SUBJECT: Local Emphasis Program (LEP): Preventing Heat Related Illness

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 temporary Heat Illness Prevention Rules.

BACKGROUND: Heat-related illnesses generally occur when body heat generated by physical work is aggravated by environmental heat and humidity.

Since July of 2017, Oregon OSHA has focused on heat related illness in all inspections from June 15 – October 1 by providing guidance and education to employers in relation to heat related illness. In 2021, a deadly heat event in the Pacific Northwest set record-breaking temperatures in Oregon. On June 28th, Portland International Airport reached 116 °F and other parts of the state were even hotter. This extreme hot weather may happen again, and it has made it necessary to enact protections to ensure the health and safety of workers. On July 8, 2021, Oregon OSHA adopted a temporary standard for Heat Illness Prevention that will be in effect until January 3, 2022 unless replaced sooner (as expected) by a rule adopted through the regular rulemaking process.

Heat-related Illnesses: The human body normally cools itself by sweating and allowing that sweat to evaporate. This simple strategy requires enough fluid in the body to make sweat, air circulating across the skin, and low enough air humidity to allow the sweat to evaporate.

Workplace causes of heat related illnesses involve work activities in a hot environment that can overwhelm the body's ability to cool itself, especially working in a hot environment without adequate access to water for rehydration.

Heat-related illnesses include:

**Heat rash** (sweat rash or prickly heat). Skin symptoms usually resolve by cooling the skin and avoiding exposure to the heat that caused it. However, symptoms that last longer than a few days, or a rash that gets worse may require medical treatment.
Heat exhaustion can be prevented by being aware of your physical limits related to a hazardous environment on hot, humid days. The most important factor is likely to be drinking enough clear fluids (no alcohol or caffeine) to replace those lost to perspiration. Signs and symptoms of heat exhaustion typically include:

- Profuse sweating
- Weakness, fatigue
- Nausea, vomiting
- Muscle cramps (associated with dehydration)
- Headache
- Light-headedness, fainting or “heat syncope” (Fainting or loss of consciousness is potentially serious and should be referred for medical advice. Any loss of consciousness must be recorded on the employer’s 300 log).

Intervention for heat exhaustion includes recognizing the symptoms, stopping the activity, and moving the affected employee to a cooler environment where they can rehydrate. Cooling off and rehydration with water (or electrolyte-replacing sports drinks) is the cornerstone of treatment for heat exhaustion. Activity must be stopped and steps taken to cool down. If activities resume without the core temperature returning to normal levels this may cause heat related symptoms to recur.

Heat stroke. This is a life-threatening condition that requires an immediate emergency medical response. The person typically stops sweating, becomes confused or lethargic and may even have a seizure. The internal body temperature may exceed 106 F (41 C). Signs and symptoms of heat stroke typically include:

- Absence of sweating
- Dry skin
- Agitation/strange behavior
- Dizziness/disorientation/lethargy
- Seizures
- Signs and symptoms that can mimic those of a heart attack

If there is no intervention and the body's temperature regulation fail, heat exhaustion can rapidly progress to heat stroke or sun stroke. Heatstroke requires immediate medical attention to prevent permanent damage to the brain and other vital organs that can result in death. Ensure that emergency services are summoned immediately if heat stroke is suspected. While waiting for emergency services to arrive cool the victim by moving them to an air-conditioned environment – or at least a cool, shady area – and help them remove any unnecessary clothing.
ACTION: INSPECTION GUIDANCE RELATED TO HEAT-RELATED HAZARDS

A. The procedures outlined in Division 1, 437-001-0057, Scheduling Inspections and the Field Inspection Reference Manual (FIRM) for programmed inspections are not suitable as the primary means to schedule inspections of applicable establishments where employees are exposed to the heat index of 80 degrees Fahrenheit because these operations are often both seasonal and of short duration. Therefore, inspection efforts will be concentrated where work activities (indoor or outdoor) are performed and the heat index (apparent temperature) equals or exceeds 80 degrees Fahrenheit.

All CSHO’s conducting safety and health inspection activity will be instructed to be aware of operations in all industries where workers are exposed to this heat index and to open inspection when such situations are observed.

B. During all inspection activities, but especially from June 15 through Oct. 1 of each year, CSHOs are expected to review employers' plans to address heat exposure and prevent heat-related illnesses at outdoor worksites and at indoor facilities where potential heat-related hazards exist.

Along with the Oregon OSHA Technical Manual, CSHOs should use the documents in the appendices as guides during heat-hazard investigations: a heat index chart, a sample hazard letter for heat-related illnesses, and links to online resources on heat-related illnesses.

CSHOs are expected to document other factors, such as the use of personal protective equipment, when they contribute to the hazard. In addition, other standards that may apply to the responsibility of employers to mitigate the hazards including training for the use of personal protective equipment, water and sanitation requirements, medical services and first aid requirements, and recordkeeping requirements.

Heat-related illness violations will be issued for both indoor and outdoor work activities. All elements of a violation must be documented and a link established between the workplace exposure and the potential for heat-related illness. However, the temporary rule presumes the existence of a hazard when exposures exceed the trigger levels in the rule.

Fatality and hospitalization reports
When a field office receives a fatality or hospitalization report, the manager will include an evaluation of whether heat exposure may have been a factor (even if not directly referenced in the report) in determining whether an accident investigation should be initiated. In doing so, the
manager is expected to consider the temperature and humidity, work load and working conditions, and the apparent availability of mitigating factors such as water and shade.

Complaints, referrals, and accidents related to heat illness
When a decision is made to conduct an inspection due to a complaint, referral or accident related to heat illness, use the wet bulb globe temperature (WBGT) instrument or other methods as listed in the case file documentation section, to measure and record temperature and humidity measurements during the walk-around inspection. For those cases where no inspection is deemed necessary, provide information about heat stress and preventing heat illness.

CITATION GUIDELINES:

Note: In the temporary rule, the following statement should be considered when citing any provision of the standard:

When any other applicable standard addresses other hazards that may be present, employers must comply with the provisions of that standard and this standard. Where the requirements of one standard are more restrictive than the other, employers must follow the more stringent requirements.

This means that all employers not subject to Division 4 (including those subject to Division 3 and Division 7) are subject to the provisions of the Division 2 temporary heat rule.

When employers have failed to provide adequate shade, CSHO should evaluate the specific conditions and cite based on the provisions of the temporary rule:

- 437-002-0155(3) for general industry, construction, and forest activities.
- 437-004-1130(3) for agriculture activities.

Violations for the lack of available shade will normally be cited serious and carry an appropriate penalty; if the heat index exceeds 90 degrees Fahrenheit the violation will be normally be rated as a death violation.

When employers have failed to provide adequate amounts of access to cold or cool drinking water in work areas, CSHO should evaluate the specific conditions and cite based on the provisions of the temporary rule:

- 437-002-0155(4) for general industry, construction, and forest activities.
- 437-004-1130(4) for agriculture activities.

Violations for lack of adequate cool or cold drinking water will normally be cited serious and carry an appropriate penalty; if the heat index exceeds 90 degrees Fahrenheit the violation will be normally be rated as a death violation.
When employers have failed to provide training for all employees, including supervisors, on each training element of the rule, CSHO should evaluate the specific conditions and cite based on the provisions of the temporary rule:

- 437-002-0155(5) for general industry, construction, and forest activities.
- 437-004-1130(5) for agriculture activities.

*Violations for lack of training will normally be cited serious and carry an appropriate penalty; if the heat index exceeds 90 degrees Fahrenheit the violation will be normally be rated as a death violation.*

When an employer has failed to follow the provisions set forth in High Heat Practices when the heat index exceeds 90 degrees Fahrenheit, CSHO should evaluate the specific conditions and cite based on the provisions of the temporary rule:

- 437-002-0155(6) for general industry, construction, and forest activities.
- 437-004-1130(6) for agriculture activities.

*Violations related to high heat practices will normally be cited serious and rated as a death violation.*

When an employer has failed to adopt and implement provisions set forth in the Emergency Medical Plan, CSHO should evaluate the specific conditions and cite based on the provisions of the temporary rule:

- 437-002-0155(7) for general industry, construction, and forest activities.
- 437-004-1130(7) for agriculture activities.

*Violations related to the Emergency Action Plan will normally be cited serious and rated based on the specifics of the deficiencies.*

When an employer has failed to implement acclimatization practices, CSHO should evaluate the specific conditions and cite based on the provisions of the temporary rule:

- 437-002-0155(8) for general industry, construction, and forest activities.
- 437-004-1130(8) for agriculture activities.

*Violations related to acclimatization will normally be cited serious and rated as a death violation.*

The temporary rule does not address workplaces where the source of the heat is the work process itself. In situations where it is not clear whether this exemption applies, or in situations where an employer has failed to provide control measures appropriate to the hot process, including break
areas where employees can cool down and otherwise counteract the adverse effects of heat and humidity, CSHO should evaluate the specific conditions and, in consultation with the field enforcement manager, cite OAR 437-002-0144(2) for general industry with a process creating hazardous heat or humidity based on the circumstances of the particular case.

**Case file documentation**

In order for the agency to track its inspection activity on heat-related illnesses, it is essential to gather data related to this hazard. All inspections involving heat-related illnesses must be coded as "S-24-HEAT STRESS." It is also important to code incoming complaints regarding heat-related illnesses as “S-24-HEAT STRESS.”

Please use Appendix B- Field Inspection Guide (FIG) - Heat stress that was created to evaluate the adequacy of proof and documentation.

Review OSHA 300 logs for any entries indicating symptoms of heat-related illness.

- Interview workers for reports of symptoms such as headache, dizziness, fainting, or dehydration related illnesses to the employer failing to provide water or rest periods.
- Review how the employer is providing an adequate amount of water and how readily employees are able to access the water.
- Review how the employer is assessing the need for rest and shade.
- Review injury and illness reports and obtain any records of emergency room visits or ambulance transport even if hospitalizations did not occur.
- Review safety committee minutes for incidents related to heat stress.
- Conduct a walk around inspection and use the NIOSH/OSHA heat stress app (take a screen print) and identify all potential sources of heat and any other factors that could aggravate heat-related illnesses.
- Verify the information obtained from employer and employee interviews during the walk-around inspection.
- Consult the Oregon OSHA Technical Manual Section III, Chapter 4 - Heat Stress for additional inspection procedures and documentation guidance.
- Document the heat index and any National Weather Service heat advisory or alert for the day of the inspection or the days employees are exposed to hazards associated with heat stress.
• Document whether drinking water and cooling areas or cooling protocols are readily available.
• Document whether appropriate first aid measures are available, including plans for obtaining prompt emergency medical help.
• If violations cannot be documented, CSHOs are encouraged to use the hazard letter found in the appendix to inform the employer about how to protect workers from this hazard.

**Sampling Procedures**

When appropriate, conduct workload assessments. Information on performing workplace assessments can be obtained from the Oregon OSHA Technical Manual, Section III, Chapter 4.

When a heat illness related complaint, referral, accident, or unique circumstance is received, conduct environmental sampling including wet-bulb globe temperature (WBGT) readings, which combine air temperature and humidity. WBGT sampling is considered a better indicator of the effects of heat on individuals than a dry bulb thermometer reading. Refer to the Oregon OSHA Technical Manual, Section III, Chapter 4, for information on conducting WBGT sampling. In the absence of the WBGT, other direct reading instruments can be used.

Where the WBGT instrument is used, correlate results with the (ACGIH) TLV guidelines. The NIOSH/OSHA heat stress app or relative humidity should also be used to reference the specific requirements of the rule, correlated with the NOAA heat index chart. (See Appendix A.)

**Enhanced Enforcement Activity**

Beginning July 16, 2021, and continuing through at least September 30, 2021, Oregon OSHA will identify additional enforcement capability to focus on heat-related issues, both through reassignment of existing staff, the use of overtime, and addressing heat issues in tandem with other inspection activity (such, but not limited to, fall emphasis inspections in construction and field sanitation inspections in agriculture) when appropriate.

**Compliance Assistance and Outreach**

**Public information:** Announcements informing employers and employees of the temporary rule and the potential hazards with either press releases or social media postings could be set to initiate once the projected weather conditions are met for the trigger temperatures of the rule. The following federal OSHA link may be used as a reference for setting the heat trigger levels: [https://www.osha.gov/SLTC/heatstress/](https://www.osha.gov/SLTC/heatstress/)
Consultation: During all appropriate Consultation activity, especially from June 15 through Oct. 1 of each year, consultation safety and health officers (CSHOs) should include a review of the employers’ plans to address heat exposure and prevent heat-related illnesses, at outdoor worksites and at indoor facilities where potential heat-related hazards may exist.

Public education: Make available short informational videos that employers can use to help educate their employees about the hazards of heat, steps to prevent heat-related illnesses, how to recognize the symptoms of dehydration, and how to respond to suspected heat-related illnesses in others. The Oregon OSHA website will be periodically monitored to keep the most current information and guides available, including the OSHA/NIOSH heat stress app: https://www.cdc.gov/niosh/topics/heatstress/heatapp.html

EFFECTIVE DATE: This directive is effective immediately and will remain in effect until canceled or superseded.

Appendix A

HEAT INDEX CHART FROM NOAA
To find the heat index, look at the Heat Index Chart. As an example, if the air temperature is 96°F (found on the top of the table) and the relative humidity is 65% (found on the left of the table), the heat index – how hot it feels – is 121°F. The National Weather Service will initiate alert procedures when the Heat Index is expected to exceed 105° - 110°F (depending on local climate) for at least 2 consecutive days.
IMPORTANT: Since heat index values were devised for shady, light wind conditions, exposure to full sunshine can increase heat index values by up to 15°F. Also, strong winds, particularly with very hot, dry air, can be extremely hazardous.

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**Heat Index Chart**

**Heat stroke likely.**

**Sunstroke, muscle cramps, and/or heat exhaustion likely. Heatstroke possible with prolonged exposure and/or physical activity.**

**Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.**

**Fatigue possible with prolonged exposure and/or physical activity.**
Appendix B

Field Inspection Guide (FIG) – Heat Stress

Date/time____________________

Name of Company ____________________
(OSHA Heat app/other) circle
If Other, provide____________________

Outdoor Temp/humidity___________
Indoor Temp/humidity __________

Type of work
(Describe)____________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

Work effort (easy)―――(moderate)―――(hard) Hours/work shift?________________________

PPE Worn? (adds to heat burden)

____________________________________________________________________________

Any new workers onsite? Yes □ No □ Acclimatization Provision? Yes □ No □ (See Also Under
High Heat Index Below) Describe ____________________________________________________

____________________________________________________________________________

Access to Shade
Shaded/cool area(s) available? (describe)______________________________________________

Air temperature of cool area?_______________________________________________________

Are breaks/lunch taken here?_________________________________________________________

Adequate space for all?_____________________________________________________________

Alternative Cooling Methods if Shade Not Safe or Feasible (Describe)___________________

____________________________________________________________________________

Confirmed through interviews? (Describe comments)

____________________________________________________________________________

Drinking Water
Water available? Yes □ No □ Cool or Cold (temperature)________________
provided by employer? Yes □ No □

Other liquids?______ What?__________________________ caffeinated/alcohol? (circle if applicable)

How much available per employee?___________________________________________________

Methods to Replenish Water/Liquids?_________________________________________________
Supervisors/Employees trained on required elements of new Rule? (Check if Present/Addressed)

- ___Environmental and Personal Risk Factors for heat illness
- ___Procedures for complying with the requirements of the Heat Rule (e.g. water provision, provision of daily heat index information, shade, cool-down rests, how to report symptoms of heat-related illness, access to first aid, employee right to exercise rights without fear of retaliation.
- ___Concept, importance and methods of acclimatization.
- ___Importance of immediate reporting of symptoms or signs of heat illness.
- ___Effects of non-occupational factors (medications, alcohol, obesity) on tolerance to HS.
- ___Different types of heat illnesses; common signs and symptoms.

Confirmed through interviews? (Describe comments) ________________________________

High Heat Practices (Ambient Heat Index > 90º F.) (Check if Present/Addressed)

- ___Effective communication? Voice_____Observation_______ Electronic________
- ___Employees observed for signs/symptoms of heat illness and monitored to determine if medical attention is necessary?
  - ___Regular communications with employees working alone. How? Describe___________
  - ___Mandatory buddy system, or
  - ___Implement other equally effective means of observation or communication. Describe__
  
- ___Designate and equip one or more employees on each worksite to call for emergency medical services, and must allow other employees to call for emergency medical services when designated individuals not available.
- ___Each employee takes a 10-minute preventative cool-down rest period in the shade at least every two-hours, regardless of shift length? (This rest period can be concurrent with other rest periods or mealtimes if timing coincides.)

Confirmed through interviews? (Describe comments) ________________________________

Emergency Medical Plan

Developed and implemented? Yes □ No □

Do the procedures include and address: (Check if Present/Addressed)

- ___Responding to signs and symptoms of possible heat illness - first aid measures and how emergency medical services.
  - ___If a supervisor observes signs or an employee reports symptoms of heat illness, the employee must be relieved from duty and provided with a sufficient means to reduce body temperature. Examples: cooling blankets, cooling vests, and fans.
  - ___If the signs or symptoms are indicators of severe heat illness (decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior or convulsions), immediately implement the emergency response procedures.
An employee exhibiting signs or symptoms of heat illness must be monitored and must 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.

- ___ Contacting emergency medical services and, if necessary and instructed to do so by the medical professionals, transporting employees to a place where they can be reached by an emergency medical provider.
- ___ Ensuring that, in the event of an emergency, clear and precise directions to the work site is provided for first responders to quickly navigate to the location of the affected worker.

Confirmed through interviews? (Describe comments) ________________________________

Effective Acclimatization Practices Developed and Implemented for High Heat Index?
Yes □ No □ (Describe) __________________________________________________________________________

Other controls
Misting stations? ____________ ice/cooling vests? ____________ moist cloths ____________
AC? ____________ ventilation? ____________ other? __________________________

Diagrams/Additional notes: ______________________________________________________________________

Employer Provided Heat Stress (HS) monitoring equipment used? (note findings below) _____________

Summarize findings: (citation/hazard letter/provide card or alert) - describe below

_______________________________________________________________________________________________

_______________________________________________________________________________________________

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Appendix C

SAMPLE HAZARD LETTER

This letter must be adapted to the specific circumstances noted in each inspection. The letter below is an example of the type of letter that may be appropriate in some circumstances. Recognize and encourage the employer’s efforts to implement solutions to this hazard, if appropriate. Tailor the recommended controls outlined below to the specific needs of the employer. Italicized and bracketed text is for Oregon OSHA compliance use only and should not be included in the letter.

Dear Employer:

An inspection of your workplace [and an evaluation of your OSHA 300 injury and illness recordkeeping logs] at [location] on [date] disclosed the following workplace conditions that have been associated with the hazard of heat-related illnesses in workers:

[Describe the information disclosed or conditions observed for each task or job, including the type of PPE worn, the approximate length of time spent on each task, the nature of the heat exposure, and any other information relevant to workers' exposure to the risk of heat-related illness.]

A citation will not be issued on the [condition] because [reason for no citation]. The temporary rules on Heat Illness Prevention are in place through January 3, 2022 unless replaced sooner, and future non-compliance of these rules could result in a citation. In the interest of workplace safety and health, I recommend that you take the necessary steps to reduce or eliminate your workers' exposure to the conditions listed above that could lead to heat-related illness by taking the following actions:

1. **Access to shade.** Employers whose work activities are covered by this rule must establish and maintain one or more shade areas when the heat index temperature in the work area equals or exceeds 80 degrees Fahrenheit.
   (a) Shade 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. A shade area must meet the following:
   (A) The shade area must either be open to the air or provide mechanical ventilation for cooling.
   (B) The amount of shade present must be at least enough to accommodate the number of employees on recovery or rest periods, so that they can sit in a normal posture fully in the shade.
   (C) The shade must be located as close as practical to the areas where employees are working.
   (D) Shade present during meal periods must be large enough to accommodate the number of employees on the meal period that remain onsite.
   (b) When the employer can demonstrate that providing access to shade is not safe or feasible in a particular situation (for example, during high winds or when an employee is walking through range land), employers must identify and implement alternative cooling measures that provide equivalent protection.
2. **Drinking water.** Employers whose work activities are covered by this rule must ensure that an adequate supply of additional drinking water is readily accessible to employees at all times and at no cost when the heat index in the work area equals or exceeds 80 degrees Fahrenheit.
   (a) Employers must supply each employee enough water to enable them to consume 32 ounces per hour.
   (b) Employers are not required to supply the entire quantity of drinking water needed to be supplied for all employees on a full shift at the beginning of the shift. Employers may begin the shift with smaller quantities of drinking water if effective procedures are established to replenish the water consumed during the shift.
   (c) Employers must ensure that employees have ample opportunity to drink water supplied under this section.

3. **Supervisor and employee training.** Beginning no later than August 1, 2021, the employer must ensure that all employees, including new employees, supervisory, and nonsupervisory employees are trained in the following topics, in a language readily understood, before employees begin work that can reasonably be anticipated to expose employees to a heat index equal to or in excess of 80 degrees Fahrenheit:
   (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 procedures for complying with the requirements of this standard, including, but not limited to, the employer's responsibility to provide water, provide daily heat index information, shade, cool-down rests, how to report symptoms of heat-related illness, and access to first aid as well as the employees' right to exercise their rights under this standard without fear of retaliation.
   (c) The concept, importance, and methods of acclimatization.
   (d) The importance of employees immediately reporting symptoms or signs of heat illness in themselves, or in co-workers.
   (e) The effects of nonoccupational factors (medications, alcohol, obesity, etc.) on tolerance to occupational heat stress.
   (f) The different types of heat-related illness, the common signs and symptoms of heat-related illness.

4. **High Heat Practices.** Employers must implement the following additional high heat practices when the ambient heat index exceeds 90 degrees Fahrenheit.
   (a) Employers must ensure that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor 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.
   (b) Employers must ensure that employees are observed for alertness and signs and symptoms of heat illness and monitored to determine whether medical attention is necessary by implementing one or more of the following:
      (A) Regular communication with employees working alone, such as by radio, cellular phone, or other alternative means, or
      (B) Create a mandatory buddy system, or
(C) Implement other equally effective means of observation or communication.

(c) Employers must designate and equip one or more employees on each worksite as authorized to call for emergency medical services, and must allow other employees to call for emergency services when designated employees are not immediately available (such a practice supplements existing requirements to ensure that emergency medical care is immediately available in all workplaces).

(d) Employers must ensure that each employee takes a minimum ten-minute preventative cool-down rest period in the shade at least every two hours, regardless of the overall length of the shift.

5. **Emergency Medical Plan.** Employers must develop and implement an effective emergency medical plan in compliance with OAR 437-002-0161 when the ambient temperature exceeds the heat index of 90 degrees Fahrenheit. In addition to the requirements of emergency medical plan, the procedures must include and address the following:

(a) 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 if a supervisor observes, or any employee reports, any signs or symptoms of heat illness in any employee, the supervisor must take immediate action appropriate to the severity of the illness.

   (A) If a supervisor observes signs or an employee reports symptoms of heat illness, the employee must be relieved from duty and provided with a sufficient means to reduce body temperature. Examples include, but are not limited to: cooling blankets, cooling vests, and fans.

   (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), immediately implement the emergency response procedures.

   (C) An employee exhibiting signs or symptoms of heat illness must be monitored and must 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.

(b) Contacting emergency medical services and, if necessary and instructed to do so by the medical professionals, transporting employees to a place where they can be reached by an emergency medical provider.

(c) Ensuring that, in the event of an emergency, clear and precise directions to the worksite is provided for first responders to quickly navigate to the location of the affected worker.

6. **Acclimatization.** Employers must develop and implement effective acclimatization practices when the ambient heat index exceeds 90 degrees Fahrenheit.

Workers must be allowed to get used to hot working environments by gradually increasing time in the work environment over several days. The same should be done for workers returning from an absence from work of three or more days.
Provided below is one example of an acclimatization plan suggested by National Institute of Occupational Safety and Health (NIOSH):

(a) Gradually increase exposure time in hot environmental conditions over a period of 7 to 14 days.
(b) For new workers, the schedule must 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.
(c) For workers who have had previous experience with the job, the acclimatization regimen must 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.

7. **Additional Considerations to Protect Workers from Heat Related Illness:**
   a. A wide-brimmed hat for work outdoors in the sun.
   b. Loosely worn reflective clothing that deflects the radiant heat, such as vests, aprons or jackets, as appropriate for indoor work around radiant heat sources.
   c. Cooling vests and water-cooled/dampened garments for high temperature and low humidity conditions. (However, be aware that “cooling vests” can become insulators that hold in heat when they equalize with the body's temperature.)
   d. In environments where respirator usage is necessary, consult with an industrial hygienist to determine the appropriate clothing to prevent heat stress while still protecting the workers.
   e. Consider the use of dermal patches for monitoring core temperature to better identify when workers need to be removed from the work area.
   f. Schedule hot jobs for cooler parts of the work day. Routine maintenance and repair work should be scheduled for the cooler seasons of the year, when possible.
   g. Use relief workers and reduce physical demands of the job.

Sincerely,

Oregon OSHA Administrator
Appendix E

HEAT-RELATED INFORMATION LINKS

1. Oregon OSHA’s Topics: Heat stress
2. OSHA Technical Manual, Section III: Health Hazards, Chapter 4, Heat Stress:
3. Oregon OSHA’s Compliance Officer’s Guide (FIRM):
4. OSHA’s Campaign to Prevent Heat Illness:
   https://www.osha.gov/SLTC/heatillness/index.html
5. OSHA’s Safety and Health Topics: Heat Stress:
6. OSHA-NIOSH Heat Safety Tool App:
   https://www.cdc.gov/niosh/topics/heatstress/heatapp.html
7. NIOSH Workplace Safety and Health Topics:
   http://www.cdc.gov/niosh/topics/heatstress/
8. NIOSH Heat Stress – Acclimatization
   https://www.cdc.gov/niosh/topics/heatstress/acclima.html
9. NIOSH Publication 2011-174: Protecting Workers from Heat Illness:
10. NIOSH Criteria for a Recommended Standard: Occupational Exposure to Heat and Hot Environments:
11. The National Oceanic and Atmospheric Administration (NOAA), National Weather Service:
    http://www.nws.noaa.gov/om/heat/ . Current weather conditions, including the previous three day weather conditions at www.noaa.gov, information from prior dates can also be requested.
12. California OSHA Heat Illness Prevention:
    http://www.dir.ca.gov/dosh/HeatIllnessInfo.html
13. Washington State Department of Labor and Industries Outdoor Heat Exposure Information:
    http://www.lni.wa.gov/safety/topics/atoz/heatstress/default.asp