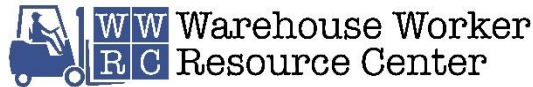




**California Rural Legal  
Assistance Foundation**



March 1, 2018

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**Re: Heat Illness Prevention in Indoor Places of Employment**

Dear Ms. Sum:

We would like to extend our appreciation to the Division of Occupational Safety and Health for inviting us to provide comments. We appreciate the tremendous amount of work that has been done by all stakeholders and the Division on this Standard.

In general, we are concerned that protections for worker health and safety have weakened with each new discussion draft of the Indoor Heat Standard. Our areas of most significant concern in the most recent discussion draft of the Standard are:

1. The dangerously high threshold temperature of 90 degrees Fahrenheit for most workplaces to implement critical control measures in subsection (e).
2. The removal of a standalone section on the Assessment of Heat Illness Risk and placing these requirements in subsection (e) subject to a higher threshold temperature than the overall application threshold.

3. An insufficient adjustment of protective measures to address heat illness factors recommended by the American Conference of Governmental Industrial Hygienists (ACGIH) such as work/rest cycles, acclimatization, and work clothing in high heat controls.
4. The removal of provisions from prior discussion drafts that would strengthen worker participation and workplace transparency.

We provide our comments and recommendations on these and additional matters below. Starting on page 15 we offer specific suggested language corresponding to our recommendations.

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## **RECOMMENDATIONS**

### **I. Subsection (a): Application Threshold of 80°F Heat Index Instead of Dry Bulb Temperature**

We support the draft proposal’s adoption of the lower application threshold of 80°F, but the failure to account for humidity will leave workers in many industries vulnerable. This is because a dry bulb measurement does not adequately assess heat exposure to workers in humid workplaces such as laundromats, restaurants, and greenhouses. A dry bulb temperature of 79.9°F would create a heat index of 85°F when combined with 90% relative humidity, which is not abnormal in some greenhouses and other very humid work environments. Many workers would be at risk of heat illness with moderate to prolonged exposure to a heat index of 85°F, especially those engaged in heavy work activities, wearing heavy clothing, or not acclimatized to the conditions. Yet, in this example, this standard would not even apply in these conditions. Too many workers will be left unprotected if this Standard only applies at the dry bulb temperature of 80°F.

Evidence-based guidelines support using a heat index of index of 80°F as a more effective threshold for implementing protective measures. The National Weather Service Heat Index identifies a heat index of 80°F as the threshold for “Caution,” where heat-related fatigue can occur with prolonged exposure or physical activity.<sup>1</sup> Empirical data from enforcement agencies on heat illness incidents bear out these guidelines. For example, analyses completed by the Division and California Department of Public Health show that work-related heat illness incidents in California occurred at dry bulb temperatures as low as 75°F in 2005 and 80°F in

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<sup>1</sup> National Weather Service Heat Index Table, <http://www.wrh.noaa.gov/psr/general/safety/heat/heatindex.png>.

2006.<sup>2</sup> The Federal OSHA Technical Manual chapter on heat stress states that "Heat-related fatality cases show that workplaces with temperatures above 70°F may have a heat hazard present when work activities are at or above a moderate workload."<sup>3</sup> These guidelines and supporting empirical evidence indicate that at the very least basic preventative measures should be taken when the heat index reaches 80°F, even if the dry bulb temperature is somewhat lower due to high relative humidity.

There is little to lose and a lot to gain by using a heat index application threshold instead of dry bulb temperature. For the many workplaces with low relative humidity, there will be little to no difference between the temperature and heat index at a dry bulb air temperature of 80°F, meaning that basing the threshold on heat index will not unnecessarily broaden the scope of application for these workplaces. On the other hand, basing the threshold on dry bulb temperature will expose workers to unsafe heat indices in humid workplaces, which are especially hazardous work environments that should be of concern in this standard.

Nor would basing the application threshold on a heat index measurement contribute to significantly increased costs for employers or implementation complexities for the Division. Reliable instruments to determine the heat index are generally available for \$60 or less and becoming increasingly affordable as technology improves. Any employer who would potentially be covered by the standard will need to purchase one or more thermometers; whether or not the required devices include the ability to detect humidity adds only a marginal additional cost to the employer. Using heat index uniformly across the standard will also improve consistency and clarity, improving implementation and compliance.

For all of these reasons, we strongly urge using 80°F, measured by heat index, for the overall application threshold in the standard.

## **II. Subsection (a): Add Clothing Adjustment Factor for Vapor-Barrier Coveralls**

To adequately protect workers, the application threshold in subsection (a) should include a clothing adjustment factor for workers wearing vapor-barrier coveralls, who are particularly vulnerable to heat illness. Vapor-barrier coveralls significantly impede the wearer's ability to cool and maintain a safe core body temperature, especially when engaged in physical activity. Because of these hazards, the ACGIH heat stress guidelines recommend an adjustment factor of 11 degrees Celsius WBGT,<sup>4</sup> which converts to 19.8 degrees Fahrenheit. SB 1167 requires the Division to consider these ACGIH guidelines, and we recommend doing so by requiring

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<sup>2</sup> See February 17, 2006, Len Welsh Memorandum re: "Cal/OSHA Investigations of Heat Related Illnesses," pg. 2; October 18, 2007, Len Welsh Memorandum re: "Cal/OSHA investigations of Heat-Related Illnesses 2006," pg. 4.

<sup>3</sup> Occupational Safety and Health Administration, OSHA Technical Manual, Section III: Chapter 4 Heat Stress, I. Introduction, [https://www.osha.gov/dts/osta/otm/otm\\_iii/otm\\_iii\\_4.html#introduction](https://www.osha.gov/dts/osta/otm/otm_iii/otm_iii_4.html#introduction).

<sup>4</sup> American Conference of Governmental Industrial Hygienists, *Heat Stress and Strain TLVs*, p.2, Table 1.

employers to take protective measures for workers in vapor-barrier coveralls at heat indices of 70°F and above. Because of the serious hazards posed by these garments, employers should be required to implement the full range of control measures in subsection (e) at a heat index of 70°F to reduce heat illness risks as much as possible.

### **III. Subsection (a): Remove Professional and Administrative Office Setting Exception**

We support the removal in subsection (a) of the former “light work” exception, which was too easily confused with industry understandings of what constitutes “light duty” and would have left too many workers vulnerable to heat illness. For similar reasons, we urge removing the replacement exception for professional and administrative office settings. An exception is unnecessary since the Standard will simply not apply to workplaces which fall out of the Standard’s preliminary thresholds. More importantly, the exception creates loopholes that put workers at risk.

As written, the professional and office setting exemption enables too many workers to face prolonged exposure to hazardous heat conditions without the full protection of the Standard. As discussed above, scientific guidelines and empirical data indicate that heat illness risk can begin at dry bulb temperatures below 80°F. The exception’s threshold of 85°F dry bulb temperature is unsafe. Office workers can be vulnerable to heat illness at a dry bulb temperature of 84°F, especially in high humidity. At 70% relative humidity and a dry bulb temperature of 84.5°F the heat index is 92°F, within the National Weather Service’s “Extreme Caution” range for prolonged activity. Any baseline threshold needs to be low enough to protect all workers and the broad range of health risk factors they bring to the workplace, which the 85°F dry bulb temperature threshold fails to do. Setting an exemption at 85°F may also potentially create a safe harbor for employers that would otherwise have to address heat illness through their IIPP if conditions warranted.

The exemption language also does not adequately address blended work environments where both sedentary and more strenuous work occur in the same setting. For example, a maintenance or custodial worker may work in an “office setting” where 84°F is a potentially hazardous indoor heat condition. Guadalupe Aguayo, a field investigator with the Maintenance Cooperative Trust Fund (MCTF), testified at the February 8th Advisory Committee meeting that custodial contracts require workers to clean office buildings both during regular business hours and after business hours, when there is often no air conditioning or ventilation. In either case, many of these workers are exempt under the proposed language as worded, and are at risk at an 85°F dry bulb temperature threshold.

For these reasons, we strongly urge removing the exception for professional and administrative office settings. However, if the exception remains, it should urge amending it to address the

above concerns about the dry bulb temperature threshold allowing prolonged exposure to hazardous heat indices, and inadequately protecting workers in those settings engaged in more strenuous work. This could be accomplished by using 85°F heat index for the threshold and limiting the exception to work areas where employees exclusively performing professional or administrative office work. This would also require adding a definition of “professional or administrative office work” to the Standard in subsection (b).

#### **IV. Subsection (b) Definitions: Inadequate Protections in the Standard’s Definitions**

There are five definitions in subsection (b) that we believe need strengthening:

- Cool-down area
- High Radiant Heat
- Indoor
- Temperature and High Radiant Heat Work Area
- Employee Representative (recommended new definition)

##### **Cool-down area**

We support the addition of new language about drinking water and humidity. The definition for the cool-down area also needs to require that the area be maintained at a heat index of no higher than 80°F. Cool-down areas that are actually hot or that have the same temperature as the work area are not effective in helping workers cool their body core temperature to safe levels.

Restaurant workers with the Restaurant Opportunities Center (ROC) have shared with us and the Division that for many workers in that industry the only “cool-down area” is a corner of a hot kitchen. The current language about heat that “defeats the purpose of providing relief” is a vague and subjective standard that will be difficult to enforce. Going back to the Division’s language from May 25, 2017 that set a heat index ceiling of 80°F will more effectively prevent heat illness and provide better clarity to aid implementation. We do not support the addition of language stating that an area of shade meeting the requirements of Section 3395 may be used instead of a cool-down area. This should only be allowed where the employer demonstrates that an indoor cool-down area is not available, because indoor areas are generally easier to maintain at the required heat index and isolated from humidity and radiant heat sources.

##### **High Radiant Heat**

This provision needs to be expanded to include “outdoor” sources of radiant heat in indoor workplaces such as greenhouses and hoop houses, where temperatures can reach or exceed 100°F due to radiant heat from the sun and humidity can be high due to irrigation systems. In addition, the language should be rephrased to include the term “such as” before the list of industries, to avoid unnecessarily limiting the included industries. California has the sixth largest economy in the world, and its economy is constantly evolving. It is not reasonable to think a short list of industrial settings is going to cover all workers in need of protection. Finally, we

recommend not using the qualifier “industrial scale” for bakeries and laundries, because the term is ambiguous and not defined in the Standard. For example, is a laundry in a hospital “industrial scale”? Other industries in the list are not prefaced with such qualifiers, which makes sense because individual employees may be exposed to the risk from radiant heat sources common to their industry, such as ovens or laundry dryers, regardless of the scale. “Commercial” would be a less confusing qualifier if one must be used for these industries.

## **Indoor**

The February 15, 2018 revisions to the definition for “indoor” significantly weakened worker protections and created more confusing and complicated guidelines in the following regards:

### Exceptions for Spaces with Openings to the Outdoors Undermines the Standard

The definition for “indoor” significantly weakened protections for workers by creating an “opt out” provision for employers who can demonstrate that the structure has an opening (e.g. a window or door) that keeps the workplace temperature less than 5 degrees above the outdoor temperature. Such workplaces would instead be regulated under the outdoor heat standard.

This proposal is dangerous for many reasons, most importantly because adoption of the structure of the outdoor heat standard would mean workplaces meeting the “5 degree criteria” would be exempt from having any high heat procedures at all unless part of a construction, agriculture, or oil and gas operation. The outdoor heat standard is not suitable for indoor workplaces.

Warehouses, restaurants, laundries, factories and countless other workplaces contain substantial and unique heat exposure hazards, are where risk factors like humidity, radiant heat and heat-trapping clothing are most likely to occur, and where, critically, employers retain a significantly greater ability to control environmental conditions and heat exposure. Allowing employers in these industries such an easy loophole would leave workers vulnerable to heat illness.

As written, a warehouse with open windows that keep the indoor temperature at 104 degrees Fahrenheit on a 100-degree day would be exempted from critical protective measures such as engineering controls, administrative controls, and providing protective equipment. With only 40% humidity, that warehouse would feel like 119°F (the heat index in those conditions) to a worker. This is a totally unacceptable loophole and a completely unacceptable risk.

Similar problems lie in exception (1) in the revised definition, which applies to spaces where openings provide for “air movement and cooling comparable” to what would be provided in an area of shade in the same location. “Comparable” is a vague term that would be difficult to administer. Without any limitations on the overall conditions, this exception as written allows for potentially dangerous conditions. If it is 100°F outside in the shade and 100°F inside a factory, but open windows provide “comparable” air movement to the spot in the shade, that would seem to exempt the factory, despite the very hazardous heat conditions inside. As discussed above, the

fact that the space would be covered under section 3395 is not an adequate alternative, as that standard is not designed to maintain safety in indoor spaces.

We strongly urge the return to the Division's prior definitions of "indoor" without any exceptions for spaces with openings to the outdoors. Opening windows or doors to provide cooling air circulation is an engineering control all indoor workplaces should consider in high heat conditions, not a circumstance that should remove the workplace from the scope of the Standard.

#### "Primary Duties" Test for Space Inside a Vehicle Undermines Administration of the Standard

The limitation of the indoor definition for space inside a vehicle to when "the employee performs his or her primary job duties while in that space" makes the Standard more complicated to enforce and leaves more workers unprotected. If a vehicle interior is at a hazardous temperature, a worker inside the vehicle will face heat illness risk irrespective of whether they are performing their primary duties at that time. Whether workers are performing their primary duties, by itself, is not an appropriate evidence-based factor to determine heat illness risk. Furthermore, whether a worker is performing primary duties is a subjective test that will require Cal/OSHA to assess additional factors any time it enforces the Standard in spaces inside a vehicle. Moreover, drivers who are exposed to such hazards outside of their primary duties are more likely to be unacclimatized, and thus in even greater need for protection. We also note that drivers who are impacted by the heat are at greater risk of involvement in accidents, further multiplying risk to workers and others. We urge the return to prior definitions that deem the space inside a vehicle that is enclosed on all sides as "indoor," without the primary duties test.

#### Other Issues

We urge returning to the Division's language from prior drafts that specified that physical barriers on an indoor space's perimeter may be temporary or permanent and either open or closed. This avoids confusion about which standard applies when a UPS driver leaves side doors open or a loading dock raises a garage door, for example. In both examples, the worker is still enclosed by perimeters that limit air flow and working in a space where engineering controls are significantly more feasible than in most outdoor areas.

#### **Temperature**

The definition of "temperature" should be reworded to clarify that the dry bulb temperature involves shielding the bulb or sensor from direct exposure to the radiant heat source, while the globe for the globe temperature is exposed to the radiant heat source. Furthermore, for determining the dry bulb temperature, the bulb or sensor should be fully exposed to ambient heat. The references to a "high radiant heat" source should be replaced simply with "radiant heat," since "high radiant heat" is not defined in the Standard and would differ from the

definition of “high radiant heat work area.”

### **Employee Representative**

The Standard needs a definition for an employee representative that allows for an employee designated representative where workers are not represented by a union. Employee representatives play a key role in increasing safety and health in the workplace. A broad definition of an employee representative would be consistent with existing definitions in current law. The suggested language for this definition is drawn from other standards such as California’s Hazard Communication Standard and the standard for Process Safety Management for Petroleum Industries.

### **V. Subsection (c): Clarify Workers’ Rights to Use Water and Restroom Facilities Without Retaliation**

The provision of water subsection should include clarifying language to ensure worker access to restroom facilities and protection from retaliation. Workers have shared with us that they are either penalized for taking water breaks or charged for water. Moreover, the related issue of the availability of restrooms plays into workers’ ability to take water breaks. Workers are often pressured to take as few breaks as possible. Having water and restroom facilities that are far away from each other on a worksite contributes to an environment where workers do not feel comfortable taking either for fear of retaliation.

### **VI. Subsection (d): Base Threshold of Access to Cool-Down Areas on Heat Index**

For the reasons discussed in detail in Section I, the application threshold for access to cool-down areas should be 80°F, heat index. This ensures adequate protection for workers and strengthens consistency and clarity in the Standard. Also for clarity, this subsection should specify that the cool-down area meet the requirements of the definition of “cool-down area” in subsection (b).

### **VII. Omitted in Latest Discussion Draft: Require Assessment of Heat Illness Risks in All Covered Workplaces**

The current draft omits the standalone section on Assessment of Heat Illness Risk included in the Division’s prior discussion drafts, which undermines the Standard’s ability to prevent heat illness. As such, the current draft only requires the employer to assess environmental risk factors in high heat conditions once the dry bulb temperature reaches 90°F, or at a heat index of 95°F in very limited circumstances. These thresholds are required far too late and are far too high to be preventive in a manner that is consistent with basic health concepts. Without an assessment of heat illness risk before reaching these temperatures, workers in circumstances with higher risk factors, either due to their health or to working conditions such as level of exertion or clothing



factors, could be at extreme risk of heat illness before these thresholds are met. As discussed in Section I, heat illness risk for many workers begins near a heat index of 80°F and increases from there as the heat index rises.

In order to *prevent* heat illness, the employer should be required to monitor and assess the heat index and the presence of radiant heat sources in the workplace at a heat index of 80°F, as a general requirement in covered workplaces, the same as other provisions such as providing water and cool down areas. We urge the division to return to the format in prior discussion drafts of separating the assessment requirements from control measures, as a standalone subsection (formerly (d) Assessment of Heat Illness Risk) that applies at the Standard's overall application threshold.

The rule should also require employers to (1) conduct an initial heat assessment in all industries in the 30 days following the passage of the Heat Illness Standard, (2) post heat monitoring results, (3) assess the workplace when there are temperature changes such as in a heat wave or where there has been a change in the work process, (4) conduct a reassessment after an incident of heat illness, (5) identify radiant heat sources, and (6) maintain a procedure for active employee involvement in the assessment. These provisions all are vital to ensuring heat illness prevention in the workplace.

#### **VIII. Subsection (e): All Appropriate Control Measures Should Apply at a Heat Index of 80°F**

The current proposal for a 90°F dry bulb threshold for triggering heat control measures, or a heat index of 90°F “where work processes use or generate water,” does not provide workers with sufficient protection from heat. It also considers humidity in too narrow a range of industries, since humidity can come from sources other than work processes, and can affect workers in a broad range of settings. Humidity can occur naturally in the atmosphere, or from standing water (pools, for example) that is not part of a “process.” The use of the term “water” is also confusing, as it could be interpreted to be limited to a liquid and exclude other forms of moisture that can contribute to humidity.

As discussed in more detail in Section I, heat illness risk can begin for many workers at around a heat index of 80°F, particularly in settings with other risk factors. Consequently, preventative control measures should be implemented at this heat index, and the control measures in subsection (e) such as engineering controls, administrative controls, and personal protective equipment are among the most critical.

Regardless of the application threshold for control measures, it should always be based on a heat index measurement. As previously discussed in Section I, thresholds are not very effective if

they do not take relative humidity into account, as humidity is a key factor contributing to heat illness risk. Under the current language, subsection (e) control measures would not be required at a dry bulb temperature of 89.5°F in most workplaces. At a relative humidity of 70%, such as in a commercial laundry or greenhouse, the heat index would be 104°F, bordering on the National Weather Service's "Danger" range, where sunstroke and cramps become likely, and heat stroke possible, with prolonged exposure or physical activity. These may be particularly humid conditions, but they occur regularly for certain workers and the Standard as written provides them insufficient protection. No workers should have to wait until such conditions before their employer implements the most effective control measures available.

### **Accounting for Heat Illness Factors**

Heat illness risk is affected by several important factors beyond the heat index, including work activity level, the clothing worn, radiant heat exposure, and degree of acclimatization. We remain concerned that the Division has moved away from the enumerated clothing adjustment factors and short-term exposure limits based on work activity level and acclimatization that it included in its February 22, 2017 discussion draft. These provisions were a measurable way to tailor control measures to address critical heat illness factors beyond temperature and humidity. We are not convinced that later discussion drafts have adequately addressed these heat illness factors.

The Division in recent discussion drafts has proposed a "one size fits all" temperature trigger, for both overall application and control measures, regardless of other risk factors such as acclimatization, work levels and clothing. The Division cannot, however, eliminate these science-based risk factors for simplicity's sake and then set a threshold temperature that is too high to protect against those factors, in the process putting employees in many common work circumstances at significant risk for heat illness. SB 1167 requires consideration of the ACGIH guidelines. So far, there is no evidence in any proposal since the first discussion draft that those guidelines were given serious consideration, nor have we seen any rationale for how they were considered but rejected. Given the current direction of the rule -- keeping the rule simple for employer compliance and not setting thresholds based upon varying risk factors -- the only way for the Division to plausibly comply with the requirements of SB 1167 regarding consideration of ACGIH guidelines is to set a threshold that accounts for as broad as possible a range of risk factors. To do that, the threshold for implementing subsection (e) control measures should be set at a heat index of 80°F.

In our suggested language, we provide an example of how to structure subsection (e) control measures such that employers would only be required to implement additional administrative controls and provide personal protective equipment where the employer demonstrates that engineering controls are not feasible, or where engineering controls do not keep the heat index at or below the trigger threshold for control measures. This hierarchy of controls could remove

concerns about complexity while ensuring that workers are protected by the most effective measures whenever possible.

### **Alternate language**

If the Division must reserve some control measures for a higher heat index than 80°F, those control measures should apply at a heat index no higher than 85°F. At heat indices above 85°F, even acclimatized workers doing light work are at risk of experiencing heat stress and illness during the prolonged exposure many jobs require. Meaningful preventative control measures must be implemented when the heat index reaches 85°F in order to maintain safe working conditions. At a heat index that high however, there would need to be some adjustment for certain risk factors to comply with ACGIH guidelines, such as by requiring subsection (e) control measures at a heat index of 80°F where workers are engaged in heavy or very heavy work.

### **Requirement Measures Beyond Shielding for Radiant Heat**

For high radiant heat work areas such as laundries and kitchens, the employer should be required to use other feasible engineering controls and appropriate administrative controls and protective gear to reduce exposure to radiant heat, not just shielding. In some work processes it is not possible to control exposure to radiant heat through shielding but reflective clothing and rotation can be effective controls.

## **IX. Subsection (e) Reinstate Mandatory Cool-Down Rest Breaks**

In a step backward from prior drafts, mandatory hourly rest breaks to prevent overheating are not required at any temperature under the most recent discussion draft. Preventative cool-down rests are an essential measure in high temperatures to reduce the risk of heat illness. These provisions should also include protocols for how to relieve employees that may not be able to leave their posts without replacement. We urge that mandatory hourly cool-down rest breaks be put back into subsection (e) control measures, following recommendations in the suggested language section.

## **X. Subsection (f): Strengthen Emergency Response Procedures**

The Division's prior discussion drafts had provisions for ensuring effective observation and monitoring of employees. This was taken out of the current draft, leaving it lacking with regard to preventative measures. Rather, the current draft jumps right into responding without any preliminary monitoring protocols. Observation and monitoring of employees is critical to ensuring that supervisors and workers are aware of potential signs of heat stress and illness so that effective and timely response can be activated. By the time an employer is responding, it is already too late and they have not adequately met their responsibility to ensure worker health and

safety. We recommend reinstating prior language requiring effective observation and monitoring of all employees as a preventative measure in covered workplaces.

## **XI. Subsection (g): Require Acclimatization Schedule**

In addition to the current acclimatization provisions, we also urge language requiring unacclimatized employees to be placed on an acclimatization schedule of gradually increasing workloads. According to NIOSH it takes 7-14 days of daily exposure to heat for the human body to acclimate to working in new heat conditions.<sup>5</sup> Studies have shown that lack of acclimatization is the single most critical factor leading to worker heat stress, illness or death.<sup>6</sup>

A possible model is Minnesota's heat illness standard. Minnesota's OSHA recommends an acclimatization procedure that has a new worker performing up to 20 % of the normal workload on their first day with 20% added each subsequent day until a full workload is reached. Minnesota OSHA also recommends an acclimatization procedure for continuing workers who are absent from the heat conditions for a week or longer. This schedule is shortened at a 50% workload on the first day, 60% on the second, 80% on the third and 100% on the fourth. We urge doing something similar here that also takes into account recommendations of ACGIH and NIOSH.

The threshold for this provision should be a heat index of 80°F for the reasons we discussed above. The 90°F threshold is too high to adequately protect workers.

## **XII. Subsection (h): Specify Training Must be In-Person and In Appropriate Language**

One of the most persistent problems we see is the lack of effective training for workers. Without information about hazards in the workplace, workers are more vulnerable to injury and illness. Provisions regarding in-person trainings in the language of the worker are important to ensuring effective worker training. This allows for important discussions on heat illness. These concepts on worker involvement are not new, and in fact have been incorporated into more recent standards such as Workplace Violence Prevention in Health Care, Blood Borne Pathogen Standard, and the Hotel Housekeeping Musculoskeletal Injury Prevention Standard (currently before the OAL).<sup>7</sup> In addition, training provisions should apply to all employees on a worksite including temporary, contingent, and subcontracted workers.

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<sup>5</sup> NIOSH Criteria for a Recommended Standard: Occupational Exposure to Heat and Hot Environments (2016). Chapter 4.1.5

<sup>6</sup> Arbury et al 2014. Heat illness and death among workers: United States, 2012-2013. MMWR 63(31): 661-665

<sup>7</sup> Workplace Violence Prevention in Health Care, Cal. Code of Regs., Tit. 8 § 3342 (e) "The employer shall have an effective procedure for obtaining active involvement of employees and their representatives in developing training curricular and training materials, participating in training sessions and reviewing and revising the training program."; Blood Borne Pathogen Standard, Cal. Code of Reg., Tit. 8 § 1910.1030 (g)(2)(G) "Information and Training: The training program shall contain at the minimum the following elements. (G) (14) Interactive questions

### **XIII. Subsection (i): More Complete Provisions Needed in Heat Illness Prevention Plan**

We recommend a return to prior language which was more complete and more effective in ensuring worker protection. In addition, since we are still learning about what an effective plan may look like, we also recommend an annual review of the Plan.

In addition, the draft, as written, requires a Heat Illness Prevention Plan only when the temperature or heat index reaches 80°F. However, language should be inserted that states that nothing in the Indoor Heat Standard would eliminate the requirements set forth under the Injury and Illness Prevention Plan to address a heat hazard outside of the scope of this rule. Otherwise, employers may be lulled into believing that since their workplace does not reach 80°F, they do not have to address heat hazards arising in the unique conditions of their workplace. This new standard should not create a safe harbor for unsafe conditions that fall outside the provisions of the rule. Naturally, the lower the thresholds and stronger the indoor heat standard, the less this is a concern.

### **XIV. Omitted Sections: Reinstate Recordkeeping and Contingency Plan**

There are two sections from prior drafts that have been omitted entirely in the latest discussion draft: Recordkeeping and Contingency Plan. These dealt with important issues and we urge reincorporating them.

**Record-keeping:** We urge the reincorporation of the requirement that employers must let employees use their own thermometer or similar device in the workplace has been deleted. For workers to meaningfully protect themselves under this standard and exercise their rights under the Labor Code, they need to be able to measure the temperature and heat index. Increasing information and transparency in the workplace only improves worker health and safety. For this same reason, we urge reincorporation of the recordkeeping requirements. Without adequate record-keeping, employers are likely to fail to record injuries and illnesses as required. This results in misinformation that deflects advocates' attempts to protect workers based on what the data is showing us about worker health and safety. For these reasons, we also urge reincorporating the full recordkeeping section from prior discussion drafts, as shown in our suggested language.

**Contingency Plan:** Finally, the most recent deletion of the "Contingency Plan" section is extremely troubling. The Standard is creating an exception which it seeks to apply to "professional and administrative offices," however, there is no fail-proof plan. There are always scenarios that an employer cannot anticipate - such as evening or weekend maintenance or

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and answers with the person conducting the training session.; Hotel Housekeeping Musculoskeletal Injury Prevention, Petition 526 (d)(2)(G) "An opportunity for interactive questions and answers with a person knowledgeable about hotel housekeeping equipment and procedures;"

cleanup workers that work in the same buildings that are air conditioned throughout the week. A Contingency Plan is critical to ensure protections for all workers. As long as the exception for professional and administrative office settings remains in the Standard, we urge reinsertion of the Contingency Plan language with several revisions shown in our suggested language.

**XV. Reincorporate Important Worker Transparency Provisions**

Basic requirements from prior drafts that promoted transparency have been deleted in the current discussion draft - namely sections addressing worker participation and worker access to workplace records and monitoring. Workplace transparency and worker engagement are vital to improving safety outcomes because workers are experts in their workplaces and can come up with the solutions to help assess, identify, and correct heat hazards in their workplaces.

Omitted sections include requirements about posting heat illness risk assessments in work areas, ensuring workers' rights to measure temperatures with their own instruments, and obtaining the active involvement of workers and their representatives in developing and implementing Heat Illness Prevention Plans and measuring workplace heat indices. We address each issue in more detail above in its corresponding section, as well as in our suggested language below, but we summarize them together here to highlight how these omissions throughout the Standard combine to substantially reduce requirements for workplace transparency and worker involvement in health and safety matters. We urge reincorporating the above provisions into the standard.

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Thank you for your time and attention to this matter. Please do not hesitate to contact any of our respective organizations should you have any questions.

Sincerely,

Doug Parker  
Executive Director  
Worksafe

Anne Katten, MPH  
Pesticide and Work Safety Specialist  
California Rural Legal Assistance Foundation

Sheheryar Kaoosji  
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## SUGGESTED LANGUAGE

This section provides suggested language corresponding to our recommendations from the prior section. Where we have edited or added recommended language, our recommendations can be found in red, underlined. The most recent draft language, for simplicity, has been rendered as normal black text except where otherwise noted. For our recommended revisions we use the Division's language from prior discussion drafts as much as possible. This language is *italicized*.

### **Scope and Application**

We recommend using a heat index measurement for the 80°F application threshold, removing the exception for professional and administrative office settings, adding an exception to the application threshold for employees wearing vapor-barrier coveralls, and clarifying that Section 3203 may require monitoring and action at heat indices below the application threshold.

(1) This standard applies to all indoor work areas where the ~~temperature~~ heat index equals or exceeds 80 degrees Fahrenheit when employees are present.

~~EXCEPTION: This section does not apply to professional and administrative office settings where the employer can demonstrate that the temperature does not equal or exceed 85 degrees Fahrenheit.~~

(2) Where employees perform work while wearing vapor-barrier coveralls in an indoor work area, the employer shall implement control measures in section (e) to the maximum extent feasible when the heat index equals or exceeds 70 degrees Fahrenheit.

NOTE: Regardless of the temperature or heat index, employers are responsible for monitoring heat conditions and implementing necessary measures to protect health and safety where environmental conditions present a risk of heat illness, consistent with Section 3203.

If an exception for professional and administrative office work remains, we suggest the following language:

EXCEPTION: This section does not apply to work areas where employees are exclusively performing professional or and administrative office work<sup>8</sup> settings and where the employer employer's records can demonstrate that the ~~temperature~~ heat index does not equal or exceed 85 degrees Fahrenheit.

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<sup>8</sup> To implement this exception effectively, the standard should define "professional or administrative office work."

## **Definitions**

We recommend revising the following definitions to improve implementation:

### **Cool-Down Area**

We recommend establishing an acceptable maximum heat index of 80°F for cool-down areas, including shaded outdoor areas in the definition only where an adequate indoor area cannot be provided, and clarifying responsibilities for providing water. Provided the definition includes a maximum heat index, we support removing the undefined term “high humidity.”

“Cool-down area” means an area that is indoor, shielded from ~~high~~ radiant heat sources, open to the air or provided with ventilation or cooling, maintained at a heat index of no higher than 80 degrees Fahrenheit, and provided with a supply of cool drinking water and single-service cups. A cool-down area does not include locations where heat in the area defeats the purpose of providing relief and allowing the body to cool, such as locations where employees are exposed to radiant heat ~~or high humidity~~. A cool-down area may be provided by any natural or artificial means that does not expose employees to unsafe or unhealthy conditions and that does not deter or discourage access or use. An area of shade meeting the requirements of section 3395 may be used instead of a cool-down area only in situations where the employer demonstrates that providing an indoor cool-down area is not feasible, for example due to lack of electricity.

NOTE: Sections 1524, 3363, and 3457 provide guidelines employers must follow, as applicable, for the provision of water in the workplace.

### **Employee Representative**

We recommend adding a definition of “employee representative” as follows:

“Employee representative” means any individual or organization to whom an employee gives written authorization to exercise such employee’s rights under this standard. A recognized or certified collective bargaining agent shall be treated automatically as an employee representative without regard to written employee authorization.

### **High Radiant Heat Work Area**

We recommend including outdoor radiant heat sources in the definition, providing industry examples instead of a limited list, and adding greenhouses and hoop houses to the examples.

“High radiant heat work area” means a work area that has an indoor or outdoor radiant heat source and is found in industries such as ~~one of~~ the following: (1) Foundries, brick-firing and ceramic plants, glass manufacturing, vehicle and vehicle parts manufacturing,



rubber manufacturing, steam plants, boiler rooms, greenhouses, hoop houses, industrial scale commercial bakeries and confectioneries, commercial and institutional kitchens, ~~industrial scale~~ commercial laundries, food canneries, chemical plants, mining sites, smelters, and steam tunnels.

....

## **Indoor**

We recommend removing the exceptions regarding openings to the outdoors, removing the performing primary duties test to space inside a vehicle, and clarifying that physical barriers may be temporary or open under the definition.

“Indoor” refers to a space, including a space inside a vehicle or equipment cab, that is under a ceiling or overhead covering and is enclosed along its entire perimeter by walls, doors, windows, dividers, or other physical barriers that are temporary or permanent, regardless of whether any windows, doors, or other physical barriers are open or closed. except for spaces where (1) openings to the outdoors provide for air movement and cooling comparable to the cooling that would be provided in an area of shade in that same location meeting the requirements of section 3395, or (2) the employer can demonstrate that openings to the outdoors provide for enough air movement and cooling to maintain the temperature in the space at less than 5 degrees Fahrenheit above the outdoor temperature. A space inside a vehicle or equipment cab located outdoors is an “indoor” space only if the space is enclosed on all sides, regardless of whether the windows are open or closed., and the employee performs his or her primary job duties while in that space. All work areas that are not indoor are considered outdoor and covered by section 3395.

## **Temperature**

We recommend clarifying proper temperature measurement procedures in areas with a radiant heat source as follows.

“Temperature” means the dry bulb temperature in degrees Fahrenheit obtainable by using a thermometer freely exposed to the air without considering humidity or radiant heat, to measure the temperature in the immediate area where employees are located. When assessing areas in which there is a radiant heat source, the bulb or sensor for determining dry bulb temperature should be fully exposed to ambient heat, but should be shielded from direct exposure to the radiant heat source. However, the globe temperature must be determined with the globe fully exposed to the radiant heat source. While the temperature measurement in high radiant heat work areas must be taken in an area that has full exposure to high radiant heat, the bulb or sensor of the

~~thermometer should be shielded while taking the measurement, e.g., with the hand or some other object, from direct exposure to high radiant heat.~~

### **Provision of Water**

We recommend clarifying employer responsibilities to also provide toilet facilities and employees' rights to consume water and use toilet facilities without penalty or retaliation.

Employees shall have access to potable drinking water meeting the requirements of Sections 1524, 3363, and 3457, as applicable, including but not limited to the requirements that it be fresh, pure, suitably cool, and provided to employees free of charge. Employees shall also have access to toilet and washing facilities and shall not be penalized or retaliated against for getting water or toilet or washing facilities. The toilet and washing facilities and water shall be located as close as practicable to the areas where employees are working. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. Employers may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water, as described in subsection (h)(1)(C), shall be encouraged.

NOTE: Articles 3, 9, and 13 provide additional requirements employers must follow, as applicable, for the provision of water and toilet and washing facilities.

### **Access to Cool-Down Areas**

We recommend using an application threshold in this section of 80°F heat index rather than dry bulb temperature, consistent with our recommendation to make the overall application threshold in section (a) a heat index of 80°F, and clarifying that the cool-down area must meet the requirements from the definition in section (b).

A cool-down area meeting the requirements of a "cool down area" in section (b) shall be present when the temperature heat index exceeds 80 degrees Fahrenheit. When the temperature heat index in the work area exceeds 80 degrees Fahrenheit, the employer shall have and maintain one or more cool-down areas at all times. The cool-down area shall be at least large enough to accommodate the number of employees on recovery or rest periods, so that they can sit in a normal posture fully in the cool-down area without having to be in physical contact with each other. The cool-down area shall be located as close as practicable to the areas where employees are working. Subject to the same specifications, the size of the cool-down area during meal periods shall be at least

enough to accommodate the number of employees on the meal period who remain onsite.

### **Assessment of Heat Illness Risk**

Rather than including assessment in the control measures section, we recommend reinstating the separate Assessment of Heat Illness Risk section from the Division's May 25, 2017 draft language, with the following revisions, as marked in red underline below: requiring a deadline for an initial assessment after the standard goes into effect, requiring the identification of radiant heat sources, requiring the assessment of other heat illness factors, maintaining a procedure for active employee involvement, and clarifying employer recordkeeping responsibilities.

Within 30 calendar days of the date this standard becomes effective, t~~h~~e employer shall assess the risk of heat illness as follows:

(1) The assessment shall be in writing and shall include heat index measurements and all other environmental risk factors for heat illness, as applicable, including but not limited to use of heavy clothing, vapor or liquid resistant clothing, heavy work load or high work rate, and a lack of acclimatization.

~~(2)~~ (2) Determine the heat index in all indoor work areas where employees are present. Heat index measurements shall be taken at locations where heat exposure is at or near the highest levels and at times when heat exposure is at or near the annual high. In addition, employers must determine whether there are radiant heat sources in the work area, and determine whether any employees are in a high radiant heat work area. ~~Personal heat monitoring is not required.~~

~~(3)~~ (3) Post the heat index measurements in each work area covered by this section. The posting shall be readily visible to employees.

(4) Maintain an effective procedure for obtaining the active involvement of employees and their representatives in measuring the heat index. This requirement is in addition to the employer's obligations under Section 340.1.

~~(5)~~ (5) Reassess heat illness risk:

(A) When there is a change in working conditions, such as a change in tasks, procedures, work processes, engineering controls, or administrative controls that may affect the exposure to heat in the work area, or when a new heat source is introduced;

(B) When there is a heat wave in which the temperatures exceed those previously assessed;

(C) When there is an incident of heat illness or when information indicates that the existing assessment of heat illness risk is deficient;

(D) At least annually.

### **Control Measures**

We recommend requiring control measures at a heat index of 80°F, requiring the encouragement of water consumption, requiring the employer to demonstrate when engineering or administrative controls are not feasible, requiring employers to use engineering controls to reduce the heat index to the lowest feasible level when possible, requiring additional control measures beyond shielding for high radiant heat work areas, and requiring mandatory cool-down rest breaks, additional administrative controls, and personal protective equipment where engineer controls are not feasible or are in effect but not sufficient to keep the heat index at 80°F or lower.

The employer shall implement control measures as follows:

~~(2 1)~~ When the ~~temperature~~ heat index equals or exceeds ~~90~~ 80 degrees Fahrenheit, ~~or where work processes use or generate water and the heat index equals or exceeds 90 degrees Fahrenheit,~~ the employer shall implement the following control measures to reduce the risk of heat illness to the greatest extent possible, based on the written assessment of environmental risk factors for heat illness required by ~~sub~~section [X]:

(A) The employer shall encourage employees to consume water at least every 30 minutes.

~~(A B)~~ Engineering controls. Engineering controls shall be used to reduce the ~~temperature or~~ heat index, ~~as applicable,~~ to ~~90~~ 80 degrees Fahrenheit or lower to the lowest temperature or heat index possible, except to the extent that the employer can demonstrate that such controls are not feasible or practicable unless the employer demonstrates that it is not feasible to reduce the heat index to that level, in which case the employer shall use feasible engineering controls to reduce the heat index to the lowest feasible level. Engineering controls include, but are not limited to: isolation of hot processes or work areas, air conditioning, cooling fans, local exhaust ventilation, reflective shields to block radiant heat, and insulation of hot surfaces.

(C) Where the employer demonstrates that engineering controls are not feasible or where engineering controls do not lower the heat index to 80 degrees Fahrenheit or lower, the employer shall:

(i) Ensure that employees take a preventative cool-down rest for a minimum of 10 minutes every hour (50 minutes work, 10 minutes rest). The employer shall establish procedures for scheduling enough workers to ensure immediate relief and rotation for workers requiring cool down rests. When the heat index equals or exceeds 95 degrees Fahrenheit, employers shall ensure employees take a preventative cool-down rest for a minimum of 10 minutes every half hour (20 minutes work, 10 minutes rest).

~~(B ii) Implement additional~~ Administrative controls, ~~Where engineering controls are not feasible or do not reduce the temperature or heat index, as applicable, to below 90 degrees Fahrenheit, administrative controls shall be implemented, except to the extent that unless~~ the employer ~~can~~ demonstrates that such controls are not feasible if practicable. Administrative controls include, but are not limited to: acclimatizing workers, scheduling work earlier or later in the day, using work/rest schedules, reducing work intensity or speed, changing required work clothing, and using relief workers.

~~(C iii) Provide P~~personal protective equipment in accordance with Section 3380 ~~Where engineering and administrative controls are not feasible or do not reduce the temperature or heat index, as applicable, to below 90 degrees Fahrenheit and administrative controls are not practicable, personal protective equipment shall be provided~~ to employees to reduce the risk of heat illness to the extent ~~possible~~ feasible. Personal protective equipment that can reduce the risk of heat illness includes, but is not limited to: fire proximity suits, water-cooled garments, air-cooled garments, cooling vests, wetted over-garments, heat-reflective clothing, and supplied-air personal cooling systems.

~~(3 2)~~ Regardless of the temperature or heat index, where the work area is a high radiant heat work area, the employer shall use shielding to reduce the risk of heat illness ~~to the extent practicable and shall implement the control measures in section (e).~~

If the Division does not require these control measures at a heat index of 80°F, it is critical that the application threshold be no higher than a heat index of 85°F. Furthermore, workers engaged in heavy or very heavy work would require preventative control measures starting at a heat index of 80°F. Under such an alternate option, we recommend the following language:

The employer shall implement control measures as follows:

(1) When the ~~temperature~~ heat index equals or exceeds ~~90~~ 85 degrees Fahrenheit, ~~or where work processes use or generate water and the heat index equals or exceeds 90 degrees Fahrenheit,~~ the employer shall implement the following control measures to reduce the risk of heat illness to the greatest extent possible, based on the written assessment of environmental risk factors for heat illness required by subsection [X]:

(A) The employer shall encourage employees to consume water at least every 30 minutes.

(B) The employer shall ensure that employees take a preventative cool-down rest for a minimum of 10 minutes every hour (50 minutes work, 10 minutes rest). The employer shall establish procedures for scheduling enough workers to ensure immediate relief and rotation for workers requiring cool down rests. When the heat index equals or exceeds 95 degrees Fahrenheit, employers shall ensure employees take a preventative cool-down rest for a minimum of 10 minutes every half hour (20 minutes work, 10 minutes rest).

~~(A C)~~ Engineering controls. Engineering controls shall be used to reduce the ~~temperature or heat index, as applicable,~~ to ~~90~~ 85 degrees Fahrenheit or lower to the lowest temperature or heat index possible, except to the extent that the employer can demonstrate that such controls are not feasible or practicable unless the employer demonstrates that it is not feasible to reduce the heat index to that level, in which case the employer shall use feasible engineering controls to reduce the heat index to the lowest feasible level. Engineering controls include, but are not limited to: isolation of hot processes or work areas, air conditioning, cooling fans, local exhaust ventilation, reflective shields to block radiant heat, and insulation of hot surfaces.

(D) Where the employer demonstrates that engineering controls are not feasible or where engineering controls do not lower the heat index to below 85 degrees Fahrenheit, the employer shall:

(B i) Implement additional Aadministrative controls, ~~Where engineering controls are not feasible or do not reduce the temperature or heat index, as applicable, to below 90 degrees Fahrenheit, administrative controls shall be implemented, except to the extent that unless~~ the employer ~~can~~ demonstrates that such controls are not feasible practicable. Administrative controls include, but are not limited to: acclimatizing workers, scheduling work earlier or later in the day, using work/rest schedules, reducing work intensity or speed, changing required work clothing, and using relief workers.

~~(C ii) Provide P~~personal protective equipment in accordance with Section 3380  
~~Where engineering and administrative controls are not feasible or do not reduce~~  
~~the temperature or heat index, as applicable, to below 90 degrees Fahrenheit and~~  
~~administrative controls are not practicable, personal protective equipment shall be~~  
~~provided~~ to employees to reduce the risk of heat illness to the extent ~~possible~~  
feasible. Personal protective equipment that can reduce the risk of heat illness  
includes, but is not limited to: fire proximity suits, water-cooled garments, air-  
cooled garments, cooling vests, wetted over-garments, heat-reflective clothing, and  
supplied-air personal cooling systems.

~~(3 2)~~ Regardless of the temperature or heat index, where the work area is a high radiant  
heat work area, the employer shall use shielding to reduce the risk of heat illness ~~to the~~  
~~extent practicable, and to the maximum extent feasible shall implement all control~~  
measures in section (e).

(3) Where employees perform heavy or very heavy work<sup>9</sup> the employer shall implement  
all control measures in subsection (e) to the maximum extent feasible when the heat  
index equals or exceeds 80 degrees Fahrenheit.

### **Emergency Response Procedures**

We recommend reinstating requirements from the Division’s May 25, 2017 draft language  
specifying employer duties for monitoring employees for symptoms of heat illness.

The employer shall implement effective emergency response procedures including:

(1) Ensuring that effective communication by voice, observation, or electronic means is  
maintained so that all employees at the work site can contact a supervisor or emergency  
medical services when necessary. An electronic device, such as a cell phone or text  
messaging device, may be used for this purpose only if reception in the area is reliable.  
If an electronic device will not furnish reliable communication in the work area, the  
employer will ensure a means of summoning emergency medical services.

(2) Ensure effective observation and monitoring of employees for alertness and signs or  
symptoms of heat illness by implementing one or more of the following:

(A) Supervisor or designee observation of 20 or fewer employees;

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<sup>9</sup> Implementing this language would require the addition of a definition of “heavy work” and “very heavy work,”  
which should be based on metabolic rate categories in ACGIH heat stress guidelines.

(B) Mandatory buddy system;

(C) When a buddy system is not feasible, regular communication, initiated by the employer, with an employee who works alone;

(D) Other effective means of observation.

(2 3) Responding to signs and symptoms of possible heat illness, including but not limited to first aid measures and how emergency medical services will be provided.

(A) If a supervisor observes, or any employee reports, any signs or symptoms of heat illness in any employee, the supervisor shall take immediate action commensurate with the severity of the illness.

(B) If the signs or symptoms are indicators of severe heat illness (such as, but not limited to, decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior or convulsions), the employer must implement emergency response procedures.

(C) An employee exhibiting signs or symptoms of heat illness shall be monitored and shall not be left alone or sent home without being offered onsite first aid and/or being provided with emergency medical services in accordance with the employer's procedures.

(3 4) Contacting emergency medical services and, if necessary, transporting employees to a place where they can be reached by an emergency medical provider.

(4 5) Ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders.

### **Acclimatization Requirements**

We recommend requiring acclimatization procedures to workers who return after an absence longer than seven working days, requiring acclimatization procedures for work in high radiant heat work areas and in vapor impermeable clothing, and requiring an acclimatization schedule of gradual workload increases.

(g) ~~Close Observation during~~ Acclimatization Procedures.

(1) Where the work area is affected by outdoor temperatures, all employees shall be closely observed by a supervisor or designee during a heat wave. For purposes of this section only, "heat wave" means any day in which the predicted high temperature for



the day will be at least 80 degrees Fahrenheit and at least 10 degrees Fahrenheit higher than the average high daily temperature in the preceding five days.

(2) An employee who has been newly assigned, or who has returned after an absence of more than seven working days, to: (1) a work area where the ~~temperature or~~ heat index, ~~as applicable,~~ equals or exceeds ~~90~~ 80 degrees Fahrenheit, (2) ~~or to~~ a high radiant heat work area, or (3) work wearing vapor impermeable clothing, shall be closely observed by a supervisor or designee for the first 14 working days of the employee's employment and shall be placed on an acclimatization schedule where the employee performs only up to 20 percent of the normal workload on the first day and performs an additional 20 percent of the normal workload each subsequent day until a full workload is reached.

### **Training**

We recommend requiring active involvement of employees and representatives in developing training curricula and materials, requiring training to be in-person and in the appropriate language and literacy level for employees, requiring training to be repeated annually, reinstating the requirement from prior Division drafts for training to cover the employer's responsibilities to use feasible engineering and administrative controls, and requiring training on acclimatization to cover graduated work exposure schedules.

(1) The employer shall have an effective procedure for obtaining the active involvement of employees and their representatives in developing training curricula and training materials, participating in training sessions, and reviewing and revising the training program.

(2) Employee training. Effective in-person training appropriate in content and vocabulary to the educational level, literacy, and language of the employees in the following topics shall be provided to each supervisory and non-supervisory employee before the employee begins work that should reasonably be anticipated to result in exposure to the risk of heat illness and repeated annually:

(A) 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.

(B) The employer's procedures for complying with the requirements of this standard, including, but not limited to, the employer's ~~responsibility~~ heat illness prevention plan, the employer's responsibilities to use feasible engineering and administrative

controls to reduce employee exposures and to provide water, cool-down rests, and access to first aid as well as the employees' right to exercise their rights under this standard without retaliation.

(C) The importance of frequent consumption of small quantities of water, up to 4 cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties.

(D) The concept, importance, and methods of close observation and graduated workload exposure during acclimatization pursuant to the employer's procedures under ~~subsection (i)(4)~~ subsection (g).

(E) 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.

(F) The importance to employees of immediately reporting to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves, or in co-workers.

(G) The employer's procedures for responding to signs or symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.

(H) The employer's procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.

(I) The employer's procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders. These procedures shall include designating a person to be available to ensure that emergency procedures are invoked when appropriate.

~~(2)~~ 3 Supervisor training. Prior to supervising employees performing work that should reasonably be anticipated to result in exposure to the risk of heat illness, and annually thereafter, effective in-person training appropriate in content and vocabulary to the educational level, literacy, and language of the supervising employees on the following topics shall be provided to the supervisor:

- (A) The information required to be provided by subsection (h)(1) above.
- (B) The procedures the supervisor is to follow to implement the applicable provisions in this section.
- (C) The procedures the supervisor is to follow when an employee exhibits signs or reports symptoms consistent with possible heat illness, including emergency response procedures.
- (D) Where the work area is affected by outdoor temperatures, how to monitor weather reports and how to respond to hot weather advisories.

### **Heat Illness Prevention Plan**

We recommend requiring an annual review and update of the HIPP, and the reinstatement of required sections from the Division’s prior discussion drafts, including involving employees and representatives in developing and implementing the Plan, procedures for assessing heat illness risk, acclimatization procedures, and training requirements.

(i) Heat Illness Prevention Plan. The employer shall establish, implement, and maintain, an effective heat illness prevention plan. The plan shall be in writing in both English and the language understood by the majority of the employees and shall be made available at the worksite to employees and to representatives of the Division upon request. The Heat Illness Prevention Plan shall be reviewed annually and updated as necessary to ensure the health and safety of workers. The Heat Illness Prevention Plan may be included as part of the employer's Illness and Injury Prevention Program required by section 3203, and shall, at a minimum, contain:

(1) Effective procedures to obtain the active involvement of employees and their representatives in developing and implementing the Plan.

(2) Effective procedures to assess heat illness risk under subsection (X).

~~(1 3)~~ Procedures for the provision of water and access to cool-down areas in accordance with subsections (c) and (d).

~~(2 4)~~ The control measures referred to in subsection (e).

~~(3 5)~~ Emergency response procedures in accordance with subsection (f).

(6) Acclimatization methods and procedures under subsection (g).

*(7) Training program under subsection (i).*

**Recordkeeping**

We recommend reinstating the Recordkeeping section from the Division's May 25, 2017 draft language, with the following revisions, as show below:

(1) Records of the most recent heat illness risk assessment and the control measures used by the employer to reduce heat illness risk shall be created and maintained. *In accordance with section 3204, the employer shall retain the written assessment as employee exposure records and shall make the written assessment available to employees, their designated representatives, and representatives of the Chief of the Division of Occupational Safety and Health.*

(2) Training records shall be created and maintained for at least one year and shall include training dates, contents or a summary of the training sessions, name and qualifications of persons conducting the training, and the names and job titles of all persons attending the training sessions.

(3) All documents and measurements required by this section shall be made available to employees and their representatives at their place of employment and shall be made available to the Division upon request.

(4) The employer shall not prohibit an employee from recording or utilizing their own thermometer or device capable of indicating temperature and humidity.

**Contingency Plan**

If the Division keeps the exception to the scope and application for professional and administrative work in office settings, it should reinstate the contingency plan initially proposed in the January 8, 2018 discussion draft, with the following recommended revisions:

(j) Contingency Plan. Any employer covered by the exception to subsection (a)(1)(B) shall establish, implement, and maintain an effective contingency plan to protect employees from heat illness in the event the *heat index temperature* reaches or exceeds *90 85* degrees Fahrenheit. The contingency plan shall be in writing in both English and the language understood by the majority of the employees and shall be made available at the worksite to employees and to representatives of the Division upon request.

(1) The contingency plan shall include:

- (A) Procedures to implement subsection (c), Provision of Water, when the heat index temperature reaches or exceeds 90 85 degrees Fahrenheit;
- (B) Procedures to implement subsection (d), Access to Cool-Down Areas, when the heat index temperature reaches or exceeds 90 85 degrees Fahrenheit;
- (C) Procedures to implement subsection (f), Emergency Response Procedures, when the heat index temperature reaches or exceeds 90 85 degrees Fahrenheit;
- (D) Procedures for employees to be closely observed by a supervisor or designee, when the heat index temperature reaches or exceeds 90 85 degrees Fahrenheit;
- (E) Procedures to implement control measures to reduce the risk of heat illness to the greatest extent possible, as provided in subsections ~~(e)(2)(A), (e)(2)(B), and (e)(2)(C)~~, when the heat index equals or exceeds 95 85 degrees Fahrenheit;
- (F) Procedures to train employees on the topics set forth in subsections ~~(h)(1)(A), (E), (F), (G), (H), and (I)~~, when the heat index temperature reaches or exceeds 90 85 degrees Fahrenheit.

(2) The employer may comply with subsection (j) by establishing and implementing an effective written procedure for employees to leave the work area before the heat index temperature reaches 90 85 degree Fahrenheit and remain away from the work area until the heat index temperature drops below 90 degree Fahrenheit. For those employees, the employer is not required to comply with subsection (j)(1).

NOTE NO. 3: Section 5142 requires any employer with a heating, ventilating, and air-conditioning system to inspect the system at least annually, correct problems found during these inspections, and retain records of all inspections and maintenance work for five years.

NOTE NO. 4: Section 3328 requires employers to inspect and maintain machinery and equipment, including any ventilating and cooling machinery and equipment, as recommended by the manufacturer.