Gina Rodda	12:50:51 PM	They are under a separate building permit	
Gina Rodda	12:52:04 PM	That is why we have acceptance testing!	
Rachel Romero	09:56:07 AM	When do you expect to start the labs piece?	For the 2025 cycle, labs will be brought in as L occupancies are being included as part of the non-residential buildings.
Ted Tiffany	10:16:27 AM	How would you enable lab setbacks based on controls like AirCuity to show compliance with this measure?	Thank you for the question. The CASE team will do our best to respond to this comment during the event. If we do not have time, we will respond in the meeting notes.
Ted Tiffany	10:20:25 AM	Something you'll need to consider Jeff is Labs within an HCAI building, healthcare labs, compounding pharmacies, etc. in the exceptions. Discussions with HCAI should start now.	Thank you for the input. The CASE team will do our best to respond to this comment during the event. If we do not have time, we will respond in the meeting notes.
Ted Tiffany	12:51:04 PM	Deferred to the elevator contractor in 99% of cases	Thank you for the input. We are taking all comments into consideration and will follow up as needed.
Ted Tiffany	12:53:31 PM	Correct, highlight the training and enforcement uplifts with the various stakeholders	Thank you for the input, Ted. We are taking all comments into consideration and will follow up as needed.
Randy Young	09:10:37 AM	Are horticulture facilities included?	Any facility that is under T24 Covered Process, so yes in theory. (Abed)
Randy Young	09:25:25 AM	I am not a huge fan of the self-advertising of Taylor engineering. Lost some credibility in my opinion	Understood, our aims were to try and establish our credibility and experience in this sector rather than using the platform to self-aggrandize. We take your words as constructive feedback going forward.

Public Input Submitted Via Mentimeter

Note: all questions and comments submitted via Mentimeter are anonymous. Those that were discussed during the meeting are incorporated into the ‘In-Meeting Questions / Comments’ section above; others are shown below.

Process Load Pipe Insulation

Asked on: Please share any additional questions, comments and feedback.

Why is hot water piping insulation requirements limited to pipes > 2 inch diameter?

CASE Team Response: We removed the 2-inch requirement from the proposal.

Asked on: Please provide feedback and suggestions on the methodology and assumptions for energy savings estimates for this proposal.

Did you use Means Mechanical Cost Data for the cost of insulation?

CASE Team Response: No, we used a combination of contractor’s cost and RS Means.

Asked on: Page 15 - DRAFT-2025 T24 Utility Sponsored Stakeholder Meeting 1_Industrial Pipe Insulatio

How will addition and alterations requirements affect existing pipe (ie lines that are not being touched as part of the addition/alteration)? (Haile CEC)

CASE Team Response: It will not affect parts of the building not being touched during an alteration or addition.

Asked on: Please provide feedback and suggestions on the market readiness and technical feasibility of this proposal.

Is this only focusing on insulation for distribution system and not for process equipment? (Haile CEC)

CASE Team Response: It is focused on process loads, which would cover process equipment and distribution systems serving process load.

Mentimeter Polls & Responses

Laboratories

Please provide feedback and suggestions on the market readiness and technical feasibility of this proposal.

(No comments were submitted)

Please provide feedback and suggestions on the methodology and assumptions for energy savings estimates for this proposal.

The values in the "Incremental cost slide" are potentially misleading without additional information on the sample building. Can the building description be shared?

Please share any additional questions, comments and feedback.

For zones with strict humidity requirements, does the code change consider how to achieve dehumidification without reheating/recooling? Proposed language struck out the humidity exception 3.

Refrigeration

Please provide feedback and suggestions on the market readiness and technical feasibility of this proposal.

Putting up the proposal to view would help

All depends on the efficiency requirements of the end user. Some may hard code it into their spec, some may not. This could be a few years off.

CARB has strict restrictions on high-GWP synthetic refrigerants. Why include these in the evaporator specific efficiency standard?

were any of your calculations done using A2L refrigerants?

What if more than 0.5" WC static pressure is required (for penthouse evaporators with ductwork (reference item E)?

will the slides be available

use consistent ratings method, and suggest deeper dive into ahri 420 before using that requirement. There may be a better solution

What will the process of verification of evaporator specific efficiency look like?

Please provide feedback and suggestions on the methodology and assumptions for energy savings estimates for this proposal.

Are there clear definitions for Direct Expansion and Liquid Recirculated? There are cases where the distinctions traditional definitions can get blurry.

Please provide feedback and suggestions on the code compliance and verification process for this proposal.

AHRI is the standard for certification, but certification is not very common for industrial evaporators

Any plans to include glycol aircoolers?

Please share any additional questions, comments and feedback.

(No comments were submitted)

Elevator Results

Please provide feedback and suggestions on the market readiness and technical feasibility of this proposal.

3 Answers

I already have major issues getting elevator contractors to meet CURRENT code, these additional measures will not be fun to enforce.

Side note: I find most elevator equipment rooms are conditioned, but engineers feel since they are exempt from envelope and HVAC requirements since it is a process load. Maybe we can make that very clear with changes.

Not my experience with the projects I work on to be heated only, but have seen ventilation only.

Please provide feedback and suggestions on the methodology and assumptions for energy savings estimates for this proposal.

Comment: I would encourage you to consider adopting the highest levels that you find to be cost-effective in your analysis.

- a. CASE Team Response: Absolutely, our goals are to adopt the most stringent energy savings measures that would still be cost effective.

Please provide feedback and suggestions on the code compliance and verification process for this proposal.

(No comments were submitted)