



## State of Idaho

### Division of Occupational and Professional Licenses Idaho Building Code Board (Energy Code Collaborative)

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#### Minutes of 08/09/2022

#### **Division Staff:**

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A public hearing to discuss amendments to the 2018 International Energy Conservation Code (IECC) was called to order at 9:00 a.m. by Tim Frost. This is the second code collaborative meeting in relation to the energy code.

#### **2018 IECC: Commercial Provisions**

##### **C403.5 Economizers (Prescriptive)**

The mechanical code identifies the requirements for ventilation of commercial buildings and the energy code requires the method on how this mechanical ventilation is provided. This will not remove ventilation entirely as it is still required in the 2018 IMC.

**Chad Schwendiman, city of Boise** – There was a Berkeley study in 2005 where the outcome was the use of economizers reduced sick leave when utilized in a building. When asked, Mr. Schwendiman stated the type of economizers were in the study and would provide a link to be included in the public comments.

**Jason Blais, city of Boise** – Another item is thresholds and when an economizer is required. I'm sure it's nice to have a list of thresholds. The other item to remember is we did take an industry amendment and added another exception. It seems if we have a threshold list of when they're required, with the industry requested exception, it seems like we should put some industry on that.

**Executive Officer Hyde** – That's a good point. If we look at the blue strike through on subsection C on page 6, what is being discussed is the exception where it says unusual outdoor air contaminate conditions. Systems where special outside air filtration and treatment for the reduction and treatment of unusual outdoor contaminants makes an air economizer feasible. Meaning that an economizer is not required however, mechanical ventilation is still required no matter if it's an unusual outdoor air contaminant condition or not because of what the 2018 IMC says. We have the energy code saying one thing, we have mechanical code saying another, so yes, I see this being permissive. However, I worry that it creates a conflict between the mechanical code and the energy code, because they still have to bring fresh air in whether it's a 6-inch cold air duck into the return or any other type of method in lieu of an economizer. I'm having a hard time seeing where this really creates any benefit other than not saving the cost and not having to spend the money to install an economizer.

**Mr. Blais** – The whole point of the economizer is, if you have the right climate is to take advantage of favorable weather where it permits free cooling without mechanical refrigeration, right? It is using that nice cool layer to help cool the building.

**Executive Office Hyde** – If that's the case, we may have to tweak the language that exists because when you read about unusual outdoor air, contaminate conditions, I think that's leading us down a different path than what's intended. But again, open for discussion. The IMC doesn't regulate the method on how you provide mechanical ventilation so ventilation is still provided, the safety concern of occupants should still be there how efficient the equipment is, depending on the equipment that is utilized to provide such mechanical ventilation is up to the design professional and the contractor. Here again, tying this back to the legislative intent is yes, we are focused on life safety, that is the intent of the building code board and statute specifically promote the health safety and welfare of the occupants. How efficient a piece of equipment is, that's where we're starting to go down the road of; is this a quality control code and an enforcement policy manual or is life safety the minimum threshold. That is something we need to take into consideration as we move forward throughout these conversations.

**Joe Barlow, city of Meridian** – I still believe that this should be the discretion of the design professional or their clients. They are ones that know what their clients' needs are going to be, what the use of occupancy is, and I still don't think that the State should mandate and require this. It should be left for the design professionals' discretion.

#### **C404.5.1 Heated Water Pipe Maximum Lengths**

The table that's depicted in rule currently is struck in the proposal. I've asked that our plumbing program manager be here today to discuss what the plumbing code board did in relation to this specific requirement.

**John Nielsen, Plumbing Program Manager** – What the plumbing board did in section 403.3 of the Idaho State plumbing code was delete exposed pipes as ADA requirement because usually the architect will designate with accessibility if it needs to be insulated strictly out of a burn protection requirement. In 609.11 pipe insulation was deleted. The board felt that installation shouldn't be a requirement on the plumber again if the design professional wants pipes insulated, or a homeowner wants their pipes insulated. They can do that without a requirement from the State.

**Executive Officer Hyde** – That's something that we do need to take into consideration, the enforcement piece of it. Who's enforcing what? We do not want a situation where a building inspector and a plumbing inspector are not seeing eye to eye based on these rules that have been written. If there's any contradiction between codes between boards, we want to figure out a way to clarify that if at all possible or rewrite the language as such to where that contradiction doesn't exist.

**Plumbing Program Manager Nielsen** – As far as the plumbing code goes, this is where I get most of the calls, when the building inspector comes in after the fact and red tags the plumber for not having their pipe insulated.

#### **C403 Building Mechanical Systems**

This section would be deleted from the energy code.

**Mr. Schwendiman** – So this is just commercial and not concerned with residential at this point in time?

**Executive Officer Hyde** – Correct. See 403 Building Mechanical Systems.

**Mr. Schwendiman** – So essentially, you are looking at removing it because of the ventilation stipulations and the equipment efficiency stipulations and stuff like that? Because it is kind of controlling the type of equipment that can be put in or what is the reasoning behind deleting?

**Executive Officer Hyde** – The thought process here was, we were trying to identify a few different factors here. What is already covered in the mechanical code? We looked at it from a perspective of the enforcement piece. Should it be done from a building board perspective, or an HVAC board perspective? We looked at it from life safety, what is minimum life safety anything above and beyond of course, is compliant. If it's above code essentially, to allow for marketing opportunities of designers, engineers, architects, and their firms as well as contractors, both subcontractors and general contractors. To promote marketing for them for building, more efficient, more energy, sustainable buildings. Focusing on the life safety aspect, tying that back to the statutory intent of the building code rule chapter. So, looking at some reports from the Department of Energy, and what they are doing on mandating what manufacturers produce. A lot of these efficiency tables, anything less than what is listed isn't even made anymore. So that was an aspect that we needed to look at, and which we did and from what is out there and available for contractors general, or subcontractor to even purchase. A lot of the value of efficiency, less than what's indicated, is hard to find.

**Mr. Schwendiman** – I agree with that.

**Executive Officer Hyde** – Overall, from a life safety perspective, we kept going back to our perspective analysis throughout and what we are being tasked to do is to try to reduce barriers and promote open business, marketing methods, et cetera.

**Eric Lacey, representing Responsible Energy Codes Alliance** – I work with a group that works with states that are considering adoption of the IECC amendments around the country, and I am very concerned with the proposed deletion of the next several sections. There is this general concern, whether these specific provisions affect life safety and health and so on. And this is a question that comes up in a lot of states and I just wanted to share with you that the energy efficiency provisions are definitely life safety. For example, high energy bills can have a really significant impact on the quality of life. The US Energy Information Administration put out a report recently they found that 1 in 3 households struggle to pay energy bills or to maintain adequate temperatures in their homes every year. I know we are talking about commercial buildings here, but this can also apply to high residential. One in five households reported reducing or forgoing basic necessities, like food or medicine to pay energy bills. Efficient buildings also provide other health safety, welfare benefits, including a better indoor environmental quality. That is particularly true of mechanical systems. Increased occupancy comfort on the residential side efficient buildings is associated with lower foreclosure rates. They're also very important for community resilience. This is a topic that's becoming more and more important as we have extreme weather events. Buildings that are constructed to the latest efficiency standards can help with passive survivability in the event of a power outage. I would encourage you all to focus on the individual sections, whether this specific efficiency provision directly affects health and safety to consider the overall effect of efficiency on health and safety in the built environment. I would encourage you to maintain the provisions of the IECC that are currently in Idaho's code. We have a very strong history of having a good energy code here and I hate to see some of these provisions cut out unnecessarily. Thank you.

**Executive Officer Hyde** – Thank you Mr. Lacey. We appreciate your feedback and any specific details that you could point back towards any of this section.

**Mr. Lacey** – The section in front of you, the building mechanical system is a very large portion of the IECC. It is one of the most important provisions, not only regulating the efficiency of the mechanical equipment, heating and cooling and refrigeration and so on, but also in proper sizing, which can all affect the indoor air quality of the occupants. In addition, the comfort and wellbeing of the occupants. So sure, we could go section by section, but I think one amendment that deletes that whole section of the code, which is many, many pages is really a concern. I think that would be an unnecessary and potentially dangerous cut from the energy code. Executive Officer Hyde - Thank you Mr. Lacey, and that is what we're here to do. We are here to discuss what sections being deleted lead to unintended consequences. When we evaluate this and work with stakeholders, we were having a hard time identifying what that would be. And so, this collaborative is to walk through each section as necessary based on any sections that we feel in this collaborative discussion needs to be brought forward and so we are open to suggestions. Chad S - Duct and plan of installation and ceiling is in Chapter 403, along with refrigeration piping installation. I do think there can be a health hazard there because duct sweat when not insulated properly in the right conditions and same thing with refrigeration piping, it will sweat when not insulated in the proper conditions and sweating leads to condensation; condensation leads to mold and mildew. Those are sections 403.11.1 and 403.11.3

**Mr. Barlow** – I believe that the requirement for insulating the refrigeration lines is in the manufacturer's installation instructions as well. You keep being an installer, a designer and doing this for a couple of decades, you can't install refrigeration lines without insulating. It's in the manufacturer's installation instructions. We need to let these guys delete this out of here and we need to adopt some of this stuff under the mechanical. So, building guys aren't coming in behind the mechanical inspectors and calling out things so this needs to be moved. The portions that we want to get adopted need to be moved under HVAC so there's not that conflict when you have different inspectors going in. Working in eastern Idaho there was more than one occasion that I had done a job, I finished up and thought I was done. The building inspector comes in and calls me out on something energy related that is a nightmare and it's ugly for the contractor. It is definitely ugly for the client, it's ugly for everyone. Let these guys delete this and let's get some of the stuff on the HVAC board. The installation, the minimum installation value on the ducting. I agree. We need to have a minimum, a hundred percent we need to have it, but it needs to be in our wheelhouse. Not under the buildings.

**Mr. Schwendiman** – I don't disagree with Joe. I think Joe's hit it on the head, but what is the pathway to get it done under the mechanical purview for the mechanical board, the HVAC Board, the Plumbing Board. What's the pathway to make that happen?

**Executive Office Hyde** – It starts with active discussion from industry to the Idaho HVAC Board, working with various stakeholders similar to what we're doing here, to identify what's not captured in code or needs to be amended in the IMC to be enforced by mechanical inspectors or enforcement departments throughout the state and it begins with the HVAC Board and attending those meetings, talking with John. John Nielsen, he's the executive officer for the HVAC Board and that's where you begin. And you work with him and get the item on the agenda for those discussions.

**Mr. Schwendiman** – So does the HVAC Board have the purview to be able to adopt codes out of the energy code?

**Executive Officer Hyde** – We would have to defer to our legal team and legal counsel with the board to get that interpretation from statute and what we can and cannot enforce or adopt.

**Yvonne Dunbar, Legal Counsel** – The board can adopt portions of the IECC directly. They can amend the chapters that they do have, and they can add that additional language the same as all

our building cohorts can amend, to add things so they could do that. It's just having the specific topic and information to them and them discussing it.

**Teri Ottens** – I have a process comment. Why are we eliminating important rules before we even see if they can be moved over, if the boards will accept them? It's like putting the cart before the horse, we should be working with those boards. See what they are able to do with their own codes and then go back to the energy code and figure out what has been able to be moved over and then what's not duplicative. This is ridiculous. I think Patrick Sullivan testified at the last meeting to eliminate all this and then try and take it over to other boards and have the legislature say no, we're not adding regulation.

**Ms. Dunbar** – We appreciate your comments. I will reiterate that the HVAC Board, the Plumbing Board, and the Electrical Board all have the authority to adopt into their rules anything we're removing related to those boards. Whether they adopt a specific provision of the IECC or not, they can adopt the language from that provision. It's just a conversation with them as to what they believe is life safety and should be adopted versus what their ability to adopt it.

**Ms. Ottens** – I understand what you are saying. You're putting the cart before the horse. You are eliminating rules before you're adopting rules on the other side and so by eliminating all these sections you don't have a full picture of what those boards will or will not do. So, it seems counterproductive. It seems like, if you really wanted to do this, you all should have started with those boards to see what they were willing to adopt under your new statutory interpretations and then go back to the energy code and get rid of any duplication. This process is backwards.

**Ms. Dunbar** – We appreciate your comments.

**Marie Kellner, Idaho Conservation League** – I echo in many ways the comments of Mr. Lacey earlier, who was concerned overall about the deletion of the energy code section. And, I had immediately raised my hand to comment along the lines of what Miss Ottens just shared. It does feel like the consumer is who loses and the public who are relying on the boards to have these rules in place; rules that have been vetted before and rules that provide life health protections as well as over a long period of time, financial protections for consumers. To not know whether they will be picked up elsewhere feels very concerning and the Conservation League would ask that we, before deleting these ensure and begin the conversations with the other boards and ensure that there is a place for these protections for people before that happens, thank you.

**Executive Officer Hyde** – Thank you for your comment. Tying this back to the duct installation, this is a great example of a specific section being discussed where we can really circle back around to the legislative intent of why these codes are adopted and why they are written. This is the first time we are hearing about the potential that duct installation may be a safety hazard. I think this is a good opportunity to have that discussion on where those safety factors occur. How frequently could they occur? We really need to dig in here and utilize this collaborative session for those discussions, rather than talking at 30,000 feet elevation. This collaborative is intended to get into the weeds and have a conversation on safety factors. We're not protecting anything other than the structure of the building, the life safety, integrity of the structure of the building, and the health and welfare of the occupants. With that as a primary focus, that is what this collaborative session is intended to discuss, the specifics, not 30,000 feet looking at it as a section, but digging in because trying to circle this background, life safety. This process needs to be evaluated specifically with the mechanical, electrical, and plumbing sections. So, I appreciate the comment, Chad. And I think this is something that we need to continue to discuss. So, if there are any other situations, how frequently this could occur, when do ducts create moisture on the exterior of the duct, not the interior of the duct to where moisture could present itself in a wood frame structure where it is a

potential life safety issue. These are the specific examples we need to evaluate and then discuss with the board, but it is one section that we specifically noted. Are there any other sections out of 403 that we need to discuss in that regard?

**Mr. Blais** – There's just a whole lot of pages on controls and I don't know if anybody's looked in detail on all those control sections

**Executive Officer Hyde** – I did, but this is a collaborative discussion. When it comes back to life safety and regulating consumer choice and occupant choice. So, I'm opening up for discussion and this proposal initiates this discussion because it is it is drastic compared to what we've done, but we've never performed a zero-based regulation review ever and that is the intent. So, yes, I did specifically for controls. I did not see anything that would be up for discussion from a life safety, consumer protection and occupant welfare situation, in a commercial structure, but I'm open to your thoughts. One thing we need to take into consideration with are refrigeration requirements. Refrigeration doesn't fall underneath the scope of HVAC.

**Mr. Blais** – Refrigeration is a chapter in the IMC that is adopted by the state.

**Executive Officer Hyde** – But the statute does not encompass; there is no “R” in HVAC. Refrigeration does not fall under the scope of the statute.

**Mr. Blais** – But the IMC is adopted as a whole right?

**Executive Officer Hyde** – It is, but as its applied by statute and rule.

**Mr. Blais** – Well, refrigeration piping is part of air conditioning.

**Executive Officer Hyde** – If it is used for conditioning space, not walk-in coolers, or display cases. In Idaho, that is not regulated. Very similar to the fuel gas code and cooking appliances. The cooking appliance itself is not regulated, but the ventilation of such is because that is the way the legislature has intended the adoption of this code. Not ICC intended State of Idaho legislature and board authority. There is a lot in here about refrigeration that is not mandated by statutes. Refrigeration contractors are not required to get a permit by statute and rule and their installations are not governed. How long has this been taking place and where; and the inconsistency has brought up a lot of questions. If we are talking Code collaborative and we're talking process, that's what we're here to discuss. That is another big part of 403 that I think is good reason why we need to evaluate this section as a whole and dig into the weeds and correlate it back to statute. Where do we have the statutory authority to amend rules or enforce codes?

**Cache Olson, city of Nampa** – Maybe a recommendation that I have, and this is hopefully not from 30,000 feet, that maybe we have time to sit down and dig into the weeds with 403. I feel unprepared for a lot of these different sections, even though I've gone through the code section several times, but maybe form a subcommittee and maybe discuss each one of these items to the conclusion or to the point at which you're asking.

**Executive Officer Hyde** – I appreciate the comment. We have been trying to extract this work. We've been trying to inform as much as possible since last summer during our town hall sessions, we've had numerous meetings since then, where we're trying to attract. We're not adopting a new code here but reviewing what's already been adopted and reviewing the minutes in the history of this 2018 code adoption. These items, I could not extract in the minutes, where these items were discussed? Looking at it as a whole, I'm trying to pull from any resource that I could as guidelines and a framework. I can't commit one way or the other. We do have a board meeting on Tuesday, we set up this code collaborative specifically upon request so that way we can utilize this opportunity to dig in and do our homework and have a discussion, but this is the informal part of the negotiating rulemaking process. This will be noticed up again in our September bulletin and

have 2 additional negotiated rulemaking hearings. We have opportunities to have further discussion.

**Mr. Blais** – I brought this section last time, but I wanted to again with c403.7.1 which is the main control ventilation. And that's where you have those larger assembly occupancies, so you're not going to blow on that full blown ventilation in your room.

**Executive Officer Hyde** – If you look at section 403 of the IMC, the IMC talks about the method of introducing mechanical ventilation based on the type of system that you have. In my opinion, I feel like this is heavily addressed in the IMC.

**Mr. Blais** – Does it have those controls, when to kick it in? Because it seems to make a lot of sense. We want to design this room for full occupancy ventilation but why do we want to blow it in here when there's two people in here? Right? But when it fills up, let's kick it in with some sensors right? And get the right balance.

**Executive Officer Hyde** – Providing mechanical ventilation according to the IMC is based on, do you have the method to bring the fresh air into each room, or however it's been designed and there's a lot of flexibility there on designers, architects, or engineers to incorporate ensuring that that fresh air is being dispersed within a room, any area of a room or a structure, according to the ventilation rates of the IMC. Looking at that from a life safety perspective, tying a specific section back to an economizer or do we mandate how, or is that life safety or just, the bare minimum is you shall provide this amount of CFM through this design system to these rooms. I mean, at what point is it an overreach? What point are we regulating from a quality control standpoint rather than minimum life safety?

**Mr. Blais** – Makes a lot of sense for assembly.

**Executive Officer Hyde** – From a design perspective, I don't necessarily disagree with you, but I don't think that we're regulating the design aspect as long as the minimum design of providing fresh air to a room or space has been met, anything outside of that is upon the designer and the contractor and the owner of the structure. Section C403.7.5, when it comes to kitchen exhaust systems, you look at this section and you compare it to section the Chapter 5 of the IMC there's some contradiction in the ventilation rates that are there. What do we do from an enforcement side? Which code trumps which? Was that evaluated when the 18 was adopted? Was there a discussion around this? Were there any amendments that needed to be made? Has anybody from the enforcement side run into this issue previously, whether you're a plan reviewer or an inspector.

**Mr. Blais** – We have, where we had UL listed hoods come through that don't meet the energy code on the plan review side of things.

**Executive Officer Hyde** – We did too. And it left an opening where it was a clear contradiction between the two, and we're stuck from our perspective, right? Or wrong. We stuck to the minimum life safety getting those fumes and contaminants outside based on what the IMC stated. One last call for comments on 403.

**Ms. Kellner** – I do just want to be on the record as saying that the Conservation League continues to have concerns about some of these things being removed without knowing where they may end up. And I do just want to verify that. I know that there was a rule making meeting earlier this summer and we were unable to attend, and I regret that and I'm sorry for that but we do hope to participate actively and productively. I want to ensure that there are, did you say one or two additional scheduled rulemaking conversations at which time the Conservation League would have the opportunity to raise additional concerns, as we were able to give it more thought.

**Executive Officer Hyde** – Most certainly, thank you Ms. Kellner. I appreciate your comments. We are looking to produce the final proposal in the September bulletin to negotiate rules through

formal procedure, which will set up two additional meetings. We do not have dates for that now, but we will be posting all that information on our website. Please feel free to reach out to me at any point in time. If you have any questions, or if you like further discussions or if you have a written statement that you like to provide, that I will get it out in front.

#### **C404 Service Water Heating (Mandatory)**

This section for the proposed draft has been recommended to be deleted.

**Plumbing Program Manager Nielsen** – This has to do with installation on the plumbing side of the house and I know the heating system can run it. But when it comes to researching systems and timers and all that stuff yes, there is little to serve the energy on that system at the same time. I can tell you, they want hot water when they want hot water and a lot of times, as soon as it's done, they go crank it over and run at 24/7 or vice versa. They shut it off and you wait 10 minutes to get hot water from one end of this building to the other. This is all good in theory, but once everybody leaves the building and the occupants are here, I think it goes out the window.

**Executive Officer Hyde** – That's a good point. I think we need to take that into consideration as we move forward and discuss some of these sections from a pragmatic standpoint. Are we really achieving energy efficiency once a COO has been issued and occupants take occupancy? Do they have the means currently to go up there and adjust the temperature valve or adjust the thermostat as they so desire or are they locked out? No, they're not. They can change it based on their needs and demands. As soon as that piece of equipment, no matter which equipment we're referring to, doesn't produce. Guess who is getting the callback. Guess who's receiving the phone calls, as we approved and inspected a design that doesn't meet our needs. It's a challenge and it is almost like a two-way street where we're trying to adhere to the energy code, but at the same time, when it doesn't meet the needs, when it's 105 for two weeks straight, we're getting phone calls because the enforcement authority is the one to blame because they said what I had to do, they mandated the equipment that I installed, or this system I designed. It's tying this all back to the legislative intent. I know I keep doing this in the discussion, but I think that's the intent of the board and that's where our primary focus is, the occupant welfare and life safety of the structure.

#### **C405 Electrical Power & Lighting Systems**

**City of Meridian???** – Just from my own personal experience from the field, and from inspections and plan review positions, the parent lighting systems need to be designed and worked through the process of who the building is being built for. Well, there's my professional input so that the person running that building occupying that space, can manipulate that system in the way they see fit or not one way or the other. I don't think it should be mandated in a way that it has to be installed to a certain point. A lot of those controls in a lot of those systems end up incurring rather substantial costs, whereas through that process can be sold to people and say you'll make up for it and the energy efficiency as time goes on and things of that nature. But that should be the decision of the person designing, or building or requesting that within their own place, rather than have it put on them and the choice taken away.

**Executive Officer Hyde** – I appreciate that comment. Thank you. In your profession, in what you do in reference to what you're making, are there any certain occupancy or type of structures that you've dealt with where this has posed a challenge in meeting the lighting demand, based on the occupancy utilizing, needing to utilize, for the place of business more than what stated here anything like that? No? Okay. We haven't either, but I can see potentially based on the demands and the needs of the structure. It may be higher than what this section allows. We were looking at



this and I asked Warren Wing, our electrical program manager, to dive into this section and identify any type of life safety requirements, or any contradictions between this section and the adopted 2017 NEC. I'll allow him the opportunity to speak on this section, but one thing that I kept coming back to, with fulfilling the perspective analysis of, are we fulfilling statutory intent and looking at it from a safety perspective? For the structure daylight lighting zones, I have a hard time answering that question. If there's any feedback to help me there, I'm all ears.

**Warren Wing, Electrical Program Manager** – I did look at it and there is nothing in the electrical code that deals with requiring any type of energy efficiency whatsoever. The electrical codes strictly look at the devices installed and make sure that they're installing in accordance with the NEC. The electrical code is designed strictly for life safety, and when I look at the IECC just reading the beginning of it in the introduction, it's strictly for energy efficiency and conservation.

#### **C406 Additional Efficiency Package Options**

This is being proposed to be deleted. The thought process here again is any additional efficiency packages that are covered or addressed out of this section are still allowed. They're permitted, it's just we're not mandating this route or option if you choose to navigate from the bare minimum. All of this would still be accepted as a beyond code or above code type programs, processes, procedures, design practices. It's just not mandated if one were to alter from the prescriptive approach. Also, based on these proposed previous amendments that we discussed, if those are nonexistent, based on the reasons, why we would struggle enforcing this section. So again, setting the baseline, setting the prescriptive approach from a minimum code standard of energy.

#### **C407 Total Building Performance**

As above, regarding the prescriptive requirements, the thought process here is because of the way the energy code is written, it's mandatory that you go one route or the other. If we mandate performance as the bare minimum, anything performance wise is above and beyond. We're sticking to the minimum prescriptive thought process here. These options are still valid, valuable, legitimate options for energy code compliance outside of the minimum prescriptive paths, which is not mandated.

**Mr. Blais** – This, I believe we need, because we get a lot of downtown buildings that can't meet prescriptive, so they can only meet performance if you think about, or any of our high rises that have all the glass.

**Executive Officer Hyde** – So the thought process here, the deletion means that now it's not mandatory that they must go this route. It's optional and allows local jurisdictions the opportunity to amend policy, procedure, and ordinances to reflect items, such as this, as part of their requirements.

**Mr. Blais** – It's already optional. It's not like this section isn't mandated, but if you can't meet prescriptive and you need to jump to this section.

**Executive Officer Hyde** – That's where, if we need to write something to address this rather than mandate that it's required, because if they can't meet prescriptive, the way it's written right now, this is required, and they have to do this.

**Mr. Blais** – It's optional if you can meet prescriptive.

**Executive Officer Hyde** – Yes, and that's the thought process here. This would still be allowed, even though it's not required by code, it's an option. And maybe there needs to be some language that we write to clarify in rule and I'm open to those suggestions.

**Mr. Blais** – If you delete it, and they can't mean prescriptive, what are they going to do? Submit just an alternate every time? It's sure nice to have the option.

**Executive Officer Hyde** – I believe that option will still be there because these are approved industry accepted models that mirror ASHRE requirements and standards and all kinds of types of design practices that are that are valuable options, allowing the local jurisdiction, the opportunity to address and accept.

**Mr. Barlow** – It seems to me that if they can't be prescriptive, they would have to provide documentation meeting some kind of minimum standard whether that section is there or not, because they didn't meet the minimum prescriptive path.

**Executive Officer Hyde** – And I think you're onto something there, Joe, because what they provide from a performance report will indicate the minimum values or calculations that prove prescriptive has been well exceeded. So, I agree with that statement.

### **C408 Maintenance Information & System Commissioning**

**Mr. Schwendiman** – When it comes to commissioning, it does play a part in indoor air quality a little bit too, because it verifies that we're getting proper ventilation building, flush outs to get rid of outdoor contaminants. Commissioning does lead to indoor air quality, which is a health item, but it's more beneficial to the building owners than anybody. I guarantee you a majority of the preliminary commissioner reports I see have deficiencies that have to be resolved, that without those probably never be recognized and would never be fixed.

**Executive Officer Hyde** – Deficiencies in relation to what specifically?

**Mr. Schwendiman** – I see it all over the board. I've seen economizers that aren't functioning properly and not modulated properly. I've seen outdoor air not being provided, then turning reports where they're not showing the minimum ventilation requirements per IMC Code and without that, you would know.

**Executive Officer Hyde** – In the discussions that we've had, the general consensus this was a plan, that it's not verified. You're saying you actually go in and you take a look at this commissioning report as final. So, based on the commissioning and these set of requirements, you have to wait a full annual year.

**Mr. Schwendiman** – No, that's why it's preliminary reports. We get the preoccupancy, post-construction, preliminary report.

**Executive Officer Hyde** – Okay, so it's halfway complete, depending on the section that we're referring to. Maybe what we need to do is to look at this section by section to see what's practical for an enforcement piece to ask of industry and designers. Because I know when you look at a set of plans a lot of these requirements have been specified by the engineer or architect and so looking at it from our perspective. What are we asking for that's ensuring life safety and occupant welfare, such as some of the items that you brought up, and we may need to call out those specific sections, but I'm open to your thoughts there without stepping on any designer's toes from a quality control perspective.

**Mr. Blais** – Just a reminder, this section does specify a threshold limit required, so it's not required on everything, it's on certain side systems, usually the larger systems.

**Executive Officer Hyde** – That's where we need to say; why is it only required? Does it ensure life safety and occupant welfare from what specific sections?

**Mr. Blais** – There are certain sections in there when it comes to balancing and verifying ventilation and I think and there are certain sections in there that don't apply to life safety. I'll be honest, there is some, so it could dive into the health safety of the occupants.

**Executive Officer Hyde** – Do you have those sections on you right now?

**Mr. Blais** – It would just be the air balancing sections.

**Executive Officer Hyde** – A question for you, and this is open for discussion from anyone with the mechanical expertise for your specific departments. Why doesn't the mechanical code capture air balancing requirements if it's life safety?

**Mr. Blais** – Well, I think chapter one, it leaves you the option to lean into requiring air balancing and verifying. I believe there is some options in one in the residential code; there are pathways to get to air balancing. Sticking with commercial, yeah.

**Executive Officer Hyde** – I think this is a good conversation pointing back to what Mr. Barlow said, where if it is life safety that we need to incorporate. Now, when I can't control that conversation. We need to walk it back to the baseline. The foundation of the discussion is balancing life safety in a commercial setting.

**Mr. Blais** – Specifically called out for balancing. There's nothing in the commercial portion of the mechanical codes other than when you go into commissioning.

**Executive Officer Hyde** – If you would send a written comment, we can introduce it and present it to the board. I'd appreciate it.

**Mr. Barlow** – In my experience in the field with the air balancing as a former contractor, it's kind of interesting because we did commercial buildings where we did air balancing and then we got callbacks later from the occupant saying, this area is cold or this area is hot. Is there value in it? Yes, at the end of the day, the contractor's going to get phone calls if the system's not functioning properly and they're going to have to deal with it down the road. The other factor in the air balancing thing that I would like to point out is, the only way that we know that we're getting the proper amount of ventilation is through air balancing. So that that is something that we need to look at.

**Mr. Schwendiman** – I agree. You know, ventilation, when I look at an air balance report, that's my biggest thing that I'm looking at, verifying that we're getting proper ventilation.

**Executive Officer Hyde** – And maybe that's how we need to tailor the conversation to say, okay, rather than air balancing as a system, we're looking at hazardous exhaust rates, fresh air rates specific and that's the intent of our IDAPA rules is to clarify and amend code language to tailor it specifically to our industry needs here in Idaho. So, I will record it as such, and we'll have further conversation, figure out okay, what does that look like? But if you have any comments on that, please send them our way, outside of this discussion.

**Mr. Blais** – I'm just looking at that air system balancing spectrum, and it does directly cross reference Chapter 6 of the IMC.

**Executive Officer Hyde** – And that's where if it's duplicative between the codes, we can stick to one, that we have those options as well.

### **C502.2.3 Building Mechanical Systems**

This section is very similar to the discussion of C403, but specifically in relation to existing buildings.

**Mr. Schwendiman** – My only comment here was when it comes to the existing building, the newer parts of those buildings, same comments we've had for everything else would apply it here.

**Executive Office Hyde** – I think in our last code collaborative, we took that same approach for all these sections that have been tailored specifically to existing buildings the comments apply to both Chapter 4 and Chapter 5, but just opening it up for further discussion. And I'll do the remainder

of the C502 sections and open it up to any conversation in relation to the deletion proposal. This addresses lighting systems, heating and cooling system, service, hot, watering, hot water systems.

#### **C502.2.4**

No comments.

#### **C502.2.6 Lighting Power & Systems**

No comments.

#### **C503.4 Heating and Cooling Systems**

This section was not discussed.

#### **C503.5 Service Hot Water Systems**

This section was not discussed.

#### **C503.6 Lighting Systems**

This section was not discussed.

### **2018 IECC: Commercial Provisions**

#### **R402.4.1.2 Air Leakage Testing (Mandatory)**

**Executive Officer Hyde** – The proposed language amends the current IECC language to the what's listed in letter H, where it was a phased approach. With discussions that we've had with local jurisdictions, throughout the state informally, some of the contractors have brought it up during our town hall listening sessions, that there was a lot of inconsistent enforcement where the majority of the state and jurisdictions want to enforce this. They don't have the ability or the mechanisms in place within their department to enforce. Looking at it from a perspective, and those that are enforcing, how are they enforcing? Are they failing jobs? Are they providing recommendations? These are the type of items that have been discussed so far, tying this back to the life safety component. If you go to the IRC amendments on page four and letter I, the Building Code Board had deleted section R303.4, which regulated the air leakage rate of a home. The Building Code Board amended to say, you do not have to follow the less than five air changes per hour. We deleted that entire section, and every new residential construction home shall have mechanical ventilation address per the mechanical section of the IRC. That's the way the Building Code Board has taken it from the building ventilation section of the building code. And then we failed to capture that same approach here under the energy code, which was duplicative of that R303.4. We went with this approach, so from both perspectives, building code and energy code, they weren't on the same approach. Looking at that, in the decisions of the Building Code Board, every home being mechanically ventilated at this point, along with the enforcement practices that are occurring in the inconsistencies that exist. How is this life safety, was the thought process and it was hard to answer that question because every home is mechanically ventilated to provide that good indoor air quality according to M1507 as amended by the Building Code Board. I open it up for discussion.

**Mr. Lacey** – There is a very direct connection to health and safety when you're talking about the tightness of the envelope and the mechanical ventilation provisions because this is indoor air quality. It is not enough to just say that mechanical ventilation shall be required, you have to know how much mechanical ventilation to add to the building. And I don't know how you determine that without an objective air tightness test. There's also such a thing as too tight of a building envelope

with not enough mechanical ventilation and I gathered the intent of this proposed amendment is to delete any requirement for a leakage test. Again, I think that's a very dangerous thing to do. It could be that the home is very leaky and you're going to lose a lot of efficiency and you're going to have a lot of outdoor air infiltration, bringing in allergens, insects and smoke and everything else. But it's also possible that the home is so tight and so efficient that the occupants are not getting adequate fresh air and that is a health and safety issue. And so, I think that the two provisions, one in the IRC and one in the IECC need to work hand in hand. The IRC regulates the amount of fresh air that you need to bring into the building, but the IECC regulates how tight the envelope should be. You can't really have one without the other. Idaho already has a very relaxed air tightness requirement and doesn't require the same level of air tightness and testing as many other states, but to completely delete the testing requirement, and just say that it's voluntary or that it could be visually inspected, which really doesn't work. If you look at any of the data out there. I think this is not a good idea. I would strongly recommend keeping the IECC requirements for tightness testing and ventilation, and to keep the building occupants healthy. Thank you.

**Executive Officer Hyde** – I appreciate your comments. We've had this in place for quite a few years now when it comes to a visual option dating all the way back to the 2009 energy code where visual options were allowed. Mechanical ventilation is being brought in at the rate specified by the IMC or Part 5 of the IRC so those ventilation rates are calculated based on the size of the home and fresh air being introduced. The leakiness of the home through visual air seal and about roughly the majority of the jurisdictions in the state has been an accepted practice for years now, since the adoption and enforcement of the 09. What we were potentially saying that in that breath is that all of those homes are unsafe because there's only a handful of jurisdictions that even enforce a performance test.

**Mr. Lacey** – The air tightness test originally began as kind of one or the other in the code going back to the 2009 IECC. There was either a visual inspection where the code official would verify a long list of measures and to see whether they've been achieved, or you could receive a test. But starting with the 2012 version of the IECC, and in every edition since then it's been a mandatory test for every new home and there's a good reason for that and the tightness level has ratcheted down as well. It doesn't just save energy, but it also keeps the occupants of the building safer and healthier. There's just no substitution for a blower door test. Even a very trained code official with a very good eye is not going to be able to tell you the difference between 3 air changes and five air changes per hour. A number of states had kept this exception open for a long time. Virginia was the most recent one that finally eliminated the visual inspection option, just because the range of results they were getting was all over the map. Code officials thought that the building was tight, but there was a garage door that was not quite sealed correctly. And if you have a huge range and leakage, I suggest keeping this objective test in place, just so the code official will know, and the builder will know, if there's an issue with the home.

**Executive Officer Hyde** – I appreciate your recommendation. I just have one final question that I have for you. Walking back to your statement of air filtration maintaining life safety for the occupants, because it keeps outdoor air and smoke from coming or entering into the building. I mean, isn't that already being brought in when we address mechanical ventilation for every home?

**Mr. Lacey** – Yeah, this question comes up a lot you want the air to come in, in the designated location you want it to come in through a filter through your HVAC system you don't want it to be seeping through the interstitial area between the force of the building. You don't want it to be seeping through the attic, the garage separation wall, for example, where you might have a car parked with all sorts of volatile organic compounds. So, yes, you do want fresh air to be coming

in, but you want it coming in through your mechanical ventilation system not through the leaks in the envelope.

**Executive Officer Hyde** – Okay, thank you. And I'll open this to anybody that is aware of a residential HVAC system that removes smoke.

**Mr. Barlow** – Typically, the mechanical ventilation is dealt with a duct to the return air side of a furnace. Homeowners can put whatever filtration system they want on their furnace. Unless you have some kind of hepa filter, you're going to be getting the pollen. You're going to be getting the dust. You're going to be getting the smoke through that filter, it's not going to stop it. I humbly must disagree with Mr. Lacey; you're still going to get it through the mechanical ventilation system. This doesn't prevent it.

**Executive Officer Hyde** – Okay. Thank you for the comment.

**Plumbing Program Manager Nielsen** – But does this also take into consideration like, my girls that will leave windows open, the doors open as they run in and out? It doesn't matter how tight the house is, we're moving in and out. You're going to get smoke, whatever in there. I'm still waiting for somebody to show me the statistics on a nice tight house that is getting mechanical ventilation in there compared to these other ones, and people are getting sick and ended up in the hospitals or anything else.

**Mr. Lacey** – Let's not get hung up on the smoke I have a hepa filter on my furnace and it takes all sorts of particular matter and allergens out of the air. When my allergies in particular improved significantly as a result, it's not just smoke, it's everything else that's in the air. Thank you.

**Ken Burgess, Idaho Building Contractors Association** – I think on this matter, the biggest challenge that you kind of pointed out is, is the inconsistency and the sometimes inability to do the test and/or any kind of way to enforce the matter. So that's the challenge that my builders face out there all the time. As you know, some testers are not available in some jurisdictions. Different jurisdictions have adopted different standards as to how many houses have to be tested and so in that regard, that's the biggest reason. I know that at least from a home builders perspective, they're in favor of eliminating that requirement, not opposed to maybe making it optional.

**Damon Woods, U of I Mechanical Engineer Professor** – I would just note that yes, perhaps, people don't put in very tight filters on their furnaces and that can introduce pollen. But at least homeowners are given the option of putting in a hepa filter that can filter out pollen and smoke. And that's an option in a tight house, but a leaky house, no homeowner has that option. Radon, mold from insulation in the walls, if it's not well sealed that can just leak in. This provision actually provides homeowners at least an option, even if they don't put in a very tight filter, better air quality and that is a life safety issue. I have heard the comments that it's a challenge in some districts to have these blower door tests and Mr. Hyde, you mentioned that visual inspections have been done in the past does that mean current buildings are unsafe. I would say just because something has been done poorly in the past, I don't think that's a reason to continue doing it poorly in the future and that blower door has really can improve life safety in Idaho. thank you.

**Executive Officer Hyde** – Thank you Mr. Woods, I appreciate your comment.

**Matt Vandermeer, Momentum** – As a tester of homes you were talking about mechanical ventilation. I've seen in many homes just over this last year how clearly mechanical ventilation is vented out. We have tested. No pressure flows, not connected to the return side, just looks like it is. There are many different options, and you talk about having mechanical ventilation when it had been done very poorly. That's one of the biggest issues that I see in this, when it is done, it's not very bad.

**Executive Officer Hyde** – There's a lot of factors that you listed when you were specifying the details that come as part of the installation. And the installation, whether it's on the contractor or the local inspector to ensure that those duct installations are made correctly according to the Part 5 of the IRC. That's not a ventilation design that's bad, it's the quality of the home. But if the installation of those ducts and systems were installed accordingly to the mechanical code, would that alter the ventilation what's provided to them?

**Mr. Vandermeer** – Sure, but from what I've seen, it is not happening

**Executive Officer Hyde** – Okay I just wanted to clarify.

**Mr. Blais** – This section is about envelope tightness, and I think there are a lot of studies out there that show that this is the biggest bang for your buck. Right? Energy savings is having a tight envelope. But you're proposing just a visual option when there should be a testing option. There should be both available. I mean, the way it reads, I think we negotiated last time at least test one in every five to see where people are at, which is nice to test and see where you're at. But throw out the whole testing option now, I think is not a good idea. It should be there as an option.

**Executive Officer Hyde** – And when you're saying allowed for the option, taking a similar approach to what we discussed with commissioning and alternative building performance paths. If somebody provides an air balance report to a set of standards, maybe we keep the standards is what you're referring to in the last, because it provides that option, but it also provides some framework on what type of testing requirements there are if they choose that path. Your thought is, if we delete it and we just perform a prescriptive visual type of inspection through the building. If somebody were to come to the city of Boise and say instead of doing a visual here's a performance test, would you accept that or do you need that in writing in order to accept that?

**Mr. Blais** – We would look at it, but it's sure nice when it's all outlined right there on your resume. And if they follow that, it's great.

**Executive Officer Hyde** – Do you think Mr. Burgess, for those that you represent, your builders, do you think that would present an issue of having that as an option?

**Mr. Burgess** – It's an option. I think there would be some builders who would choose to do that, quite honestly.

**Executive Officer Hyde** – Is that something that you would incorporate into your process, preconstruction, for them to identify? Just thinking outside the box here. What does that process look like for a builder submitting a permanent application to tell your staff whether they need to do a visual inspection? I'm just trying to think consistency. I'm trying to take into account some of the comments that were made throughout the state about the inconsistencies just to make it user friendly, if you will. I just didn't know if anybody either had that process developed currently.

**Mr. Burgess** – I think around 2016 we were hired as a third party in the city of Boise to do visual inspections and if it was missed, then we did the blower work for that builder at the end.

#### **R402.6 Log Home Insulation Requirements**

**Mr. Blais** – I can tell you that this was brought forward by the log home industry in the past, and they were pretty involved in providing that amendment and they were agreeable to it.

**Executive Officer Hyde** – Do you know who those individuals work or name or association? Because we still want the permissive requirements, we just want to capture the lighting systems, mechanical systems, plumbing systems, and then allow them the opportunity to provide risk check in lieu of the prescriptive table as necessary, or needed for them to achieve envelope requirements, but not mandated, we want it to be an option for their industry.

### **R403.3.1 Duct Insulation**

This section was not discussed.

### **R403.3.6 Ducts Buried within Ceiling Insulation**

Next section R403.3.3 ducts buried within ceiling installation, and I'll just open it up to 403.3.7. The proposal amendments that are existing were brought forward last year due to duct installation requirements being mandated out of the energy code when we were in a shortage of flex duct supply due to the COVID situations that were present that affected the global supply chain. We made this amendment and since June of last year, the only location where ducts had to be insulated were in the attic and they had it be a minimum of R8. The way this draft has been proposed is the insulation requirements are not required.

**Mr. Schwendiman** – The way it's written, we're deleting all of 403. Not just the amendments that have been made. I defer back to the same thing with the duct installation in an attic. I mean, you got a chance there for a wood framed home, where the duct above the installation for that to sweat and create a mold issue in the attic through that water dripping down and into the structure. I think I would like to see us keep it as it was amended, even if we just stick with that amendment, just in the attic. That's the most important part in my opinion to have that duct insulation. I have talked to the various contractors; they'll say they're not having issues with flex duct anymore. They're not having issues, getting duct installation. The other part of this that I would like to see us keep and maybe change it a little bit, is the duct testing. Instead of making it mandatory make it an option because otherwise, how are you going to verify ceiling? You're going to have to add an additional inspection for production.

**Executive Officer Hyde** – Let's table that one, because I want to come back to duct blaster testing. Okay let's discuss just duct installation for now. Tying it back to your comment of what you said, there are no longer being a supply chain shortage. Would you propose to the board that they remove this amendment because flex is in supply now? What's your recommendation?

**Mr. Schwendiman** – I would like to propose that we keep an insulation required in the attic. That's where I feel as though there's a health saved health life safety aspect. You know, that's what we're trying to get to, is health and safety. I can't tie it to insulation anywhere else in the structure other than in the attic. Yeah, maybe in a ventilated crawl, but the jury's still out on that location. I think we all can agree there's a potential for condensation mold and mildew there.

**Mr. Barlow** – I'd like to see this deleted from building and moved under the HVAC. I think we really need to push to get this stuff to the umbrella it needs to be under. We can deal with it.

**Mr. Schwendiman** – Just a follow up to Joe, I don't disagree, but we can't delete it. In the meantime, we need it somewhere. It is a health safety standard and I agree. We need to get it under the purview of the mechanical board until we can do that. I think we need to keep it in code here because it is a health safety issue.

### **R403.3.7 Ducts located in Conditioned Space**

This section was discussed under section R403.6.

### **R404.1 Lighting Equipment (Mandatory)**

Delete and replace with the following. This is requiring that 75% of lamps and permanently install lighting fixtures shall be high efficacy lamps, or a minimum of 75% of the permanently installed lighting fixtures shall contain only high efficiency lamps.



**Mr. Schwendiman** – Anytime you mandate a certain type of light fixtures or lamps to be put into a home, if they put all, say CFL lamps, and homeowner takes that house, then they don't like those, they're going to take them all out anyway. So, you can require it and end up putting the cost onto the consumers and onto the contractors and most of us. They're going to still have the choice in their own home to alter the way they see fit the second they are in there.

**Executive Officer Hyde** – Thank you for that comment. This is where I like an enforcement perspective, we need to tailor a lot of things back to a pragmatic approach. What are we really going to gain, because you can take that same point and apply it to a lot of these sections in the energy code in a residential setting. Yeah, I can install a three and a half ton AC system because the manual says so, but as soon as you leave, I can pull a retrofit permit and install a four ton one if I wanted to, without any enforcement in a majority of the state, there would be no enforcement. So what are we really guaranteed by requiring this? Just during the initial construction, whether it's lighting, heating, and cooling what are we really gaining? Is there a thermostat in my house that says I cannot go over there when it's 105 and set it to 68 if I wanted to? Now, will the system do it; probably not. Where are these efficiencies really being realized? Are homeowners educated enough to understand what they're purchasing? Are we just assuming here? This is part of the conversation we really need to consider. Tying it into life safety, what are we gaining? What's overly restrictive, where the cost our consumers are paying for are really being realized and without that education piece, I don't think it is. Or it's hard to pinpoint where. I've read Department of Energy efficiency standards, and the cost between the 2012 to 2018, specifically tailored for Idaho, based on their amendments. You're talking an annual energy bill that encompasses water heating, heating, and cooling, lighting. The average bill for an average size home, based on the square footage is about close to a thousand bucks a year. That's great. If I use it as its design but I don't know that as a homeowner. They're going to set that thermostat. They're going to open windows and doors as needed. How much cost did that put on me on the front end to build my home, and that's depicted in this report as well. I think that's what honestly the governor's office, through the executive order, is asking for industry to discuss. What barriers are created through the building code promulgated rules that Idahoans are experiencing? What are we truly regulating here? Should we be regulating this? A lot of people move to Idaho, so that way they can build the house the way they want to. We don't want to lose sight of that. It's something that we need to consider when it comes to your point. Let me digress, going back to lighting requirements at 75%. We are all homeowners here to some degree and when a light bulb burns out, LEDs don't last forever. I've had to replace them. Did I replace it with the right efficacy? Probably not, but in a retrofit setting, how is it an enforcement piece if we're not insuring it throughout the entirety of the home and as occupancy changes. That has been expressed. There's no guarantees. So, what are we really achieving? That's where we've got to sit down and really evaluate this energy code. Building envelope, we haven't changed a thing that we can fill out that perspective analysis because it does live with the entirety of the home as the home changes occupants. That does not change unless they start removing walls. Changing out installation in their ceiling, adding more. We haven't touched any of that, but the things that we can't control or regulate from an enforcement piece throughout the entirety of the home, we really have to look at. What are we requiring? It doesn't drive up the cost of construction, so I appreciate your comment.

**Mr. Lacey** – I went and pulled Idaho's residential field study, which is where we took a sampling of actual homes built in Idaho. This is back in 2019, I believe. One of the things they looked at was compliance rate with high efficacy lighting. At the time, Idaho just required 50%, high efficacy lighting. What they found was the average statewide was 88%, and in fact, 98% of the homes

complied with the 50% or more. Most of them were at or close to 100%. Lighting is one of those simple straightforward things that the consumers are actually okay with. And LEDs don't last forever, but the difference is an incandescent bulb will last four years or so on average and an LED twenty, depending on usage and other factors. But lighting is a very simple thing to implement. It does save a lot of energy. It's cost effective within the first year. We've heard, anecdotally, the concern that a builder might put in LEDs and then swap them out for something less efficient. I have not seen that backed up by any data and it certainly hasn't been our experience out in the field. So, I would encourage you to leave in the 75% requirement. Going forward, the code does get more stringent in the 2018 version of the code, it went up to 90%. It's basically 100% in 2021 and that's one of those provisions that's largely complied with around the country. So, I would encourage you to keep this provision. Thank you.

**Executive Officer Hyde** – Thank you Mr. Lacey, we appreciate the comment for further conversation in relation to this topic. Our electrical program manager is here, and he can speak to that but not questioning the validity of the report. I can just speak for what our division does, and our division has jurisdiction for the county and most cities for the electrical enforcement program. Our electrical inspectors used to go around and affix pink stickers that said whether the house met the lighting efficacy requirement, whether it was verified.

**Electrical Program Manager Wing** – The reality of it is, our guys aren't going to go and take covers off of fixtures and investigate fixtures. So everything we did, we just put 'cannot verify'.

**Executive Officer Hyde** – I question how that 88% of homes was calculated or measured. I couldn't find the report that Mr. Lacey was referring to and I may have overlooked it where they tracked that information. Again, not poking holes in the report, just knowing that we do the majority of the jurisdiction, and I know for electrical lighting systems we were asked to do at one point in time from our energy program manager. A lot of those stickers were marked as 'could not verify'. It is something that we need to tie back to the conversation in life safety.

**Tyler Perot, city of Meridian** – Obviously lighting can easily be associated with life safety, in terms of egress but that's typically in a commercial setting. We don't have emergency systems in a home for our lighting, but even the lighting industry has taken a massive turn in the last 15 years with eradicating incandescent lamps, for the most part. You can still find them, but very rarely. And most people like Mr. Lacey said it's pretty self-explanatory and one of the few things in construction and materials that people can understand easily. And if you invest the money in the light bulbs, and you watch your electrical bill change, you see that and you will continue to follow that path, but it also depends on how you work your house. Do you want someone telling you and mandating what light bulbs you have in there? How do you enforce it in the future? What level of enforcement do you have for turning over new homes? Are we going to go through as inspectors and open every single light fixture? Not necessarily. It has gotten to a point with lighting being so efficient, especially residentially, that it doesn't need to necessarily be mandated.

**Executive Officer Hyde** – I appreciate that comment because we can tie that into our heating cooling and water heating appliances. They're becoming so efficient. It's almost at a point where it's moot to mandate because the supply already meets the efficiency requirements, or in this case efficacy. I appreciate that comment. The way the draft is proposed is that we delete that section and defer back to allowing the market to regulate based on consumer desires and consumer needs, build their option type of an approach. The next three are where you're recommending deleting section R403, which is mechanical system or systems, it doesn't encompass some plumbing and I open that section up for conversation.

## **R403 Systems**

**Mr. Schwendiman** – As I said earlier, I don't think we should get rid of the duct blast testing altogether. I think, in this way it's written in code, it's mandatory. I think we should allow a visual or as an option duct testing because that allows the contractors a pathway if they want to insulate seal and insulate everything, and I must make two trips the option to be able to do so. Just because it saves everybody time, saves everybody an extra trip to the site. There's not really a life safety issue to duct sealing that I can come up with, but sealings required in the mechanical code. So, it just gives you a pathway to be able to utilize your jurisdictions to be able to utilize otherwise you're going to end up with stuff all over the board. Some jurisdictions are going to require a visual inspection only. Some people are going to defer back to this and give them the option for a duct blast test. But at least if you leave it in there, it gives the industry the option of either one.

**Executive Officer Hyde** – Right now leaving it in there it would require a leakage test, a performance test. There is not a visual option path currently on the 2019.

**Mr. Schwendiman** – No, duct sealing is required in the mechanical code. So how do you verify that if you're not seeing it?

**Executive Officer Hyde** – That's a valid point. You can correlate that directly to our envelope testing. They do a visual test. I, from an inspector's point of view, think I would be more confident verifying a duct sealant test than an air sealant test. I think the duct sealants are easier in my opinion. But I opened it up for conversation, if we think that a visual option suffices for duct sealant like air leakage for blower doors.

**Mr. Barlow** – I think we need to approach this through the mechanical board and get the duct blaster test as an option under mechanical. I just don't see where this needs to be in the building code. I think we need to go that route. The code, if I remember correctly, it just requires duct sealing it doesn't provide you a method that you have to verify so either method in my mind would be an approved method. It would be up to the contractor. Do you want me to make a special trip, a special inspection to visually verify it? Or do you want to do the duct sealing? If it's something that there's a concern for, jurisdictions? Not having the verbiage for language. I really feel like that's something that we should address with the HVAC board and get it in their purview.

**Mr. Schwendiman** – Agreed at this point in time, we just don't have that language in there. We need that language because I've heard just in the last week some jurisdictions say they're going to stipulate visual inspection only. It's going to create an extra trip for everybody. Because the duct testing won't be in code anymore so it's going to add additional inspection just like in commercial right now. There's none other than underground ducts and unless an engineer specifies, a pressure test for a medium pressure, high pressure, duct system. The only way to verify duck sealing is to go out and visually inspect it. It's going to come down to the same thing and I've heard jurisdictions that are going to require that extra inspection, that extra trip, without the parameters and codes to be able to test too.

**Mr. Barlow** – The code doesn't specify that it has to be done visually. So where are they coming up with that? Their jurisdiction can't enforce that. It's not written that way. It's written as ducts have to be sealed. How it's verified that it's sealed should be left at the jurisdiction. If they want to accept either method, they need to relay that to their contractors. We will take either method.

**Mr. Schwendiman** – That's where they're getting it from. How do they verify it? Because the code requires it to be sealed. You've got to verify somehow, so they're going to require visual. Myself in the city of Boise, I would still defer to the duct testing as an alternative to visual inspection because it saves everybody a trip.

**Executive Officer Hyde** – I have a question when it comes to the trip in the additional inspection. So why wouldn't the duct sealing inspection be done at rough? And when the ducts were installed.

**Mr. Schwendiman** – If it's insulated already like an attic, how are you going to verify it? If they're running hard metal? Because some people are due to project shortages and to seal the duct and insulate the duct you have no test how do you verify?

**Executive Officer Hyde** – But isn't that already not okay. I apologize, not going into residential because majority of residential is flex right? Where most contractors will leave enough insulation back so you can see that ceiling connection at one phase of the inspection, but I know in a commercial setting, anything based on Chapter 1, you have your approval to cover and so it's already integrated into an existing process. I see your point. If they're running a hard pipe in a residential setting, it would follow suit to a commercial. But it's not concealed in an attic, so insulation can be verified and same within a crawl. There's no reason why we bought all our inspectors have ladders specifically for that reason.

**Mr. Vandermeer** – Health and safety for disconnected duct work, there are issues. When there's water in the crawlspace there is a problem with mold. I agree with Joe Barlow, it should be on the HVAC board. Visually, it's very hard to see even when we do a test, you can't find where leaks are sometimes. So, there's a health and safety issue there. My crews tested twelve houses today, five failed the duct blaster. Disconnected duct work in the crawlspace, in the attic, sucking up attic insulation into the furnace and safety health.

**Executive Officer Hyde** – We may have to have a detailed discussion from industry, not because I'm implying that the approach is wrong by any means. It may be a discussion that we need to look at with the board on why it would be different for performance tests on duct blasters versus blower doors. Why do we allow visual on one and not another? And you were in the business Matt, so you probably have a lot of that data, but anyone that has any type of data supportive data specifically in relation to blower door performance tests and measuring houses that would help this discussion and what we do moving forward. So, if anyone's aware of any of that, please let me know, and we'll dig in and supply it for discussion purposes. Yvonne brought up the point, look at the duct section of whether it's residential or commercial. The IRC, Part 5 have addressed duct construction in sealant and installation practices and installation practices, not the value, but how you wrap a duct. How is that essentially insufficient where the energy code takes precedence, or it adds to and when we have that conversation at whichever board, we discuss with. We need to look at those differences to figure out why does the energy code capture this? But not the IMC who heavily regulates duct construction. Whether ducts are disconnected and creating a problem, that's part of the inspection process according to the IMC or the IRC. The energy code doesn't capture that. So, something to consider.

**Mr. Schwendiman** – So, back to my original statement, I just want to hold it available as an option and we should put it under the mechanical board, but until then we should leave here as an option.

**Mr. Barlow** – I think your jurisdiction has it as an option in the mechanical section, because it doesn't specify. Any jurisdiction that's mandating it without getting it in city ordinance is stepping outside their purview of their authority. Because the only way you can enforce something outside of what the state has adopted is through city ordinance. So, someone who's saying, we want it visually mandatory. We want to see that without going through their city ordinance. I think they're overstepping their authority.

**Mr. Schwendiman** – Well there's the person I talked to that says that the code doesn't stipulate one or the other. So, it's up to them, it's open to interpretation for how they want to enforce it and

the code requires it to be sealed. For them, they're going to require visual inspection if there is no duct test.

**Executive Officer Hyde** – That's something we need to be mindful of is how we write these codes. We want them clear and concise, as black and white as possible to try and eliminate any ambiguity or any differences in interpretation.

**Mr. Barlow** – I don't disagree with you. I don't see anything wrong with putting the verbiage in there that either way is an option.

**Mr. Lacey** – I put a link in the comments to the data, which is sortable. It's an Excel spreadsheet. This is the data behind the Idaho residential field study. There's a question raised just a minute ago. Is there any data to support the claims? Here's some data you can go to. What you'll find there specifically related to duct tightness testing environment was for CFM or a visual inspection. But if you look at the actual tested level of duct leakage, it's in column CC and you can sort it. Just based on which of these homes were tested for air leakage. The range of air leakage went between a low of 3.22 CFM to a high of 64. There were five homes that were over 40 CFM and what we found in a number of States is that when the test is not required, sometimes the leakage rates are much higher. And for that reason, in 2021, every home is just required to be tested whether the ducts are inside condition space or not. The duct tightness test is very important. We've already heard some good testimony about this. But again, this is an objective test, either the house passes or it fails and you can see from this data that some of these houses have failed by a lot. The homeowner is going to be very disappointed in how well the home operates. The system is going to have to run longer and you're going to have condensation issues and you're going to have air quality issues. I would encourage you to use this data that was only 3 years old from Idaho homes that were built and allow that to guide your decisions that tightness is an area where Idaho needs to keep working because consumers are not getting the four CFM. That's in the code that I think they're expecting to get.

**Executive Officer Hyde** – I appreciate this data; I think it needs to be evaluated which is part of the process. One thing we do really need to consider is all the variables that come into play here, there's a lot. We've got to think about 4% leakage per so many square feet of living space. How do you directly correlate the linear feet of duct to square footage, especially on sizing principles? It's no longer tonnage per square foot, that went away years ago. There is a lot of things in play here that we need to look at with new innovative technology. You don't see a lot of the spider duct systems anymore, so trying to correlate length of duct, linear feet to a square foot of condition space is that applicable to Idaho and our design practices. What's already captured in the IRC comes to duct construction to Yvonne's point of what's already captured that failing to be enforced on the mechanical side, or the building side. Maybe a large part of it is a lot of mechanical inspectors throughout the state are pointing to the building inspector to enforce building inspector pointing back to the mechanical inspector. We have a lot of inconsistency. I don't know, I think there's a lot of variables that we need to consider here. Circling back to life safety, duct leakage, depending on where the ducts are located, depending on the season, and the outdoor temperatures, or the surrounding temperatures is condensation being produced on the exterior of the duct or the interior of the duct. Those are the things that we need to consider when we're talking about mold specifically structural damage. Okay when does it occur? When is moisture produced? It'd be in the heating system during the winter for it to be on the interior. It'd be in cooling mode for the during our seasons, and our design conditions where there's condensate on the exterior. But I've been in my attic in the summertime right now and I know it's and that doesn't last long. Now in the winter where there is for wood moisture, and then even producing condensation. That happened

in the wintertime in the crawl but it's wrapped and insulation as well. Now we amend it. But how does that moisture go from the interior of a metal duct to the exterior of the duct. I don't see it happening.

**Mr. Vandermeer** – It's just that mold and it's also fumes from the garage they are also part of cut sealing.

**Executive Officer Hyde** – The amendments to the energy code of what they're forcing on manufacturers, the leakage rate of the cabinet of your air handler, and that's been captured through the federal mandate. When we're having these discussions, we need to look at all variables not just the overall big picture, how does it apply to Idaho? How does it apply to our industry?

**Plumbing Program Manager Nielsen** – With the five houses that failed today, what is the process now?

**Mr. Vandermeer** – All we do is take pictures, show the HVAC company what the issue is and then they go back and fix it and then we go back and retest.

**Mr. Barlow** – I don't think that a lot of these items are being disputed by anyone. I don't think they need to live in the energy code. I think they need to be moved to the mechanical sections of the code through IDAPA rule and it would make it a lot easier for all enforcement contractors and everyone to mitigate these items.

**Plumbing Program Manager Nielsen** – I don't think there's going to be an issue with that from the HVAC side. Where I think there would be an issue is industry. I just wonder how big a fight we're going to have because others coming in and wanting the whole thing, and not having it tailored to the specific trades and electrical.

**Mr. Schwendiman** – That's where we go back to negotiations within those boards between the industry of the board and all parties involved. And I think we've done some pretty good work on that in the past with the boards and negotiating.

**Executive Officer Hyde** – Has this topic ever been discussed, to your knowledge, with other boards in relation to these requirements of MVP?

**Mr. Blais** – There's been some discussion about it. Bill has been at some meetings with people in the past. I think the chairman went to the mechanical board at one time in the past.

**Plumbing Program Manager Nielsen** – I know I've gone to the building board about this specific topic and was told it lives here.

**Executive Officer Hyde** – It's something we're looking at. We're trying to find a solution. We can't vocalize anything until we get some solid answers on what we can do. When it comes to the equipment sizing, we know that's covered in the mechanical code. That's duplicative. There's ventilation here again, the efficacy of the fan is not captured in the mechanical code. However, the ventilation rates and the ability for mechanical inspectors to require or ask for some type of measured report is there, it exists. I hope that the intent is, are we removing enough air? That's why it's efficient from a life safety perspective when it comes to the dollar on what's saved. And that's not in our legislative intent unless it's on the front end for how much it costs to build a home.

#### **R404 Electrical Power & Lighting Systems**

The Division amended this section to read 75% along with that amendment that we previously discussed of 75%. This section is being proposed to be removed.

#### **R405 Simulated Performance Alternative (Performance)**

**Executive Officer Hyde** – The proposal has this section being deleted similar to the same commissioning reports as options. We're trying to set the baseline for the minimum life safety.

Any of these options are performance based of course, are above and beyond code and would be accepted in the direction that we're going. It's just not mandated that way. If you must comply with the entirety of this section, we leave that up to local jurisdictions discretion in policy, we just set the minimum prescriptive requirements is the intent here. Are there any other topics on the agenda that anyone would like to discuss, or final comments?

**Mr. Burgess** – I just want to clarify to the discussion at our last meeting, the addition of garages and shops.

**Executive Officer Hyde** – The energy code has two chapters for definitions, residential and commercial. We have amended based on a public comment and request the definition of conditioned space that it shall not apply to garage spaces or detached shops or detached accessory structures. Included in that was anything that's not defined as a dwelling unit that not considered conditioned space, it would be treated like a garage. Unit heaters can be installed without perimeter foundation installation or wall installation or ceiling installation. A mini split. It would be permitted and not be a violation of the energy code. That is something that has been requested between our last meeting with the building code board on June 14 and now, so this is new to the board. They will see it on Tuesday. It has been well received from industry from the feedback that I've been getting. It provides a lot of clarification for local jurisdictions. The intent was, we want to guide people to a safe permit and inspection process. We thought it was imperative that we had some type of definition to allow for this exception. I just want to provide an outline of what occurs next. We're still in open comment period, public comments are still being received. If you have anything, get it in as soon as you can. I want to get it in the board packet, and I want to get the board packet out as quickly as possible because this packet may be quite large due to all the public comments that we received and supportive documentation, which I'm very appreciative of. At our board meeting on Tuesday, the board will go through a second sixty day negotiated rulemaking process and then the board will start their board meeting based on public comments discussion during the negotiated rule making. We'll run through the rule red line again. We'll run through the process. The comments that we've received both written verbal at these meetings to summarize and capture the entirety of the state and then open it up for anybody that's in attendance to speak, and then we'll go into the board meeting. At the end of the board meeting the board will vote on the draft proposal with any amendments as necessary. We're going to take these rules and go to a proposed status. In September, we are going to officially notice it up that the Idaho Building Code Board is going to plan to go through the negotiating rule making process. It'll be in the September bulletin published by the office of rules coordinator, at which point in time, we'll have two follow up meetings where we'll have opportunity to make any changes as needed to this draft proposal before it goes to a pending status, and then sent down to the legislature at the 2023 legislative session. There are more meetings to come, negotiated rulemaking and a board meeting this Tuesday at 9am, then an additional two negotiated rulemaking hearings occurring in September and November, we have to have them sixty days apart. Again, open public comment will be open between those two dates. I appreciate everyone's involvement. I appreciate all the comments submitted, it's very helpful. It's helpful for our division with answering the prospective analysis and providing additional feedback to the board. I'm going to collect all these and we're going to discuss it with the board on Tuesday leaving no comment unseen. Thank you.

The meeting adjourned at 11:34 a.m.