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Engineers | Environmental Specialists

REVIEW AND BREAKDOWN OF THE PROPOSED OSHA HEAT INJURY AND ILLNESS PREVENTION (1910.148) STANDARD

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Discussion Outline

- Review the Standards Making Process
- Discuss OSHA Standard Development
- Explore Heat in the Workplace
- Review the Scope of Standard
- Key Words
- HIIPP Triggers
- HIIPP Requirements
- Compliance requirements
- Evaluation of compliance options
- Some Toolsets to use Today
- Standards summary

Understanding OSHA Standards Development

SEC. 6. Occupational Safety and Health Standards

(b)The Secretary may by rule promulgate, modify, or revoke any occupational safety or health standard….

Identification of Hazards

- Industry practices, new technologies, or scientific studies identify workplace hazards. OSHA initiates the process to develop a new standard to address these safety concerns.

Stakeholder Engagement

- OSHA consults with industry experts, unions, and other stakeholders. A Notice of Proposed Rulemaking (NPRM) is published in the Federal Register, inviting public comment.

Public Comment and Review

- OSHA reviews public comments and testimony. Public hearings may be conducted to gather additional information and perspectives on the proposed standards.

Finalizing the Rule

- After considering feedback, OSHA drafts the final standard. This is published in the Federal Register as a Final Rule, detailing compliance requirements and timelines.

On to the Heat!

Workplace Heat

- Heat is a leading cause of work-related deaths in the U.S.
- Thousands of workers suffer heat-related illnesses and injuries annually.
- Underreporting of incidents significantly masks the true scale of the problem.
- Existing regulations and guidelines are insufficient to adequately protect workers.
- Vulnerable populations, such as outdoor workers, those in certain industries, and those with pre-existing conditions, are disproportionately affected.

Workplace Heat

- 1,042 work-related deaths due to heat exposure (1992-2022)

  An average of 34 deaths per year. (Source: BLS, 2024c)

- 33,890 work-related heat injuries and illnesses resulting in days away from work (2011-2020)

  An average of 3,389 per year. (Source: BLS, 2023b)

- Significant underreporting: Actual numbers are likely far higher.

- Disproportionate impact: Certain industries and demographics face increased risk.

Workplace Heat

- Early 20th century: High mortality rates during Hoover Dam construction (1930s), military training camps (1940s-50s).
- 1972: NIOSH first recommended a heat standard.
- 1986 & 2016: Updated NIOSH criteria documents underscored the need for action.
- OSHA's prior efforts: General Duty Clause enforcement, educational campaigns – inadequate for comprehensive protection.
- Growing state-level action: Highlight the number of states with their own heat standards.

Workplace Heat

1972: NIOSH first recommended a heat standard.

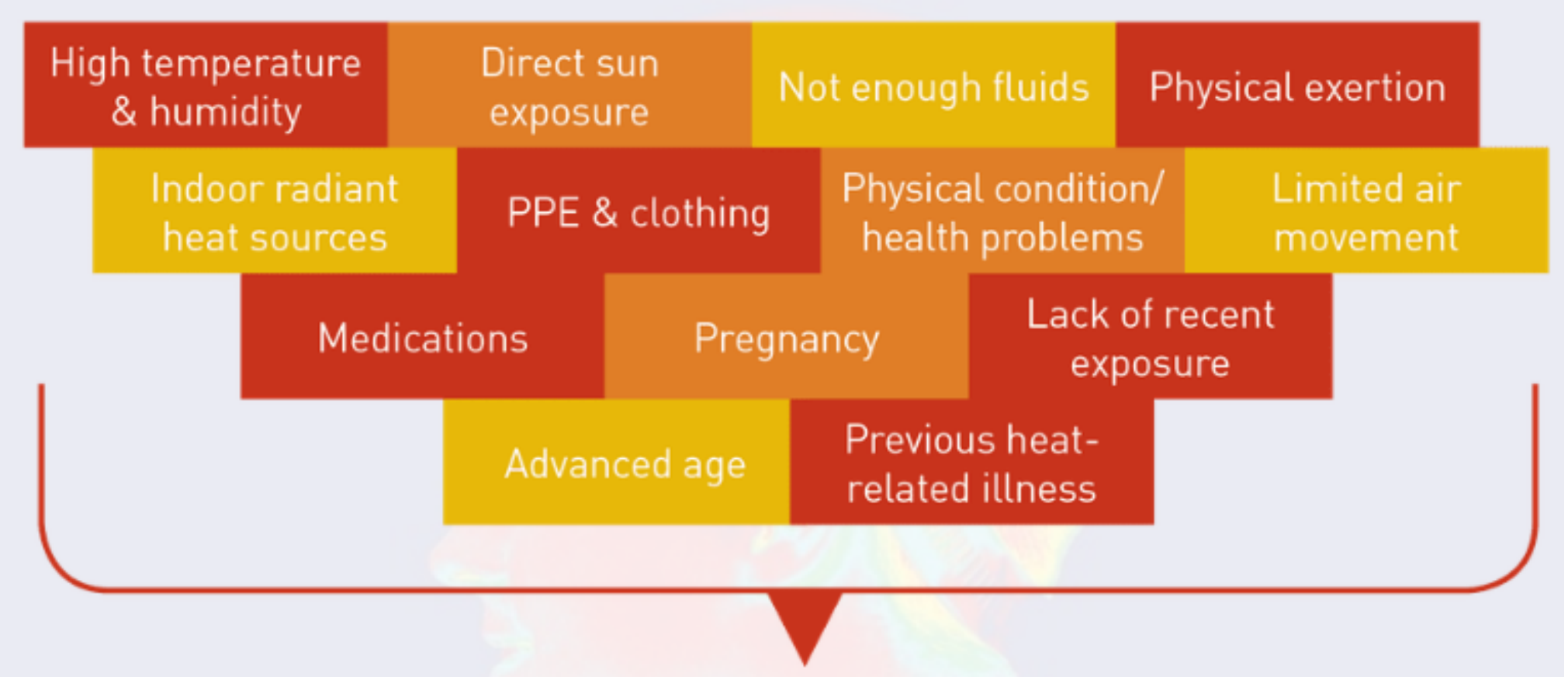
- **Rising Incidence of Heat-Related Illnesses: There was an increase in heat-related illnesses and fatalities among workers, particularly in industries including construction and manufacturing.**

- **Lack of Protective Guidelines: There were few regulations or guidelines to protect workers. Establishing a standard would provide necessary protections and protocols, like frequent breaks and access to cool water.**

- **Research Findings: Studies indicated that higher temperatures negatively impacted worker productivity and safety. Assessments in road construction showed that as temperatures rose, both efficiency and health declined.**

- **Economic Concerns: Businesses faced financial burdens due to heat-related health issues, including increased medical costs and lost work time.**

Workplace Heat



Source: Heat Hazards: Protecting Workers in Hot Environments, Jacklitsch B.

Workplace Heat - Illnesses

- Heat related Death
- Heat Stroke
- Heat Exhaustion
- Heat Syncope
- Rhabdomyolysis
- Hyponatremia
- Heat Cramps
- Heat Rash
- Heat Edema
- Kidney Health Effects
- Chronic Kidney Disease

TABLE IV—1—ICD–9 AND ICD–10 CODES FOR HEAT-RELATED HEALTH EFFECTS *

ICD–9 code	ICD–10 code equivalent
992 *Effects of heat and light*	T67 *Effects of heat and light.*
992.0 *Heatstroke and sunstroke*	T67.0 *Heatstroke and sunstroke.*
992.1 *Heat syncope*	T67.1 *Heat syncope.*
992.2 *Heat cramps*	T67.2 *Heat cramp.*
992.3 *Heat exhaustion, anhydrotic*	T67.3 *Heat exhaustion, anhydrotic.*
992.4 *Heat exhaustion due to salt depletion*	T67.4 *Heat exhaustion due to salt depletion.*
992.5 *Heat exhaustion, unspecified*	T67.5 *Heat exhaustion, unspecified.*
992.6 *Heat fatigue, transient*	T67.6 *Heat fatigue, transient.*
992.7 *Heat edema*	T67.7 *Heat edema.*
992.8 *Other effects of heat and light*	T67.8 *Other effects of heat and light.*
992.9 *Effects of heat and light, unspecified*	T67.9 *Effects of heat and light, unspecified.*
E900 *Accident caused by excessive heat*	NA.

International Classification of Diseases;

Workplace Heat – Illnesses

Hyponatremia: A condition characterized by low sodium levels in the blood.
Causes: Excessive sweating, drinking too much water without electrolyte replacement, prolonged physical exertion in heat.

Heat Cramps: Definition: Painful muscle contractions that usually occur in the abdomen, arms, or legs.
Causes: Loss of electrolytes through sweat, dehydration, and overexertion in high temperatures.

Heat Rash: A skin condition caused by blocked sweat ducts leading to small red bumps.
Causes: Excessive sweating, humid weather, and tight clothing that traps sweat.

Heat Edema: Swelling due to fluid retention, primarily in the hands, ankles, and feet.
Causes: High temperatures leading to increased blood flow to the skin and impaired circulation in the heat.

Kidney Health Effects: Various adverse effects on kidney function due to heat exposure.
Causes: Dehydration, heat stress, and exertion leading to rhabdomyolysis, which can damage kidney tissues.

Rhabdomyolysis: A serious condition resulting from the breakdown of muscle tissue and the release of muscle fiber contents into the bloodstream.
Causes: Intense physical activity in high heat conditions, dehydration, and muscle over exertion.

Workplace Heat – Illnesses

Heat-Related Death: Fatalities resulting from extreme heat conditions.
Causes: Severe heat exhaustion, heat stroke, and underlying health conditions exacerbated by heat.

Heat Stroke: A severe condition characterized by a body temperature of 104°F (40°C) or higher, altered mental state, and life-threatening consequences.
Causes: Prolonged exposure to high temperatures, vigorous exercise in hot weather, and inadequate hydration.

Heat Exhaustion: A heat-related illness that can occur after prolonged exposure to high temperatures, often accompanied by heavy sweating and a loss of electrolytes.
Causes: High environmental temperature, vigorous physical activity, and dehydration.

Heat Syncope: Definition: A fainting episode due to overheating or excessive heat exposure.
Causes: Standing for long periods in the heat, dehydration, and low blood pressure.

Chronic Kidney Disease: A long-term condition affecting kidney function, which may be exacerbated by heat stress.
Causes: Persistent dehydration, recurring heat illnesses, and increased physical stress on the kidneys.

Workplace Heat – State Actions

- Growing state-level action: Highlight the number of states with their own heat standards. California, Minnesota, Oregon, Washington, Colorado, and Maryland is in the works.

Heat Index Guidelines: The standard establishes specific temperature thresholds based on the heat index, which combines temperature and humidity. Recommendations for preventive measures are tied to these thresholds.

Mandatory Breaks: Employers are required to provide scheduled rest breaks in shaded or cool locations as temperatures rise, allowing employees to recover from heat exposure.

Hydration Requirements: Employers must ensure that drinking water is readily available and easily accessible to all workers, encouraging regular hydration.

Training and Education: Workers and supervisors are mandated to undergo training about the signs and symptoms of heat-related illnesses, prevention strategies, and emergency responses.

Acclimatization: The proposal includes guidelines for acclimatizing workers to heat conditions, especially for new employees or those returning after an extended absence.

Monitoring Conditions: Employers are encouraged to monitor heat conditions and take proactive measures when the heat index reaches unsafe levels.

Workplace Heat – State Plans

TABLE III–1—INITIAL HEAT TRIGGERS AND PROVISIONS IN STATE HEAT STANDARDS

	Threshold	Provision of water	Shade or cool-down means	Rest breaks if needed	Emergency response	Acclimatization	Training	Heat illness prevention plan	Observation/ supervision
General									
California: Outdoor	80 °F (Ambient) [1]	•	•	•	•	•	•	•	.....
Washington: Outdoor	80 °F (Ambient), All other clothing; 52 °F, Non-breathable clothes.	•	•	•	•	•	•	• (accident prevention).	.....
Colorado: Agriculture	80 °F (Ambient)	•	•	•	•	•	•	.....	•
California (proposal): Indoor.	82 °F (Ambient)	•	•	•	•	•	•	•	.....
Maryland (proposal): Indoor & Outdoor.	80 °F (Heat Index)	•	•	.....	•	•	•	•	.....
Minnesota: [2] Indoor	86 °F (WBGT), Light work; 80 °F, Moderate work; 77 °F, Heavy work.	.....	.....	.....	.....	.....	•	.....	.....
Oregon: Indoor & Outdoor.	80 °F (Heat Index)	•	•	.....	•	•	•	•	.....

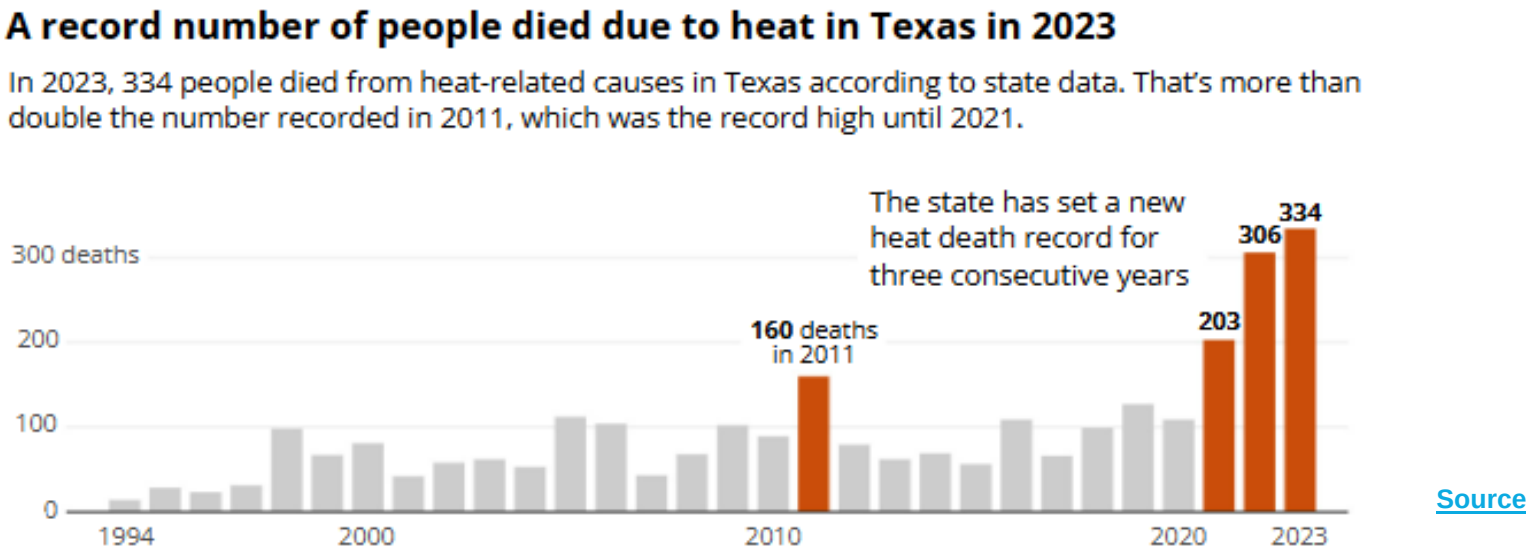
Workplace Heat – State Plans

TABLE III–2—HIGH HEAT TRIGGERS AND ADDITIONAL PROVISIONS IN STATE HEAT STANDARDS

	Threshold	Work-rest schedule	Observation/supervision	Pre-shift meetings	Assessment and control measures [1]
Additional High Heat Provisions					
California: Outdoor [2]	95 °F (Ambient)	• (only agriculture)	•	•	
Washington: Outdoor	90 °F (Ambient)	•	•		
Colorado: Agriculture	95 °F (Ambient) or other condition [3].	•	covered in general provisions above.	•	
California (proposal): Indoor	87 °F (Ambient or Heat Index) or other conditions [4].				•
Maryland (proposal): Indoor & Outdoor.	90 °F (Heat Index)	•	•		
Oregon: Indoor & Outdoor	90 °F (Heat Index)	•	•		

Workplace Heat – Alternate State Plans

- June 2023, Texas passed a law that effectively removed certain local regulations in major cities like Austin and Dallas, which mandated protections against heat stress for workers.
- These local ordinances previously required breaks for workers during periods of extreme heat
- House Bill 2127, preempts local governments from enforcing regulations in several sectors unless they are explicitly authorized by state law.
- This initiative was part of broader efforts to unify business regulations across the state, preventing local governments from imposing regulations that vary from state standards.



Source

Federal or State Standards

- Inconsistent state regulations: Varying standards across states create confusion and unequal protection.
- Limited enforcement: General Duty Clause enforcement is insufficient.
- Clearer employer responsibilities: A federal standard establishes clear obligations.
- Enhanced worker protections: Provides minimum, uniform standards nationwide.
- Proactive prevention: Focus shifts from reacting to incidents to preventing them.
- Data-driven improvement: Facilitates comprehensive data collection and analysis.

General Duty Clause – Challenges (1-2)

- Vagueness and Subjectivity: The General Duty Clause requires employers to provide a safe workplace free from recognized hazards. However, the definitions of "safe" and "recognized hazards" can be vague and subjective, making enforcement challenging.

- Lack of Specific Standards: Unlike specific regulations, the General Duty Clause does not provide detailed guidelines or thresholds for heat exposure, making it difficult for employers to know what is required to comply.

- Burden of Proof: Under the General Duty Clause, the burden is on OSHA to prove that a specific heat-related hazard exists and that the employer failed to act accordingly, which can be difficult in cases of heat-related illnesses that occur over time.

- Limited Scope of Application: The clause may not apply uniformly across all types of work environments. Certain industries may have unique challenges related to heat that aren't adequately addressed by a general clause.

General Duty Clause – Challenges (2-2)

- Enforcement Challenges: Investigating and proving cases of heat-related hazards can be complex, particularly in demonstrating a direct link between the working conditions and health outcomes.

- Potential for Inconsistent Enforcement: Enforcement of the General Duty Clause can vary by region or inspector, leading to inconsistent application of safety measures across different workplaces.

- Reactive Rather Than Proactive: Enforcement through the General Duty Clause often occurs after an incident or complaint, rather than through proactive measures to prevent heat exposure.

Who is exempt from this new standard…?

Exemptions from OSHA Heat Standard

- **Negligible Heat Exposure Risk**: Work activities where heat exposure at or above the initial trigger is unlikely.

- **Short-Duration Exposures**: Brief exposures (<15 minutes within any 60-minute period) at or above the initial trigger.

- **Emergency Response**: Organizations whose primary function involves emergency response (firefighting, EMS, technical search and rescue). These are largely covered under other OSHA regulations (29 CFR 1910.120, 1910.146, 1910.156, part 1915, subpart P, 1926.65, and 1926.1211).

- **Consistently Air-Conditioned Workspaces**: Work in indoor areas or vehicles where air conditioning consistently maintains temperatures below 80°F.

Exemptions from OSHA Heat Standard

- **Telework**: Remote work from home or other locations.
- **Sedentary Indoor Work**: Primarily sedentary indoor work (sitting, occasional standing, minimal walking, minimal lifting of objects <10 pounds).
- **Exclusively Exempt Employees**: Employers whose employees exclusively perform any of the above activities are fully exempt.

OK, lets start looking into this heat standard…..

Select Key Words

- **Acclimatization**: Body's adaptation to heat through gradual exposure, reducing heat stress.
- **Heat Index**: NWS combined temperature and humidity index.
- **Initial Heat Trigger**: Heat index of 80°F (26.7°C) or WBGT at NIOSH RAL.
- **High Heat Trigger**: Heat index of 90°F (32.2°C) or WBGT at NIOSH REL.
- **Vehicles**: Considered outdoor work in most cases – especially with no air conditioning
- **Indoor/Outdoors**: Work performed indoors / outdoors
- **Work Area**: Where employees work within a worksite.
- **Work Site**: Physical location of work.
- **HIIPP**: Heat Injury and Illness Prevention Plan (site-specific).

Select Key Words – Acclimatization

Unacclimatized

- Readily show signs of heat stress when exposed to hot environments.
- Difficulty replacing all the water lost in sweat.
- Failure to replace the water lost will slow or prevent acclimatization.
- Higher risk of injury

Acclimatization

- Increased sweating efficiency (earlier onset of sweating, greater sweat production, and reduced electrolyte loss in sweat).
- Stabilization of the circulation.
- Work is performed with lower core temperature and heart rate.
- Increased skin blood flow at a given core temperature.

Acclimatization plan

- Gradually increase exposure time in hot environmental conditions over a period of 7 to 14 days.
- For new workers, the schedule should be no more than 20% of the usual duration of work in the hot environment on day 1 and a no more than 20% increase on each additional day.
- For workers who have had previous experience with the job, the acclimatization regimen should be no more than 50% of the usual duration of work in the hot environment on day 1, 60% on day 2, 80% on day 3, and 100% on day 4.
- The time required for non–physically fit individuals to develop acclimatization is about 50% greater than for the physically fit.

Source

HIIPP Triggers: When is a HIIPP Required?

Outdoor Work:

- Initial Heat Trigger (80°F or WBGT at RAL): Implement 1910.148(e) controls.
- High Heat Trigger (90°F or WBGT at REL): Implement 1910.148(e) and (f) controls.
- Exemption: If temperatures consistently exceed both triggers, all control measures must be implemented (no monitoring required).

Indoor Work:

- HIIPP is required when there's a reasonable expectation of employee exposure to heat at or above the initial heat trigger. Include a monitoring plan. Re-evaluation required for significant outdoor temperature increases impacting indoor conditions.

Employees must be involved in the development and implementing of plans

HIIPP Components

Component	Description
Comprehensive Work Activity List	All jobs and tasks subject to heat exposure.
Policies & Procedures	Detailed plans to meet standard requirements (water access, breaks, etc.).
Heat Metric Selection	Chosen heat metric (heat index or WBGT) for monitoring.
Acclimatization Plan	Procedures for new and returning employees (gradual acclimatization strategies).
Water Access	Access to sufficient, cool potable water.
Break Areas	Sufficient indoor and outdoor break areas.
Indoor Work Area Controls	Methods for controlling heat (air movement, AC, radiant heat reduction).
Observation of Signs/Symptoms	Procedures for monitoring employee health.

HIIPP Components

Hazard Alert System	Communication to workers about high-heat conditions before/during shifts.
Cooling PPE	Procedures for using and maintaining cooling PPE.
Heat Illness & Emergency Response	Plan with emergency contacts, procedures, transportation, and employee monitoring.
Training	Initial, supervisor, and annual refresher training (detail content in next slide).
Heat Safety Coordinator	Designation of coordinator(s) with authority to ensure HIIPP implementation and compliance.

Control Measures

- Potable Water
- Rest Breaks (at high heat trigger)
- Shade/Break Areas (Indoor & Outdoor)
- Acclimatization procedures
- **Observation for signs and symptoms**
- Hazard alerts
- Cooling PPE (if necessary)
- Indoor work area controls (air movement, AC, radiant heat reduction)

Control Measures – Observation for signs and symptoms

Heat Exhaustion:

- Heavy sweating
- Weakness and fatigue
- Dizziness or fainting
- Nausea or vomiting
- Headache
- Elevated body temperature

Heat Stroke (a more severe condition that requires immediate medical attention):

- High body temperature (typically 104°F or higher)
- Altered mental state (confusion, agitation)
- Hot, dry skin or profuse sweating
- Rapid pulse
- Seizures
- Loss of consciousness

Other Heat-Related Symptoms:

- Muscle cramps (often in the legs or abdomen)
- Thirst
- Rapid heartbeat
- Dehydration signs, such as dark urine or decreased urine output

Indoor Control Measures

Employer must provide one of the following:

- Increased air movement (fans or natural ventilation) and dehumidification (if appropriate).
- Air-conditioned work area.
- Measures to reduce radiant heat exposure (shielding, barriers, isolating heat sources).

Fan use evaluation: At ambient temperatures above 102°F, employers must evaluate humidity to ensure fan use isn't harmful.

Compliance Options

Employers may evaluate different compliance options, considering factors such as:

- Cost-benefit analysis
- Feasibility of implementation
- Effectiveness in reducing risk
- Employee acceptance
- Legal compliance

Training and Recordkeeping

Training

- Initial comprehensive training for all employees and supervisors.
- Annual refresher training and additional training for any changes impacting heat exposure.
- Supervisor Training: Supervisors must receive training on all HIIPP topics and their supervisory responsibilities.
- Language: Training must be in a language understood by all.

Recordkeeping

- Written or electronic records of indoor heat measurements (if conducted) for a 6-month retention period.

What kind of training……?

Training for Employees

Understanding Heat-Related Illnesses:

- Recognize symptoms of heat-related illnesses (heat exhaustion, heat stroke).
- Understand the importance of hydration and acclimatization.

Preventive Measures:

- Knowledge of how to minimize risk, including taking breaks, staying hydrated, and using cooling methods.
- Awareness of the work environment and conditions that increase heat stress.

Emergency Procedures:

- Training on how to respond to heat-related illness symptoms, including when and how to seek help.
- Knowing first-aid measures for heat emergencies, including cooling techniques.

Monitoring Work Conditions:

- Understanding the use of heat indexes or other monitoring tools to evaluate environmental conditions.

Training for Supervisors

Responsibilities for Employee Safety:

- Training on how to recognize signs of heat stress in employees.
- Understanding their role in implementing the heat safety program and monitoring compliance.

Implementation of Heat Safety Programs:

- Knowledge of required measures for heat exposure prevention, including scheduling breaks and providing access to water and cooling areas.
- Training in establishing contingency plans for high heat days.

Communication:

- Skills to effectively communicate the risks associated with heat exposure to workers.
- Ensuring all employees are aware of resources available to them, such as hydration stations and shaded areas.

Monitoring and Evaluation:

- Training on how to monitor environmental conditions, including taking temperature readings and assessing humidity levels.

Developing and Implementing Your HIIPP (Actionable Steps)

- Assess: Identify potential heat exposures in your workforce and work environments.
- Determine Triggers: Which triggers apply to your workplace (initial, high heat, indoor)?
- Develop: Create your HIIPP, documenting all necessary information (policies, procedures, etc.).
- Communicate: Ensure everyone understands the plan.
- Implement: Put the plan into action.
- Monitor & Review: Regularly monitor the effectiveness of your HIIPP and update as needed (annually, or after any heat-related incident).

Proposed Collection-of-information Requirements

TABLE X.J–1—PROPOSED COLLECTION-OF-INFORMATION REQUIREMENTS FOR HEAT INJURY AND ILLNESS PREVENTION

	Section	Collection-of-information requirements
1	§ 1910.148(c)(1) through (4).	Paragraphs (c)(1) through (4) would require employers to develop and implement a heat injury and illness prevention plan (HIIPP), which must include a list of covered activities, the policies and procedures necessary to comply with the proposed standard, the heat metric the employer will use to comply with paragraph (d), and policies and procedures related to the use of vapor-impermeable clothing, if applicable. For employers with more than 10 employees, the HIIPP must be in writing.
2	§ 1910.148(c)(5)	Paragraph (c)(5) would require the employer to designate one or more heat safety coordinators to implement and monitor the HIIPP.
3	§ 1910.148(c)(6) and (7)	Paragraphs (c)(6) and (7) would require the employer to seek the input and involvement of non-managerial employees in the development and implementation of the HIIPP, and to review and evaluate the effectiveness of the HIIPP at least annually and whenever a heat-related illness or injury occurs that results in days away from work, medical treatment beyond first aid, or loss of consciousness.
4	§ 1910.148(c)(8) and (9)	Paragraphs (c)(8) and (9) would require the employer to make the HIIPP readily available at the work site in a language each employee, supervisor, and heat safety coordinator understands.
5	§ 1910.148(d)(3)	Paragraph (d)(3) would require the employer, at indoor work sites, to identify each work area(s) where there is a reasonable expectation that employees are or may be exposed to heat at or above the initial heat trigger. For each work area identified, the employer would be required to develop and implement a monitoring plan that includes measuring heat index or wet bulb globe temperature. Employers would also be required to evaluate any affected work area(s) and update their monitoring plan whenever there is a change in production, processes, equipment, controls, or a substantial increase in outdoor temperature which has the potential to increase heat exposure indoors. The employer would be required to seek the input and involvement of non-managerial employees when identifying work areas with a reasonable expectation of exposure at or above the initial heat trigger and in developing and updating monitoring plans.

Proposed Collection-of-information Requirements

TABLE X.J–1—PROPOSED COLLECTION-OF-INFORMATION REQUIREMENTS FOR HEAT INJURY AND ILLNESS PREVENTION

	Section	Collection-of-information requirements
6	§ 1910.148(e)(7)	Paragraph (e)(7) would require the employer, when the initial heat trigger is met or exceeded, to implement an acclimatization protocol for each new employee and each returning employee (i.e., who has been away from work for more than 14 days) during their first week on the job. Employers would be required to choose either a plan that would incorporate the control measures required when the high heat trigger is met or exceeded, or a gradual acclimatization plan that would slowly increase the employee's exposure to heat each day. The requirement would not apply if the employer can demonstrate that the employee consistently worked under the same or similar conditions within the past 14 days.
7	§ 1910.148(e)(9)	Paragraph (e)(9) would require the employer, when the initial heat trigger is met or exceeded, to maintain a means of effective, two-way communication with employees and regularly communicate with employees.
8	§ 1910.148(f)(4)	Paragraph (f)(4) would require the employer, prior to the work shift or upon determining that the high heat trigger is met or exceeded, to notify employees of the importance of drinking plenty of water, employees' right to take rest breaks if needed and required rest breaks, how to seek help and the procedures to take in a heat emergency, and, for mobile work sites, the location of break area(s) and drinking water.
9	§ 1910.148(f)(5)	Paragraph (f)(5) would require the employer to place a legible, visible, and understandable warning sign at indoor work areas with ambient temperatures that regularly exceed 120 °F.

Proposed Collection-of-information Requirements

TABLE X.J–1—PROPOSED COLLECTION-OF-INFORMATION REQUIREMENTS FOR HEAT INJURY AND ILLNESS PREVENTION

Section	Collection-of-information requirements
§ 1910.148(g)(1)	Paragraph (g)(1) would require employers, as part of their HIIPP, to develop and implement a heat emergency response plan that includes a list of emergency phone numbers, a description of how employees can contact a supervisor and emergency medical services, individual(s) designated to ensure that heat emergency procedures are invoked when appropriate, a description of how to transport employees to a place where they can be reached by emergency medical services, clear and precise directions to the work site, and procedures for responding to an employee experiencing signs and symptoms of heat-related illness or a heat emergency.
§ 1910.148(g)(3)	Paragraph (g)(3) would require the employer, if an employee is experiencing signs and symptoms of a heat emergency, to take immediate actions to reduce the employee's body temperature and immediately contact emergency medical services, as well as relieving them from duty, monitoring them, ensuring they are not left alone, and offering them on-site first aid and medical services.
§ 1910.148(i)(1)	Paragraph (i)(1) would require employers to have written or electronic records of on-site measurements at indoor work areas, and to retain those records for 6 months.

Effective Dates: Currently in Federal Registry Review

This standard is still under review and has not been released yet.

Effective Date: 60 days after date of publication of the final rule in the Federal Register.

Compliance date: Employers must comply with all requirements of this standard by 150 days after date of publication of the final rule in the

Costs of Implementation

Estimate compliance costs

Costs less than 1% of annual revenues indicate feasibility.

Findings:

Annual compliance costs < 1% of revenue (most industries).

Costs should not threaten industry viability or competitive structure.

Industries above 1% (Costs as a percentage of revenue)

1.	Sheep and Goat Farming	(NAICS 1124)	1.57%
2.	Other Animal Production	(NAICS 1129)	1.23%
3.	Individual and Family Services	(NAICS 6241)	1.04%
4.	Vocational Rehabilitation Services	(NAICS 6243)	1.13%
5.	Child Care Services	(NAICS 6244)	2.76%

Tools to use today

OSHA-NIOSH Heat Safety Tool App

The OSHA-NIOSH Heat Safety Tool features:

- A visual indicator of the current heat index and associated risk levels specific to your current geographical location
- Precautionary recommendations specific to heat index-associated risk levels
- An interactive, hourly forecast of heat index values, risk levels, and recommendations for planning outdoor work activities
- Location, temperature, and humidity controls, which you can edit to calculate for different conditions
- Signs and symptoms and first aid for heat-related illnesses

Tools to use today

ACGIH Heat Stress Guidelines

Method 1: Screening criteria based on Wet Bulb Globe Temperature
This method uses the Wet Bulb Globe Temperature (WBGT) and estimated work rate. WBGT considers air temperature, humidity, radiant heat, and wind speed to provide an overview of the environment for predicting the heat stress that a worker experiences.

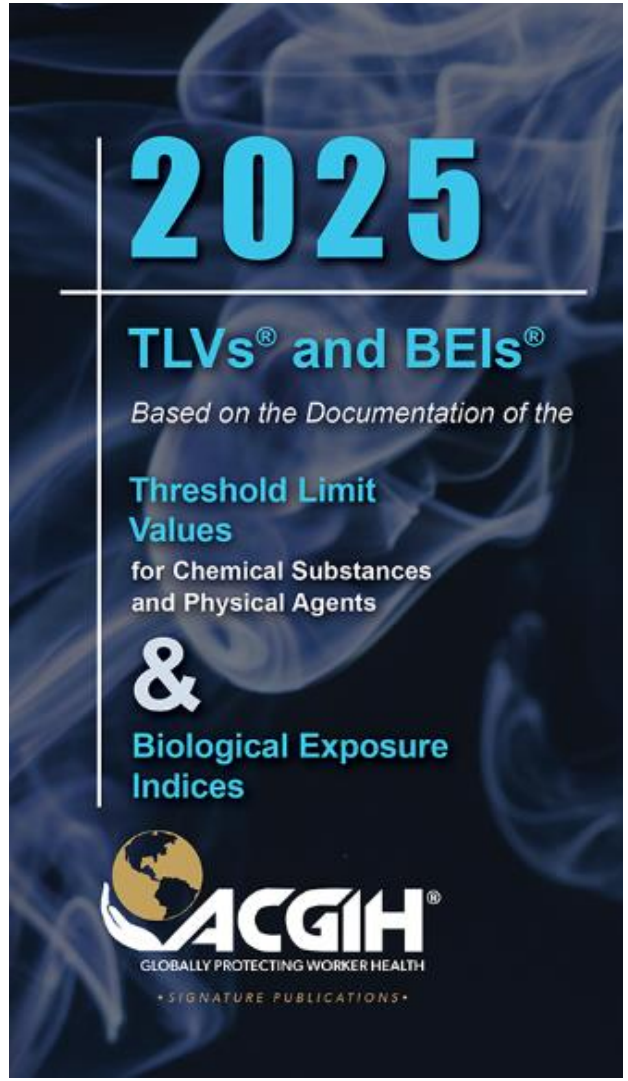
Method 2: TLV analysis

This requires the organization to analyze the task to calculate the time-weight averages for WBGT and work rate. If exposure is less than the AL, no further action is required while preventative measures are recommended if exposure is greater than AL but lower than TLV.

Method 3: Advanced heat stress evaluation

This refers to methods such as the predicted heat strain (PHS) model and the US Army Heat Stress Decision Aid (HSDA).

Method 4: Heat strain and physiological monitoring



Tools to use today – Publications and Standards

OSHA National Emphasis Program – Outdoor and Indoor Heat-Related Hazards

ABSTRACT

Purpose: This Instruction describes policies and procedures for implementing a National Emphasis Program (NEP) to protect employees from heat-related hazards and resulting injuries and illnesses in outdoor and indoor workplaces. This NEP expands on the agency's ongoing heat-related illness prevention initiative and campaign by setting forth a targeted enforcement component and reiterating its compliance assistance and outreach efforts. This approach is intended to encourage early interventions by employers to prevent illnesses and deaths among workers during high heat conditions, such as working outdoors in a local area experiencing a heat wave, as announced by the National Weather Service. Early interventions include, but are not limited to, implementing water, rest, shade, training, and acclimatization procedures for new or returning employees.

State of Oregon Local Emphasis Program" Preventing Heat-Related Illness and Guidance on Health Illness Prevention

PURPOSE: The purpose of this directive is to create a State Local Emphasis Program (LEP) for preventing heat-related illness in the state of Oregon by enforcing Oregon OSHA's Heat Illness Prevention Rules.

Cal/OSHA Heat Illness Prevention Guidance and Resources (Section 3396 Indoor – Section 3395 – Outdoor)

In California, employers must take steps to protect workers from heat illness in both indoor and outdoor workplaces under California Code of Regulations, Title 8 (T8CCR), sections 3395 and 3396. Employers may be covered under both the indoor and outdoor regulations if they have both indoor and outdoor workplaces.

CDC Occupational Exposure to Heat and Hot Environments

REVIEW AND BREAKDOWN OF THE PROPOSED OSHA HEAT INJURY AND ILLNESS PREVENTION (1910.148) STANDARD

Safety & Health

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