



AFSCME Model Management Plan for Heat Illness Prevention July 2023

AFSCME members are hammered by high temperatures and humidity around the country. According to the Centers for Disease Control and Prevention (CDC), more than 9,000 people are hospitalized each year and more than 700 die due to uncontrolled heat exposure. There is no federal standard requiring employers to provide workers with relief from working in heat even though creative scheduling, acclimatization and providing shade, hydration and rest breaks save lives during times of heat risk.

This fact sheet describes one model management plan to protect workers from heat hazards, whether working inside or out. Best practices emphasize recognizing heat hazards and risk of illness for each task. Heat Illness Prevention Plans must include engineering controls to cool people off and make sure they stay hydrated. Effective plans must enforce administrative controls, including adequate staffing, schedule accommodations, monitoring, communication, emergency response and training. The most effective programs include assigning a designated, trained individual to the worksite who is responsible for ongoing assessment of heat conditions and monitoring workers for symptoms of heat-related injury and illness. Program components of a good management plan will protect workers from being overcome or killed due to heat exposures on the job.

Heat Illness Prevention Plans work best when developed, implemented and revised collaboratively with workers, Union representatives, Safety Committee members, supervisors and management.

1. Definitions

- **Acclimatization:** Allowing people time to build up heat tolerance over one to two weeks, depending on worker health. This applies to outside and inside workers.
 - **New workers:** Initially, no more than 20% of their time spent in a hot environment. No more than 20% additional heat exposure each day.¹ *Workers who are not physically fit may take twice as long to acclimate to hot working conditions compared to people who are more fit.*
- **Adjusted Rest Breaks:** Increasing the length and frequency of rest and hydration breaks to reflect worsening heat stress conditions.
- **Administrative Controls:** Administrative, procedural methods to minimize exposure to worksite heat hazards, including staffing, monitoring, acclimatization, scheduling, access to relief, reporting, non-retaliation, written plans, responsible individuals, communication systems, buddy system, arranging emergency services, training, incident investigation and workers/Union inclusion.

¹ <https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf?id=10.26616/NIOSH PUB2016106> Table 4.1

- **Assessing Risk:** Assessment of work activities, tasks and environment to identify risk factors for heat related illness.
- **Buddy System:** Ensuring workers do not work alone and have someone to check up on them during heat stress conditions. Establish a Buddy System so coworkers can monitor themselves and report to each other (and notice in the other) signs of heat stress or illness.
- **Communication Systems:** Means all workers impacted by heat stress or illness can communicate the need for immediate medical care. Communication Systems are necessary to report changing work conditions and requirements in remote locations and if workers are working alone.
- **Cooldown Area:** An environmentally safe area inside or outside that has shade, blocks direct sunlight and provides ventilation and/or cooling to mitigate heat stress. *A Cooldown Area must be large enough to accommodate the number of employees exposed to heat hazards at any one time. At minimum, Cooldown Areas should be maintained at less than 80°F - preferably cooler.*
- **Cooling Techniques:** Bring worker to cooler area and shade. Remove excess clothing and work related personal protective equipment (PPE). Place cool compresses on skin; focus on head, neck, armpits, feet, groin area, etc. In an emergency, provide ice bath to lower body temperature swiftly. *Minutes at high internal temperature can cause permanent damage or death.*
- **Designated Heat Stress Assessment Individual:** Employees who have been trained and designated to monitor environmental conditions for heat stress and to monitor workers for signs and symptoms of heat illness.
- **Engineering Controls:** Physical worksite methods to minimize exposure to heat hazards, including providing hydration, air conditioning and fans, misting, shaded areas, Cooldown Areas, shielding of hot equipment, mechanization to minimize work intensity and emergency response medical resources.
- **Environmental Risk Factors:** Conditions that cause heat stress, including workload effort and intensity, air temperature, humidity, radiant heat, conductive heat and use of protective clothing and PPE.
- **Extreme Heat Conditions:** The U.S. government defines extreme heat as periods of high heat and humidity with temperatures above 90°F for two to three days or more (<https://www.ready.gov/heat>). *The experience of Extreme Heat is highly influenced by Environmental Risk Factors. Heat stress and illness can occur during conditions that are not technically “extreme.”*
- **Health Monitoring:** Checking self or coworkers for signs and symptoms of heat stress or illness. *Environmental Risk Factors increase heat stress and should be taken into consideration when monitoring health regardless of “cooler” ambient work temperatures.*
- **Heat Alert System:** Ensuring that all workers exposed to heat stress have immediate access to communication methods that summon help in case of signs or symptoms of heat stress illness.
- **Heat Exposure** can include:
 - Moderate to strenuous physical activity performed in warm or hot indoor or outdoor environments.
 - Working when temperature is 80°F or more.
 - Working without air conditioning or air movement in warm or hot environments.
 - Working indoors in warm or hot environments near radiant or conductive heat sources like ovens, stoves, fires, industrial dishwashers, boilers, incinerators, etc.
 - Working or sitting in spaces that are not air conditioned, such as in a vehicle, shed, tent or inside structure during heat conditions.

- Working outside in warm or hot weather or in direct sun.
 - Just being outside when temperatures exceed 87°F.
 - Wearing work PPE or protective work clothing in warm or hot environments.
 - *Note: At 95°F and high humidity, sweat will not evaporate. Hot, humid air moving across the body will not cool or lower core temperature.*
 - *Temperatures at or over 80°F can cause heat exposure with any full coverage work clothing.*
 - *Wearing non-breathable, impervious clothing while performing strenuous work can cause heat stress in temperatures as low as 52°F.*
 - **Heat Index (also called Apparent Temperature):** National Weather Service measurement of what temperature feels like when relative humidity is combined with temperature.
 - **Heat Stress and Heat Illness (also known as Signs and Symptoms):** Serious medical conditions, including heat cramps, heat exhaustion, heat stroke and death. Heat stress can include heat rash, sunburn, headache, fatigue, flushing, extreme sweating or lack of sweating, dark-colored urine or no urine, muscle cramps, weakness, nausea, unsteady gait, dizziness, fainting, shortness of breath, altered mental state, disorientation, exhaustion, seizures and more. *Can lead to death or permanent organ damage.*
 - **Heat Stress Monitor (environmental monitoring):** Easy-to-use monitors that quantify heat conditions by showing real-time measurements of temperature, relative humidity, wet bulb temperature, dew point and overall heat stress. An example for under \$200.00 can be found here (2023): <https://www.zoro.com/general-tools-deluxe-wbgt-heat-index-monitor-5-95-pct-wbgt8778/i/G5201007/?recommended=true>
 - **Heat Tolerance Acclimatization Plan:** Written plan providing adjusted work schedules for new and returning workers to build tolerance to working in heat.
 - **High Heat Conditions:** A temperature or Heat Index that meets or exceeds 87°F when employees are merely present; or environments that are 80°F or more when employees must perform strenuous activity, wear protective work clothing or PPE. Temperatures as low as 52°F can cause heat stress when workers wear heavy, impervious, non-breathable protective apparel. *Environmental Risk Factors can cause significant heat exposures at temperatures below High Heat Conditions.*
 - **No Retaliation:** Policies and implementation of no retaliation against workers for reporting signs and symptoms of heat stress; or for taking adjusted rest breaks, hydration, shade and using Cool Down Area when experiencing signs and symptoms of heat stress.
 - **Personal Risk Factors:** Health factors causing people to be more susceptible to heat stress and illness. Each worker's acclimatization capacity is influenced by health, fitness, hydration, age, weight, medication, pregnancy, medical diagnoses and illness history.
 - **Reporting Methods:** Designated reporting methods at the work site for employees to report signs and symptoms of heat illness during work. Reporting Methods should coordinate with Communication Systems.
 - **Signs and Symptoms:** See Heat Stress and Heat Illness.
2. **The Employer should implement a written Heat Illness Prevention Plan that will:**
- Describe procedures used to lower risk of injury during moderate, high and extreme heat events, including using engineering and administrative controls to mitigate workers' exposure to heat.
 - Designate Heat Stress Assessment Individuals assigned to the worksite to assess and monitor:
 - Workers for heat-related stress, injury or illness.

- Environment and worksite in areas with heat exposure.
- Include a Heat Tolerance Acclimatization Plan for all titles impacted by heat.
- Establish methods to confidentially report personal risk factors for heat stress or illness.
- Establish methods for workers to report signs or symptoms of heat stress or illness.
- Implement adjusted work breaks in times of heat exposure to minimize heat stress.
- Establish a Heat Alert System and provide communication methods for workers at risk of heat illness to report symptoms and request relief or aid.
- Establish reliable, rapid emergency medical response services for workers impacted by heat.
- Establish a Heat Stress Incident Investigation process whenever one or more workers lose work time due to heat stress.
- Incorporate lessons learned from Heat Stress Incident Investigations into the annual review of the Heat Illness Prevention Plan.
- Review and update the Heat Illness Prevention Plan at least yearly.
- Include Union and worker involvement in review and revision of the Heat Illness Prevention Plan.
 - Union will choose their own representatives to work with Management to review and update the Heat Illness Prevention Plan during (at least annual) reviews.
 - Safety Committee involvement in plan revision is recommended.
- Commit to and describe how to implement training for all employees impacted by heat, including new hires, existing employees and supervisors. Provide training:
 - At hire and at beginning of assignment.
 - At least annually.
 - At the beginning of heat season.
 - Before shifts when high or extreme heat conditions are anticipated or experienced.
- Provide plan and training in English and in the language most familiar to employees.
- Make Heat Illness Prevention Plan available to all employees.
- Ensure a No Retaliation Policy is in place.

3. Training on Heat Illness Prevention Plan - All exposed workers will learn how to:

- Understand components of the Heat Illness Prevention Plan.
- Assess and report Environmental Risk Factors for heat stress or illness.
- Use environmental monitors to identify heat stress and risk.
- Confidentially report presence of personal risk factors for heat stress or illness.
- Recognize heat stress and report signs and symptoms of heat stress or illness.
- Recognize how medications, preexisting medical conditions and fitness levels impact capacity for heat acclimatization.
- Minimize heat stress, through acclimatization, cooler time-of-day work schedules, adjusted work breaks and rest periods, hydration access, cooling techniques, use of shade and Cooldown Areas.
- Communicate about heat hazard.
- Summon emergency medical care during a heat emergency.
- Deliver cooling techniques, first aid and/or CPR for heat stress illness.
- **Training for Designated Heat Stress Assessment Individuals will include:**
 - Environmental monitoring.
 - Worker monitoring for heat stress or illness.
 - Cooling techniques.

- Reporting methods.
- Documentation.
- Communication and summoning help.
- Components of the Heat Illness Prevention Plan.

4. Engineering Controls: The Employer must provide engineering controls for heat hazard.

- **Hydration:** Encourage people working in a hot environment for up to two hours to drink water at least every 15 minutes. Provide electrolyte replacement drinks in addition to water to counteract electrolyte loss due to sweating.
 - **Employers should provide at least one quart of drinking water per hour per employee.**
 - Provide ready access to free, cool, potable drinking water at all times.
 - Locate water as close as possible to work area.
 - *OSHA requires bathrooms be made available for all workers.*
- **Air Conditioning** for Inside Workers: Any time outside temperatures require air conditioning for building occupants, and when a building is equipped with air conditioning, the **Employer shall provide air conditioning** for all employees working inside.
 - HVAC units and fans will be checked and maintained year-round to ensure full functionality when needed.
- **Shade:** Workers outside must have access to shade.
- **Cooldown Area:** A shaded Cooldown Area will be provided. The Cooldown Area should be equipped with fans, misting or other cooldown devices as feasible, means for communication and capacity to provide or summon emergency response.
- **Shielding:** Hot equipment at worksite, whether inside or outside, should be shielded to protect workers from heat, steam and humidity.
- **Work Aids:** Use mechanization wherever possible to reduce metabolic workload of tasks performed in heat conditions.
- **Emergency Response:** Areas where high heat conditions exist should have access to cooling, ice, towels and emergency first aid supplies for rapid worker treatment in case of heat illness.

5. Administrative Controls: The Employer must provide administrative controls for heat hazard.

- **Monitoring environment to assess heat stress:**
 - Employer shall provide heat stress monitors.
 - Employer will designate and train person responsible for taking and recording measurements of heat stress with a heat stress monitor.
- **Heat Tolerance Acclimatization Plan:** Employer will assure that workers have been provided opportunities over one to two weeks to build tolerance to working in heat. The Employer will establish safe methods to acclimatize new workers or workers who have been away from the heat environment for four days or more (for example, those returning to work after leave).
 - *Lack of acclimatization has been a major cause of heat-related fatalities in the workplace.*
 - *It can take up to two weeks for a worker to acclimate to heat.*
 - As part of **Acclimatization Plan**, the Employer will ensure that all workers know how to recognize and report signs and symptoms of heat illness.
- **Scheduling:**
 - Schedule work during cooler hours, earlier or later in the day.

- Avoid assigning moderate to heavy work outside during summer months or schedule them at night when it is cooler.
- Limit strenuous work in high heat situations.
- Institute frequent and adjusted rest breaks to limit heat exhaustion.
- **Access to Cooldown Area:** Employees shall have the right (and should be encouraged) to access the Cooldown Area whenever they feel signs or symptoms of heat stress or illness, and/or whenever other workers observe them to be impacted by heat stress.
- **Monitoring workers for heat illness:**
 - **Designated Heat Stress Assessment Individual(s)** will be assigned to heat-exposed work areas to monitor environmental conditions for heat stress and to monitor workers for signs and symptoms of heat illness.
 - The Employer will establish a method for workers to confidentially report presence of personal risk factors for heat stress or illness.
 - **Monitoring in Cooldown Area:** Workers using the Cooldown Area will be checked for signs and symptoms of heat stress and illness. When workers report experiencing heat stress, or when it is observed that they have signs and symptoms of heat stress, *they will not be required to return to worksite until they feel better and no longer experience signs and symptoms of heat stress.*
- **Communication:** Provide reliable means of emergency communication for workers in environments where high heat exposures are a possibility.
 - Establish a Heat Alert System.
- **Emergency Response:** The Employer will have first aid and medical services available during high heat conditions so that workers suffering from heat stress can receive immediate care.
- **Buddy System:** Don't let workers work alone in heat stress conditions.
- **Staffing:** Use relief workers (additional staff) to stagger and minimize heat exposures for individuals.
- **Heat Stress Incident Investigation:** The Employer will perform root-cause analysis investigation of incidences where workers become ill due to heat exposure. Becoming ill includes missing work and requiring medical care.
- **Worker Involvement:** Heat Stress Incident Investigation findings will be shared with the Union and Safety Committee.
- **Revising Plan:** The Heat Illness Prevention Plan will be revised as needed and at least annually to include lessons-learned from heat exposure root-cause incident investigations.
- **No Retaliation:** Employer will not retaliate against workers for reporting signs and symptoms of heat stress, for taking adjusted rest breaks (and sitting and resting), finding shade or for using the Cool Down Area during times of heat exposure. The Employer will communicate the No Retaliation Policy to all impacted employees.

6. Emergency Response Services:

- If a supervisor observes or if a worker reports heat illness, the impacted employee will be monitored, not left alone and will be provided with appropriate medical intervention as needed; and emergency services will be provided as necessary, including transportation to a medical provider.
- Swift, competent emergency response medical intervention will be on call and available whenever workers are exposed to heat stress on the job, whether inside or out.

Federal information and resources on heat illness and safe work practices can be found here:

- ✓ Occupational Safety and Health Administration, OSHA:
<https://www.osha.gov/heat-exposure>
Information for workers on heat exposure:
<https://www.osha.gov/heat/worker-information>
State-by-State Heat Illness Prevention Standard Comparisons:
<https://www.regulations.gov/document/OSHA-2023-0003-0006>

- ✓ National Institute on Occupational Safety and Health, NIOSH:
<https://www.cdc.gov/niosh/topics/heatstress/default.html>
<https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf?id=10.26616/NIOSH PUB2016106>

- ✓ Industry and Labor Consensus best practices addressing methods to prevent heat exposure, compiled by the National Advisory Committee on Occupational Safety and Health, NACOSH, June 2023:
<https://www.regulations.gov/document/OSHA-2023-0003-0012>

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