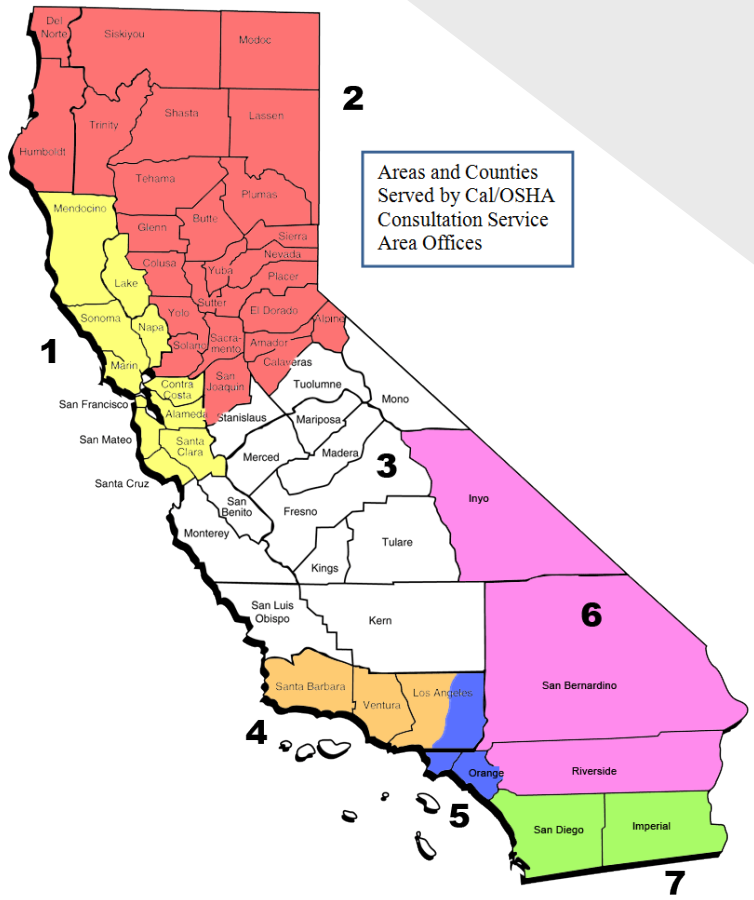
Understanding Cal/OSHA's New Indoor Heat Illness Standard

Today's Topics

- Why Heat Matters
- Heat Illness and Regulation Overview
- Regulation Details: Section 3396
- Control Measures and Hierarchy of Controls
- Interactive Hazard Mapping Activity
- Q&A and Wrap-Up

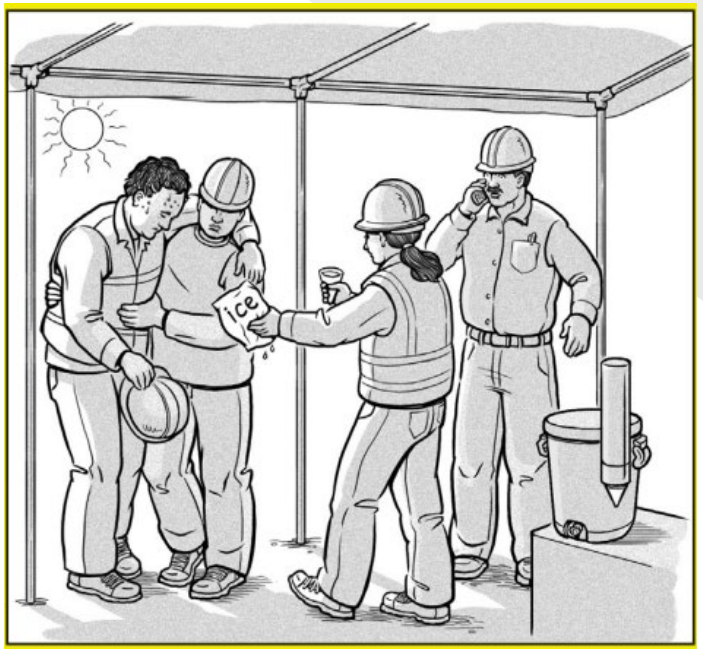
Cal/OSHA's Role in California

- Cal/OSHA has jurisdiction over every employment and place of employment in California
- Enforcement
  - Workplace Accidents
  - Complaints
- Consultation
  - On-site Visits
  - Offsite Consultation (Telephone Support)
  - Educational Materials



Why Heat Matters

- 26th warmest summer in California
  - Warmest year ever recorded on Earth
- There were 45 confirmed heat-related illnesses reported to Cal/OSHA
- Cal/OSHA received and investigated 183 heat-related complaints
- Strong continued enforcement – 257 proactive high heat inspections (a record high) with $$$ in total citations



What is Heat Illness?

- **Heat illness** is a serious medical condition resulting from the body's inability to cope with a heat load.
- Types:
  - heat cramps
  - heat exhaustion
  - heat stroke, which can lead to death
- Symptoms:
  - Headache, fatigue, dizziness, confusion, muscle pain and spasms, elevated heart rate, heavy sweating, hot/dry skin, nausea/vomiting, and fainting/unconsciousness.

Risk Factors for Heat Illness?

- Age, weight, level of physical fitness
- Degree of acclimatization and metabolism
- Use of alcohol or drugs or medications
- Dehydration
- Medical Conditions (diabetes, hypertension)

Title 8 CCR Section 3395 – Outdoor Heat Illness Prevention

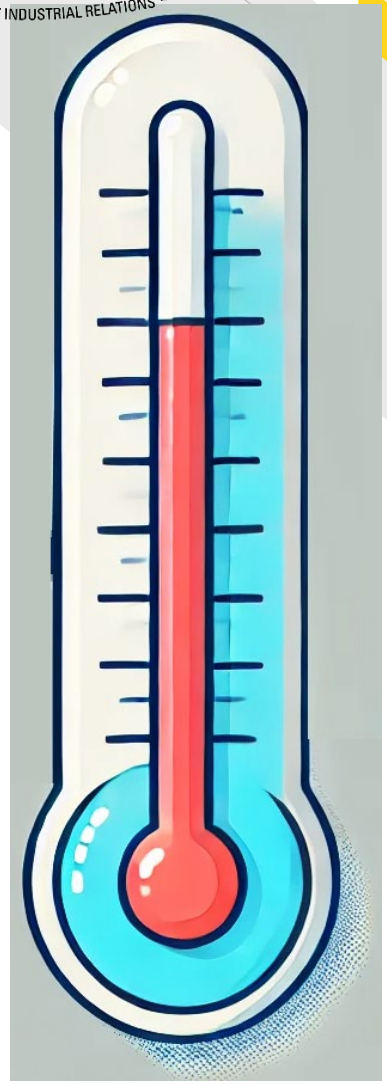
- Regulation has remained unchanged since 2015.
- Some requirements of the standard:
  - Access to Water (c)
  - Access to Shade (d)
  - High Heat Procedures (e)
  - Acclimatization (g)
  - Employee and Supervisory Training (h)
  - Written Procedures Including Emergency Response (i)/(f)

Title 8 CCR Section 3396 – Indoor Heat Illness Prevention

- Approved by OAL on July 23, 2024.
- Regulation goes into effect immediately.

Some requirements of the standard:

- Access to Water (c)
- Access to Shade (d)
- Implement control measures under certain conditions (e)
- Emergency procedure (f)
- Acclimatization (g)
- Employee and Supervisory Training (h)
- Written Procedures (i)

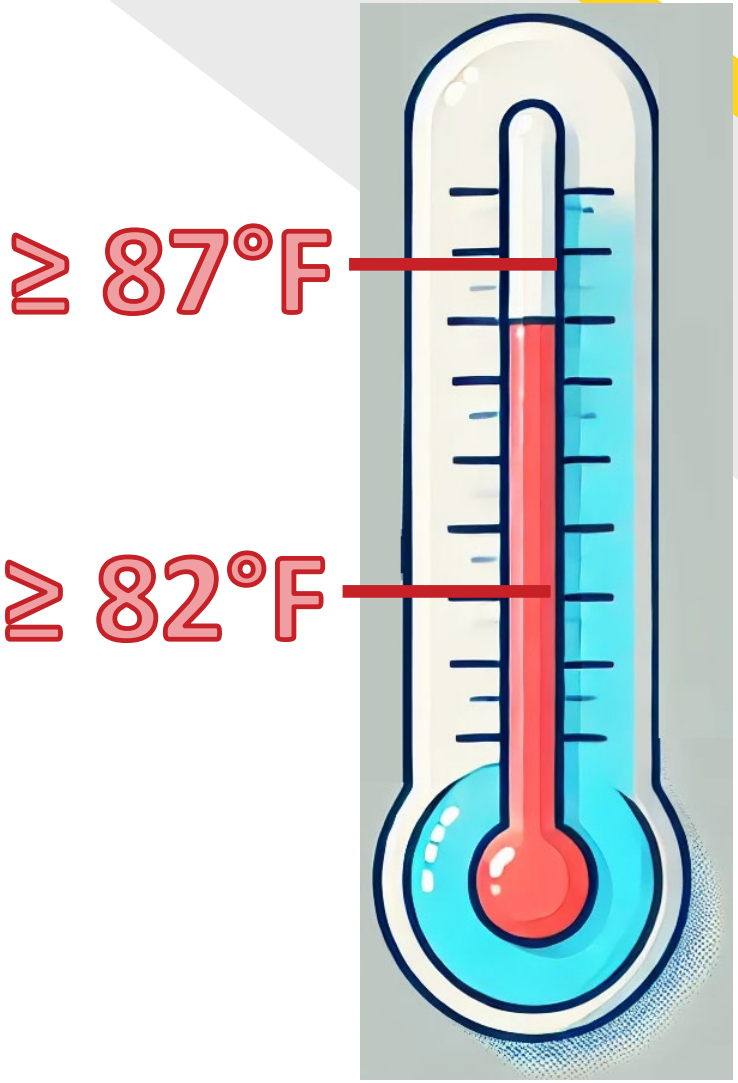


(a) Scope

Applies to all indoor work areas where the temperature equals or exceeds 82°F when employees are present.

(a)(1) ≥82°F:
Entire regulation applies except subsection (e) "Assessment and Control Measures" when indoor work areas are not subject to any of the conditions listed in (a)(2)

(a)(2) Entire regulation subsection (e) "Assessment and Control Measures" when:
≥ 87°F or ≥ 87°F Heat Index
≥ 82°F and
Clothing restricts heat removal, or
Employees work in a high heat area



§3396(b) Definitions

Section 3396 contains 21 defined terms in section (b). Some of the mirror definitions in 3395 and some are new or slightly different.

Defined Terms (Green are the same or nearly the same in 3395 and 3396 and Bold will be discussed):

1. Acclimatization
2. **Administrative control**
3. Clothing that restricts heat removal
4. **Cool-down area**
5. **Engineering control**
6. Environmental risk factors for heat illness ("air movement" moved)
7. **Globe temperature**
8. Heat illness
9. **Heat index**
10. Heat wave (adds word "outdoor")
11. High Radiant Heat Area
12. **High Radiant Heat Source**
13. **Indoor**
14. **Personal heat-protective equipment**
15. Personal risk factors for heat illness
16. Preventative cool-down rest
17. Radiant heat
18. Relative humidity
19. Shielding
20. **Temperature**
21. Union Representative

(b) Key definitions

"**Indoor**"

- Space that is under a ceiling or overhead covering that restricts airflow and is enclosed along its entire perimeter by walls, doors, windows, dividers, or other physical barriers that restrict airflow, whether open or closed.
- All work areas that are not indoor are considered outdoor and covered by section 3395.

(b) Key definitions

"**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.

(b) Key definitions

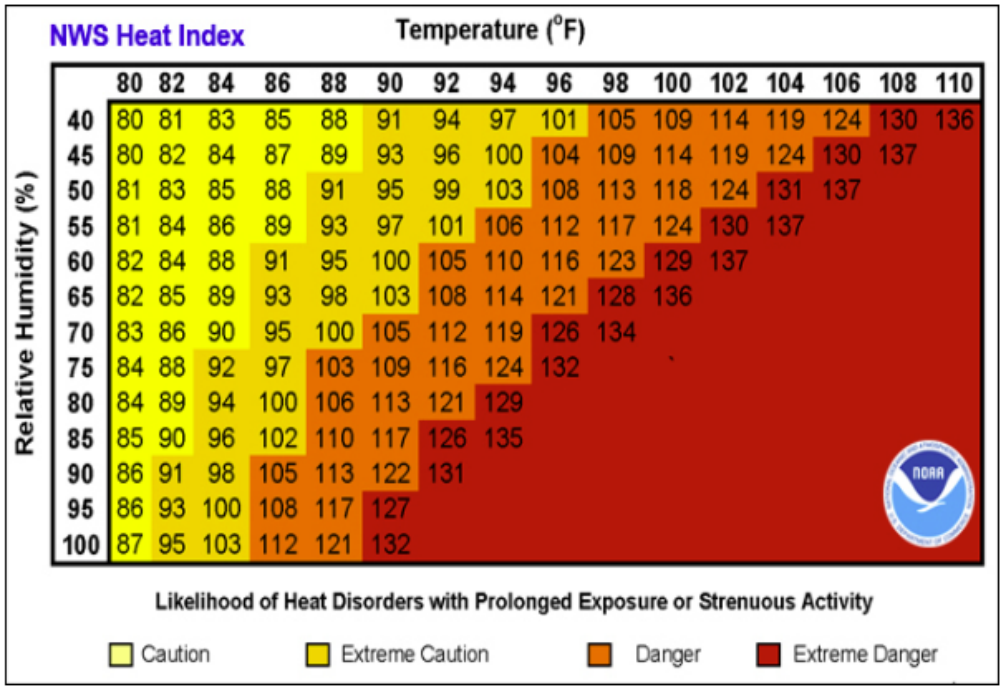
"**<u>Globe Temperature</u>**" means:

The temperature measured by a globe thermometer, which consists of a thermometer sensor in the center of a six-inch diameter hollow copper sphere painted on the outside with a matte black finish, or equivalent. The globe thermometer may not be shielded from direct exposure to radiant heat while the globe temperature is being measured.

(b) Key definitions

"**Heat index**" (aka perceived temperature) means:

"a measure of heat stress developed by the National Weather Service (NWS) for outdoor environments that takes into account the dry bulb temperature and the relative humidity. For purposes of this section, heat index refers to conditions in indoor work areas. Radiant heat is not included in the heat index."



(b) Key definitions

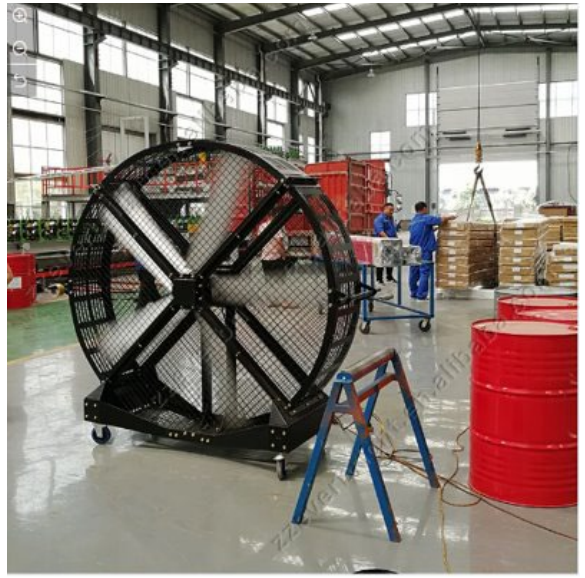
"**High radiant heat area**" means:

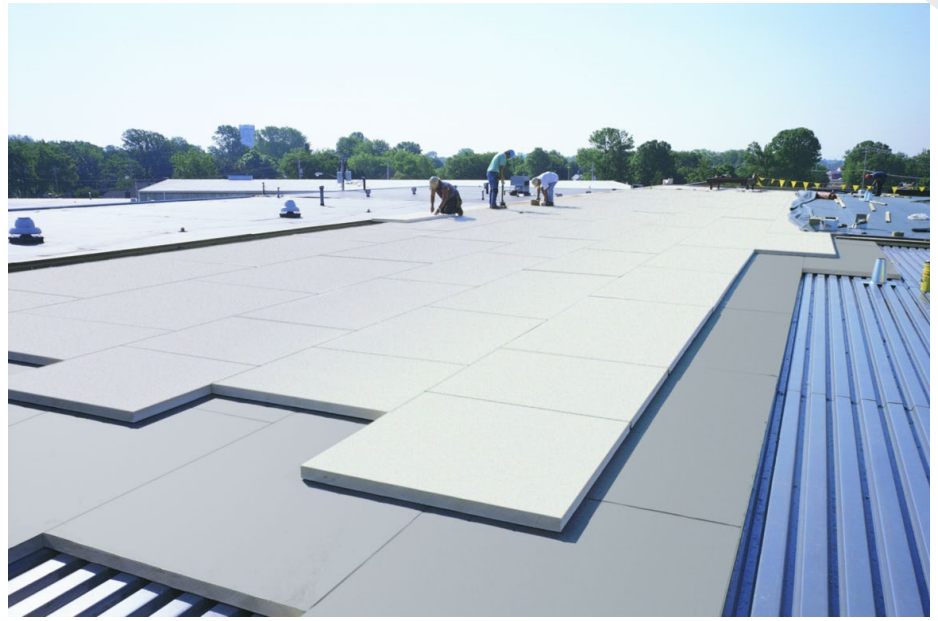
a work area where the **globe temperature** is at least five degrees Fahrenheit greater than the **temperature**, as defined in subsection (b)(20).

(b) Key definitions

"**ENGINEERING CONTROL**" means

Control or device that removes or reduces hazardous conditions or creates a barrier between the employee and the hazard.



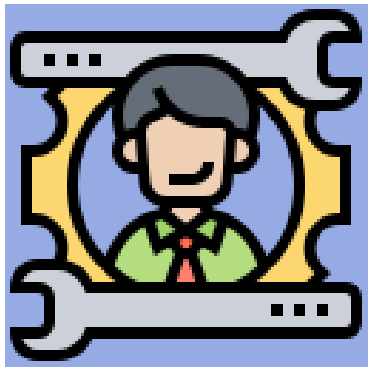


(b) Key definitions

Examples of **ENGINEERING CONTROLS**:

- Isolation of hot processes
- Isolation of employees from sources of heat
- Air conditioning
- Cooling fans, cooling mist fans, evaporative coolers
- Natural ventilation (when cooler outdoors)
- Local exhaust ventilation
- Shielding from a radiant heat source
- Insulation

(b) Key definitions



"**ADMINISTRATIVE CONTROL**" means:

Method to limit exposure to a hazard by adjustment of work procedures, practices, or schedules.

Examples of **ADMINISTRATIVE CONTROLS**:

- acclimatizing employees
- rotating employees
- scheduling work earlier or later in the day
- using work/rest schedules
- reducing work intensity or speed
- reducing work hours
- changing required work clothing
- using relief workers

(b) Key definitions

"PERSONAL HEAT-PROTECTIVE EQUIPMENT"

- Means "Equipment worn to protect the user against heat illness."
- Examples of personal heat-protective equipment:
  - Water/air-cooled garments
  - Cooling vests
  - Wetted over-garments
  - Heat-reflective clothing
  - Supplied-air personal cooling systems

(b) Key definitions

"**Cool-down Area**":

"Indoor or outdoor area that is blocked from direct sunlight and shielded from other high radiant heat sources to the extent feasible and is either open to the air or provided with ventilation or cooling."

"A cool-down area does not include a location where:

(A) Environmental risk factors defeat the purpose of allowing the body to cool; or

(B) Employees are exposed to unsafe or unhealthy conditions; or

(C) Employees are deterred or discouraged from accessing or using the cool-down area."

(c) Provision of Water

- Employees shall have access to potable drinking water
- Must be fresh, pure, suitably cool, and provided to employees free of charge
- Shall be located as close as practicable to the areas where employees are working and in indoor cool-down areas
- Where drinking water is not plumbed or continuously supplied, it shall be provided in sufficient quantity [and replenished]
- Frequent consumption of water, as described in subsection (h)(1)(C), shall be encouraged

(d) Access to Cool-Down Areas

- The Employer shall have and maintain one or more cool-down areas at all times while employees are present.
- Shall be at least large enough to accommodate the number of employees on recovery or rest periods [and meal periods]
- Shall be located as close as practicable to the areas where employees are working

- Temperature shall be maintained at less than 82 degrees Fahrenheit unless the employer demonstrates it is infeasible.

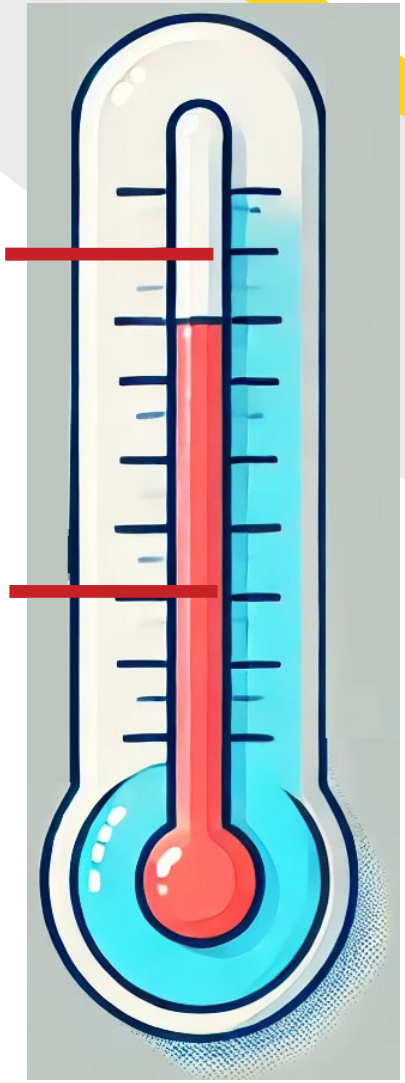
(e) Assessment and Control Measures

Remember the scope:

Conditions under which an indoor work area is subject to entire regulation **including** subsection (e):

≥ 87°F or
≥ 87°F Heat Index

≥82°F for:
Clothing restrict heat removal
or
High radiant heat areas



(e) Assessment and Control Measures

(e)(1):

- Measure temperature & heat index; record whichever is greater
- Identify & evaluate other heat illness environmental risk factors
- Effective procedures for active involvement of employees & union representatives in:
  - Planning, conducting, and recording measurements
  - Identifying & evaluating other heat illness environmental risk factors

(e) Assessment and Control Measures

EXCEPTION (A) to (e)(1):

- The Employer may assume a work area is subject to one or more of the conditions listed in subsection (a)(2).
- Comply with subsection (e)(2).

EXCEPTION (B) to (e)(1):

- Vehicles with effective and functioning air conditioning

Taking Measurements

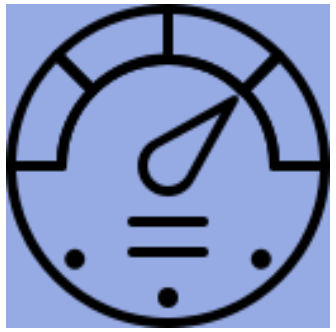
- **When to Measure**:
  - Take initial measurements when it's reasonable to suspect subsection (e) applies (e.g. >87°F)
  - Re-measure when temperatures are expected to be **10°F or more** above the previous measurement.
- **How to Measure**:
  - Measure both **temperature** and **heat index**—record the greater value.
  - Measurements should be taken at locations and times where employee exposure is expected to be the highest.

Taking Measurements

- **Instruments used to measure:**
- Shall be used and maintained according to the manufacturer's recommendations.
- Shall provide the same results as those in the NWS heat index chart.

- **Record Requirements**:
  - **Maintain accurate records**: Include the **date, time, and location** of each measurement.
  - **Keep records for 12 months** or until the next measurement, whichever is later.
  - Make records available to employees, union representatives, and Cal/OSHA upon request.

(e) Assessment and Control Measures



(e)(2) Use control measures to **minimize risk** of heat illness

- (e)(2)(A) Engineering Controls
  - 1. Reduce temp/heat index to below levels listed in subsection (a)(2) or the lowest feasible level.
  - 2. Use engineering controls to **minimize the risk** of heat illness.

    Exception for both: controls are infeasible.
- (e)(2)(B) Administrative Controls
  - **Minimize the risk** of heat illness to the extent feasible.
- (e)(2)(C) Personal heat-protective equipment.
  - **Minimize the risk** of heat illness to the extent feasible.

Feasibility – "Can it be done?"

- **Technical vs. Economic Feasibility**
- Feasibility will be determined based on the circumstances of the work environment

- **Infeasible engineering control examples:**
    - Unoccupied locations with short-term/intermittent exposures
        - Administrative controls feasible – limit time in spaces when the temp is over the threshold
    - Controls would contradict other legal requirements
    - Burn units where high temperatures are needed for patient safety

(f) Emergency Response Procedures

The employer shall implement effective emergency response procedures including:

- Ensuring that effective communication by voice, observation, or electronic means is maintained.
- Responding to signs and symptoms of possible heat illness(provide first aid and emergency medical services).
- Contacting emergency medical services and transporting employees if necessary
- Ensuring clear and precise directions to the worksite are provided to emergency responders

(f) Emergency Response Procedures

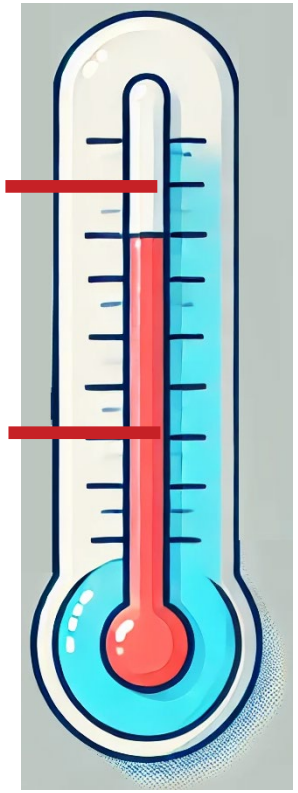
- The longer a person goes without assistance in excessive heat, the more likely they are to become seriously ill.
- Reminder: The Supervisor must take immediate action commensurate with the severity of the illness.
- Reminder: Severe heat illness symptoms:
  - decreased level of consciousness
  - staggering
  - vomiting
  - disorientation
  - irrational behavior
  - convulsions

(g) Acclimatization

- **Closely observe** employees during a heat wave
- **Closely observe** for 14 days employees newly assigned to work when:

≥ 87°F or
≥ 87°F Heat Index

≥82°F for:
Clothing restrict heat removal or
High radiant heat areas



(h) Training

- Effective training shall be provided:
  - Before the employee begins work that should reasonably be anticipated to result in exposure to the risk of heat illness.
  - (h)(1) Provides the full list of the required topics for employee training.
  - (h)(2) Provides the full list of the required topics for supervisor training.
  - Training can be combined for indoor and outdoor.

(i) Heat Illness Prevention Plan

- The employer shall establish, implement, and maintain an effective Heat Illness Prevention Plan.
- Shall be in writing in both English and the language understood by the majority of the employees
- Shall be made available at the worksite
- Written plan can be combined for indoor and outdoor

Key Takeaways

- Recognize the risk
  - Heat illness is preventable.
- Know the temperature thresholds
  - The regulation applies when indoor temperatures exceed **82°F**.
  - When temperatures exceed **87°F**, additional control measures must be in place.
- Control the heat
  - Employers must prioritize feasible engineering controls (e.g. ventilation, air conditioning).
- Emergency response is critical
  - Make sure workers are trained to recognize signs/symptoms and what to do.
- More resources are available

For Additional Information

Cal/OSHA Heat Illness Webpage:

- Fact Sheets, Guidance Documents, Heat Illness Prevention Model Plan, FAQs, and eTools.

https://www.dir.ca.gov/DOSH/HeatIllnessInfo.html

Cal/OSHA Consultation:

https://www.dir.ca.gov/dosh/consultation.html

NWS HeatRisk

https://www.wpc.ncep.noaa.gov/heatrisk/

99 Calor Webpage

- Free multilingual educational materials

https://www.99calor.org

Email heat@dir.ca.gov to get free materials mailed to you

Thank you!

Any questions?