



4 June 2018

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California Department of Industrial Relations
1515 Clay Street
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RE: Heat Illness Prevention in Indoor Places of Employment

Dear Ms. Neidhardt:

The Phylmar Regulatory Roundtable (PRR) appreciates this opportunity to provide comments on DOSH's 16 May 2018 revised draft proposal for Heat Illness Prevention in Indoor Places of Employment. PRR is a group of 35 companies and utilities; 15 of the member companies rank among the Fortune 500. Combined, the PRR members employ more than 687,600 individuals in the U.S. and have annual revenues of more than \$843 billion. PRR members are committed to improving workplace safety and health. Toward that end, PRR provides informal benchmarking and networking opportunities to share best practices for protecting employees. In addition, participating entities work together in the rulemaking process to develop recommendations to federal and state occupational safety and health agencies for effective workplace regulatory requirements.

PRR recognizes that this is a complex area, and appreciates Division of Occupational Safety and Health (DOSH) staff for its efforts on a collaborative process and its considering PRR recommendations from three previous sets of comments filed in 2017 and 2018.

Some PRR members have had procedures in place for years to protect employees from radiant heat sources, and some members have implemented programs for employees at risk of heat illness when working outdoors. These comments were developed from PRR members who contributed their expertise, guidance and recommendations. Nevertheless, the opinions expressed below are those of the PRR, and may differ from beliefs and comments of individual PRR companies.

General Comment - Outreach - PRR recommends that DOSH **begin now** to develop educational materials for employer use, both now and after the regulation is adopted. Most employers in general industry have no experience with indoor heat, as they are addressing and correcting other hazards (e.g., arc flash, confined space, chemical exposures, ergonomics, lockout/tagout). Certainly, PRR members with high radiant heat sources are aware and have taken steps to mitigate the risk of heat illness. Developing guidance material will be useful as the rulemaking process continues to familiarize other employers with the issues, concerns, and solutions. Typically, resources are not developed until after a regulation becomes effective,

preventing employer long-term planning to address the risk of heat illness if present in indoor work environments.

Specific Comments

- I. **Subsection (a) Scope and Application** – PRR supports the language in (a)(1), (a)(2) and (a)(3) as reflective of the risk of heat illness in indoor environments. PRR has recommendations regarding (a)(4) and (a)(5). **Concerns:** PRR recommends that DOSH remove subsection (a)(4) as it is unnecessary verbiage; employers are well aware that an Order to Take Special Action in an industry or operation not currently covered by the scope of a standard obviously expands the scope to include the employer(s) to whom DOSH issued an Order to Take Special Action.

Also, PRR questions the need or relevance for the final sentence of (a)(5) as redundant with its previous sentence which identifies section 3203. We believe that the additional language is more likely to cause confusion than provide clarity.

Finally, as stated in March 2018 comments, we recommend that Note No. 2 regarding the prohibition on retaliation or discrimination against employees for exercising their rights under the standard be deleted because it is redundant with existing requirements for notifying employees about the prohibition on retaliation or discrimination.

Current Draft Language with PRR Recommended Language Revisions:

(a) Scope and Application

- (1) This standard applies to all indoor work areas in the following industries, operations or locations where the temperature equals or exceeds 80 degrees Fahrenheit when employees are present:
 - (A) Agriculture;
 - (B) Commercial and institutional kitchens;
 - (C) Commercial and institutional laundries;
 - (D) Construction;
 - (E) Manufacturing;
 - (F) Mining;
 - (G) Oil and gas extraction;
 - (H) Steam plants, geothermal plants, steam tunnels, and boiler rooms;
 - (I) Warehousing and storage.
- (2) This standard applies to any indoor work, regardless of the industry, operation, or location, where employees wear clothing that restricts heat removal and the temperature equals or exceeds 80 degrees Fahrenheit.
- (3) This standard applies to all other indoor work areas, not specifically identified in subsection (a)(1) or (a)(2), where the

temperature equals or exceeds 85 degrees Fahrenheit when employees are present.

- ~~(4) This standard applies in any other setting identified in writing by the Division through the issuance of an Order to Take Special Action, in accordance with Section 332.3 of these orders.~~
- (5) This standard applies to the control of risk of occurrence of heat illness. This is not intended to exclude the application of other sections of Title 8, including but not necessarily limited to, sections 1512, 1524, 3203, 3363, 3395, 3400, 3499, 3457, 6251, 6512, 6969, 6975, 8420 and 8602(e). ~~This is also not intended to exclude the application of Section 3203 to indoor work areas not covered by this section where one or a combination of environmental risk factors can still cause heat illness in employees.~~

~~NOTE No. 1:~~ The measures required here may be integrated into the employer's written Injury and Illness Prevention Program required by section 3203, the employer's written Heat Illness Prevention program required by section 3395, or maintained in a separate document.

~~NOTE No. 2: This standard is enforceable by the Division of Occupational Safety and Health pursuant to Labor Code sections 6308 and 6317 and any other statutes conferring enforcement powers upon the Division. It is a violation of Labor Code sections 6310, 6311, and 6312 to discharge or discriminate in any other manner against employees for exercising their rights under this or any other provision offering occupational safety and health protection to employees.~~

Rationale for PRR Recommendation for (a)(1): PRR has supported limiting the scope to those industries where there is risk of heat illness from indoor work environments. Limiting the scope to the nine industries identified accomplishes the goal of focusing on those work environments where employers should have a program in place. We previously stated that requiring all employers to prioritize indoor heat illness prevention trivializes the serious risk of heat illness in those environments where there is a hazard. We believe that limiting the scope will go far to protect workers at risk of heat illness in indoor work environments and educating employers who have not been aware that the risk of heat illness needs to be addressed.

Regarding (a)(2), please see below discussion in definition of "clothing that restricts heat removal."

Rationale for PRR Recommendation for (a)(3) - PRR supports the 85 degree Fahrenheit trigger temperature for the following specific reasons:

- (a) Flex Alerts are periodically issued by the California Independent System Operator (ISO), a nonprofit, public benefit corporation that operates the high voltage grid in California and in parts of eight western states. The ISO does not own

transmission lines or power plants, but does tell power plants when to generate electricity, how much to generate and where the electricity will be delivered. The ISO is regulated by the Federal Energy Regulatory Commission. The Flex Alert recommendation, to set thermostats to 78° F or higher, would have been unreasonably close to being in violation of the proposed regulation if the threshold remains at only 80 °F. This would have resulted in only two degrees making the difference between compliance with the Flex Alert and non-compliance with the Heat Illness Regulation. For more information, please see: <https://www.sdge.com/business/demand-response-overview>.

- (b) CDC/NIOSH, in the Topics page for indoor environments, the operative temperatures recommended range from 75°-80.5°F in the summer; see <https://www.cdc.gov/niosh/topics/indoorenv/temperature.html>. Since 80.5 degrees is in the recommended temperature range, it is inappropriate to establish 80 degrees as the trigger for the regulation to address heat illness.
- (c) The **ASHRAE Standard 55-2013**, Thermal Environmental Conditions for Human Occupancy, notes that for thermal comfort purposes, **temperature** could range from between approximately 67 and 82 °F. Again, if the range includes 82 degrees, having a trigger less than the ASHRAE standard is improper and does not reflect the risk.
- (d) Federal OSHA issued a [letter](#) of interpretation in 2003 which states the following:

As a general rule, office temperature and humidity are matters of human comfort... [and] OSHA recommends temperature control in the range of 68-76 degrees F and humidity control in the range of 20% - 60%.

Many employers have used this guideline for years. If 76 degrees is within the recommended range of temperatures, 85 degrees would be more appropriate as a regulatory threshold.

- (e) There is zero improvement to employee health or safety with the imposition of requirements in workplaces that are controlled already and where there is virtually no chance that heat illness will occur. We support DOSH's decision to encourage the expenditure of limited resources on health and safety risks that are present in workplaces.

Rationale for PRR Recommendation Re: Note 2: This note states that it is a violation of Labor Code sections 6310, 6311, and 6312 to discharge or discriminate in any other manner against employees for exercising their rights under this or any other provision offering occupational safety and health protection to employees. PRR agrees with Chief Sum's point, made at the 8 February 2018 Advisory Committee meeting, that the Labor Code already prohibits discrimination or retaliation in any form, and adding a provision so stating to individual regulations may lead some to believe that there is no prohibition on discrimination or retaliation in regulations where it is not specifically stated. We therefore question inclusion of this note. PRR members believe that employees should

not only be protected against retaliation, but employers would be smart to offer incentives to employees for reporting hazards, as many PRR members do, so hazards may be acted upon before an injury occurs. We are concerned that the language implies that unless this Note is included in a regulation, employees are not protected from discrimination or retaliation for exercising their rights.

III. Subsection (b) Definitions - PRR member companies support the definitions of: acclimatization, cool down area, environmental risk factors for heat illness, heat illness, heat index, high radiant heat work area, indoor, personal risk factors for heat illness, preventative cool-down rest, radiant heat, relative humidity, shielding and temperature. We have the following comments on the “**clothing that restricts heat removal**” which PRR recommends be revised. As written, the proposed definition includes in element (1) clothing that is “waterproof.” The American Conference of Governmental Industrial Hygienists (ACGIH) discusses clothing that severely restricts heat removal by evaporation of sweat from the skin in its heat stress Threshold Limit Value (TLV). ACGIH uses the terms water-vapor impermeable, air impermeable and thermal insulating to discuss features that prevent evaporation. Also mentioned by ACGIH are multiple clothing layers (and encapsulating suits, addressed in part 2 of the proposed definition). Developments in fabrics also have made waterproof but vapor permeable garments available that can improve heat removal. PRR recommends that DOSH slightly revise the proposed definition as it incorporates the term waterproof, and use instead “impermeable to water and water vapor, impermeable to air, or thermal insulating,” consistent with ACGIH.

The proposed regulation also defines “clothing that restricts heat removal” to include clothing “designed to protect the wearer from a chemical, biological, radiological, or fire hazard.” Some persons may interpret fire hazard as including rare and unpredictable exposure to electric arc and flame such as during electrical faults. Currently work shirts, pants and coveralls with flame-resistant (FR), arc-rated (AR) properties are worn extensively in various industries. These rated garments are manufactured of fabrics that are similar to unrated garments in water, vapor and air permeability and heat loss. But if electric arc and flame are interpreted as a “fire hazard,” FR/AR clothing would be defined as “clothing that restricts heat removal” *even though FR/AR shirts, pants and coveralls do not restrict heat removal beyond other typical unrated work shirts, denim jeans and coveralls*. Also, most full-body clothing worn for protection against chemical, biological, radiological or fire hazards is worn *over* daily wear clothing and those multiple layers would restrict heat removal. But FR/AR shirts/pants or coveralls worn as an outer layer do not restrict heat removal more than typical work clothing does.

This is consistent with the National Institute for Occupational Safety and Health (NIOSH) *Criteria for a Recommended Standard - Occupational Heat and Hot Environments (DHHS 2016-116)* which states: “Studies of clothing materials have led to the conclusion that the insulation provided by clothing is generally a linear function of its thickness. Differences in fibers or fabric weave have only very minor effects on insulation, unless these directly affect the thickness or the vapor or air permeability of the fabric.” See: <https://www.cdc.gov/niosh/docs/2016-106/default.html>

Breathable flame resistant clothing is not a significant contributor to heat stress, and can be helpful in mitigating heat stress. According to NIOSH, workers should be encouraged to wear clothing that is breathable and loose-fitting.

To better define clothing that traps water and heat and to prevent the inadvertent inclusion of FR/AR work clothing that is like other typical work clothing. PRR recommends that the draft proposed definition be revised as follows:

PRR Recommended Language:

“Clothing that restricts heat removal” means full-body clothing covering the arms, legs, and torso that is any of the following:

- (1) Waterproof- Impermeable to water and water vapor, impermeable to air, or thermal insulating; or
- (2) Designed to protect the wearer from a chemical, biological, radiological, or fire hazard;
or
- (3) Designed to protect the work process from contamination.

Note: “Clothing that restricts heat removal” does not include clothing with flame-resistant or arc-rated properties if the shirt and pants or coveralls are constructed only of knit or woven fibers, have a fabric weight typical of work clothing, and are work as the outer layer.

An alternative definition could be: “Clothing that restricts heat removal” means full-body clothing covering the arms, legs, and torso that is impermeable and retains heat. Clothing which retains heat (such as raingear or impermeable membranes can contribute to heat stress).

IV. Other Sections: PRR member companies support language in subsections (c) provision of water and (h) training.

- (1) **Subsection (e) Assessment and Control Measures** – PRR supports the requirement that employers assess the environmental risk factors for heat illness as a necessary part of a regulation to prevent heat illness.

Some PRR members reported that installing air conditioning or ventilation systems in some California locations will create challenges with the Air Quality Management Districts, adding potential costs for employers. We have been unable to determine specifics and will provide anything we learn that might be of interest to DOSH.

(e)(1)(C) – PRR supports the requirement that instruments used to measure the temperature or heat index shall be used and maintained according to the manufacturers’ recommendations.

- (2) Subsection (g)(i) -**Close Observation during Acclimatization** - There remains confusion in general industry about what exactly is meant by “Close Observation during

Acclimatization.” We recommend that DOSH include examples and guidance materials. We understand that this concept appears in the current 3395 regulation, but significant numbers of employers in a variety of industries are not covered by that rule and have no frame of reference for this requirement.

Also, the clause in (g)(1) “where the work area is outdoor or affected by outdoor temperatures” is surprising, as almost all indoor temperature may be affected by outdoor temperature to some extent, unless there is an internal localized radiant source such as a boiler. In addition, we do not understand why an outdoor “heat wave” is relevant. One example of confusion is as follows: under the current draft language, if it is 70 degrees outside for five days, and the predicted high temperature is 82 degrees on the sixth day, this temperature change may not affect the indoor work environment at all. It does not make sense for employers to spend resources “closely” observing employees when the indoor temperature remains the same or nearly the same. We recommend that DOSH clarify the requirement to state that when the **indoor** temperature of the work area increases by ten degrees over the previous five days, then close observation would be necessary. Outside temperature differentials are irrelevant for indoor environments; it is the temperature in the work area that the employee is experiencing.

Specific Recommended Language:

~~Where the work area is affected by outdoor temperatures, a~~[A]ll employees shall be closely observed by a supervisor or designee when the temperature in the work area is 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 work area in the preceding five days.~~

Rationale for PRR Recommendation: The relevant temperature for heat illness prevention risk is the temperature in the work environment, not the outside temperature. We recommend this language to eliminate the confusion generated from the insertion of the outdoor temperature into a requirement regarding the indoor heat illness prevention.

(3) Subsection (i) Heat Illness Prevention Plan – PRR members support subsection (i), items (1) through (4), however, PRR members are at a loss as to why DOSH raises Section 3203 again. Because 3203 is a general requirement, and the new section for heat illness prevention in indoor work environments will be specific, employers, if covered, will need to have a Heat Illness Prevention Plan. Any procedures previously included in an employer’s 3203 Injury and Illness Prevention Plan that address heat illness prevention in indoor work environments will need to be included in the Heat Illness Prevention Plan for Indoor Work Environments. We believe that mentioning this here will cause needless confusion on the part of the employer community. We therefore recommend that DOSH delete subsection (i)(5).

~~(i)(5) Applicable procedures under section 3203 to identify, evaluate, and correct indoor heat hazards not already addressed in this standard, where one or a combination of environmental risk factors can still cause heat illness in employees.~~

Thank you for the opportunity to submit these comments; please let me know if you have any questions. We look forward to continuing to participate in this important rulemaking.

Sincerely,



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cc: Juliann Sum
Eric Berg

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