

October 3, 2023

Mr. Douglas Parker
Assistant Secretary of Labor for OSHA
U.S. Department of Labor – OSHA
200 Constitution Avenue, N.W.
Washington, DC 20210

Re: Docket No. OSHA-2021-0009 – OSHA SBAR/SBREFA Panel on Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings

Dear Assistant Secretary Parker:

We wish again to thank the Occupational Safety and Health Administration (“OSHA” or “the agency”), the Small Business Administration (“SBA”) Office of Advocacy, and the White House Office of Management and Budget (“OMB”) Office of Information and Regulatory Affairs (“OIRA”) for the opportunity to participate during the Small Business Advocacy Review (“SBAR”) / Small Business Regulatory Enforcement and Fairness Act (“SBREFA”) Panel (“Panel”) meetings as Small Entity Representatives (“SER”) in the early stages of the rulemaking process for a potential standard entitled, “Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings” (Docket No. OSHA-2021-0009). We participated as SERs during the September 18 and 19, 2023, Panel meetings, and submit our comments jointly as businesses with similar interests related to this rulemaking. We are pleased to submit the following comments, and very much hope that the Panel gives meaningful consideration to them as it develops and delivers its Final SBREFA Report.

By way of background, we provide roofing contractor services, including roofing, waterproofing, maintenance and repair, and inspections, on a number of projects in different parts of the country. Although our numbers fluctuate a bit, we tend to have around 35 and 65 employees, respectively. The common thread among us, as well as our fellow SERs and other employers, is that we are responsible employers who care deeply about our employees’ health and safety. As we mentioned during our Panel meetings, safety is a core value of our company culture, and we treat our employees like family.

During the Panel meetings, it was evident that, like us, our fellow SERs, and we expect other employers, have significant experience implementing thoughtful and effective heat illness mitigation programs – both where required in State OSH Plan states, and on a voluntary basis – for years. We have learned valuable lessons about the practices and policies that most effectively prevent and mitigate heat illness, as well as those that are less effective or entirely ineffective. Based on this work, we also have an understanding of which efforts impose burdens that substantially outweigh any benefit and those that are unworkable or untenable at most workplaces.

The comments we share here represent our collective wisdom from our personal experiences, from what we learned from other SERs during the Panel meetings, and from

what we know of other like-minded, responsible employers. Our motivation here is to ensure that if OSHA promulgates a heat injury and illness prevention standard, that it is effective in its purpose – protecting workers from heat illness hazards – and reasonable in the burdens it places on employers, including small businesses.

GENERAL COMMENT¹

1. The Standard Should be Flexible, Performance-Oriented, and Centered on Training.

More than any other comment we heard during all six of the Panel meetings, almost all, if not all, SERs repetitively and consistently stated that any potential standard must be flexible and performance-oriented because there is no “one size fits all” approach to regulating heat. We wholeheartedly agree. While employers have similar goals, their approaches, by necessity, are very different. Crafting the standard as a performance standard makes sense at least in part because of the diverse set of industries OSHA intends to regulate, but also because of the complexity associated with assessing and mitigating heat hazards. There are myriad factors relevant to determining whether heat is hazardous. For example, as set forth in the ANPRM, relevant factors include, but are not limited to: geography; air temperature; humidity; wind; direct sunlight; individual risk factors, such as gender, preexisting conditions (e.g., obesity, diabetes, hypertension, cardiac disease), use of certain medications or illicit drugs, age, fitness level, alcohol consumption, prior heat-related illness, and lack of access to air conditioning in housing; physical exertion; the ability of surfaces to absorb heat; PPE; heat-producing processes and equipment; climate control; placement of windows; and the vulnerability of the energy grid. *See* 86 FR 59309 (Advanced Notice of Proposed Rulemaking for OSHA’s Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings (“ANPRM”)) (October 27, 2021) at 59319. Based on the factors that OSHA has determined are impactful and relevant to this hazard, even within the same industry or company – and at times even within the same **facility** – there can be still substantial variability with respect to hazardous levels of heat.

Additionally, there are countless effective approaches to address heat hazards. While there are some common threads in the approaches employers utilize to mitigate heat hazards – namely, implementation of administrative controls and provision of robust employee training – there are many more differences. For example, while some employers may be able to implement the “Rule of 20%” for purposes of acclimatization, others, as many SERs mentioned, may not. Additionally, although some employers may be able to install new or upgrade existing air conditioning systems, for others, particularly small businesses, as discussed at length by SERs,¹ including specifically during the September 12, 14, and 18, 2023 Panel meetings, this would be cost prohibitive and/or technologically infeasible. Quite simply, there is no way for OSHA to effectively regulate heat illness hazards through a prescriptive standard. Accordingly, we urge OSHA to proceed cautiously in this rulemaking

¹ Throughout our comments, we do not address the SERs by name, as we understand that this is the Panel’s approach for purposes of writing its Final SBREFA Report, and out of respect for their privacy.

and give careful and thoughtful consideration, based on the feedback from the regulated community and employees, whether a heat standard is necessary. If OSHA chooses to proceed, it should promulgate a standard that is performance-oriented, flexible, and centered on training.

To that end, we know OSHA mentioned in its SER Background Document for Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings (“SER Background Document”) that some of the options in its Regulatory Framework for Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings (“Regulatory Framework”) will stay as options that employers can choose from, whereas others might be reduced to a single requirement. See OSHA SER Background Document (August 2023) at p. 8 (stating, “While the options for some elements could eventually be reduced to a single requirement in the regulatory text of a potential rule, there could also be instances in which the regulatory text contains multiple options for a particular element from which employers could choose. Some existing state standards have taken this approach of having multiple compliance options for required elements, such as rest breaks (OR, 2022a; OR, 2022b), acclimatization (OR, 2022a; OR, 2022b), and supervision (WA, 2009; WA, 2022). In addition, while some elements might be required for all covered workplaces, others might only be required when the temperature is at or above an initial heat trigger or a high-heat trigger.”). We encourage OSHA to keep the options as options, but to also expand upon them, and give employers the ability to tailor their programs according to their own individual sizes, work environments, job tasks, workforces, etc. Otherwise, any rule that is promulgated could be economically burdensome and cost prohibitive.

OSHA should look to the performance-oriented Process Safety Management (“PSM”) Standard as a model for heat illness. For PSM, this approach was met with substantial support from the regulated community in large part because it allows employers to consider and address the specific needs of their particularized workplaces in establishing workplace requirements. In the preamble to the final rule, OSHA provides:

Participants in the rulemaking also supported OSHA's development of a performance-oriented standard. The Chemical Manufacturers Association remarked: [“]Initially CMA would like to commend OSHA on its efforts to craft a comprehensive performance-based standard addressing process safety management of highly hazardous chemicals. As CMA has commented in past rulemakings, ***performance language capitalizes on industry's ingenuity and capability to effectively reduce hazards as they may be uniquely applied to a particular safety concern.***[“] Ashland Petroleum Company stated: [“]Ashland * * * is generally supportive of the efforts of the Secretary and of the Occupational Safety and Health Administration with respect to this proposed regulation. While our internal commentators had divided between a desire for specificity and the obvious value of the non-detailed performance approach, ultimately we believe ***the “performance standard” approach is the best way to regulate a wide variety of situations for which a common end is desired.***[“] The American Society of Safety

Engineers noted: [“]The Society commends *OSHA's use of a performance standard rather than a specification rule, believing this is the better means to help ensure each affected facility address its individual situation.*[”]

See 57 FR 6356 (February 24, 1991) (exhibit references omitted) (emphasis added). Likewise, for similar reasons, a heat illness prevention standard would be most effective through a performance-oriented approach.

In fact, even more than with process safety management, heat hazards are deeply dependent on the individual worker. Two employees working in *identical environments*, may experience vastly different risk of heat illness. A task and environment that poses no risk to a hydrated, healthy employee may pose serious risk to an unhealthy, dehydrated employee. This is the reason regulating heat hazards is so challenging. To be effective and successful, any such standard must allow employers the ability to consider and address the particulars of their individual workplaces and individual workforces.

At the same time, we hear and understand OSHA’s dilemma about employers asking for flexible, performance-based standards, and then, after such standards are issued, subsequently asking for guidance to set forth clearer compliance lines (i.e., arguably asking for more prescriptive language). By no means are we suggesting that the words “flexible” and “performance-based” be taken to mean “vague.” Employers need clear regulatory language so that they know how to comply. To that end, we believe that many parts of the Regulatory Framework are concerning because they are too vague.

For example, there are various references to “observation of employees for signs and symptoms” or “observed signs and symptoms.” See OSHA Regulatory Framework at pp. 7-8. Among many of our concerns regarding this language is that it is too vague. There are many signs and symptoms of heat illness. Do they have to be observed for a set amount of time? Is one minute enough? Sweating is a sign/symptom of heat illness. How much sweat must be observed before it rises to the level of warranting attention? Additionally, while we like the open-endedness of allowing outdoor worksites to use “[c]ooling measures (e.g., cooling fans/misting machines), if employer can demonstrate that they are at least as protective as shade[.]” we are not sure how we would go about demonstrating that such measures are at least protective as shade, and to the extent that that would require engineering or legal expertise, small businesses are in no position to readily afford those. See OSHA Regulatory Framework at p. 5. In these and similar circumstances, it will be difficult to tell what would be considered sufficient action by an employer, especially if a heat illness were to occur. In retrospect, it may always look like preventive/mitigative actions were insufficient, so clear compliance lines would be useful.

We believe OSHA can strike a balance between the need for a flexible, performance-based standard and the need for clear compliance lines by crafting a standard that is flexible and performance-oriented, with limited, necessary prescriptive language, rather than crafting a standard that is prescriptive, with certain flexible, performance-based options. The key is

ensuring that employers have flexibility in deciding how best to protect their workers, but that they can also rest assured that their methods are compliant. Here, to the extent that any part of a heat standard sets forth specific prescriptive criteria, we urge OSHA to limit this to training requirements. We recommend that the standard should be training-focused, and have robust, comprehensive employee training programs that have proven effective in mitigating heat hazards. The importance of employee heat illness training and education cannot be overstated.²

State heat illness standards demonstrate this. Though existing state heat illness standards vary quite substantially, they all impose training requirements. For example, Cal/OSHA's requirement for employee training states that training must be provided on topics such as: the environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body caused by exertion, clothing, and personal protective equipment; the importance of frequent consumption of small quantities of water when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties; the concept, importance, and methods of acclimatization; the different types of heat illness, the common signs and symptoms of heat illness, and appropriate first aid and/or emergency responses to the different types of heat illness, and in addition, that heat illness may progress quickly from mild symptoms and signs to serious and life threatening illness; and the importance to employees of immediately reporting symptoms or signs of heat illness in themselves, or in co-workers. *See* 8 California Code of Regulations ("CCR") 3395(h). These topics are similar to those required under the Washington and Oregon standards as well.

Training on hazard recognition, as well as prevention and mitigation methods, including water, rest, and shade – for employees and supervisors – is critical to controlling heat hazards. Empowering employees to recognize the signs and symptoms of heat illness for themselves and their co-workers, and stressing the importance of reporting those signs and symptoms to supervisors is crucial. We support development of a heat illness prevention standard that is focused on training, and ask OSHA to consider providing employers with templates for heat illness training as part of a non-mandatory appendix to any standard. A common construction saying is to always choose the right tools for the job instead of using everything in the toolbox. That applies here as well – the right tool is training.

As a final note, we understand that OSHA might be skeptical when employers ask for flexibility or performance-based standards. But, we respectfully ask that OSHA see it the other way around. We want to do what we know works rather than what might seem wise on paper but does not work in the field. SER after SER in all six Panel meetings stated that they have not had a heat-related injury or illness in years, meaning that our existing programs are working. Flexibility will allow for more – not less – effective programs.

² Because employee's physiological make-up is such a key component to whether an employee experiences risk associated with heat, employee training should be the centerpiece of any heat standard.

2. *The Elements in the Regulatory Framework are Technologically and/or Economically Infeasible (That is, OSHA's Time/Cost Estimates are Too Low).*

In reviewing the SER Background Document, overall, OSHA's time/cost estimates are way too low, meaning that they do not accurately represent the technological and/or economic infeasibility of the various elements in the Regulatory Framework. We mention a few examples here; however, our comments extend to each element. For example, the estimates for how long it will take to either modify or create a written Heat Illness and Injury Prevention Program ("HIIPP") are exponentially low. Per the SER Background Document, OSHA estimates that it will take 2.5 hours to modify existing programs, and 6 hours or 40 hours to create a program, depending on whether a model template is used or the program is created from scratch. See OSHA SER Background Document at p. 27.

These numbers are way too simplistic and not based in reality. While we have to write the program, we also have to plan out the program, before any writing even begins. The planning process alone can take days, weeks, or even months as we consider input from different stakeholders and numerous factors, including, but not limited to, how this new program will fit in with existing programs, how to implement the various components, how to account for any resources we may need, how our employees will adjust to the new requirements, etc. Then comes the physical drafting of the program, which again, can take days, weeks, or months. Even if we use templates (which typically have numerous placeholders), we want to make sure that our wording is accurate and easy to understand (i.e., not just copied/pasted from the standard), that we tailor certain sections appropriately, that there are no conflicts with our existing programs, that we make appropriate cross references, etc. And then, after we write the program, of course, and perhaps the most importantly, is roll out and implementation. That means we have to get it integrated with our existing policies and procedures, purchase any necessary supplies and distribute them accordingly, communicate the program to our employees and ensure it is effectively understood,³ modify our existing, or create new, training materials (e.g., videos, slides, quizzes, etc.), make sure our supervisors are educated on the standard and ready to provide training (e.g., through "train-the-trainer" training), make sure we do any follow-up training if our employees do not pick up the material the first time, etc. And that's just the first round. Program development is an iterative process; it is not "one and done."

Although hard to say, in part because it is such an iterative process, we guess that our programs probably took us at least 90 days to create, which does not even account for rolling it out and implementing the measures contained in the program. In looking at the Regulatory Framework, we believe that it would probably take at least 60 days to modify our existing programs. That means that it would cost approximately \$25,000 dollars based on current wages. And, although it is very difficult to estimate, we think lost opportunity costs could be upwards of \$100,000. For small businesses, this is very economically

³ One way we do this is by providing quizzes on the program to our employees. If multiple employees do not score above a certain percentage, we go back and make any modifications that might increase comprehension in case the quiz scores could be indicative of a need for improvements to the program.

burdensome and resource constraining. In this regard, we urge OSHA to do everything possible to allow employers to maintain their existing effective programs and avoid these unnecessary costs. This would not be a novel approach either, as OSHA has used similar language in other standards, including its Hazard Communication (“HAZCOM”) Standard. *See* 29 CFR 1910.1200(e)(3) (“The employer may rely on an existing hazard communication program to comply with these requirements, provided that it meets the criteria established in [29 CFR 1910.1200(e)].”).

By way of another example, as related to the supervision element, OSHA estimates that employers would task a designated person to stay in communication with employees, and that this activity would require, on average, 5 minutes per check-in every 2 hours (20 minutes total per 8-hour shift). *See* OSHA SER Background Document at pp. 36-37. Again, we think that this is an enormous underestimate, and that, indeed, this designated person would not have much time to do anything else. If the check-in is meant to be meaningful (not a “check-the-box” exercise), it will take much longer to prepare for the check-in, communicate with the employee, and document any notes and follow up as necessary. Small businesses are already stretched too thin for resources, and wear too many hats. Piling on additional requirements on supervisors may require some small business to hire new staff, if they can bear the cost. But, consider too that piling additional requirements can be counterproductive, for small and larger employers alike. With too many obligations, other important safety and health responsibilities may slip.

Additionally, many SERs also spoke about how their workforces are spread out over large distances. This was particularly true of a SER who spoke during the September 14, 2023 Panel meeting. The SER stated that he has employees spread out up to 120 miles apart, working on multiple different jobsites per day. It will be exceedingly time-consuming to track down and stay in communication with each employee. Far more than 20 minutes total per 8-hour shift. To avoid this burden, we think a better approach is to ensure that employers effectively communicate to employees the importance of reporting to a supervisor any signs or symptoms of heat illness (after providing training on those signs and symptoms of course). Supervisors can then take appropriate action.

Again, we believe OSHA’s estimates of time/cost are way too low overall. However, one last example we mention here is OSHA’s estimates related to monitoring weather conditions. OSHA states:

The standard could require employers to identify if and when heat hazards exist and to monitor the hazard. For outdoor work sites, the standard could require employers to monitor weather conditions to determine when there is a heat hazard. OSHA is considering three options for monitoring weather conditions. The first option would involve a designated person for each work site tracking local forecasts of ambient temperature and humidity provided by the National Weather Service (NWS) (or others) to determine the daily maximum heat index, which the employer would then use to determine which protocols are triggered, if any, to be used

throughout the entire working day. ***OSHA estimates it would take approximately 15 seconds per occurrence to read the daily forecast.***

The second and third options would require employers to measure work area conditions. OSHA could require employers to take measurements at or as close as feasible to the work area on days when relevant forecast heat triggers are met or exceeded. The only difference between options two and three is the type of measurements the employer would need to take. The second option would require the employer to designate someone to take measurements of heat index or ambient temperature and humidity to calculate heat index (if needed, using the OSHA-NIOSH Heat Safety Tool App as a calculator or the online calculator available from the NWS). ***OSHA estimates it would take the designated person 5 minutes each time they measure the heat index or ambient temperature and humidity, including calculating the heat index (e.g., by consulting the OSHA-NIOSH App or NWS's online calculator).*** The third option would require the employer to designate someone to take measurements of wet bulb globe temperature (WBGT). This option would require the purchase of one WBGT thermometer for each worksite. ***Additionally, OSHA estimates the designated person would need 30 minutes to read the WBGT thermometer user manual and 10 minutes per stabilization period and measurement.***

Employers with indoor work sites may be required to conduct a hazard assessment to identify the work areas or processes where there is potential for employees to be exposed to hazardous heat, including a determination of whether and when outdoor heat affects indoor temperature/heat index at the work site. ***OSHA estimates that conducting the hazard assessment would require about 8 hours in total.***

If the employer determines that any employee's exposure may equal or exceed relevant initial heat triggers [], the employer could be required to develop a monitoring program to identify when employees are exposed to heat at or above the relevant triggers (as part of the HIIPP []). OSHA is considering two options for monitoring conditions in indoor worker settings. ***These options are the same as options two and three for outdoor worksites discussed above, except that they are not tied to local weather conditions. OSHA estimates that the hours and equipment necessary to comply would be the same.*** Note that employers could be required to conduct additional monitoring or a new hazard assessment whenever a change in production, process, equipment, or controls has the potential to increase heat exposure.

See OSHA SER Background Document at pp. 28-29 (emphasis added). These numbers again do not reflect reality because they do not account for factors such as the forethought that must go into monitoring weather, the checks for accuracy that many employers conduct, the possibility that resampling may be necessary, or the decisions that must be made once the temperature is determined.

For example, in checking the forecast, we routinely consult multiple different forecasts since each can be different, and we want to determine which one is most representative. This alone can take 20-30 minutes per occurrence. Not to mention, we have to check different locations if we are working multiple jobsites. Additionally, taking measurements will be exceedingly difficult. It seems OSHA may have assumed that each workplace has an industrial hygienist or other knowledgeable safety professional on standby. That is not the case. Employers, particularly small businesses, will have to train their supervisors on how to take measurements, as well as make any necessary calculations. Measuring WBGT in particular will be particularly time-consuming and costly. Again, not only is the specialized equipment expensive, the cost associated with the number of hours required to train on how to use it, and then ensure it is being used correctly, will be cost prohibitive.

We guess that it could take 30 minutes each time to measure the heat index or ambient temperature and humidity, including calculating the heat index, and many hours, as well as a fair degree of professional background in industrial hygiene / safety to read the WBGT thermometer user manual and 45-60 minutes per stabilization period and measurement. And, as to the heat hazard assessment, even though we do not typically have indoor worksites, we think 8 hours is a vast underestimate. A lot of planning, thought, and consideration goes into each Job Hazard Analysis (“JHA”) that we write for our jobsites. Based on our experiences, we guess that a hazard assessment could take at least 40 hours. However, that does not even take into account the time that could be required to conduct a new hazard assessment whenever a change in production, process, equipment, or controls has the potential to increase heat exposure, as OSHA is contemplating. *See* OSHA Regulatory Framework at p. 3. That too could be very time-consuming and economically burdensome.

Again, the examples above are not meant to be comprehensive. We believe the costs and/or time associated with every element in the Regulatory Framework have been vastly underestimated, meaning that they do not accurately represent the technological and/or economic infeasibility of the elements in the Regulatory Framework. As mentioned by numerous SERs in all of the Panel meetings, complying with the Regulatory Framework as written could very well be impossible. For example, one SER at the September 12, 2023 Panel meeting stated that compliance under the Regulatory Framework would increase costs by 1.5 to two times, including \$50,000 on an annual basis, and upwards of \$100,000 for retrofitting equipment, depending on the equipment installed, contractor availability, etc. The SER stated that the economic impact could be “very substantial” for his small business. Another SER at the September 14, 2023 Panel meeting stated that the costs of compliance could get near \$96,000 per year. And, with respect to air movement alone, one SER who participated in the September 18, 2023 Panel meeting stated that she spent \$200,000 on upgrades and modifications. While some small businesses may be able to afford these costs, others cannot. Accordingly, we urge OSHA to consider these substantial burdens, particularly as related to the major impact that they will have on small businesses, in any rule it develops going forward.

3. The Standard Should Not Cover Indoor Worksites.

Although we tend to work on top of roofs, and so, work outside, we noticed that, as difficult as it may be to regulate outdoor heat, it may be even more difficult or indeed impossible at this point to regulate indoor heat on a national level. As such, we recommend that any initial heat injury and illness prevention standard should focus on and be limited in application to outdoor settings only, segregating regulation of indoor heat for a potential separate rulemaking. A number of sound reasons exist to segregate and tier regulation of heat, focusing first on outdoor environments. First, regulating exposure to heat can require vastly different controls depending on whether the source of the heat is an indoor or outdoor environment. In particular, engineering mechanisms to control indoor and outdoor heat are typically entirely different, and present an entirely disparate set of challenges. OSHA cannot easily regulate both sources of heat with a single regulatory approach.

Second, as set forth in OSHA's SER Background Document, the large majority of very serious heat-related illnesses occur in outdoor environments. The SER Background Document states: "In an evaluation of 66 heat-related illness enforcement investigations from 2011-2016, **80% of heat-related fatalities occurred in outdoor work environments.**" See OSHA SER Background Document at p. 4 (emphasis added); see also 86 FR at 59310 (emphasis added). Although the SER Background Document goes on to state that "61% of non-fatal heat-related illness cases occurred during or after work in an indoor work environment[.]" this data is difficult to interpret since it combines illnesses that occurred during **and after** work in an indoor work environment. Could the illnesses that occurred after work in an indoor work environment have been attributed to **outdoor** heat? To be clear, we do not deny that indoor temperatures can reach hazardous levels. We simply highlight this data because it demonstrates the concentration of risk for very serious heat-related illnesses in outdoor environments. Thus, for purposes of this rulemaking, outdoor heat should be OSHA's primary focus.

Additionally, the standard should be limited in scope to outdoor work environments only because there are several major challenges associated with attempting to regulate indoor heat. For example, the measurement to determine "hazardous heat" is inconsistent and difficult to apply in indoor settings. While employers in the same geographic area can reasonably rely on **weather forecasts** to determine outdoor temperature, employers would inevitably be required to take their own measurements on some periodic basis to determine whether heat has reached hazardous levels in their unique indoor workplaces. Indeed, this is reflected in OSHA's Regulatory Framework. Per the Regulatory Framework, in describing indoor worksites, OSHA states:

The standard could require employers to conduct a hazard assessment to identify the work areas or processes where there is the potential for employees to be exposed to heat hazards, including a determination of whether and when outdoor heat affects indoor temperature/heat index at the work site. When information

gathered during the hazard assessment indicates that any employee's exposure may equal or exceed the initial heat trigger [], the employer could be **required to develop a monitoring program** to identify when employees are exposed to heat at or above the relevant triggers. Employers could be required to conduct additional monitoring or a new hazard assessment whenever a change in production, process, equipment, or controls has the potential to increase heat exposure.

Monitoring options could include:

- Option: Employers measure heat index or ambient temperature and humidity to calculate heat index (employers could use the OSHA-NIOSH Heat Safety Tool App as a calculator or the online calculator available from the National Weather Service) at or as close as feasible to the work area
 - Optional to account for dry work sites: If the indoor relative humidity is below a certain threshold (e.g., 30%), the employer could rely on ambient temperature alone.
 - Optional for employees in vapor-impermeable PPE: Employers could rely on ambient temperature triggers when employees are wearing vapor-impermeable protection.
- Option: Employers measure wet bulb globe temperature at or as close as feasible to the work area

See OSHA Regulatory Framework at p. 3 (emphasis added). Notably, because temperatures would not be accurate otherwise, the option for tracking local forecasts that is included for outdoor worksites is not presented as an option for indoor worksites. See OSHA Regulatory Framework at pp. 2-3. We agree that outdoor temperatures likely should not dictate actions for indoor operations as there are a number of factors that come into play in determining indoor temperatures that are not relevant to outdoor temperatures (e.g., climate control, placement of windows, energy grid, etc.). Accordingly, employers with indoor worksites would be required to do active, periodic temperature measuring, for which many employers, particularly small businesses, simply do not have the resources.

Specifically, under the Regulatory Framework, covered employers with indoor worksites are presented with two options for monitoring. First, they can measure the heat index, either by purchasing some equipment, or by calculating it based on measurements of ambient temperature and humidity. However, as nearly all SERs expressed during the Panel meetings, small employers already wear too many hats and are stretched extremely thin for resources. Indeed, many of us do not have the resources to have designated safety professionals. Adding a requirement that someone go out and measure the heat index, or calculate it after taking ambient and/or relative humidity readings, even if an online or app-based calculator is available, on some frequent basis throughout the day, is likely

numerous areas of the worksite (indeed, potentially multiple worksites), is simply not feasible. As one SER remarked during the September 12, 2023 Panel meeting, the indoor monitoring options will likely require the company for which she works to hire a new full-time employee, or convert a current part-time employee into full-time status, which, especially for small employers, can be economically burdensome.

Moreover, these indoor heat index readings may not be accurate. Indeed, one SER asked OSHA during the September 12, 2023 Panel meeting whether OSHA has developed an OSHA-NIOSH Heat Safety Tool App for indoor worksites, since the current OSHA-NIOSH Heat Safety Tool App is designed for outdoors work environments. See National Institute for Occupational Safety and Health "[OSHA-NIOSH Heat Safety Tool App](#)" (last reviewed August 2, 2022) (stating, "The simplicity of the HI [heat index] makes it a good option for many **outdoor** work environments (if no additional radiant heat sources are present, such as, fires or hot machinery).") (emphasis added). OSHA stated no, but that that idea is under discussion right now, and admitted that, while the current OSHA-NIOSH Heat Safety Tool App can be helpful for purposes of determining indoor heat if outdoor heat is affecting indoor temperatures, actual measurements are still necessary. Additionally, as one of the SERs from the September 19, 2023 Panel meeting demonstrated with his own trial monitoring, indoor heat index measurements can result in readings that are much different from equivalent WBGT readings.

To that end, as a second option under the Regulatory Framework, employers with indoor worksites can measure WBGT. However, even OSHA recognizes in its SER Background Document that measuring WBGT may be more challenging for some small employers, and states that it is not currently considering proposing this as the only option. See OSHA SER Background Document at p. 13 ("OSHA recognizes that WBGT measurements may be more challenging for some small employers, and thus is considering heat trigger options using simpler heat index or ambient temperature measurements consistent with most state heat-specific standards []. As such, OSHA does not currently envision a standard that would require WBGT measurements without providing employers with one or more options for simpler heat index or ambient temperature measurements."). We agree, and want to specifically point out that the specialized equipment used to measure WBGT (let alone the costs associated with taking the time to learn how to properly use such equipment) can be extremely economically burdensome. Clearly, challenges still remain with respect to the ability to measure indoor "hazardous heat" levels in a manner that reflects the well-being of an employee in an efficient and effective way.

There are also significant concerns with respect to defining "indoor" work, as reflected in part in OSHA's "Heat Injury & Illness Prevention in Outdoor and Indoor Work Settings: Small Business Advocacy Review (SBAR) Questions" ("Heat SBAR Questions") document. See OSHA Heat SBAR Questions at p. 1. For example, OSHA asks:

- What types of occupations at your workplace do you consider outdoor occupations, and what percentage of your workforce falls into that category? What types of

occupations at your workplace do you consider indoor occupations and what percentage of your workforce falls into that category?

- Consider employees at your workplace who work both indoors and outdoors; on average, how much time do they spend outdoors? How much time indoors? How much time indoors is next to process heat or heat-generating equipment?
- Are there certain work settings in which you are unsure if they would be considered outdoor work settings or indoor work settings? If so, what are they? What characteristics of that work setting make it hard to classify as solely indoor or outdoor?

See OSHA Heat SBAR Questions at p. 1. So, there is recognition by OSHA that, in any industry, employees may spend time both indoors and outdoors as part of their job, and that there are certain work settings that simply do not fit neatly in one category or the other. On the latter point, as one SER mentioned during the September 7, 2023 Panel meeting, this can be especially difficult in the construction industry, where structures are built from the ground up. Buildings begin very bare, and, as more infrastructure is added, become more substantial, so there is a natural transition from being considered more outdoors than indoors, to more indoors than outdoors. But, that transition is unclear at best. If OSHA were to regulate both indoor and outdoor heat through this rulemaking, it would have to provide a very clear, bright line on how to make the distinction so employers can know under which part of the standard they fall at any given moment.

Yet, this is still a topic of much debate in the few jurisdictions attempting to regulate both indoor and outdoor heat. For example, comments submitted on proposed text of draft revisions dated January 29, 2019, for Cal/OSHA's Heat Illness Prevention in Indoor Places of Employment state:

Lack of a clear distinction between the two spaces will create confusion and significant challenges regarding compliance and safety.

There are numerous structures that have open doors and moveable walls allowing employees to walk in and out of the facilities throughout the day. When employees are outside the structure, they potentially fall under the outdoor heat illness regulations, even if they are outside for a limited time, even though most of their work is spent "indoor." For example, many construction employees perform interior work while frequently going outside to prepare or obtain materials, then going back inside.

Thus, the definition of "indoor" could make it unnecessarily burdensome for employers to determine whether an area is indoor or outdoor and to manage accordingly and correctly. Therefore, employers need clarity and the ability to harmonize the indoor requirements as much as possible with the outdoor requirements so they may maintain and manage one plan.

See [Coalition and Chamber of Commerce Comments](#) on Cal/OSHA's Heat Illness Prevention in Indoor Places of Employment Standard (dated February 22, 2019). We agree with these concerns.

In this regard, there simply is not yet enough understanding of the way to establish one standard for indoor and outdoor heat. This is evidenced by state efforts to regulate heat.⁴ Of the four states that have heat illness prevention standards – California, Oregon, Washington, and Minnesota – three states apply those standards to outdoor settings only (California, Oregon, and Washington); only two apply them to indoor settings (Oregon and Minnesota), and only one applies its standard to both (Oregon). And although Minnesota's standard includes a definition for "indoor,"⁵ that definition could not be adopted or relied on in a federal standard because the Minnesota standard does not regulate outdoor heat. In fact, the only state that currently regulates both indoor and outdoor heat – Oregon – does not provide a definition for "indoor" at all. Furthermore, because Oregon's standard took effect June 15, 2022, it is still too new to assess its effectiveness and reasonableness.

Accordingly, for the above reasons, we urge OSHA to exclude indoor heat from this rulemaking. To the extent that OSHA wishes to expand the application of its rule to indoor settings, it should, like California, do so in a subsequent rulemaking, when more information is available on how to effectively and reasonably regulate indoor heat, and the regulation can focus on the unique aspects of indoor heat sources, how best to establish measurement thresholds, the control mechanisms to manage indoor heat, and the feasibility of these controls. Of course, for purposes of efficiency, any future standard regulating indoor heat should be designed to align with and allow employers to rely on programs established to comply with an outdoor heat standard.

4. The Standard Should Not Apply to Emergency Operations As Interpreted in the Broadest Sense or to Drivers With Air-Conditioned or Fan-Ventilated Vehicles.

To the extent that OSHA promulgates a standard for the prevention of heat illness, the agency should scope the standard properly and narrowly to cover those employees most at risk. In hearing from our fellow SERs, we believe for example that the standard should not apply to the broadest range of emergency operations, or to drivers with air-conditioned or fan-ventilated vehicles. The Regulatory Framework states:

OSHA could consider exempting:

- Short duration exposures, such as 15 minutes of work in hazardous heat

⁴ We understand that OSHA includes Colorado in its analysis of states with state heat illness prevention standards in its SER Background Document. However, Colorado's standard only applies to agricultural work sites, so it is not a good comparison for purposes of this rulemaking, where OSHA is attempting to issue a broad general industry rule.

⁵ Per Minnesota OSHA's standard, "indoor" means "any space between a floor and a ceiling that is bound on all sides by walls. A wall includes any door, window, retractable divider, garage door, or other physical barrier that is temporary or permanent, whether open or closed." See Minnesota Administrative Rules 5205.0110 Subpart 5(A).

conditions every 60 minutes

- Emergency operations such as those already covered under 29 CFR 1910.156 or 29 CFR 1910.120 (Note: OSHA is currently engaged in rulemaking on emergency response and there are elements of on scene rehabilitation that address the same issues covered in this standard.)
- Work in spaces where mechanical ventilation keeps working areas below certain conditions (e.g., ambient temperature of 80°F) with possible administrative controls required if the mechanical ventilation is not operable
- Work done from home (e.g., telework, remote, and hybrid employees)
- Sedentary or light activities performed indoors, if these are the only activities performed during the work shift

See OSHA Regulatory Framework at p. 1. As a preliminary matter, we would like to note that the mechanical ventilation “exemption” is not so much an exemption as it is a method of compliance. Air conditioning and fan ventilation are effective engineering controls. As the agency is aware, where elimination and substitution are not available, engineering controls are at the top of the hierarchy of controls, and are generally considered the most effective method for mitigating hazards. Essentially, air conditioning and fan ventilation are methods of controlling climate so that hazardous heat levels are not reached in the first instance. Additionally, we believe that there is little if any hazard associated with short term exposures, or sedentary or light activities performed indoors, and that it would be impossible for employers to effectively enforce their heat programs on employees working from home. Accordingly, we agree that these exemptions should stay as exemptions, but note that they should also be broadened.

For example, we think that the emergency operations exemption should be expanded to the maximum extent possible. Currently, the Regulatory Framework appears to tie the exemption to 29 CFR 1910.156 and 29 CFR 1910.120. That should not be the case. We heard from multiple SERs who might not be covered under one of those standards, but must provide support in warmer temperatures to save lives and/or critical infrastructure. For example, one SER who participated in the September 14, 2023 Panel meeting stated that he has conducted emergency work to restore the power grid, which has significant consequences for critical infrastructure like hospitals. Utilities must get power lines back up and running, and, similar to Oregon OSHA’s heat illness prevention standard, that activity, among other emergency operations, should be expressly included within the scope of this exemption.⁶ See Oregon Administrative Rules (“OAR”) 437-002-0156(1)(a)(C)

⁶ As set forth in the Regulatory Framework, we understand that OSHA is currently engaged in rulemaking related to emergency response and that there are elements of on scene rehabilitation that address the same issues covered in this standard. Nonetheless, we urge OSHA to include this broadened exemption in any heat illness prevention

(exempting “[a]ll emergency operations that are directly involved in the protection of life or property, or the restoration of essential services, such as evacuation, rescue, medical, structural firefighting, law enforcement, utilities, and communications, when employees are engaged in those operations.”).

Additionally, while this may partially fit within the mechanical ventilation “exemption,” it should be made clear that any heat illness prevention standard should not apply to drivers in air-conditioned or fan-ventilated vehicles, and that this should include related work drivers may conduct outside the vehicle, such as pickup and delivery, so long as there is unimpeded access to the air-conditioned cab at all times. This is in part because it would be nearly impossible for employers to enforce a heat standard to vehicular work settings. Drivers typically work alone. Thus, while employers can certainly train and educate on the importance of turning on air-conditioning in vehicles when temperatures are high, and we advocate for such an approach, it is impossible for the employer to know whether the driver maintained air-conditioning at cool enough levels throughout the trip. Additionally, drivers move to areas of different temperature as they drive from area to area; however, temperature can remain relatively stable with air-conditioning or fan ventilation. It would be impossible for employers to determine each area where the heat standard might be triggered since weather varies with time and drivers’ expected times of arrival may vary based on unexpected traffic.

We also think that fans should be recognized as an effective substitute for air conditioning, particularly in or around vehicles such as tractors and forklifts, and where fan ventilation reduces heat below thresholds of concern. Recognizing fans as a substitute for air conditioning makes sense not only from a risk standpoint – air flow is an effective mechanism to cool body temperature – but is an important consideration that should be made in light of climate change concerns regarding the burden on the climate from air conditioning use. There are also significant economic costs associated with trying to retrofit vehicles to install air conditioning. One SER who spoke at the September 12, 2023 Panel meeting stated that it would cost \$1,500-3,000 per vehicle to add air conditioning. Accordingly, we believe that the standard should not apply to the broadest range of emergency operations, or to drivers with air-conditioned or fan-ventilated vehicles.

standard at least in part to ensure consistency, and in light of the fact that, assuming both standards are promulgated (which may not even be the case), it will be difficult to determine which is promulgated first.

SPECIFIC COMMENTS

1. OSHA Should Add Flexibility to Any HIIPP Requirement, Recognize That HIIPPs are Mitigation Programs, and Eliminate Any Vague Requirement That Programs be Reviewed to Ensure Ongoing Effectiveness.

Although we generally support the written HIIPP element in the Regulatory Framework, we do believe some changes are necessary. For example, we think OSHA should build in more flexibility to allow employers to reasonably rely on their existing effective programs for purposes of compliance. Here, again, the Regulatory Framework becomes too prescriptive in dictating exactly how employers' programs should be written, which is completely unnecessary, and, as set forth above, can be extremely time consuming and cost prohibitive. Per the Regulatory Framework, OSHA states:

The standard could require that employers create a written Heat Injury and Illness Prevention Program (HIIPP), with the input of employees, and include the following elements:

- Procedures to identify when heat hazards exist for employees, including procedures for environmental monitoring and the identification of work processes and external factors that increase the likelihood of heat-related injury and illness
- Procedures for implementing engineering controls
- Procedures for implementing administrative controls, including the provisions of drinking water, rest breaks in a cool and/or shaded area, acclimatization protocols for new and returning employees, and supervision of employees for signs and symptoms of heat-related illness
- High-heat procedures
- Procedures for when employees are exhibiting symptoms of heat-related illness and emergency response procedures
- Training of employees and supervisors
- Selection of a designated individual(s) to oversee and implement the HIIPP, including environmental monitoring

See OSHA Regulatory Framework at pp. 1-2. More flexibility will allow for more effective programs. Rather than try to require all employers to adopt the same program that may not work for them ***or their employees***, OSHA should acknowledge that programs come in all shapes and sizes, and give credit to those employers who have already developed

effective programs, demonstrated at least in part by the fact that, as stated by SER after SER during all six Panel meetings, that they have not had any heat related injuries or illness over the last several years. Requiring all these specific topics in a HIIPP seems more of an attempt to be able to cite employers for recordkeeping-type “gotcha” citations. **Training** on this information, not necessarily having it all in a written program, is key.

Additionally, we also disagree with the name, “Heat Injury and Illness Prevention Program.” While yes, certainly, we want, and will do everything we can, to prevent heat injuries and illnesses, the harsh reality is that there are certain circumstances where that is not possible. Heat hazards, unlike many other potential hazards, are out of our control. We cannot eliminate them, nor can we substitute them. We can only mitigate them through engineering and administrative controls, and PPE. Accordingly, we request that OSHA delete the reference to “Heat Injury and Illness Prevention Program” in any heat standard, and allow employers to decide the name of their programs, or alternatively, call it a “Heat Injury and Illness **Mitigation** Program.”

This is not just a matter of semantics. The name of a safety and health program, perhaps even more so than its contents, has a long-lasting effect on people’s perceptions of a hazard and the ways it can be eliminated and/or reduced. That includes the perceptions of our employees. We want to make sure that we are being accurate in the way that we characterize our programs at least in part because we do not want our employees to erroneously “get too comfortable.” Other OSHA standards include program names that more accurately describe their purpose. For example, OSHA requires employers covered under its Respiratory Protection Standard to have Respiratory Protection Programs – not Respiratory Hazard Prevention Programs. *See* 29 CFR 1910.134(c). Here too, it would be misleading to call our programs “Heat Injury and Illness Prevention Programs” when they are instead more accurately mitigation programs.

Furthermore, we think OSHA should eliminate any vague requirement that we review our programs to “ensure its ongoing effectiveness.” OSHA states:

The standard could require employers to make the HIIPP available at the work site to employees and governmental representatives and to review and update the HIIPP periodically. Options for frequency for reviewing and updating the HIIPP include:

- Option: Whenever necessary to ensure its ongoing effectiveness
- Option: Whenever a heat-related illness or injury occurs
- Option: Annually
- Option: Whenever a heat-related illness or injury occurs, but no less than annually

See OSHA Regulatory Framework at p. 2. This was echoed by at least one other SER who participated in the September 14, 2023 Panel meeting. Again, this language is far too vague to provide any sort of clear compliance lines. Try as hard as we might, accidents (as opposed to incidents),⁷ do happen. But, that does not necessarily mean that our programs were deficient. It would be an unfair use of hindsight for OSHA to cite an employer for not reviewing its program “whenever necessary to ensure its ongoing effectiveness” after an accident.

Additionally, we want to note that the two periodic review options which mention the occurrence of heat related injuries or illnesses are also difficult to implement for compliance purposes. Heat related injuries and illnesses can be some of the most difficult to determine in part because of the myriad of personal health conditions that may involve signs and symptoms similar to those of heat related illnesses. Also, as one SER stated during the September 14, 2023 Panel meeting, what type of result would constitute a heat related injury or illness to prompt program review? Would that be for an employee who gets an IV? Or an employee who goes home early? An employee who sits down and rests? Again, there would need to be clear compliance lines.

As a final thought for purposes of these comments, we question whether our programs need to be subject to periodic review at all. While an annual review period would likely be the easiest option to implement from an administrative standpoint, reviewing our programs every year will still take substantial amounts of time that we already do not have. Again, we wear many hats, and do not have adequate resources for this. Additionally, we do not expect that there will be substantial changes in heat hazards from year to year. As demonstrated by almost all, if not all, SERs, we have been implementing many of the mitigation measures referenced in the Regulatory Framework (albeit, in a variety of different ways) for ages. While we can understand that the agency may be concerned with climate change, those effects are felt over decades and centuries, not annually. Accordingly, we think an approach similar to that incorporated in OSHA’s Respiratory Protection Standard, whereby programs must be reviewed only where there are material changes in workplace conditions affecting our heat mitigation methods, makes sense for purposes of a standard. See 29 CFR 1910.134(c)(1) (“The program shall be updated as necessary to reflect those changes in workplace conditions that affect respirator use.”).

2. The Standard’s Metric for Determining Heat Exposure Should be Ambient Temperature or Heat Index, Not Wet Bulb Globe Temperature.

The standard’s metric for determining heat exposure should be ambient temperature or heat index, not WBGT. As set forth in the ANPRM, there are many advantages and disadvantages associated with each heat exposure metric. For example, while ambient temperature is calculated using a common thermometer, and is the most accessible and

⁷ We generally refer to incidents as those events that are caused by deficient safety and health management programs (i.e., more likely to be preventable), and accidents as all other types of events (i.e., more likely to be unpreventable).

understandable metric, it does not take into consideration humidity, which influences the body's ability to cool. With respect to heat index, while it combines air temperature and humidity, and is a widely reported weather statistic with which many people are familiar, it does not take into consideration radiant heat or wind speed. Last, although WBGT takes into consideration air temperature, wind, radiant heat, and humidity, measuring WBGT requires specialized thermometers or equipment. Additionally, WBGT is not always available as a forecast through the National Weather Service, requiring guidance and training to avoid confusion with more well-known scales like temperature or heat index. Because the disadvantages associated with WBGT far outweigh the advantages, we urge OSHA to use ambient temperature or heat index as the standard's metric for determining heat exposure, and to not develop a standard that would require WBGT measurements without providing employers with one or more options for simpler heat index or ambient temperature measurements, which aligns with OSHA's current vision as set forth in the SER Background Document. *See* OSHA SER Background Document at p. 13.

Although OSHA states that it does not currently envision a standard that would require WBGT measurements without providing employers with one or more options for simpler heat index or ambient temperature measurements, we think it bears emphasizing our rationale for this recommendation. First, as stated above, unlike ambient temperature and heat index, WBGT is not readily available as a forecast through the National Weather Service, and thus, would require employers to monitor and take measurements (or engage in a somewhat complex mathematical calculation). Taking measurements raises numerous questions, including, fundamentally, on what days would employers be expected to take measurements (i.e., how should employers reasonably be expected to know when to measure) and where would employers be expected to take measurements in and/or around the facility?

We understand that, per the Regulatory Framework, WBGT measurements would be required to be taken "at or as close as feasible to the work area (i.e., area where one or more employees are working within the work site)." *See* OSHA Regulatory Framework at p. 3. However, there are numerous complications associated with such a requirement. Indeed, as one of the SERs from the September 19, 2023 Panel meeting demonstrated with his own trial monitoring, WBGT readings taken on one side of an employee can result in numbers very different from WBGT readings taken on another side of the employee. Facilities come in all shapes and sizes; a one-size-fits-all approach cannot work.

Consider also, for example, mobile / trailer type environments where workers will rotate in and out of new trailers. The use of monitoring equipment becomes impractical in such environments. Would one reading suffice, or should there be an average? What time of day should measurements be taken – morning, noon, and/or night? Although some of these questions are raised in the OSHA Technical Manual ("OTM"), Section III: Chapter 4 "Heat Stress," the OTM guidance is dizzying and incredibly complex. *See* OSHA [Technical Manual \("OTM"\), Section III: Chapter 4 "Heat Stress"](#) (updated September 15, 2017) ("Step 1, Option A: Using a WBGT Meter" and "Step 1, Option B: Calculating WBGT Using Weather

Data”).

Although OSHA provides that, if a WBGT meter or records are not available, Argonne National Laboratory (“ANL”) has developed a utility (i.e., calculator) that uses literature-supported algorithmic equations to determine WBGT from current or historic data available on the internet, this assumes that all employers have access to this calculator. However, as recognized by OSHA, the calculator must be downloaded and is copyrighted, requiring users to follow open-source license redistribution contingencies.

The calculator also uses a significant amount of information – air temperature, solar irradiance, wind speed, relative humidity, date and time, barometric pressure, and longitude/latitude – to determine WBGT, which may or may not be readily available. And there are limitations associated with the calculator. OSHA states that “[a] calculated WBGT is more accurate when the data source (e.g., weather station) has similar direct sun, humidity, and wind speed as the worksite. If time, date, longitude, latitude, or barometric pressure is not accurate, then the WBGT calculation adjustments will not be accurate.” See OSHA [Technical Manual \(“OTM”\), Section III: Chapter 4 “Heat Stress”](#) (updated September 15, 2017). Accordingly, while the main advantage of using WBGT is that it accounts for air temperature, wind, radiant heat, and humidity, this matters little if it cannot be measured (whether through metering or calculations) accurately.

The specialized nature of the equipment required to determine WBGT, and associated guidance and training necessary to educate on measuring WBGT, is also concerning. From an economic perspective, use of WBGT is likely not sensible or supportable: “The WBGT requires specialized measurements for the wet bulb and globe temperatures and thus is not typically assessed at weather stations, such as those monitored by the National Weather Service. Many WBGT devices are commercially available, yet no recent studies have been completed to determine the reliability of these devices compared with a specification unit. The devices vary in design and price, **ranging from approximately \$100 to \$3000** (Table 1). Most commercially available WBGT devices directly measure the dry and globe temperatures, but how the wet bulb temperature is determined differs.” See Cooper, Earl, et al., “[An Evaluation of Portable Wet Bulb Globe Temperature Monitor Accuracy](#),” *Journal of Athletic Training* (December 2017) (emphasis added). This is particularly true for small businesses. And these price estimates do not even take into account the cost of maintaining and/or replacing equipment.

In addition to the economic burden imposed by the equipment itself, the financial and human resource costs associated with training managers and supervisors on how to properly use the equipment are substantial as well. Indeed, we believe that that supplying and effectively training staff (if available in the first place) to use the equipment can be extremely challenging. In our experience, the greater the sophistication (or complication) of the measurement equation/rating, the greater the need for training. We are particularly concerned about how this will impact smaller businesses.

Beyond this, use of WBGT is highly subject to human error. It inevitably will result in incorrect and inaccurate determinations, which in many cases impedes an employer from sufficiently protecting its employees from heat stress and inadvertently establish a false sense of security for employees. In a lot of ways, requiring use of a WBGT essentially imposes a requirement on employers to become full-time weather specialists. This is simply not practical and is overly burdensome, for small and larger employers alike. Also, as weather conditions can change rapidly, if equipment is not immediately available, employers' ability to respond or act can be difficult.

Only one state uses WBGT as its threshold triggering heat illness protection requirements – Minnesota, which has developed an indoor-only rule. Other states use ambient temperature or heat index. Similarly, we, as well as our fellow SERs, use a wide range of metrics for purposes of our own heat programs, but typically use ambient temperature or heat index as our metrics to determine heat exposure. Additionally, we are aware that some employers use standard effective temperature (“SET”), which is defined as “the temperature of an imaginary environment at 50% RH [relative humidity], <0.1 m/s air speed, and t_r [mean radiant temperature] = t_a [air temperature], in which the total heat loss from the skin of an imaginary occupant with an activity level of 1.0 met and a clothing level of 0.6 cloth is the same as that from a person in the actual environment, with actual clothing and activity level,” to monitor and assess hazardous heat exposure in the workplace, as well as to monitor the effectiveness of controls. See ANSI/ASHRAE Standard 55-2010. However, we agree that SET, like WBGT, might be too complex of a metric for purposes of a national heat illness prevention standard. All of this is to say that, while from a purely theoretical standpoint, there may be no clear “right answer” when choosing a heat exposure metric, the disadvantages of using WBGT in a sweepingly broad standard applicable to all employers – big and small, sophisticated and not – clearly outweigh the advantages.

Accordingly, we urge OSHA to use ambient temperature or heat index as the standard's metric for determining heat exposure, not WBGT, or, at the least, as OSHA mentions in its SER Background Document, not develop a standard that would require WBGT measurements without providing employers with one or more options for simpler heat index or ambient temperature measurements. See OSHA SER Background Document at p. 13. Use of a more objective, readily available metric, such as ambient temperature or heat index, is a much better overall approach.

3. The Standard's Temperature Threshold Should be Simple, Science-Based, and Account for Local Environmental Conditions.

Along with our fellow SERs, we too find the hazard identification and assessment section of the Regulatory Framework, which explains the methods for determining at what temperatures certain mitigation measures must be implemented, to be extremely concerning. In short, the standard's temperature threshold should be simple, science-based, and account for local environmental conditions. We realize that SER after SER,

including ourselves, shared information about local weather conditions and our experiences in those conditions. More than many other hazards, the hazard of heat is very dependent on the environment. What works and is necessary in the arid southwest is different than what works in the high humidity Gulf Coast region is different than what works and is necessary in our home states of Colorado and Illinois. What this means is that a federal standard must provide employers the ability to establish programs based on their particularized environments. This comes back to our message that there simply is no “one size fits all” approach to regulating heat.

To start, SER after SER stated in all six of the Panel meetings that the approach towards temperature thresholds and methods presented in the Regulatory Framework is far too complex and complicated for purposes of implementation. We agree. Under the Regulatory Framework, OSHA presents three options (or really, two options, with the second having two sub-options) for outdoor worksites to monitor weather conditions to determine when there is a heat hazard:

- (1) tracking local forecasts of ambient temperature and humidity provided by the National Weather Service (or others) to determine daily maximum heat index, with an option to account for dry climates, where employer can rely on ambient temperature alone; or
- (2) measuring work area heat conditions every day or when local forecasted conditions meet or exceed relevant triggers, including by either:
 - (a) measuring heat index or ambient temperature and humidity to calculate heat index at or as close as feasible to the work area at some periodic interval, with an option to account for dry climates, where employer can rely on ambient temperature alone, as well as an option to account for employees in vapor-impermeable PPE, whereby employers can also rely on ambient temperature triggers, or
 - (b) measuring WBGT at or as close as feasible to the work area (i.e., area where one or more employees are working within the work site) at some periodic interval.

See OSHA Regulatory Framework at pp. 2-3.

For indoor worksites, OSHA goes on to provide information about potential requirements for employers to conduct hazard assessments and develop monitoring programs, with options for monitoring programs that essentially mimic those in the second option (including sub-options) for outdoor worksites. OSHA states, “The standard could require employers to conduct a hazard assessment to identify the work areas or processes where there is the potential for employees to be exposed to heat hazards, including a determination of whether and when outdoor heat affects indoor temperature/heat index at

the work site. When information gathered during the hazard assessment indicates that any employee's exposure may equal or exceed the initial heat trigger [], the employer could be required to develop a monitoring program to identify when employees are exposed to heat at or above the relevant triggers. Employers could be required to conduct additional monitoring or a new hazard assessment whenever a change in production, process, equipment, or controls has the potential to increase heat exposure." See OSHA Regulatory Framework at p. 3.

This all culminates in a table ("Table 1") that combines everything together and includes specific initial and high heat triggers. See OSHA Regulatory Framework at p. 4 (also below).

Table 1. Options for initial heat trigger and high-heat trigger

	Initial Heat Trigger			High-Heat Trigger		
	Ambient	Heat Index	WBGT	Ambient	Heat Index	WBGT
When using a forecast	78°F or higher	76°F or higher	N/A	86°F or higher	83°F or higher	N/A
When measuring on-site	82°F or higher	80°F or higher	ACGIH AL or NIOSH RAL	90°F or higher	87°F or higher	ACGIH TLV or NIOSH REL

The values in this table represent the minimum value currently being considered.

We certainly appreciate OSHA's effort to reduce all of this down to a table. However, even the table is confusing. Employers, especially small businesses, need simple regulatory text that they can understand and reasonably rely on so that they can come into and maintain compliance. Indeed, it would take an exorbitant amount of time and resources, that, frankly, we do not have, to figure all this out, let alone implement. And while we understand that OSHA would likely develop compliance guidance upon promulgating a standard, we have found that, where the underlying standard is confusing, in many ways, so too is the guidance. Along with our fellow SERs, we urge OSHA to develop a more simplified approach to the temperature thresholds and methods, should the agency decide to move forward with this rulemaking.

Second, and importantly, the temperature thresholds – or, as called in the Regulatory Framework, the "heat triggers" – are too low and not based on science. We understand that OSHA may have referred to certain State OSH Plan states' adopted or proposed heat triggers in establishing the numbers that the agency included in Table 1. See OSHA SER Background Document at p. 14. Indeed, OSHA developed another table ("Table 2") to simplify the adopted or proposed State OSH Plan states' heat triggers. See OSHA SER Background Document at p. 15. Specifically, OSHA states:

The minimum options OSHA is currently considering for initial ambient temperature and heat index triggers are 82°F and 80°F, respectively, for on-site measurements. These are comparable with those in heat-specific standards adopted or proposed by states. As indicated in [Table 2] below, the states use various initial heat triggers, some of which are dependent on the clothing or gear worn by

workers. Some of the options for initial heat triggers OSHA is considering are the same as those used by states (CA, 2005; OR, 2022a; OR, 2022b; CO, 2022; WA, 2023). Although other states use different triggers, they are comparable with the options OSHA is considering. California and Colorado use an ambient temperature trigger of 80°F for outdoor work sites and agricultural sites, respectively, as does the Washington updated standard for workers wearing breathable clothing (CA, 2005; CO, 2022; WA, 2023). California's proposed indoor standard uses an ambient temperature trigger of 82°F, while Nevada's proposed standard for indoor and outdoor work sites uses 90°F (CA, 2023; NV, 2022). The states using heat index for outdoor and indoor work sites vary in their triggers: 80°F in Oregon and 88°F in the Maryland proposal (OR, 2022a; OR, 2022b; MD, 2022).

The minimum options OSHA is currently considering for high-heat ambient and heat index triggers are 90°F and 87°F, respectively, for on-site measurements. These are also comparable with those in adopted or proposed heat-specific state standards. While California and Colorado use an ambient temperature high-heat trigger of 95°F, the Washington updated standard uses 90°F and the Washington ETS and Agriculture standard use 89°F (CA, 2005; CO, 2022; WA, 2023; WA, 2022; WA, 2009). The California indoor proposal uses an ambient temperature or heat index trigger of 87°F to impose additional requirements (CA, 2023). Oregon uses a heat index of 90°F for both outdoor and indoor work sites to trigger additional high-heat requirements (OR, 2022a; OR, 2022b).

Table 2. Heat triggers in state heat standards

	Setting	Initial Heat Trigger	High-Heat Trigger
California	Outdoor	80°F (Ambient)	95°F (Ambient)
Washington ETS, Ag, and General Industry	Outdoor	89°F (Ambient) (all other clothing); 77°F (double-layer woven clothes); 52°F (non-breathable clothes)	89°F (Ambient, Ag + ETS only)
Washington (updated)	Outdoor	80°F (Ambient) (all other clothing); 52°F (non-breathable clothes)	90°F (Ambient)
California (proposal)	Indoor	82°F (Ambient)	87°F (Ambient or Heat Index), except for certain clothing or in high radiant heat (82°F)
Minnesota ¹	Indoor	86°F (WBGT), Light work; 80°F, Moderate work; 77°F, Heavy work	
Oregon Ag and General Industry	Indoor/Outdoor	80°F (Heat Index)	90°F (Heat Index)
Maryland (proposal)	Indoor/Outdoor	88°F (Heat Index) and the presence of external influencing factors	
Nevada (proposal)	Indoor/Outdoor	90°F (Ambient)	
Colorado	Indoor/Outdoor Agriculture only	80°F (Ambient)	95°F (Ambient) or other conditions

¹-Minnesota uses a 2-hour time-weighted average permissible exposure limit rather than a trigger

Note that there are different provisions required at each trigger by each state.

See OSHA SER Background Document at pp. 14-15. More than anything, what this confirms to us is that there is no “one size fits all” approach to regulating heat. Even states as close as California, Oregon, and Washington have vastly different ways of addressing this hazard. But, to the extent that OSHA relied on these State OSH Plan state standards, we do not think that it necessarily shows (the numbers selected in Table 1 are too low), or, perhaps more importantly, that OSHA should have relied on such standards in the first place. This is at least in part because there is no scientific reason for doing so. The states with adopted standards are all on the West Coast (except for Minnesota, which has an indoor-only rule). Clearly, the rest of the country does not have the same climate or weather patterns as the West Coast. Also, as we stated earlier, Colorado has an agriculture-only rule, making it inappropriate to compare against for purposes of developing a general industry rule. And, Maryland and Nevada only have proposed rules, so their heat triggers may change greatly before their standards are issued, if issued at all.

What’s perhaps even more puzzling though is that OSHA has completely diverted away from the heat triggers provided in its OSHA-NIOSH Heat Safety Tool App. Per OSHA’s Heat National Emphasis Program (“NEP”), “The OSHA-NIOSH Heat Safety Tool App is a resource for finding the forecasted and current heat index [(“HI)]. The App indicates the hazard levels using the heat index as: **Caution less than 80°F HI, Warning 80°F to 94°F HI and [D]anger at 95°F HI or higher.**” See OSHA “[National Emphasis Program – Outdoor and Indoor Heat-Related Hazards](#)” (April 8, 2022) at p. 5 (emphasis added). While we can see

that, per Table 1, the initial heat trigger when measuring onsite is 80°F heat index, which corresponds to the OSHA-NIOSH Heat Safety Tool App's "Warning" level, the other numbers do not follow. For example, the high heat trigger when measuring onsite is 87°F heat index, whereas the OSHA-NIOSH Heat Safety Tool App's corresponding "Danger" level is set at 95°F heat index. Again, we are puzzled by this, especially since OSHA has strongly encouraged employers, for years and years, to use its OSHA-NIOSH Heat Safety Tool App, including through its Heat Illness Prevention campaign materials. The numbers in Table 1 are too low.

To be clear, we are not advocating that OSHA adopt the triggers set by the OSHA-NIOSH Heat Safety Tool App for purposes of a national heat standard. Quite the contrary. We believe flexibility and consideration of local environmental conditions is key. However, we noticed that many SERs, including numerous SERs who participated in the September 7, 12, and 18 Panel meetings, mentioned that they currently use the OSHA-NIOSH Heat Safety Tool App, and think, in alignment with our position that employers' existing effective programs should be able to stay intact, that OSHA should ensure that these employers' reliance on the OSHA-NIOSH Heat Safety Tool App is deemed compliant under any heat illness prevention standard that the agency issues.

Circling back to a scientific approach to any heat triggers, one key consideration is that the triggers be based on local environmental conditions. As OSHA is aware, one of the greatest complications associated with issuing a nationwide heat illness prevention standard is geography. Weather varies considerably from coast to coast. And although creating a bright line heat trigger may seem objective and fair, doing so does not take into account the long-term acclimatization of workers. That is, by way of example, while workers in Florida may be accustomed to working in warmer temperatures for the majority of the year, workers performing the exact same work in Minnesota may not. Accordingly, consideration of local environmental conditions in the standard's temperature threshold is important.

To be clear, we do not deny that heat illness hazards can occur anywhere in the country. As set forth in the ANPRM, although Texas and California accounted for a quarter of all heat-related workplace fatalities from 2000-2010, when the size of the worker populations are taken into account, states like Mississippi, Arkansas, Nevada, West Virginia, and South Carolina, have been found to have the highest rates of heat-related workplace fatalities from 2000-2010. Additionally, as OSHA provides in the ANPRM, climate change is increasing the frequency and intensity of extreme heat events. Indeed, many states experienced record-breaking high temperatures this summer. However, to make this a fair and workable standard, we urge OSHA build into the standard triggers that make sense for the particular area and are higher and hotter than what the average citizen (and the workers covered by the standard) are typically exposed to on any particular day.

Although there is much more to be said on the topic, we conclude with three final remarks. First, in any standard the agency decides to promulgate, taking measurements cannot be

the only option. We understand that that eliminates all of the options for indoor worksites under the Regulatory Framework. However, again, we do not think that any standard should cover indoor work environments at this point. Maybe when OSHA and NIOSH complete development of an indoor OSHA-NIOSH Heat Safety Tool App, or when methods of determining indoor temperatures otherwise become easier, OSHA can pick up a second rulemaking, if it so wishes. However, for purposes of outdoor work environments, the option to track local forecasts is essential, particularly for small businesses that do not have the resources or industrial hygiene expertise to conduct periodic measuring, and for small and larger employers that work on multiple jobsites per day. Measuring temperature cannot be the only option; there must be allowance for tracking local forecasts or otherwise determining whether any heat triggers have been met.

Second, as roofing contractors, we think it is important for OSHA to keep in mind that, if the heat triggers are too low, we might be called more and more often to start earlier and earlier on in the day. While those earlier start times might be cooler, they can also be darker and more damp, meaning that our employees will be exposed to greater slip/trip/fall hazards. We work from heights, near the edges of buildings, on all kinds of roofs, including sloped roofs, and climb up and down ladders. Lighting and dry conditions are absolutely essential. And while some larger general contractors can afford extra lighting around the buildings we work on, others simply cannot.

And lastly, we recognize that OSHA is considering a definition for “heat wave,” which would trigger a couple additional requirements (namely, additional acclimatization and supervision requirements). *See* OSHA Regulatory Framework at pp. 4 and 7. In particular, OSHA is considering the following two options:

- When the National Weather Service issues a heat advisory or a heat warning for the local area
- When the daily maximum temperature exceeds 90°F and is 9°F or more above the maximum reached on the preceding days

See OSHA Regulatory Framework at p. 4. We think inclusion of a “heat wave” definition would only serve to make the standard more complicated and confusing and should be eliminated from any proposed rule. (Not to mention, trying to understand the second option for a definition alone is exceedingly difficult.) There are already three levels of compliance contemplated by the Regulatory Framework – (1) requirements that must be implemented at all times; (2) those that must be implemented at an initial trigger level; and (3) those that must be implemented at a high heat trigger level. *See* OSHA SER Background Document at p. 7 (“Figure 1” excerpt below).

Figure 1. Potential elements and when they might be required

Potential Elements	All Covered Workplaces (see Scope)	At or Above Initial Heat Trigger	At or Above High-Heat Trigger
Hazard identification and monitoring (based on forecast or workplace measurements)	●	●	●
Drinking water	●	●	●
Emergency response procedures	●	●	●
Training for employees and supervisors	●	●	●
Heat injury and illness prevention plan	●	●	●
Recordkeeping	●	●	●
Shade or cool-down area		●	●
Indoor air movement and humidity control		●	●
Acclimatization for new or returning workers, and during heat waves		●	●
Rest breaks (as needed or 10 min every 2 hours)		●	●
Effective communication means with employees		●	●
Rest breaks (minimum 15 min every 2 hours)			●
Supervisor or buddy system to observe for signs and symptoms			● (+ during acclimatization)
Pre-shift meetings or employee notifications			●

Adding a fourth level is unnecessary when the Regulatory Framework already provides a high heat trigger level. Additionally, even OSHA recognizes the difficulty associated with setting a national “heat wave” definition (similar to the difficulty associated with setting national heat triggers). OSHA states, “OSHA acknowledges that the specific conditions that constitute a heat wave vary across the country; the Agency is open to suggestions for easy-to-use approaches for heat wave definitions that can account for this variability.” See OSHA SER Background Document at p. 14. We think a “less is more” approach – that is, not including a definition for “heat wave,” or additional requirements during heat waves – is better in this regard.

4. The Standard Should Not Require Employers to Collect Information or Inquire About Individual Risk Factors.

In both indoor and outdoor settings, individual risk factors significantly contribute to risk of heat-related illness: some individuals are more susceptible to detrimental effects of heat based on their physical condition and/or their physiological make-up. Occupational heat-related fatalities have been found to occur more frequently in men than in women, in those with preexisting conditions (e.g., obesity, diabetes, hypertension, cardiac disease), and in

those with a preexisting use of certain medications or illicit drugs that predispose individuals to heat-related illness. Other factors, such as age, fitness level, alcohol consumption, prior heat-related illness, and lack of access to air conditioning in housing, also reduce the body's ability to regulate heat and can increase individual risk of heat-related illness. This, of course, is one of the primary reasons identifying and measuring the risk of heat stress in one's workforce is so challenging. Indeed, almost all, if not all, of the very few SERs who mentioned that they had experienced a heat related illness in their workforce stated that the employee's personal choices, including alcohol consumption, during off-time played a major role. This included at least two SERs from the September 7, 2023 Panel meeting (one employee was wearing a nicotine patch, the other had consumed alcohol the night before), and one from the September 18, 2023 Panel meeting.

Notwithstanding the fact that individual risk factors are significant contributors to heat hazard, the heat standard cannot require employers to collect information or inquire about individual risk factors. Such a requirement would be an invasion of employees' privacy, and would implicate concerns about the confidentiality of medical information. Such requirements also implicate numerous state and federal laws, including anti-discrimination laws, the Americans with Disabilities Act, etc. Indeed, this issue was raised by at least one SER at the September 7, 2023 Panel meeting, one at the September 14, 2023 Panel meeting, and another at the September 19, 2023 Panel meeting. Any standard promulgated by OSHA obviously cannot create a conflict between an employer's ability to comply with the standard and the ability to comply with existing laws. Additionally, collection of this type of personal risk factors-type information could fall within OSHA's medical records retention requirements (at 29 CFR 1910.1020) requiring employers to retain this information for thirty-plus years, imposing a heavy and costly administrative burden on employers.

Accordingly, rather than require employers to collect information or inquire about individual risk factors, or establishing a standard aimed at the "lowest common denominator" – which would still miss those most at risk and unnecessarily overregulate at the same time – the standard should address individual risk factors through training. As stated above, this standard should be training-focused, requiring employers to provide effective training on individual risk factors and encouraging employees to respond in the appropriate way if they are affected by any such factors.

5. To the Extent the Standard Applies to Indoor Environments, the Standard Should Not Include Requirements for Conditioned Air, or Combination of Air Movement and Humidity Control.

While we primarily work outdoors, many of our fellow SERs with indoor worksites raised the impossibility of being able to comply with the Regulatory Framework's engineering control requirements. After hearing their concerns, we still think indoor worksites should be excluded from any standard that comes out of this rulemaking, but, to the extent the standard applies to indoor work environments, we think that any broad requirement to condition air, or provide rooms with some combination of air movement and humidity

control, in indoor settings is simply not workable and should not be included in any heat illness prevention standard that OSHA promulgates. Per the Regulatory Framework, OSHA states:

OSHA has identified the following possible options for engineering controls for indoor work sites:

- Provision of a cool-down area (e.g., break room or trailer) that is air-conditioned or has some combination of air movement and humidity control, can accommodate the number of employees on break, and is located as close as practical to the work area
- Provision of work area controls:
 - Option: Increased air movement (except where it would increase exposure to contaminants). Increased air movement could include fans at individual work areas or the entire work site (when temperature is cool enough) or natural ventilation (e.g., open windows).
 - Option: Some combination of increased air movement (except where it would increase exposure to contaminants) and humidity control (depending on temperature and humidity status of work area).
 - Option: When feasible, air-conditioned work areas or control booths (if applicable)

See OSHA Regulatory Framework at p. 5. While engineering controls could potentially be managed in some areas, we anticipate based on feedback we have heard from other employers that there are many places (e.g., papermaking) where it simply is not feasible to isolate a machine, install much more airflow, or alter the humidity of the environment. This was echoed by numerous SERs as well. Specifically, many SERs at the September 18, 2023 Panel meeting stated that they could not add air conditioning in their work areas for a variety of reasons, such as the amount of makeup air, the size of their work areas, the need for ducts over the entire work area, greater hazard concerns, and/or supply issues. SERs at the September 12, 2023 Panel meeting also described that adding air movement can lead to greater hazards associated with cross contamination of harmful fumes or materials. Accordingly, an “if feasible” condition would be useful for all engineering control options, since we are sure that there are infinite variations in manufacturing facilities where engineering controls are not a simple fix.

As background, while the long-standing legal standards for demonstrating an occupational health standard is either economically or technologically infeasible are high, we believe that inclusion of an indoor air conditioning control, or requirement to provide rooms with some combination of air movement and humidity control, in a heat standard would render

it economically infeasible for vast swaths of the regulated community, making it subject to immediate and successful legal challenge by a host of industries. Likely the same would be true for many employers on technological infeasibility grounds. Installation of air conditioning systems is simply not technologically and economically feasible for all indoor environments.

Specifically, a standard is economically feasible when industries can absorb or pass on the costs of compliance without threatening industry's long-term profitability or competitive structure. *See Am. Textile Mfrs. Inst. v. Donovan*, 452 U.S. 490, 530 n. 55 (1981) ("*Cotton Dust*"). Standards are economically infeasible which "threaten massive dislocation to, or imperil the existence of, the industry." *See United Steelworkers of Am. v. Marshall*, 647 F.2d 1189, 1272 (D.C. Cir. 1981). More than any other engineering control we can imagine, installation of air conditioning systems and the additional requisite ancillary equipment necessary to operate the systems, like customized ductwork for large manufacturing or warehousing facilities, would be staggeringly costly. So too could be the provision of rooms with some combination of air movement and humidity control.

Even retrofitting existing systems likely would not meet the economic test for feasibility in vast numbers of manufacturing facilities. Each system is unique. To the extent systems exist in workplaces, many have had parts replaced or added to them, or have been ungraded, tweaked, and/or repaired over many years (including in some structures that are over a hundred years old), so the thought of "upgrading," or "modifying" them to provide sufficiently cool/moving air in areas throughout the workplace is infeasible.

On top of the extraordinary capital costs of conditioning large buildings, employers would also be adding costs associated with weekly, monthly, quarterly, and annual maintenance checks and tests required to keep large-scale systems working, adding enormous administrative costs for employers. On top of this, some employers have shared that it would be necessary to install a redundant system to keep air cooled during the high heat season. In sum, the cost of air conditioning, or providing rooms with some combination of air movement and humidity control, in all areas where workers conduct activities in hot environments would most certainly bankrupt many companies in many industries, resulting in the very type of industry restructuring the economic feasibility requirement of the OSH Act is designed to prevent.

For many building structures in many different industries, it also would be technologically infeasible to add air conditioning or provide rooms with some combination of air movement and humidity control. Technological feasibility has been interpreted to mean "capable of being done." *See Am. Textile Mfrs. Inst. v. Donovan*, 452 U.S. 490, 509–510 (1981). A standard is technologically feasible if the protective measures it requires already exist, can be brought into existence with available technology, or can be created with technology that can reasonably be expected to be developed (i.e., technology that "looms on today's horizon"). *See United Steelworkers of Am., AFL–CIO–CLC v. Marshall*, 647 F.2d 1189, 1272 (D.C. Cir. 1980) (Lead I); *Amer. Iron & Steel Inst. v. OSHA*, 939 F.2d 975, 980 (D.C. Cir.

1991) (Lead II); *American Iron and Steel Inst. v. OSHA*, 577 F.2d 825 (3rd Cir. 1978). Though this is a high standard to meet, it is not impossible. While air conditioning and/or rooms with some combination of air movement and humidity control are existing technologies that theoretically could be added to just about any structure, it would not be feasible to install ductwork in many existing facilities because of the inability to allocate the space necessary for the system and implement and maintain unimpaired airflow.

Some industries would be even more significantly impacted than others. For example, flour milling operations in the Southern states include many older operations that have been expanded over the decades to include interconnected structures that are separated by brick-and-mortar walls over six inches thick, making air conditioning installation infeasible due to structural integrity issues caused by boring holes for ductwork, as well as issues associated with balancing air to ensure air is evenly distributed throughout the entire workplace. Even if possible, the likelihood that installations of these systems could cause substantial damage to the structure is high. Also, there is a real possibility that subsequent malfunctioning of these “square hole in a round peg” systems could result in mold, rot, or other forms of structural damage. The idea of harmonizing newly installed air conditioning systems in large, interconnected structures, given all these challenges and variables, is simply not doable in many industries, but particularly those that where older and larger buildings are used. In sum, inclusion of a blanket air conditioning requirement or requirement to provide rooms with some combination of air movement and humidity control in a heat standard would render this standard legally impermissible under the OSH Act’s feasibility requirements. And it is not necessary. There are other means – much more cost effective – to achieve the same goal.

6. To the Extent the Standard Includes Requirements for Rest/Breaks, They Should be Flexible.

As we know, and as stated by SER after SER at all six Panel meetings, rest breaks and hydrations are part of many effective heat programs. These administrative controls are examples of effective alternatives to engineering controls like air conditioning. However, it is critical that these administrative requirements not be prescriptive; rather, flexibility in designing a rest/break regimen tailored to the particular work operations is imperative. Otherwise, central work activities and operations could be impacted, resulting not only in production issues but safety concerns. For example, a requirement for a regimented 10 or 15 break every two hours (under certain heat triggers), as contemplated in the Regulatory Framework, with no flexibility could result in lower manpower than necessary to safely conduct an operation, the loss of a critical co-worker with experience and operational knowledge at the exact “wrong” time to complete a job safely, etc.⁸ See OSHA Regulatory Framework at p. 7.

⁸ Additionally, as our fellow SERs mentioned, including at the September 13, 2023 Panel meeting, scheduling regimented breaks could decrease employee morale and the trust we have built with our employees. The break becomes something we have to give, rather than something we give voluntarily.

It also presents greater hazard concerns in our industry because we work from heights. The location of the rest area is often a factor in deciding work/rest for workers. While rest areas can sometimes be set up on a roof, often times, they cannot (e.g., on steep sloped roofs). Requiring our employees to climb up and down a ladder, donning and doffing substantial amounts of PPE, every couple of hours for a break, may actually put them at more risk. Falls are a leading cause of injuries in the construction industry, so this could be switching hazards (indeed, for a greater hazard). This concern was repeated by various SERs in our industry, as well as one SER who participated in the September 7, 2023 Panel meeting who mentioned that he works in the telecommunications industry, with cell phone towers that reach thousands of feet in the air. He expressed the same concern as we do here about any rigid requirement for rest breaks.

Rather, we believe that self-paced breaks, where employees and supervisors work together to coordinate rest breaks based on a wholistic view of the job and the various potential hazards associated with these tasks, as included to some extent in the Regulatory Framework as an option at or above the initial trigger (but not at or above the high heat trigger), is a safer and better approach to establishing rest break requirements. See OSHA Regulatory Framework at p. 7 (presenting an option at or above the initial trigger (but not at or above the high heat trigger) where “[e]mployees are allowed and encouraged to take rest breaks as needed to prevent overheating[.]”). This option should be presented as an option at or above the high heat trigger as well. As SER after SER mentioned at all six Panel meetings, the way we typically handle breaks right now is by allowing and encouraging our employees to take them whenever they need them. Again, we treat our employees like family, and, whether it is for concerns related to heat, a common cold or flu, a strain in their body, or any other legitimate reason, we want them to take care of themselves, first and foremost, always.

We also want to echo a couple of other points made by our fellow SERs. First, breaks are already sometimes “built in” to the schedules that our employees work. This was raised, for example, by a SER at the September 7, 2023 Panel meeting. He described that his employees pace themselves and have a workload that is naturally spread out across many hours. For example, one job might be from 2:00 – 3:00 PM, and another from 3:00 – 4:00 PM. Employees are not expected to make an instant transition; rather, they naturally take a break as they prepare for and begin the new job. We find that to be the case for a number of jobs across a variety of industries.

Second, we understand that OSHA may be concerned that employees will fear retaliation if they are only encouraged (not required) to take a break, and ask to or actually do take a break. Certainly, that has not been our experience, nor seemed to be the case for any of our fellow SERs. However, to rectify this concern, as one of the SERs at the September 12, 2023 Panel meeting mentioned, we think the key is providing training/communication to our employees on the fact that they will not be retaliated against if they ask to take a break and/or do so. This goes back to our position that any heat standard should be centered around training. Here too, we think the best approach is to allow employers to implement

employee self-paced breaks, where employees and supervisors work together to coordinate rest breaks, and to provide training on the fact that employees will not be retaliated against for taking breaks as needed.⁹

Additionally, we noticed that many of the poll questions and discussions during the Panel meetings centered around existing meal/rest breaks. We think that it is important that OSHA take into consideration the applicability of state wage and hour regulations and/or collective bargaining agreements that impact break requirements. For example, can any rigid break requirements set forth by this standard be combined with other existing breaks? How do the breaks line up throughout the day? The myriad of questions that arise from this are complicated indeed. Rather, a flexible, performance-oriented requirement associated with break time is better and necessary to ensure that employers are able to design their staffing programs in a manner that meets existing state requirements.

7. Hydration Requirements Should be Focused on Making Cool Potable Water Readily Accessible and Training Employees on Dehydration Hazards.

As with rest breaks, hydration is another key component to effective heat programs. We support the idea of including hydration requirements in a heat illness standard. However, the requirement should be focused on making cool potable water ***readily available*** and training employees on dehydration hazards. The agency must take care in establishing this requirement because, ultimately, an employer cannot ensure that an employee is hydrated. There are limitations to the authority and power supervisors have over their employees. Rather, it should be sufficient for employers to ensure that cool potable water is readily accessible to employees in a manner that can be imbibed and provide training to employees on the hazards associated with dehydration. Robust training on the importance of hydration, providing ready access to water and/or other hydrating options, not just beverages as set forth in the Regulatory Framework (e.g., fresh fruit, popsicles, etc.), and encouraging regular hydration in hot environments should be the limit of what is required in the standard. Building in any expectation or requirement that employers actually monitor either the amount of water consumed by each employee, or the specific amount of water available ***per employee***, is entirely unreasonable.

In terms of establishing specific quantities of water to be provided, we recognize that, under the Regulatory Framework, and, except for Minnesota, state heat illness prevention standards, include prescriptive requirements regarding the provision of water. Per the Regulatory Framework, OSHA states:

⁹ We do want to point out that, although it seemed to be rare, some SERs shared that certain employees took advantage of their flexible break policies. To the extent that employees are disciplined in such cases, that of course should not be interpreted as retaliation. Additionally, it should be made explicitly clear in any regulatory text for a heat standard that an employers' obligation in this regard is solely to allow and encourage employees to take breaks as needed. To the extent an individual employee does not take a break, that should not be used against the employer as a basis for issuing a citation.

There are existing OSHA requirements for employers to provide drinking water to employees. OSHA is considering specifying additional requirements for location, temperature, and quantity, such as:

- Drinking water must be located as close as practical to work areas
- Drinking water should be suitably cool
- ***Employees should have access to 1 quart (32 fluid ounces) of drinking water per employee per hour for the entire shift, provided by the employer (can be refilled throughout the shift)***
- Employees should have ample opportunity to drink water and must be encouraged to frequently consume water or other acceptable beverages
- Employers are allowed to provide other beverages (e.g., non-caffeinated electrolyte solutions) if they are provided in addition to minimum water requirements, not in place of

See OSHA Regulatory Framework at p. 6 (emphasis added). As set forth in the SER Background Document, all state standards except for Minnesota require employers to provide at least 1 quart of water per hour for each employee. See OSHA SER Background Document at p. 18 (“Where drinking water is not plumbed, California requires employers to provide one quart of drinking water per hour to employees for the entire shift (CA, 2005). At certain temperature triggers, Oregon, Washington and Colorado require employers to supply at least one quart of suitably cool drinking water per hour to employees (OR, 2022a; OR, 2022b; WA, 2008; WA, 2009; WA, 2022; WA, 2023; CO 2022).”).

We believe that such prescriptive requirements are unnecessary and impose unrealistic expectations on employers. The quantity of water made available to employees should not be set at a specific amount, so long as employees have ready access to the quantity they so desire. Workers know their bodies best, and, coupled with extensive training on the importance of staying hydrated in warmer temperatures, will have the requisite information and education to make the best decisions about the amount of water they consume for themselves.

Additionally, we disagree with the Regulatory Framework language that “[e]mployers are allowed to provide other beverages (e.g., non-caffeinated electrolyte solutions) ***if they are provided in addition to minimum water requirements, not in place of.***” See OSHA Regulatory Framework at p. 6 (emphasis added). Employers large and small seem to share the common experience of employees preferring electrolyte and other safe, hydrating options over water. As was mentioned by OSHA during OSHA’s New England Area Offices’ August 9, 2023 roundtable discussion addressing heat illness, sometimes psychology plays a part in making these other options more likely to be consumed. The options, like freeze

pops, tend to be viewed as “treats” by employees, and are often consumed right away (in part also to keep from melting). That has been our experience, as well the experience of other employers, too. Indeed, even though we provide our crews with coolers of water, they are always adding electrolyte powder to it, sometimes in less concentrated form, to make it a little less sweet. Those regularly come back empty. Accordingly, we do not think employers should be penalized for providing other, safe hydrating options in place of water, especially since these options are often healthier than water (any options that include electrolytes provide essential nutrients and minerals), and water is often part of the mixture or an ingredient of these options already.

8. The Standard Should Provide Flexible Acclimatization Requirements and Allow for Self-Managed Acclimatization.

The standard should provide flexibility regarding any acclimatization requirements. As set forth in the ANPRM, “[a]cclimatization refers to the process of the human body becoming accustomed to new environmental conditions by gradually adapting to the conditions over time. Gradual exposure to the condition of concern (e.g., heat) allows the body to develop more robust physiological responses, such as a greater sweat response, to adapt to heat more efficiently.” See 86 FR at 59320. We are concerned that evaluations of workplace fatalities have shown that approximately 70% of deaths occur within the first few days of work, and upwards of 50% occur on the first day of work, highlighting the consequences of workers not becoming acclimatized to the environmental conditions of the workplace. However, by its nature, acclimatization is unique and individualized, and depends on an employee’s personal health and his/her background experience and exposure to and familiarity with hot environments.

Indeed, as OSHA mentions, acclimatization is important for those who may have been previously acclimatized but were out of the workforce or hot environment of the workplace for more than two weeks (e.g., due to vacation or sick leave). Additionally, workers with underlying medical conditions may need more time to fully adapt to the heat. Not to mention, acclimatization periods will be different due to variations in the physical demands of work and the duration/intensity of hazardous heat to which each employee is exposed (depending on site demands). This makes it impossible for employers to use a one-size-fits-all approach. Employers therefore need flexibility and discretion in developing acclimatization plans that will be most effective for the workplaces/workforce. Among the options to address acclimatization should be an allowance for employers, through training, to empower their employees to self-manage their acclimatization periods. Allowing for more self-managed acclimatization through health education awareness and training is key.

To that end, we believe that OSHA has presented a couple of options that, with some changes, seem workable, assuming they stay as options in any regulatory text for a heat standard. Under the Regulatory Framework, for both new and returning employees who have previous experience with the job but have been away from the job for some period

(e.g., 7, 14, or 30 days), OSHA presents the following three options:

- Option: Employer-developed plan that includes heat hazard awareness training before work begins in addition to increased monitoring and communication by supervisor or designee for the first week
- Option: Employer-developed acclimatization protocol based on the work tasks performed by employees, clothing/personal protective equipment (PPE) worn, and environmental risk factors. The standard could specify a minimum protocol for this option.
- Option: Follow high-heat procedures at the initial heat trigger [] for the first week

See OSHA Regulatory Framework at p. 6. We believe the first two options could be workable, with at least a few changes. Specifically, for the first option, and as we discuss below, we do not think “increased monitoring and communication by supervisor or designee for the first week” is the right approach. Again, a standard that relies heavily on supervisors monitoring and making judgment calls about employees’ signs and symptoms of heat illness is ill-advised. Supervisors cannot possibly know whether this employee is looking tired v. fatigued, or that employee has heat rash or eczema. Not for one employee, and definitely not for multiple employees. Employees know their bodies best; any requirement to replace the increased monitoring/communication language in the first option should center around increased communication to employees about the importance of reporting any signs or symptoms of heat illness to their supervisors.

As for the second option, first, we do not think the standard should set a minimum protocol for this option. A non-mandatory appendix may be helpful, but ultimately, it should be left for the employer to decide. Additionally, we do not necessarily think that all of the factors listed in the option (i.e., “work tasks performed by employees, clothing/personal protective equipment (PPE) worn, and environmental risk factors”) need to be considered. The option should be reworded to state: “. . . work tasks performed by employees, clothing/personal protective equipment (PPE) worn, **and** environmental risk factors, **and/or any other relevant factors.**” This will help add the type of flexibility employers need with respect to their acclimatization protocols, should they choose this option.

Additionally, and this is where the rubber meets the road, OSHA also provides a fourth gradual acclimatization option for both new and returning workers (one slightly different from the other) under the Regulatory Framework:

New employees:

- Option: Gradual acclimatization to heat:

- First day – heat exposure restricted to 20 percent of a normal duration
- Second day – heat exposure restricted to 40 percent of a normal duration
- Third day – heat exposure restricted to 60 percent of a normal duration
- Fourth day – heat exposure restricted to 80 percent of a normal duration
- Fifth day – normal duration of heat exposure

Returning employees who have previous experience with the job but have been away from the job for some period (e.g., 7, 14, or 30 days)

- Option: Gradual acclimatization to heat:
 - First day – heat exposure restricted to 50 percent of a normal duration
 - Second day – heat exposure restricted to 60 percent of a normal duration
 - Third day – heat exposure restricted to 80 percent of a normal duration
 - Fourth day – normal duration of heat exposure

See OSHA Regulatory Framework at pp. 6-7.

As background, we are aware that OSHA and NIOSH have historically recommended the “Rule of 20%,” as reflected in the gradual acclimatization option for new employees (and as slightly modified for returning workers) under the Regulatory Framework, for acclimatizing workers.¹⁰ However, we have found this approach unnecessary and/or impractical/infeasible in many instances, and very costly, yet yielding little to no benefit. For example, sometimes we hire employees who have been performing the same tasks literally down the street in the same environmental conditions, and thus, already have been properly acclimatized when they begin work for us. There would be no benefit or need to apply the “Rule of 20%” to a worker under these circumstances, and there is a major cost associated with such a rule. We see that OSHA is considering exempting such employees, and support such an exemption. See OSHA Regulatory Framework at p. 6 (“Exemption: Newly hired employees who report recently (e.g., in the prior week) performing the same work tasks in similar heat conditions could be exempted”).

However, our concerns by no means stop there. We are aware of other employers that hire employees on short-term assignments, such that, by the time workers are properly acclimatized according to the “Rule of 20%,” the assignment has concluded. In that situation, while it would be important to ensure acclimatization, applying the “Rule of 20%” is not feasible. Similarly, another employer described to us that one of the challenges associated with acclimatizing workers is that, in high turnover occupations, there is often a

¹⁰ As set forth in the ANPRM, “[u]nder this regimen, workers would only work 20% of the normal duration of work on their first day in hazardous heat conditions performing job tasks similar in intensity to their expected work, increasing the work duration by 20% on each subsequent day until performing a normal work schedule. For example, if the normal workday lasts 8 hours, then new workers should work no more than 1 hour and approx. 40 minutes (20% of 8 hours) on their first day in the heat, and spend the remainder of the workday doing work tasks without heat stress.” See 86 FR at 59320-59321.

need “to work immediately” due to operational demand. There are also complications associated with large scale, multi-site locations. One employer said that, at such locations, management may require an advanced software management process to verify acclimatization processes are adhered to and effective. But not all employers, particularly small businesses, may have sufficient resources to acquire and use such software. To subject all employers to a one-size-fits-all acclimatization approach, especially such a costly one like the “Rule of 20%,” would, at minimum, post extraordinary staffing concerns, and in many cases, make staffing projects impossible.

Indeed, we also try to keep a stable number of workers on a job, which makes vacations or other leaves doubly onerous, as we would need to establish coverage for a week even after the employee returns. Additionally, any temporary cover employees working in the heat would need to be acclimated – not just for the time covering the employee, but for a week beforehand. This means that an employee out for a week requires *three weeks* of work by a covering employee. And that is all assuming that there is other work for the acclimatizing employee to be doing, which we think is an incorrect assumption made by OSHA. See SER Background Document at p. 34 (“Note that the amount of work time actually lost due to acclimatization will be tempered by the fact that workers may be able to complete other tasks during periods at or above the initial heat trigger so long as they are not working in those conditions. OSHA estimates that workers, on average, would spend 50% of their non-heat exposed time during acclimatization on tasks in non-heat exposed work conditions.”). This carousel effect of employees covering employees is unduly burdensome and can be cost prohibitive. At any one time, we might not have enough people to keep going.

Instead, we urge OSHA to provide flexibility with respect to any acclimatization requirements. This will allow employers to take into account the unique factors specific to their workplaces and employee populations. For example, some employers establish, for new employees, a period of reduced workload until such time the employee can perform as expected. And, as we heard from multiple SERs, including specifically at least one SER during the September 12, 2023 Panel meeting, sometimes acclimatization is not formalized, but already built into existing onboarding/orientation schedules for new employees. For example, the SER mentioned that, when hiring, they conduct a month or more of training before the employee is ever tasked with full operational responsibilities. In this sense, new employees are already acclimatizing.¹¹ Other employers may conduct hazard assessments to determine whether new employees have already been properly acclimatized. And we, as

¹¹ To that point, we do think that acclimating returning employees is more difficult than new employees from an administrative standpoint. Again, many new employees naturally go through an acclimatization process because they are not hired and immediately given a full schedule. Training, orientation, and onboarding all play a vital role in preparing new employees on how to work safely when conducting their job tasks. However, returning employees, as mentioned by numerous SERs, might have come back from even warmer locations, which is particularly true in the warmer summer months, when employees like to visit the beach, go fishing, or partake in other outdoor activities. In those instances, acclimatization simply is not necessary, yet, it will be exceedingly difficult for us to ask, employee-by-employee, what they did during their time away. Accordingly, we believe that any acclimatization requirements should be more focused on new employees. Additionally, we believe seven days is typically too short of a time period to be considered “returning.”

well as our fellow SERs, provide extensive training to employees on the importance of acclimatization. A comprehensive, yet tailored and flexible, approach in this regard is necessary.

9. The Standard Should Provide Flexibility Regarding Employee Monitoring Requirements and Limit Supervisor Responsibilities to Circumstances Where Employees Report Signs or Symptoms of Heat Illness.

The standard should provide flexibility regarding any employee monitoring requirements, and limit supervisor responsibilities to circumstances where employees report signs or symptoms of heat illness. While we recognize that physiological, medical, and exposure monitoring of workers exposed to heat hazards can prevent heat strain from progressing to heat-related illness or death, flexibility must be provided in this regard. As set forth in the Regulatory Framework, OSHA states:

The standard could require the supervision of employees for signs and symptoms of heat-related illness. Options could include:

- At or above the initial heat trigger []: employers maintain effective communication with employees by voice, observation, or electronic means (such as a handheld transceiver, phone, or radio) and provide regular communication
- At or above the high-heat trigger [] or for new or returning workers who may not be acclimatized or during heat waves:
 - Option: Observation of employees for signs and symptoms by coworkers, also called a buddy system (using either visual or verbal communication)
 - Option: Observation of employees for signs and symptoms by supervisor, with no more than 20 employees supervised per supervisor or designee

See OSHA Regulatory Framework at p. 7. First, this should not be characterized as a supervision requirement; it more accurately would be an employee monitoring (or, to the extent OSHA does not want to confuse these requirements with monitoring/measuring for temperature, observation) requirement.

Second, additional options should be presented. As set forth in the ANPRM, employee monitoring activities may include self-monitoring of urine color and monitoring of heart rate and core body temperature. SERs who participated in the September 12 and 18, 2023 Panel meetings described how they provide and train on urine charts so that employees can determine whether they may need to drink more water. Additionally, individual-level biomonitoring with wearable technologies may be an option in some occupational settings, assuming appropriate training is provided to those doing the monitoring and with access to

the data.¹² Monitoring activities also may include communication and buddy systems, as set forth as an option under the Regulatory Framework when temperatures are at or above the high-heat trigger or for new or returning workers who may not be acclimatized or during heat waves, where workers are educated in signs and symptoms of heat-related illness and proactively look for signs and symptoms in fellow workers and encourage them to rest, hydrate, and find shade or seek emergency medical attention if the worker is experiencing signs of heat-related illness. These should all be options, not requirements, under both initial and high heat trigger / non-acclimatized worker / heat wave scenarios, from which employers can choose based on what fits their workplaces and work populations best.

This is especially true because, for certain employers who have lone workers for example, the options presented under the “at or above the high-heat trigger [] or for new or returning workers who may not be acclimatized or during heat waves” section are not options at all. Such employers cannot employ a buddy system for lone workers, nor can they have supervisors observe employees for signs and symptoms, because, definitionally, the lone worker is alone. Equally effective is allowing employers to choose the monitoring activities that work best. We have found a variety of methods to be effective, and those should not be taken away and replaced with a set of prescriptive requirements which may or may not work for a specific worksite. Accordingly, to the extent that there are employee monitoring requirements in the standard, those requirements should be flexible.

Third, and importantly, any requirements placed on supervisors should be limited to circumstances where employees report signs or symptoms of heat illness. As discussed above, the wording “observation of employees for signs and symptoms” is extremely vague.¹³ We rely on our employees to speak up, but if they don’t, and choose to self-diagnose or self-manage, it is impossible for us to know if they are experiencing signs or symptoms of heat illness. Is this employee sweating too much? Too little? Is that employee looking tired? Fatigued? Supervisors cannot possibly know the answers to these questions, not for one employee, let alone multiple employees. Again, employees know their bodies best, and any requirement regarding supervision should be limited to circumstances where employees report signs or symptoms of heat illness. Training employees on the importance of reporting any signs or symptoms of heat illness to their supervisors is key. Otherwise, it would be difficult to tell what would be considered

¹² Although it does not appear this way, to the extent that OSHA intends to require employers to equip all employees with monitoring equipment and manage the results/actions derived from this information, the costs would be tremendous. Additionally, there would be extra complexity associated with managing the number of devices and their use in multi-site locations. Such locations would have to assign a manager to distribute the devices daily and track data. This would simply be infeasible, particularly for small businesses. Moreover, serious concerns regarding confidentiality are implicated with any requirement to gather and monitor biological data, by individual personnel. Indeed, some of the information could be subject to OSHA’s Access to Employee Exposure and Medical Records Standard, 29 CFR 1910.1020.

¹³ Our concerns here apply equally to other parts of the Regulatory Framework that use similar wording. See e.g., OSHA Regulatory Framework at p. 8 (stating that the standard could require employers to “[r]espond to reported **or observed** signs and symptoms of heat illness.”) (emphasis added).

sufficient action by an employer, especially if a heat illness were to occur. Greater emphasis on worker engagement/training will make for a stronger, not weaker, standard.

10. The Standard Should Not Include Any Requirements Regarding PPE or the Multi-Employer Worksites, But Should Keep the Section on Additional Administrative Controls Broad and Open-Ended.

We understand that OSHA may be contemplating requirements regarding PPE and multi-employer worksites. This is wholly unnecessary as existing standards/policies already govern these topics. *See* 29 CFR 1910.132; *see also* OSHA [Multi-Employer Citation Policy](#) (December 10, 1999). With respect to PPE specifically, employers have very differing needs with respect to PPE usage, and a standard should not mandate one way or another. As roofing contractors, cooling PPE, such as cooling vests, and other cooling equipment, like cooling towels, can create greater hazards. First, they are heavy, and become even heavier because they get wet/soggy. This makes it very difficult for employees to climb up and down ladders, for example. Second, they are difficult to wear with other PPE, such as fall protection, and might even interfere with essential PPE components. We have provided our crews with cooling PPE options, and frankly, like employees of our fellow SERs, our employees too did not like them.

Additionally, per the Regulatory Framework, OSHA states:

- Additional administrative control options could include:
 - Altering work schedules (i.e., scheduling outside of the typical workday or season)
 - When the high-heat trigger [] is met or exceeded, holding a pre-shift meeting or notifying employees of the following:
 - High-heat procedures are in effect
 - Encouraging employees to drink plenty of water
 - Reminding employees of their rights to take rest breaks as needed
 - Location of shade and/or cool-down areas, breaks, and water for mobile work sites
 - Designating employees to call 9-1-1 in a medical emergency
 - In indoor environments, restricting access to excessively high heat areas (e.g., those with ambient temperatures at or above 120°F) by only allowing employees that have been trained to access these areas and placing warning signs outside or near these areas

See OSHA Regulatory Framework at pp. 7-8. We think OSHA should keep these options (in particular, the option for altering work schedules, which is a method we use at times), but

make this section broader and open-ended so that employers can use any reasonable (including innovative) administrative controls that work for their workplaces.

11. To the Extent that There Are Any Recordkeeping Requirements, They Should be Limited to Training Records Only.

Like our fellow SERs, we have significant concerns with the recordkeeping section of the Regulatory Framework. Per the Regulatory Framework, OSHA states:

The standard could require employers to maintain any or all of the following records:

- Environmental monitoring data (maintained for a certain period of time)
- A record of any heat-related illness or injury (including those that only require first aid) and the environmental and work conditions at the time of the illness or injury
- An accurate record of all heat acclimatization for new and returning employees

See OSHA Regulatory Framework at p. 10. Additionally, OSHA states that “[t]hese records would need to be maintained and made available in accordance with OSHA’s Records Access standard (29 CFR 1910.1020). See SER Background Document at p. 25. Collecting and maintaining environmental monitoring data, records of any heat-related injuries and illnesses, and acclimatization records for all new and returning workers for 30+ years would be completely unnecessary, and, particularly for SERs, extremely challenging, if not impossible, and an absolute waste of resources that would better be spent on other, more meaningful safety initiatives (including, for example, actually implementing heat illness mitigation measures).

First, as to environmental monitoring, such monitoring data is simply a weather reading, most of which is publicly available and archived anyway. To the extent OSHA is contemplating including this as a requirement so that it can ascertain indoor temperatures, again, we do not think indoor heat should be covered in this rulemaking. Additionally, there is no reason to keep environmental monitoring data, let alone maintain it for 30+ years, under OSHA’s Records Access Standard, 29 CFR 1910.1020. While we understand the motive for requiring employers to keep certain records for such a long time period because of the latency period of certain illnesses, that is not the case here. For example, the preamble to OSHA’s Hexavalent Chromium Standard provides:

The final rule also incorporates the requirement that employers maintain and provide access to records in accordance with OSHA’s standard addressing access to employee exposure and medical records (29 CFR 1910.1020). The medical and exposure records standard requires that exposure records be kept for at least 30 years and that medical records be kept for the duration of employment plus thirty

years. ***It is necessary to keep these records for extended periods because of the long latency period commonly associated with cancer. Cancer often cannot be detected until 20 or more years after first exposure. The extended record retention period is therefore needed because causality of disease in employees is assisted by, and in some cases can only be made by, having present and past exposure data as well as the results of present and past medical examinations.***

See 71 FR 10100 at 10371 (February 28, 2006) (emphasis added). For the vast majority of heat illnesses, and certainly, for those being addressed by this rulemaking, the concern is about acute, not chronic, illness.¹⁴ This is not like hexavalent chromium or asbestos or lead or other similar monitoring data, which can let employees know about any chronic and/or latent health conditions. Rather, any heat standard that is issued from this rulemaking is meant to address immediate illness/injury, as reflected at least in part by the Regulatory Framework's language regarding supervision and medical treatment and heat-related emergency response.

Second, as to recording heat-related injuries and illnesses, OSHA already has requirements about recording heat-related injuries and illnesses that are work-related and meet recording criteria. Those are in OSHA's Recordkeeping Standard, 29 CFR 1904.4. We know OSHA means for employers to record ***all*** heat injuries and illnesses, despite the severity and despite work-relatedness. However, that is a significant departure from OSHA's existing Recordkeeping Standard. The Recordkeeping Standard was devised with certain boundaries – including boundaries on severity and work-relatedness – and (arguably) expanding the Recordkeeping Standard through more specific standards, such as a heat standard, could be tantamount to underground or backdoor rulemaking.¹⁵ Should OSHA wish to change its Recordkeeping Standard, it should do so through a separate rulemaking.

Third, as to acclimatization records, it goes without saying that keeping acclimatization records of all new and returning employees would amount to piles and piles of paper, for large and small employers alike. Even if collected and stored electronically, that would amount to substantial data storage costs, which again, small businesses might not be able to readily (or actually) afford.

¹⁴ We acknowledge that, in OSHA's ANPRM, OSHA states that “. . . there are some health conditions associated with occupational heat exposure that may take many years to manifest in workers previously exposed to hazardous heat due to the latency period between exposure and symptom onset (Gubernot et al., October 2014).” See 86 FR at 59311. However, immediately thereafter, OSHA states, “For these illnesses that develop over time, it is unlikely that the current national datasets of occupational illnesses and injuries associate those outcomes with hazardous heat exposure.” See 86 FR at 59311. Accordingly, we do not believe OSHA has adequate data to support a showing of significant risk to material impairment of employee health as related to any chronic heat illnesses, at least not at this point.

¹⁵ We recognize that OSHA's COVID-19 Healthcare Emergency Temporary Standard (“ETS”) contains recordkeeping provisions, include a requirement for covered employers to keep COVID-19 Logs to track all COVID-19 cases, regardless of work-relatedness. See 29 CFR 1910.502(q)(2)(ii). However, the COVID-19 Log was meant at least in part to assist with contact tracing efforts. Here, no such concern exists; heat illness is not contagious.

To that end, as discussed more broadly above, the estimates in the SER Background Document are extremely low. Estimating that a person would spend 5 minutes per measurement to take heat recordings using measurement equipment such as a heat index monitor, 5 minutes per employee recording heat-related illness or injury, and 10 seconds per employee recording acclimatization each time, is not realistic. *See* OSHA SER Background Document at p. 44. Taking a measurement is one thing (which is still more time-consuming than the estimates provided). Recording and maintaining it takes extra effort. Also, heat injuries and illnesses are often very difficult to determine, especially due to personal health conditions that our employees might have that involve similar signs and symptoms. That determination alone could take days. And documenting acclimatization could get very complicated based on employee schedules.

Recordkeeping will be an administrative nightmare for small businesses. We already have to keep and maintain numerous documents. If we had to keep even one of these sets of documents, we think we would have to hire someone new, like some of our fellow SERs mentioned too. Again, we do not have the manpower for this. We are already wearing too many hats, and need to focus our efforts on what really matters – keeping our employees healthy and safe, not unnecessary, needless paperwork.

CONCLUSION

We respectfully request that the SBREFA/SBAR Panel give meaningful consideration to the comments and recommendations provided herein as it develops and delivers its Final SBREFA Report, and as the agency potentially moves forward to develop a proposed standard to address occupational heat illness.

Sincerely,

/s/ Rodney Petrick

Rodney Petrick

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/s/ John Fleming

John Fleming

President, Weathercraft Co. of Colorado Springs

Occupational Safety and Health Administration

Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings

Small Entity Representatives

ⁱ At the outset, we urge OSHA to take into consideration the views expressed by the majority of the U.S. Supreme Court in its decision in *Nat'l Fed'n of Indep. Bus. v. Dep't of Labor*, 142 S. Ct. 661 (2022). While there surely are widely divergent views on the propriety of the Court's decision, the agency should be mindful of the Court's viewpoint and position on the limitations of OSHA's authority to regulate generalized hazards that are not uniquely "occupational" in nature. Our point is not to agree with the Court on these boundaries; we do not express a view on this point. However, we do recognize that those boundaries have been clearly established, and believe, therefore, that the agency now must use the guideposts clearly laid forth in that decision in this rulemaking. To do otherwise would subject the agency and the regulated community to years wasted and significant resources expended on a rule for naught – because any final rule scoped beyond the Court's newly established guideposts would likely be found to be beyond the agency's authority to promulgate and impermissible. We will continue to be heavily involved in this rulemaking process, and will do our best to provide information, data, thoughts, and insights based on our programs, and our views about how to best ensure U.S. workforces are protected from the hazards of heat exposure. OSHA similarly will continue to devote significant of its scarce personnel resources to this effort. This exercise should not be in vain. OSHA should therefore proceed cautiously and carefully in this rulemaking. There exist some red flags that bear noting, and some overarching alternatives to establishing a standard at this point that should be considered:

- a. Heat exposure could be viewed as the very type of ubiquitous, broad hazard to which all humans are exposed, rendering a standard designed to control and protect against it the very type of hazard the Supreme Court cautioned against;
- b. Heat exposure in both indoor and outdoor environments is undoubtedly a recognized hazard for which OSHA has ample authority under the General Duty Clause to control (including through its Heat National Emphasis Program); and
- c. Developing the boundaries, requirements, and thresholds for a heat illness standard presents particular challenges to the agency because there are so many personal health conditions and risk factors (obesity, high blood pressure, diabetes, etc.) that greatly impact the onset of heat-related illness.

It is with this caution that we provide the following comments.