American Federation of Labor and Congress of Industrial Organizations

815 Black Lives Matter Plaza NW
Washington, DC 20006

202-637-5000

aflcio.org

AFL-CIO

AMERICA'S UNIONS

January 14, 2025

Douglas Parker

Assistant Secretary for Occupational Safety and Health

U.S. Department of Labor

200 Constitution Ave., N.W.

Washington, DC 20210

Re: Request for Comments on OSHA's proposed standard on Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings; Docket ID: OSHA-2021-0009-4761

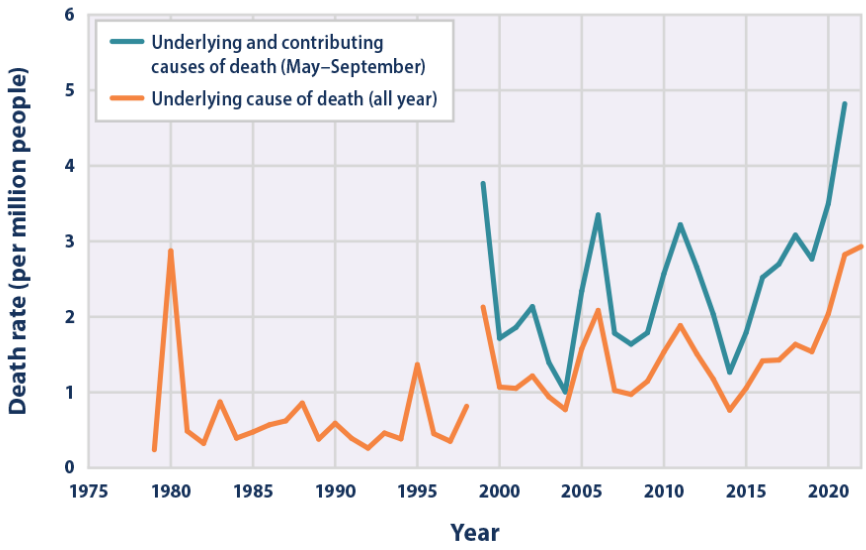
Dear Mr. Parker,

On behalf of the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO), we appreciate the opportunity to comment on the Occupational Safety and Health Administration (OSHA) notice of proposed rulemaking (NRPM) on Heat Injury and Illness Prevention in Outdoor and Indoor Settings. As a federation of 61 national unions representing nearly 15 million working people in this country, many of whom work indoors and outdoors in increasingly hot conditions, we support OSHA's proposed rule to prevent work-related heat injury and illness and encourage the implementation of comprehensive, systemic measures to protect America's divergent workforce. In support of this process, the AFL-CIO also submitted comments to OSHA's advanced notice of proposed rulemaking to prevent heat exposures in January 2022.

Requiring employers to prevent and mitigate injuries and illnesses associated with heat exposure is overdue, timely, and critically needed. Heat has been a significant hazard to workers, specifically because of their job activities, for decades, and has become increasingly worse, making many jobs unbearable and outright dangerous in recent years. In 2024, climate events have made it evident that extreme heat is an ever-increasing issue. The summer of 2024 was the hottest

ever measured, usurping the previous record set in 2023.[1] This paved the way for record-shattering rates of heat-related emergency department visits in the United States: the first half of summer 2024 alone saw more visits to the emergency room than the entirety of the summer of 2023.[2] The National Weather Service found that extreme heat kills more Americans than any other type of weather-related event.[3] Scientists anticipate that every region of the United States will sustain more intense temperature extremes throughout the 21st century with the Southeast, Southwest, and Alaska having the most drastic increases in heat.[4] High-temperature episodes have become more recurring, intense, and drawn–out, and increasingly occur earlier in the year and last longer, amplifying health risks for workers.

Deaths Classified as "Heat-Related" in the United States, 1979–2022



Between 1998 and 1999, the World Health Organization revised the international codes used to classify causes of death. As a result, data from earlier than 1999 cannot easily be compared with data from 1999 and later.

Data sources:
- CDC (U.S. Centers for Disease Control and Prevention). (2024). *CDC WONDER database: All ages deaths by underlying cause* [Data set]. Retrieved May 22, 2024, from https://wonder.cdc.gov/Deaths-by-Underlying-Cause.html
- CDC (U.S. Centers for Disease Control and Prevention). (2024). *Indicator: Heat-related mortality* (Annual national totals provided by National Center for Environmental Health staff in June 2024) [Data set]. National Center for Health Statistics. https://ephtracking.cdc.gov

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

[5]

[1] Younger, S. "NASA Finds Summer 2024 Hottest to Date." National Aeronautics and Space Administration. 11 September, 2024. Available at: https://www.nasa.gov/earth/nasa-finds-summer-2024-hottest-to-date/.
[2] U.S. Department of Health and Human Services. "2024 Heat-related Emergency Department Visit Rates Are Higher Than Last Year." 2024. Available at: . https://www.hhs.gov/climate-change-health-equity-environmentaljustice/climate-change-health-equity/climate-health-outlook/extreme-heat/index.html.
[3] National Weather Service. *Weather Hazards Statistics.* National Oceanic and Atmospheric Administration, weather.gov/hazstat. Accessed 2 Dec. 2024.
[4] Union of Concerned Scientists. *Extreme Heat: Heat Waves, Climate Change, and Health.* Aug. 2018, https://www.ucsusa.org/sites/default/files/attach/2018/08/extreme-heat-science-fact-sheet.pdf. Accessed 14 Dec. 2024.
[5] U.S. Environmental Protection Agency. (2024, December 13). *Climate change indicators: Heat-related deaths*. U.S. Environmental Protection Agency. https://www.epa.gov/climate-indicators/climate-change-indicators-heat-related-deaths.

Recent years have demonstrated extreme heat as a physiological risk to both indoor and outdoor workers due to their working conditions that can be managed differently to lessen the effects. There is an abundance of evidence showing that it is feasible to mitigate work-related heat exposures and further, that when we prevent heat exposures, we save lives and improve livelihoods.

Under the occupational health and safety law governing our nation, it is the employer's responsibility to maintain a safe workplace free from recognized hazards. OSHA is responsible for promulgating standards and regulations that require employers to mitigate workplace hazards. Since OSHA's inception, the agency has successfully issued standards to protect workers from silica, asbestos, lead, bloodborne pathogens, unsafe machinery, excessive noise, fall risk, and other hazards. Despite 50 years of imperative rulemaking by OSHA, the agency has yet to require a comprehensive standard that protects workers from heat and it is urgently needed.

The AFL-CIO supports OSHA's efforts to promulgate a national heat standard to protect workers. The NPRM offers a comprehensive approach that is feasible and adaptable across every industry while maintaining critical elements that reduce workers' significant risk of exposure to heat hazards on the job. Below we offer comments on improvements that are necessary to strengthen OSHA's proposal so that the final rule is both protective and effective on the ground.

Extreme heat in outdoor and indoor working environments is a longstanding, well-recognized workplace hazard and regulatory gaps still expose workers to significant risk of harm from heat exposure.

Extreme heat in outdoor and indoor working environments has been established as a workplace hazard for decades, with well-documented risks to workers across industries. In 1972, the National Institute for Occupational Safety and Health (NIOSH) first developed criteria for OSHA to promulgate a federal standard.[6] Since its initial publication, NIOSH has updated its recommended criteria twice in 1986 and 2016. In May 2023, the National Advisory Committee of Occupational Safety and Health (NACOSH), OSHA's advisory committee, sent recommendations to OSHA on key elements of a heat standard.[7] Despite decades of growing scientific and workplace research cementing the harm of occupational heat exposure on workers, regulatory gaps persist leaving more than 50 million workers in America unprotected from heat as global temperatures continue to increase due to the changing climate.

In the absence of a federal standard, several states have issued their own standards to protect workers from heat, which has created different requirements for employers between states and jurisdictions. In 1997, Minnesota's State OSHA plan developed a heat standard covering indoor

[6] National Institute for Occupational Safety and Health. *Criteria for a Recommended Standard: Occupational Exposure to Hot Environments.* U.S. Department of Health, Education, and Welfare, 1972.
[7] National Advisory Committee on Occupational Safety and Health. (2023). *Amendment to recommendations for potential elements of a proposed heat injury and illness prevention standard*. U.S. Department of Labor, Occupational Safety and Health Administration. Available at https://www.regulations.gov/document/OSHA-2023-0003-0012.

workers.[8] In May 2022, Oregon OSHA established heat standards protecting both outdoor and indoor workers.[9] In January 2022, Colorado adopted heat standards that covered agricultural workers.[10] In June of 2023, Washington adopted a heat standard for outdoor workers.[11] In June of 2024, the California OSHA plan finalized its indoor heat standard since previously developing an outdoor heat standard in 2005.[12] In September 2024, Maryland issued a strong, comprehensive heat standard covering both outdoor and indoor workers. Finally, Nevada was the latest state to adopt an indoor and outdoor heat standard in November of 2024.[13] Phoenix, AZ, and other localities have adopted or are in the process of issuing worker heat protections.

The U.S. military has long had its own heat prevention programs in effect that include key systemic elements, including a comprehensive plan, controls farther up the hierarchy, break requirements, acclimatization and training, a temperature trigger, and hourly assessment of Wet Bulb Globe Temperature when trigger is reached.[14] The Defense Health Agency also works directly with research centers for constant improvements to military programs and practices, such as in May 2024 when U.S. Army basic combat trainees (BCT) were studied and assessed as the most susceptible population of military personnel to experience heat illness. The study concluded that adaptations of the BCT program are required to maintain rigorous standards without incurring unacceptable risk of heat illness among recruits.[15]

Under the Occupational Safety and Health Act of 1970, employers are obligated to mitigate workplace hazards. In the absence of a federal heat-specific standard, OSHA relies on its general duty clause and provides voluntary guidance practices for employers and workers. Still, these measures have been insufficient in ensuring extensive and enforceable worker protections and instead, leave workers at significant risk of injury and illness due to hot working environments. Lack of comprehensive and effective heat illness prevention programs, inconsistent implementation of hydration, shaded rest areas, and flimsy approaches to adjusted worktimes have left workers unprotected, resulting in increased work-related heat morbidity and mortality.

---

[8] Minnesota Department of Labor and Industry. Occupational Safety and Health Division: HEAT STRESS. https://mn.gov/admin/assets/heat_stress_guide_tcm36-207189.pdf.

[9] Oregon Occupational Safety and Health Division Department of Consumer and Business Services. https://osha.oregon.gov/OSHARules/pd/pd-299.pdf.

[10] Colorado Department of Labor and Employment, Division of Labor Standards and Statistics. https://cdle.colorado.gov/sites/cdle/files/7%20CCR%201103-15%20Agricultural%20Labor%20Conditions%20Rules%20%5Baccessible%5D.pdf.

[11] Washington State Department of Labor & Industries, Division of Occupational Safety and Health. https://www.lni.wa.gov/forms-publications/F417-300-000.pdf

[12] Department of Industrial Relations: Heat Illness Prevention in Outdoor Places of Employment. https://www.dir.ca.gov/title8/3395.html

[13] Nevada Department of Business and Industry, Division of Industrial Relation. https://www.leg.state.nv.us/Register/2024Register/R131-24AP.pdf

[14] U.S. Department of Defense. (n.d.). *CPHE Heat/EHIP Guide*. Public Health Center. https://ph.health.mil/PHC%20Resource%20Library/cphe-heat-ehip-guide.pdf.

[15] Patton EM, Doyle MW. Observed Warming Trends at U.S. Army Basic Combat Training Installations and Implications for Future Recruit Training. Mil Med. 2024 May 18.

A federal standard would level the playing field for employers and workers across states, addressing a regulatory gap heightened for workers amidst a changing climate. However, even once a final federal standard is issued, it is worth noting that nearly 8 million state and local public sector workers in states without OSHA programs will not be afforded coverage under the standard unless states choose to act on their own. Further delays and inaction will only proliferate heat-related illnesses and deaths.

Heat in the workplace poses a significant risk for indoor and outdoor workers and many workers of color face disproportionate risks.

Millions of indoor and outdoor workers remain at risk of acute heat disorders such as heat stroke, heat syncope, heat exhaustion, heat cramps, hyponatremia, heat rash, rhabdomyolysis, and permanent organ damage.[16] The onset of these morbidities is oftentimes inconspicuous and not appropriately attributed to the severe disorders previously described. Symptoms include rapid heart rate, lightheadedness, headache, dizziness, nausea, weakness, irritability, thirst, excessive sweating, and decreased urine output.[17] Continuous exposure to environments with high temperatures can exacerbate pre-existing health issues, diminish cognitive abilities, and impair decision-making, resulting in work environments that are much more dangerous.[18] High temperatures in workplaces contribute to additional workplace injuries due to slippery sweat, foggy personal protective equipment, and utilization of hot tools/equipment. A study by the Workers Compensation Research Institute assessed claim data which uncovered that the probability of work-related accidents increases by 5-6% when daily temperatures exceed 90°F.[19] The Bureau of Labor Statistics (BLS) Annual Survey of Occupational Injuries estimated there were 33,890 work-related heat injuries involving days spent away from work from 2011-2020.[20] The Centers for Disease Control and Prevention found that heat exposure contributed to 702 deaths in a similar period between 2008-2018.[21] The U.S. Bureau of Labor Statistics reported 53 fatalities due to extreme heat in 2023, up from 43 in 2022; these are both expected to be

[16] National Institute for Occupational Safety and Health (NIOSH). *NIOSH Criteria for a Recommended Standard: Occupational Exposure to Heat*. U.S. Department of Health and Human Services, Public Health Service, 2016. 47-58.

[17] Id.

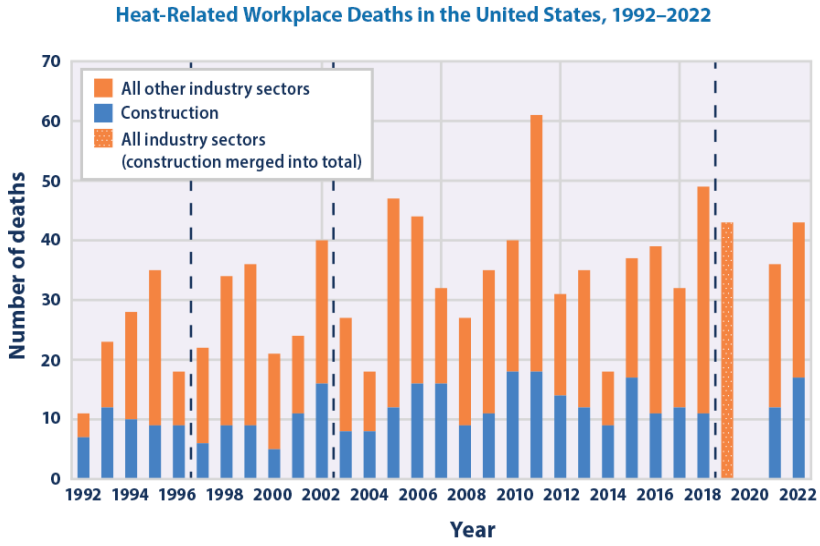
[18] Xiang J, Bi P, Pisaniello D, Hansen A. Health impacts of workplace heat exposure: an epidemiological review. Ind Health. 2014;52(2):91-101. doi: 10.2486/indhealth.2012-0145. Epub 2013 Dec 21. PMID: 24366537; PMCID: PMC4202759.

[19] Workers Compensation Research Institute. (2024). *Impact of excessive heat on the frequency of work-related injuries*. Available at: https://www.wcrinet.org/reports/impact-of-excessive-heat-on-the-frequency-of-work-related-injuries.

[20] "Heat Injury and Illness Prevention SBREFA Panel." *Occupational Safety and Health Administration*, n.d., https://www.osha.gov/heat/sbrefa. Accessed 14 Nov. 2024.

[21] Vaidyanathan A, Malilay J, Schramm P, Saha S. Heat-Related Deaths — United States, 2004–2018. MMWR Morb Mortal Wkly Rep 2020;69:729–734. DOI: http://dx.doi.org/10.15585/mmwr.mm6924a1

undercounts of the real problem due to issues with a variety of reporting, recording, and death certificate requirements and procedures.[22]



Data source: BLS (U.S. Bureau of Labor Statistics). (2024). *Census of Fatal Occupational Injuries (CFOI)*. Retrieved April 29, 2024, from www.bls.gov/iif/oshcfoi1.htm

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

[23]

A comprehensive heat standard must establish that all types of workers exposed to heat-prone settings are protected from heat illness and injury, regardless of industry and geographic location. OSHA must consider all fields in which workers face significant risk of heat exposure including seasonal, temporary, mobile, indoor, and outdoor workers. Outdoor workers are exposed to weather and climate conditions daily, including hot working conditions, humidity, and wind, often in addition to heavy labor, that all must be considered when assessing work tasks. Various industries with outdoor workers can include construction, landscaping, agriculture, utilities, postal and delivery, and oil and gas. Occupational heat-related mortality is 35 times higher among agricultural workers compared to workers from any other industry.[24] Construction workers also face a substantial risk of the detriments of extreme heat exposure, from 1992 to 2016, construction workers accounted for 36% of all occupational heat-related

[22] U.S. Bureau of Labor Statistics, "Fatal occupational injuries by event or exposure."

[23] U.S. Environmental Protection Agency. (n.d.). *A closer look at heat-related workplace deaths*. U.S. Environmental Protection Agency. https://www.epa.gov/climate-indicators/closer-look-heat-related-workplace-deaths

[24] El Khayat M, Halwani DA, Hneiny L, Alameddine I, Haidar MA, Habib RR. Impacts of Climate Change and Heat Stress on Farmworkers' Health: A Scoping Review. Front Public Health. 2022 Feb 8;10:782811. doi: 10.3389/fpubh.2022.782811. PMID: 35211437; PMCID: PMC8861180.

deaths.[25] The toll of heat exposure disproportionately affects Black and Brown workers as they make up the largest margins of outdoor workers in America.

Indoor workers are also at significant risk of exposure to heat hazards and we commend OSHA for including them in this comprehensive standard (however, please refer to comments below about the exclusion of "indoor sedentary work"). Overexposure to heat is prevalent in workplaces that do not have adequate heating, ventilation, and/or air conditioning (HVAC) systems. Often, where these systems exist, they are not maintained according to manufacturer instructions and industry standards, reducing their effectiveness. Therefore, we strongly support OSHA's inclusion to ensure the HVAC systems are maintained properly.

Even so, outdated and older buildings can exacerbate and increase temperatures in these settings. Indoor workers perform all sorts of jobs that increase their heat exposures, including work near ovens, near industrial machine processes with radiant heat, in unairconditioned indoor cranes, at higher levels of a plant with extreme temperature differential, in maintaining broken cooling systems, and many others. These industries with hot indoor working environments can include warehousing, education, postal service buildings construction, manufacturing, food processing and preparation, laundry, hospitality, utilities, and "temporary" or makeshift structures in many industries that then serve permanent uses. For example, the U.S. Postal Service (USPS) set up unairconditioned temporary structures to handle the mass mailing of COVID-19 test kits across the nation; many of these structures still exist for other USPS work and they can become very hot, especially in southern states.

Many mobile workers—such as those in telecommunications, utilities, maintenance, transit, delivery, first response, and many other occupations—face additional challenges related to employers' inadequate handling of heat exposures on the job. These include but are not limited to, solo work, movement from indoors to outdoors frequently, work in buildings, homes, and vehicles, communication, exposure monitoring of varying environments, different control measures necessary, different work schedules, and interaction with various jurisdiction ordinances. However, just like across other settings, it is feasible for employers to monitor, assess, plan, and adjust as conditions change; but OSHA should take additional considerations into ensuring the heat standard applies practically to these work settings.

Temporary work increases the vulnerability of workers to uncontrolled heat exposures. Temporary workers are at higher risk of being not trained adequately, not acclimatized, not made aware of preventive practices, and lacking clear supervision and communication channels. Workers performing temporary work can work in any industry and are increasingly hired across industries.

As the federation of 61 national labor unions, we also support the direct experiences in workplaces submitted by our affiliated unions.

---

[25] Dong XS, West GH, Holloway-Beth A, Wang X, Sokas RK. Heat-related deaths among construction workers in the United States. Am J Ind Med. 2019 Dec;62(12):1047-1057. doi: 10.1002/ajim.23024. Epub 2019 Jul 22. PMID: 31328819.

A heat injury and illness prevention standard is necessary to protect indoor and outdoor workers and OSHA has the authority and responsibility to promulgate such a standard.

A national heat illness prevention standard is a mandatory safeguard for the various sectors of outdoor, indoor, mobile, seasonal, and temporary workers mentioned above who face the risk of heat-related morbidity and mortality. Without a standard, states have relied on OSHA's general duty clause and provided voluntary guidance practices for employers, which have not been sufficient in getting employers to implement effective and systemic control measures to prevent injury and illness. When a citation has been issued, it has almost always been after a fatality or hospitalization, which is too late. A heat-specific standard is necessary to prevent fatal and non-fatal injuries and illnesses from occurring.

Occupational risks of heat exposure are different from public exposures because of their job requirements and the power structure in the workplace, which prevents many workers from modifying or affecting the employer's work environment. Just as OSHA has long regulated lead and other workplace hazards that are also present outside the workplace, the agency has full authority and clear responsibility to issue heat requirements for employers to fulfill their duty under the law.

OSHA must require employers to follow the hierarchy of controls to control heat exposures for indoor and outdoor workers.

Heat exposures in both indoor and outdoor work can be prevented and mitigated by applying commonsense and known exposure controls. The hierarchy of controls is the fundamental model used for exposure control plan requirements throughout other OSHA standards and widely elsewhere for heat exposures in the workplace. The hierarchy of controls framework emphasizes hazard elimination, substitution, and engineering controls, before moving on to work practice and administrative measures and finally onto measures that place responsibility on individual workers' adherence to personal protective equipment (PPE) and other individual behaviors.[26] (See also the American Industrial Hygiene Association white paper attached to these comments.) However, OSHA's proposed rule does not require employers to use the hierarchy of controls when identifying needed control measures, leaving employers to use reactionary and non-systemic measures that focus more on worker behavior. We strongly recommend OSHA modify the structure of its heat standard to align with its other standards and require the use of the hierarchy in methods of compliance, as well as through its heat plan requirements. OSHA also is not transparent about employer requirements to *implement* control measures; this language needs clarity in the final rule.

The use of the hierarchy is a longstanding, widespread industrial hygiene practice and heat is no exception to its use; in fact, it is a great example of its utility. A multi-pronged approach of

[26] Centers for Disease Control and Prevention (CDC). (n.d.). *About the hierarchy of controls.* National Institute for Occupational Safety and Health (NIOSH).

controlling hazards in the workplace can only be used in the hierarchy framing in order for it to be most effective. Otherwise, it permits employers to cherry pick less effective control measures in place of more effective controls farther up the hierarchy, and those that often place the burden only on the worker, rather than the systemic interventions employers are responsible for.

NIOSH's heat recommendations going back decades, as well as other documented heat prevention practices and current heat consensus standards (see the recent ANSI heat standard), all require the emphasis of engineering controls and the use of the hierarchy of controls. On its website, OSHA itself outlines heat controls at different tiers of the hierarchy that apply to many workplaces (please see attachment of web page), but fails to apply and integrate them into its proposal.[27] In fact, it would be useful for OSHA to include an appendix in the final rule describing the many different kinds of control options within the hierarchy and we encourage the agency to do so.

There are two overall "buckets" critical for reducing the adverse health and safety effects of work-related heat exposure:

1) preventing work-related exposure to heat, and
2) mitigating the body's physiological response to the remaining heat they are exposed to.

Both are very important and OSHA is responsible for addressing both of these areas in order for employers to reduce harm to workers from work-related heat exposures. However, OSHA's proposal tends to focus heavily on the second area, rather than the first. Water, rest, and shade, as well as acclimatization, are vital to mitigating the physiological effects of heat on the body, but they generally do not prevent heat exposure from reaching the worker, unless a person is working in the shade.

The hierarchy of controls is designed to control workers' *exposure* to the hazard and by its very nature is not prescriptive, but is a tiered approach that provides hazard control options at each level of effectiveness. This is paramount in mitigating heat exposure, just like other workplace hazards.

Requiring the hierarchy of controls does not mean that employers need to use controls not applicable to them, but just as with all other OSHA standards, employers need to demonstrate that they used or considered using these more effective control measures before moving onto controls down the hierarchy.

For example, in addition to other measures, outdoor airport environments can change working surface materials to reflect, rather than absorb, heat and install radiant heat exposure barriers and construction employers can schedule the location of their work by "chasing the sun" (i.e., working in different areas as the sun shifts throughout the day so that workers can remain in the in the shade, where feasible)—both that can have profound impacts on heat from reaching the workers, lessening the physiological response needed from workers' bodies.

[27] https://www.osha.gov/heat-exposure/controls

Other examples of controls farther up the hierarchy include modifying work schedules in which heavy laborious tasks happen during cooler time frames. In the event that elimination of heat is not possible, employers must follow the next intervention measure of engineering controls such that increased cooling mechanisms like ventilation/cooling systems, air conditioning, and heat shields are additional stopgaps to protect workers from extreme heat.[28] This is particularly relevant for indoor workspaces such as commercial kitchens, manufacturing plants, warehouses, and indoor construction sites as these workplaces can increase in ambient temperature due to machinery utilization.

Administrative controls like heat acclimatization and work-rest cycles can accompany engineering controls but cannot displace them. Compulsory shaded rest breaks with water still keep workers susceptible to heat, particularly if the working area's ambient temperature is constantly high. Acclimatization protocols must emphasize gradually adjusting workers to high-heat environments over a period of days or weeks. OSHA's proposed acclimatization period is less than the NIOSH's recommendation, which recommends gradually increasing workload and closely monitoring workers over 7 to 14 days.[29] Notably, OSHA's state plans in both California and Washington follow this gradual acclimatization plan.[30,31] Lastly, PPE such as cooling vests and reflective clothing should be used only in combination with/used as a supplement to more effective measures, as long as they do not create an increased heat burden. Besides, workers say that cooling vests are often not useful after 20-30 minutes, and often warm again by the time they reach their job site if they have to walk through a large factory, for example. PPE places the onus of heat mitigation on the individual worker rather than mitigating the hazard in the workplace.

Break requirements for water, rest, and shade are all critical for mitigating the body's response to heat exposure and are useful in combination with other control measures. Just as OSHA requires employers to identify where and how heat hazards occur (and as employers do through a job hazard analysis), OSHA must require employers to walk through the hierarchy to identify control measures *for* those hazards; and the employer's heat plan must include the appropriate controls applicable to their industry, job tasks and setting, in addition to water, rest and shade breaks.

There are many other examples and OSHA knows about them, as the agency describes many on its website to control heat exposures with engineering and work practice controls, in its guidance materials, and from NACOSH recommendations to the agency.[32] In its final standard, OSHA should better distinguish the purpose and requirements of employers using the hierarchy. The agency would be moving against decades of precedent by ignoring the hierarchy altogether.

---

[28] Occupational Safety and Health Administration. *Heat: Controls for Heat Exposure.* U.S. Department of Labor, https://www.osha.gov/heat-exposure/controls. Accessed 14 Nov. 2024.
[29] NIOSH. *Heat injury and illness prevention in outdoor and indoor work settings: Notice of proposed rulemaking.* Retrieved from https://www.osha.gov/sites/default/files/Heat-NPRM-Final-Reg-Text.pdf/.
[30] California state regulations §3395. Heat Illness Prevention in Outdoor Places of Employment. www.dir.ca.gov/title8/3395.html.
[31] Washington state regulations 296-62-095 Outdoor heat exposure. 2008. https://app.leg.wa.gov/WAC/default.aspx?cite=296- 62&full=true#296-62-095.
[32] https://www.osha.gov/heat-exposure/controls

It is technologically and economically feasible to control worker exposure to extreme heat.

Heat exposures in the workplace have been controlled effectively for decades by implementing systems that reduce temperature generation, modify the working environment, and eliminate exposure. These systemic solutions apply to divergent industries, presenting comprehensive and viable methods to strengthen safety and maintain productivity even in extreme heat. A challenge faced by warehouse, manufacturing, and other indoor workers is heat accumulation, especially during the summer months. With the addition of inadequate ventilation, lack of proper air conditioning, and the use of heavy machinery such as forklifts, indoor ambient temperatures can quickly rise.

An Amazon facility in New Jersey upgraded its HVAC system after a worker died from extreme heat in 2022.[33] HVAC systems include updated cooling mechanisms and constant airflow management to sustain safer indoor temperatures in enclosed spaces. Coca-Cola's bottling plants have adopted industrial cooling systems that mitigate heat accumulation for workers during production. Coca-Cola installed Vilter's large-scale industrial refrigeration systems to alleviate high temperatures. Vitler systems cut one factory's energy cost by $160,000 annually while managing specific production temperatures, tighter process control, overheating prevention, and contributing to higher production volume.[34]

There are many manufacturers of industrial HVAC systems, such as Systemair who manufacture tailored systems that advance air circulation in extreme heat to factories and food processing and preparation facilities.[35] The International Association of Sheet Metal, Air, Rail and Transportation (SMART) union represents workers performing testing, adjusting and balancing (TAB) of airflow in HVAC systems as well as the manufacturing and installation of materials used in these systems. Expertise is widely available to create, install, and properly maintain such systems to ensure systems are functioning as the designer and manufacturer intended.

Employers in the agricultural sector in California are required to stay in compliance with Cal/OSHA's heat illness prevention regulations to mitigate heat exposure for workers, just as employers in other states with OSHA heat standards. Modular shade structures, misting systems, and cooling tents are examples of controls that reduce heat illness and injury in these settings. These measures are practical and enforceable when temperatures exceed 80°F and are applied to large-scale agricultural farms in the state.[36]

Challenges in small business environments shall not be reason enough to exclude them from the rule altogether. Small businesses have many resources available to them through OSHA's

---

[33] Rosenberg, E. NBC News. "Amazon Warehouse Death Puts Heat Safety in the Spotlight." NBC News, 3 Sept. 2022, https://www.nbcnews.com/business/business-news/amazon-warehouse-death-heat-safety-new-jersey-rcna43639.

[34] Emerson Climate Technologies. "Bottling Company Improves Operations with Industrial Refrigeration System." *Vilter*, 2014, https://media.copeland.com/ddd2c05b-e6d2-487b-b7e3-b16d0016125e/VILTER%20REF%20Bottling%20Company%20QBR.pdf.

[35] https://www.systemair.com/en-us/expertise/about

[36] California Department of Industrial Relations. (n.d.). *Title 8, section 3395: Heat illness prevention*. California Department of Industrial Relations. https://www.dir.ca.gov/title8/3395.html

compliance assistance specialists, on-site consultation program (a *free* service to small and medium sized businesses) and other resources, such as its small business safety and health handbook and heat-specific materials.[37, 38, 39] Employers know how to keep themselves cool in their homes and can apply similar measures to protect their workers.

By prioritizing and investing in technologies that mitigate extreme heat, employers can feasibly adhere to OSHA regulations that protect workers and permit the work to continue. Employers can demonstrate that the reduction in workplace illness and injuries and the safe operation of their business during prolonged and ever-increasing hot weather events can help reduce the need for operation interruptions and outweigh the initial cost of the technology. Besides, OSHA regulations are meant to be technology-forcing so that where specific technology does not already exist, an OSHA heat standard is designed to drive the market to create technology solutions.

Below are the AFL-CIO's additional comments and positions on specific provisions of OSHA's proposed heat standard:

Exclusions on indoor sedentary work

The AFL-CIO objects to the proposed rule's exclusion of indoor sedentary work. We believe OSHA has not considered all areas of work that fall into this category and practical working conditions. For example, many "indoor sedentary" workers would include our members who work at a desk on/near hot factory floors and those in unairconditioned post offices, and education settings, among many others. These workers cannot be at the whim of any employer's temperature setting, especially since consistent work in hot environments, even when at a desk, places workers at risk. OSHA's own offices have air conditioning for its sedentary workers.

OSHA's standard shall be based on the significant risk that heat poses to workers because the body is responsive to the warming work environment, and then additionally to other factors. Workers who are performing heavy labor have compounded effects, which would have them reach the equivalent of a temperature threshold sooner, but does not preclude other workers at that temperature threshold from being harmed by the effects of heat. OSHA currently has it backward and needs to address this in its final rule. Excluding these workers from the rule would be arbitrary and detrimental to the aim of the rule.

In response to OSHA's question under scope in the NPRM, all workers—including those in indoor sedentary work settings—shall have protections that are triggered at the same temperature thresholds of 80- and 90-degrees Fahrenheit.

[37] https://www.osha.gov/complianceassistance/cas.

[38] https://www.osha.gov/consultation.

[39] https://www.osha.gov/sites/default/files/publications/small-business.pdf.

Heat illness prevention program/Heat exposure control plan

We support OSHA's requirement for employers to provide a written heat illness prevention plan, or exposure control plan, which needs to focus on requirements that control exposures to heat at work. Employers must create and implement a written program that anticipates worker risks for overexposure to heat and outlines methods to control those risks. The program must be written to ensure that both employers and workers know the full scope of work-related factors that are potentially present at their workplace, as well as the comprehensive set of actions that will be put in effect to control heat exposures appropriate to the tasks and settings.

Workers and their representatives must be involved in every step of this process to ensure that all the risks are properly identified, proper control measures are implemented in their workplace, access to adequate rest breaks are given, and other control measures are provided and encouraged.

Additional procedures for extreme heat conditions must be required. Extreme heat conditions must require additional rest breaks, monitoring for heat illness symptoms, and other precautions beyond those required during high heat conditions. Additionally, there will be extreme heat conditions where work cannot be performed safely and work must be stopped and rescheduled for a cooler time (e.g., nighttime, a cooler day). In other standards, this has been defined as heat above 100-degree heat index or a lower heat index with other factors that increase the risk. Indoor work may have emergency temperatures that are temporary and require work to be stopped until the emergency can be addressed and the temperature to be controlled. Planning for these scenarios must be included in the written program. In recommendations for the heat standard in 2016, the CDC acknowledged that sedentary work should cease when ambient temperatures surpass 110°F.[40] Many indoor and outdoor work settings already exceed that threshold regularly.

Heat trigger definition

OSHA should maintain the language of the initial heat trigger at 80°F as this heat trigger would cement a definitive temperature threshold at which employers are obliged to implement preventive measures within the hierarchy of controls for heat exposure mitigation. Studies routinely and scientifically back the physiological detriment of prolonged exposure to extreme heat when temperatures exceed 80°F and become even more exacerbated when temperatures reach 90°F and hotter.[41] The inclusion of this trigger would position itself behind California and Maryland—state plans that have already effectively implemented a comprehensive and enforceable standard.

[40] National Institute for Occupational Safety and Health (NIOSH). NIOSH Criteria for a Recommended Standard: Occupational Exposure to Heat. U.S. Department of Health and Human Services, Public Health Service, 2016.
[41] Courtney E. Morris, Richard G. Gonzales, Michael J. Hodgson & Aaron W. Tustin (2019) Actual and simulated weather data to evaluate wet bulb globe temperature and heat index as alerts for occupational heat-related illness, Journal of Occupational and Environmental Hygiene, 16:1, 54-65, DOI: 10.1080/15459624.2018.1532574.

Acclimatization

Acclimatization is an essential measure that reduces heat exposure for the first assignment periods of work under hot conditions—including new workers or workers who have not been assigned hot work for three or more days. This is key to preventing heat stress, stroke, and death. The written plan must include the employer's clearly defined acclimatization procedures. It is not sufficient to closely observe newly assigned employees to reduce the magnitude of the risk. OSHA must include provisions that require employers to implement a scheduled acclimatization plan to reduce heat exposure within the first days of assigning work in hot conditions and ensure everyone is trained on this plan. Employers should be able to tailor their acclimatization plan to their specific workplace, but the plan must include reduced workloads and reduced work hours in hot conditions that are gradually increased until a worker is fully acclimated to the conditions.

In the final rule, it would be useful for OSHA to provide an appendix with commonly used and recommended schedules to help employers develop and tailor their acclimatization plans. It is important to note that reduced workloads and work hours does not mean no work can be performed; rather, it means reduced work under hot conditions. Workers must not be penalized through reduced pay and benefits during the time required to acclimatize for their job obligations.

Proactive Assessment of Heat Exposure

Employers must plan for and assess heat exposure on the job site daily, incorporating all factors that contribute to heat exposure. This includes ambient temperature, radiant heat from the sun, other sources of radiant heat (e.g., hot asphalt, steam piping, ovens, mechanical rooms), wind speed, humidity, workload and physical exertion and personal protective equipment. There are many existing tools and devices to estimate heat exposures that allow employers to easily make proactive determinations, incorporating them into regular protocols and job tasks.

We support stronger incorporation and reliance on using wet bulb globe temperature (WBGT) to accurately assess hot working conditions. In 2025, there are also many sharing and real-time technologies that will only continue to improve and OSHA can drive the market on the most accurate, real-time technologies that are rooted in WBGT and reflect real work environment conditions.

Water, rest and shade and control measures

Access to hydration, rest and shade are foundational elements of a heat illness prevention program. Cool-down areas that allow workers to rest, hydrate and cool down must be made accessible and communicated clearly to workers. In addition to cool down areas, employers must require periodic rest breaks, and encourage rest breaks and drinking of water and electrolytes as necessary for all workers in hot conditions. The duration and frequency of breaks should be based on both the temperature and other risk factors (e.g., radiant heat, workload, PPE). We urge OSHA to require mandatory scheduled breaks at the lower temperature trigger of 80 degrees F. Additional breaks should be required in high heat conditions, and additional and extended breaks

if work is permitted in extreme heat conditions. The ACGIH rest break schedule should be considered for incorporation or modification in OSHA's standard.

As stated previously in these comments, the inclusion of water, rest and shade breaks do not replace the need for employer requirements to apply exposure controls using the hierarchy of controls.

The AFL-CIO opposes OSHA's current language on prohibiting fan use at 120 degrees F. It is widely documented that fan use starts to have a warming effect above 95 degrees F.[42]

Cooled drinking water

We support OSHA providing specific details about the coolness and volume of water that should be made available and accessible to workers. Oregon's heat illness and prevention plan has implemented such language in the state's regulatory guidance.[43] Tracking water temperature is economically feasible and is not a complex process. Thermometers are low in cost and are easily portable.

Buddy system and lone work procedures

A buddy system is a simple way to have workers look out for each other and ensure that rest breaks are taken, hydration, early warning signs are flagged and first aid is called for when needed. When workers are required to work alone, employers must be required to implement lone-worker procedures. Lone worker procedures must include a daily work plan so a supervisor knows where and when the lone worker is located and uses specific check-in and communication protocols. Lone work should not be permitted when conditions are hazardous enough and OSHA should consider requiring buddy system procedures at a lower threshold since this work is *always* more dangerous. We urge OSHA to require lone work procedures at the lower threshold of 80 degrees F.

Continued pay and benefits

When rest breaks are taken by the worker, either due to a scheduled break or preventative break, the employee must not be penalized through loss of pay or benefits. Any time spent in a rest break or time spent acclimatizing to hot work must be paid to ensure that workers are not discouraged from taking breaks when needed to prevent heat illness. California has clarified that all required breaks to prevent heat illness must be paid for all workers under their labor codes,

[42] New York State Department of Health. "When It's Too Hot for a Fan." 2017. https://www.health.ny.gov/publications/6594/

[43] Oregon Occupational Safety and Health Division. (2019). *Heat illness prevention guide* (Publication No. 5866). Oregon Occupational Safety and Health Division. https://osha.oregon.gov/OSHAPubs/5866.pdf.

including workers who are compensated on a piece-rate basis.[44,45] A federal standard should incorporate similar paid break protections as it directly influences workers' access to a healthy working environment permitted by the agency's regulatory authority. We support OSHA's provision that prohibits costs from being passed onto workers for the protections provided to them in this standard.

First aid and emergency response

We support OSHA's inclusion of emergency response requirements. Employers must be required to have a first aid and emergency response protocol to address emergency situations, including providing first aid and calling and receiving emergency care. It is not enough for the provision of a first aid kit, but full team communication, clear procedures and accessible resources tailored to each work setting about response protocols and assignments of duties for each team member in the event of a heat illness emergency, including those trained in first aid.

Training

Training for workers ensures that they have accurate and reliable information about the signs, symptoms and risks of heat illness, the risk factors in their workplace, the actions their employer is taking to protect them, and how to safely perform their job tasks, including when and where to safely take a scheduled or other break. Training should also include the limitations of PPE. While some types of PPE can help reduce the risk of heat illness, it is not an alternative to a minimum number of cool-down breaks or acclimatization procedures; and some PPE contributes to the risk of heat illness. To ensure training is effective, employers must document who has received training and ensure training is participatory and performed by a knowledgeable person using methods and language that all workers understand.

Additionally, supervisors must be provided specific heat illness prevention awareness training on and on implementation of the employer's heat illness prevention program. The training provisions must include training for supervisors to encourage workers to take a non-punitive break if they are experiencing signs or symptoms of heat illness and activate emergency response procedures. Supervisors and workers should be rewarded for identifying signs and symptoms of heat illness and taking preventative action before a worker falls ill.

Recordkeeping: Recording and reporting

The proposed rule lacks clear requirements for employer recording and reporting of work-related heat incidents, injuries and illnesses. As OSHA acknowledges in the preamble of the proposed

[44] https://www.dir.ca.gov/pieceratebackpayelection/AB_1513_FAQs.htm

[45] https://law.justia.com/codes/california/2011/lab/division-2/200-243/226.7/

standard, work-related heat illnesses are vastly under-recorded and underreported. In 2021-2022, BLS reported only 5,177 cases of "exposure to environmental heat" resulting in days away from work, restricted activity or job transfer (DART) nationwide out of nearly 3.4 million DART injury cases.[46] Currently, there are no requirements under OSHA's existing injury and illness recording keeping regulations for employers to record heat-related illnesses that only require first aid, or temporary short-term job restrictions that last less than one day. These cases are never captured and are critical for identifying issues with a workplace heat illness prevention plan and practices, and for intervening before the situation becomes worse. These are quite literally "hotspots" that harm workers and provide key insights to problematic areas. Further, the only heat-related illnesses that must be reported to OSHA are those that result in death or in patient hospitalization.

The final standard should be strengthened in the following key ways to capture the full extent of work-related heat-illnesses, to prevent these illnesses and improve protections for workers:

- Require all employers covered by the standard to maintain a heat incident log as part of the heat illness and emergency response plan to record all heat-related incidents, (not limited to cases that meet the criteria for an OSHA recordable heat illness or injury) that that are identified by the employer or reported by a worker or their representative. The log should be in writing, with workers and their representatives having the right to access and copy the log. A heat incident log would assist employers and workers in identifying heat related hazards and conditions and taking action to institute measures to prevent them in the future.
- Include a definition and criteria for what constitutes a work-related heat illness that must be recorded on the OSHA 300 log, that is broad and covers all the heat-related illnesses outlined in the Health Effects section of the preamble of the proposed heat standard and presumes that these conditions require medical treatment, not simply first aid.
- Require that all work-related heat cases that require emergency care be reported to OSHA within 8 hours as part of OSHA's severe injury reporting regulation.

Anti-discrimination/Anti-retaliation

A standard should make it explicit that discrimination and retaliation are not tolerated. Heat illness prevention plans are most effective when workers and supervisors are actively encouraged to report unsafe working conditions, report and record incidents of work-related heat injury and illness, take cool-down breaks, and identify early warning signs. An OSHA standard must specifically prohibit disincentivizing or punishing workers and supervisors for these actions.

Where medical evaluations occur, OSHA should include confidentiality provisions to ensure privacy between workers and healthcare providers and leave it as the workers' decision to share medical results with their employer. We do not support pre-employment medical screenings that

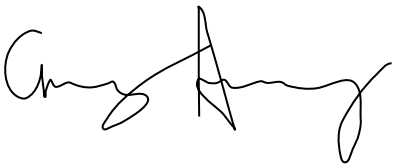
[46] BLS, Survey of Occupational Injuries and Illnesses Data, TABLE R64. Number of nonfatal occupational injuries and illnesses involving days away from work, restricted activity, or job transfer (DART), days away from work (DAFW), and days of restricted work activity, or job transfer (DJTR) by event or exposure leading to injury or illness and industry sector, private industry, 2021-2022 https://www.bls.gov/iif/nonfatal-injuries-and-illnesses-tables/case-and-demographic-characteristics-table-r64-2021-2022.xlsx.

focus on individual risk factors. A robust heat injury and illness prevention plan and implementation should ensure the setting of a higher floor of workplace protections for everyone and appropriate protocols are in place to monitor and respond appropriately. Employers are responsible for maintaining a safe workplace so that all workers can do their jobs safely and return home unharmed at the end of their shift.

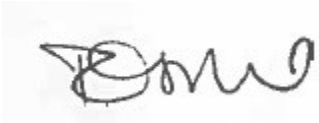
Conclusion

Occupational exposure to heat has been a recognized hazard for decades and there have long been effective, known measures to prevent heat exposure at work and mitigate the effects of heat on the human body. OSHA proposed a commonsense heat standard that is not "one-size-fits-all," but instead focuses on a comprehensive approach with mandatory elements that can be applied across all settings. We urge OSHA to take our recommendations to improve this proposal into a final standard, which is necessary to ensure employers are providing a safe workplace free from recognized harm. Such a rule will save lives and improve the livelihoods of workers across the nation.

Sincerely,



Chenay C. Arberry
Senior Safety and Health Specialist, AFL-CIO



Rebecca L. Reindel, MS, MPH
Safety and Health Director, AFL-CIO