Heat Illness Prevention Discussion Draft for 2/8/18 – Option B: Create Standalone Indoor Standard

§____. Heat Illness Prevention in Indoor Places of Employment

(a) Scope and Application.

(1) This standard applies to all indoor places of employment where the temperature equals or exceeds 80 degrees Fahrenheit at least once a year.

EXCEPTION: Where employees work only in indoor work areas, do not work in a high radiant heat work area, and perform only light work and the employer demonstrates that the temperature in the work areas reaches or exceeds 90 degrees Fahrenheit only four or fewer calendar days per year, the employer is only required to comply with this section to the extent required in subsection (j), Contingency Plan.

(2) This section 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, 3400, 3439, 3457, 6251, 6512, 6969, 6975, 8420 and 8602(e).

NOTE NO. 1: The measures required here may be integrated into the employer's written Injury and Illness Program required by section 3203, 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.

(b) Definitions.

"Acclimatization" means temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.

"Cool-down area" means an area that is indoor, shielded from high radiant heat sources, and open to the air or provided with ventilation or cooling. 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. 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.

“Environmental risk factors for heat illness” means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.

“Globe temperature” means the temperature measured by a globe thermometer, which consists of a thermometer sensor in the center of 6-inch diameter hollow copper sphere painted on the outside with a matte black finish or equivalent. Globe temperature can be measured by commercially available heat stress meters.

“Heat Illness” means a serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

“Heat index” means a measure of heat stress used by the National Weather Service that takes into account the dry bulb temperature and the relative humidity. Radiant heat is not included in the heat index. A chart to determine the heat index is included as Appendix A.

“High radiant heat work area” means a work area that has an indoor radiant heat source and is found in one of the following:

(1) Foundries, brick-firing and ceramic plants, glass manufacturing, vehicle and vehicle parts manufacturing, rubber manufacturing, steam plants, boiler rooms, industrial scale bakeries and confectioneries, commercial and institutional kitchens, industrial scale laundries, food canneries, chemical plants, mining sites, smelters, and steam tunnels.

    EXCEPTION: In work areas where the employer demonstrates that the globe temperature is less than 5 degrees greater than the dry bulb temperature, the work area is not a high radiant heat work area.

(2) Other locations that have been determined in writing by the Chief of the Division of Occupational Safety and Health to include a high radiant heat work area through the issuance of an Order to Take Special Action, in accordance with section 332.3 of these orders.

“Indoor” refers to a space, including a space inside a vehicle or equipment cab, that is under a ceiling or overhead covering and has walls along its entire perimeter. A wall includes, but is not limited to, any door, window, retractable divider, garage door, or other physical barrier that is temporary or permanent, whether open or closed. All places of employment that are not indoor are considered outdoor and covered by section 3395.

"Light work" means work that is no more strenuous than sitting or standing doing light manual work such as writing, typing on a computer, talking on the phone, using electronic controls, operating a cash register while seated, or driving a vehicle on roads. Light work may include occasional walking or carrying light items such as a notebook or purse. Light work does not include more strenuous work such as food production work including canning; food preparation or other kitchen work; dishwashing; production or assembly line work; bagging groceries; equipment installation, repair, or maintenance; building construction, repair, or maintenance; janitorial work; housekeeping work; garment manufacturing; dry cleaning; warehousing activities including loading or unloading activities; or operating mobile equipment.[1]

"Personal risk factors for heat illness" means factors such as an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body's water retention or other physiological responses to heat.

"Preventative cool-down rest" means a rest break taken in a cool-down area to prevent overheating.

"Radiant heat" means heat transferred by electromagnetic waves rather than by conduction or convection. Sources of radiant heat include the sun, hot objects, hot liquids, hot surfaces, and fire.

"Relative humidity" means the amount of moisture in the air relative to the amount that would be present if the air were saturated.

"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. While the temperature measurement in high radiant heat work areas must be taken in an area with full exposure to the indoor radiant heat source, 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 contact by the indoor radiant heat.

(c) Provision of water. 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. The 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

[1] Note for this discussion draft: Cal/OSHA will provide guidance by giving examples of types of work that will be considered "light work."

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.

(d) Access to Cool-Down Areas.

(1) A cool-down area shall be present when the temperature exceeds 80 degrees Fahrenheit. When the temperature 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.

(2) Employees shall be allowed and encouraged to take a preventative cool-down rest in a cool-down area when they feel the need to do so to protect themselves from overheating. Such access to cool-down areas shall be permitted at all times. An individual employee who takes a preventative cool-down rest (A) shall be monitored and asked if he or she is experiencing symptoms of heat illness; (B) shall be encouraged to remain in the cool-down area; and (C) shall not be ordered back to work until any signs or symptoms of heat illness have abated, but in no event less than 5 minutes in addition to the time needed to access the cool-down area.

(3) If an employee exhibits signs or reports symptoms of heat illness while taking a preventative cool-down rest or during a preventative cool-down rest period, the employer shall provide appropriate first aid or emergency response according to subsection (f) of this section.

(e) High-Heat Control Measures. The employer shall implement high-heat control measures as follows:

(1) When the heat index equals or exceeds 95 degrees Fahrenheit,[2] the employer shall assess the environmental risk factors for heat illness.

(A) The assessment shall be in writing and shall include heat index measurements and all other environmental risk factors for heat illness, as applicable.

[2] Note for this discussion draft: Cal/OSHA will provide guidance on situations where the dry bulb temperature will always be greater than the heat index and the employer can use dry bulb temperature measurements in lieu of heat index measurements.

(B) Heat index measurements shall be taken at times and locations where the heat index is at or near the annual high, shall be taken as close as practicable to the affected employees, and shall be taken again whenever there is a change in working conditions that may increase heat index levels. Employers may use representative measurements for multiple work areas that share similar conditions.

(C) The employer shall have an effective procedure for obtaining the active involvement of employees and their representatives in measuring the heat index.

(D) 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) When the heat index equals or exceeds 95 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 (e)(1):

(A) Engineering controls. Feasible engineering controls shall be used to reduce the heat index to below 95 degrees Fahrenheit or to the lowest heat index possible. 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.

(B) Administrative controls. Where engineering controls are not feasible or do not reduce the heat index to below 95 degrees Fahrenheit, administrative controls shall be implemented 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) Personal protective equipment. Where engineering controls are not feasible or do not reduce the heat index to below 95 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. Personal protective equipment that can reduce the risk of heat illness include, 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) 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.

(f) Emergency Response Procedures. The employer shall implement effective emergency response procedures including:

(1) Ensuring that effective communication by voice, observation, or electronic means is maintained so that 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) 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) Contacting emergency medical services and, if necessary, transporting employees to a place where they can be reached by an emergency medical provider.

(4) 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.

(g) Close Observation during Acclimatization.

(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 to a high heat area or a high radiant heat work area shall be closely observed by a supervisor or designee for the first 14 days of the employee's employment.

(h) Training.

(1) Employee training. Effective training 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:

(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 to provide water, shade, 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 during acclimatization pursuant to the employer's procedures under subsection (i)(4).

(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) Supervisor training. Prior to supervising employees performing work that should reasonably be anticipated to result in exposure to the risk of heat illness effective training on the following topics shall be provided to the supervisor:

(A) The information required to be provided by section (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.

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

(2) The high heat control measures referred to in subsection (e).

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

(4) Procedures for close observation during acclimatization in accordance with subsection (g).

(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 temperature reaches or exceeds 90 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 temperature reaches or exceeds 90 degrees Fahrenheit;

(B) Procedures to implement subsection (d), Access to Cool-Down Areas, when the temperature reaches or exceeds 90 degrees Fahrenheit;

(C) Procedures to implement subsection (f), Emergency Response Procedures, when the temperature reaches or exceeds 90 degrees Fahrenheit;

(D) Procedures for employees to be closely observed by a supervisor or designee, when the temperature reaches or exceeds 90 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 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 temperature reaches or exceeds 90 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 temperature reaches 90 degree Fahrenheit and remain away from the work area until the 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.