



# **TWO ROCK UNION SCHOOL DISTRICT**

## **Heat Illness Prevention Program**

### **Introduction**

Heat illness in all its forms has always been a recognized work hazard in California, and across the nation. All heat related illnesses are preventable. Cal/OSHA requires Districts in California to train workers regarding the hazards of working in heat and in heat related illness.

The standard also requires the District to have a written plan that informs employees, supervisors, and managers of the regulatory requirements the District must adhere to related to heat related illness prevention.

The primary goal of the District Heat Illness Prevention Plan is employee safety. The training and operational elements found in this plan will provide employees, managers and supervisors with the tools necessary to anticipate environmental conditions that contribute to heat related illness, to recognize when work assignments place employees at risk and what job instructions need to be communicated to employees regarding the prevention of heat related illness.

This plan is consistent with the requirements of the District's Accident Prevention Plan and nothing in this program supersedes or nullifies the requirements found in our Accident Prevention Plan.

## **Definitions**

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

**“Active Cooling Equipment”** Clothing or powered devices (passive or active) that work to provide body core cool when worn by an employee.

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

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

**“Full-body protective clothing”** means clothing or a protective suit that can provide a protective barrier to prevent dermal contact with a full range of materials from ordinary non-hazardous soiling agents to aggressive hazardous material/chemical substances. This suit provides body protection including head (hood) and feet (integrated booties).

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

**“Preventative recovery period”** means a period of time to recover from the heat in order to prevent heat illness.

**“Shade”** means blockage of direct sunlight. Canopies, umbrellas and other structures or devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade shall be present when the temperature exceeds

80 degrees Fahrenheit, the District shall have and maintain one or more areas with shade at all times while employees are present that are either open to the air or provided with ventilation or cooling.

Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

### **Program Scope**

The District's Heat Illness Prevention Plan is intended to control occurrences of heat related illness. The Plan applies to all outdoor areas where the District's employees can be assigned work, and where environmental conditions cannot be mitigated by engineering controls.

Additionally, the Plan also applies to indoor areas where District employees may be assigned work, where the indoor temperature meets or exceeds 95 degrees F.

### **Program Responsibilities**

- Draft and distribute the HIPP to District Officers, Directors, Managers, Superintendents, Supervisors and all Employees.
- Provide initial training in the requirements of the plan to District Officers, Directors, Managers, Superintendents, Supervisors and all Employees who are covered by the requirements of this Program.
- Maintain all employee records for courses conducted by the District.

### **Managers, Supervisors, and Directors will:**

Ensure that employee work assignments both indoors and outdoors are evaluated, and the components of this plan are implemented when the established temperature/relative humidity thresholds are met or exceeded.

Ensure that initial and periodic training is provided to employees under their supervision and are consistent with the requirements of this document.

Ensure that active or passive cooling equipment is available to employees who may require its use.

Maintain employee training records for courses conducted solely by District management personnel.

**Employees will:**

Comply with the requirements of this plan.

Understand the responsibilities of both the District Managers and employees in maintaining compliance with this plan.

Take steps to mitigate any personal risk factors that may exist prior to working in a regulated hot environment.

Immediately report unsafe conditions to their supervisor.

Observe their fellow employees for signs of heat related illness, and take quick action to ensure that rapid assistance is provided if applicable.

**Training**

California Code of Regulations, Title 8, Chapter 4, Section 3395 requires Districts to provide training in the provisions of the written Heat Illness Prevention Plan to managers and supervisors, and employees. The minimum requirements for training content include:

The environmental and personal risk factors for heat illness.

District procedures for complying with the requirements of CCR, T8, Section 3395.

The importance of frequent consumption of small quantities of water, up to four (4) cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties.

The importance to employees of **immediately** reporting to the District, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves, or in co-workers.

The District's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.

The District's procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.

The District's procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders,

Further, supervisors are required to receive the same training content as outlined above and in addition:

Supervisors training: Supervisor training will include how to monitor weather reports and how to respond to weather advisories.

The procedures the supervisor is to follow to implement the applicable provisions in this section.

The procedures the supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

### **Program Compliance Strategy**

Nothing in this plan prevents a manager or supervisor from encouraging good heat related work practices when local temperatures are hot but do not reach the thresholds detailed below.

### **Acclimatization**

- All employees shall be closely observed by a supervisor or designee during a heat wave. For purposes of this section only, "heat wave" means any day in which the predicted high temperature for the day will be at least 80 degrees Fahrenheit and at least ten degrees Fahrenheit higher than the average high daily temperature in the preceding five days.

- An employee who has been newly assigned to a high heat area shall be closely observed by a supervisor or designee for the first 14 days of the employee's employment.
- To acclimatize newly assigned employees to outdoor work the supervisor will consider the exertion level associated with the work activity and the time spent working outdoors when assigning work tasks. Work tasks will be modified to gradually acclimatize newly assigned workers. Example, not working in the heat of the day, high exertion tasks performed during the cooler part of the day

## **Outdoor Work Assignments**

Managers and supervisors shall ensure that they are aware of the most current and accurate meteorological information (ambient temperature and relative humidity) in areas of the District where they will be assigning employees to work. The manager and/or supervisor shall implement the proper controls when local weather conditions have achieved, or are expected to achieve the following threshold:

**More than 8 hours with day time temperatures at or above 85 degrees F and relative humidity at or above 80%.**

**Note:** Managers and supervisors may consult the Internet and/or the District's main office staff who will inquire on-line for accurate information regarding weather within the District's job sites vicinities.

***In these conditions, the manager and/or supervisor shall implement the following worker protection controls.***

Prior to the start of the work shift, when weather conditions require the application of the HIPP, managers and/or supervisors shall meet with their employees, and review the work procedures to be used during the high heat period.

- Employees shall have access to potable drinking water meeting the requirements of Sections 1524, 3363, and 3457, as applicable, including but not limited to the requirements that it be fresh, pure,

suitably cool, and provided to employees free of charge. The water shall be located as close as practicable to the areas where employees are working. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. Districts may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water, as described in subsection (f)(h)(1)(C), shall be encouraged.

- When employees are working on roof tops are in any location where plumbed drinking fountains are not found, bottle water will be made available. Water bottles and/or clean cool water to replenish personal non disposable water bottles shall be made available upon start of the day to take out to the work site. Site administrators will check on employees throughout the day to confirm that water remains available.
- Shade shall be present when the temperature exceeds 80 degrees Fahrenheit. When the outdoor temperature in the work area exceeds 80 degrees Fahrenheit, the District shall have and maintain one or more areas with shade at all times while employees are present that are either open to the air or provided with ventilation or cooling.
- Most school sites have many areas of shade to include covered walk ways built shade structures and trees. When work is planned on open sports fields or on roof tops and the time to complete the job is estimated to be 60 min. or more a portable "Pop-Up Tent" will be provided for shade to work under.
- Employees shall be allowed and encouraged to take a preventative cool-down rest in the shade for a period of no less than five minutes at a time when they feel the need to do so to protect themselves from overheating. Such access to shade shall be permitted at all times. An individual employee who takes a preventative cool-down rest (A) shall be monitored and asked if he or she is experiencing symptoms of heat illness; (B) shall be encouraged to remain in the shade; and (C) shall not be ordered back to work until any signs or symptoms of heat

illness have abated, but in no event less than 5 minutes in addition to the time needed to access the shade.

- Employees will be paired up and not work alone during excessive heat events. This is to insure that employees can monitor each other and encourage the necessary breaks. This will also assure that First Aid and/or 911 is called if needed
- If an employee exhibits signs or reports symptoms of heat illness while taking a preventative cool-down rest or during a preventative cool-down rest period, the District shall provide appropriate first aid or emergency response.
- No employee shall work alone during a heat event. Working in pairs guarantees emergency response if needed
- Managers and/or supervisors shall ensure that employees assigned work outdoors and exposed to high environmental temperatures shall have quick and effective access to a rest area where shade is available, or to an area where ventilation or cooling is provided for a period of not less than 5 minutes. Employees shall have access to shade or cooling at all times during the work shift.

### **High-heat Procedures.**

The District shall implement high-heat procedures when the temperature equals or exceeds 95 degrees Fahrenheit. These procedures shall include the following to the extent practicable:

- Ensuring 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.
- Observing employees for alertness and signs or symptoms of heat illness. The District shall ensure effective employee observation/monitoring by implementing one or more of the following:



- Supervisor or designee observation of 20 or fewer employees, or
  - Mandatory buddy system, or
  - Regular communication with sole employee such as by radio or cellular phone, or
  - Other effective means of observation.
- Designating one or more employees on each worksite as authorized to call for emergency medical services, and allowing other employees to call for emergency services when no designated employee is available.
- Reminding employees throughout the work shift to drink plenty of water.
- Pre-shift meetings before the commencement of work to review the high heat procedures, encourage employees to drink plenty of water, and remind employees of their right to take a cool-down rest when necessary.

### **Work Assignments in Indoor Environments**

Where employees are assigned work in an indoor environment where ambient temperatures will meet or exceed 95 degrees F, managers and supervisors will ensure that:

Prior to the start of the work shift, when interior environmental conditions require the application of the HIPP, managers and/or supervisors shall meet with their employees, and review the work procedures to be used during the high heat period.

Managers and/or supervisors shall ensure that exposed employees have access to cool potable water. Water must be provided to employees at the beginning of the work shift in sufficient quantities to ensure that employees can consume one quart of potable water per hour.

When plumbed drinking fountains are not available, bottle water will be made available. Water bottles and/or clean cool water to replenish personal non disposable water bottles shall be made available upon start

of the day to take out to the work site. Site administrators will check on employees throughout the day to confirm that water remains available.

Employees may be provided with smaller quantities of water if provisions are made to supply one quart of water per hour per employee.

Managers and/or supervisors shall encourage frequent drinking of water by employees.

### **Work in Full Body Protective Clothing (FBPC)**

Full body protective clothing that is used occasionally by District employees for routine maintenance related tasks, the District does not permit its employees to perform either routine and/or non-routine emergency response to hazardous materials releases or any of this type of work related tasks and as such, the District outsources and hires licensed company/agencies for performing tasks such as this. In the event employees would need to wear FBPC for non hazardous jobs, the District would follow the below procedures in order to comply with this program.

When an employee wishes to wear a full body protective suit (Tyvek, breathable Kleenguard, etc.) to prevent soiling street clothing from routine work assignment, and no exposure to hazardous materials is anticipated, and the temperature is not expected to meet or exceed the HIPP action thresholds, the manager and/or supervisor shall comply with the following:

- Employees shall be advised to pre-hydrate before donning suit and beginning work. Employees shall be advised to continue drinking sufficient water to maintain a hydration rate of one 500ml bottle of water per hour.
- Employees shall be instructed to get out of the direct sun, and to a shaded area, for at least 5 minutes every hour.
- When emergency conditions are present and the responders are required to protect themselves from any chemical, physical or

biological hazard, the following work practices shall be implemented (by properly and currently trained staff only):

- Supervisors shall ensure that active cooling equipment is available for employee use, and that employees have been trained in the use of the equipment prior to work assignment.
- Supervisors shall limit work assignments for employees to allow sufficient rest time for fluid replacement and restoration of nominal vital signs.
- Every effort shall be made to schedule work in the coolest part of the day, usually early morning, to mitigate the need for active cooling equipment.
- If conditions do not permit off hours scheduling, supervisors shall ensure that baseline vital signs for employees shall not exceed established thresholds.

## **Understand and Recognize Definitions and Symptoms of Heat Related Illness/Emergency Services Contact Procedures**

### **Emergency Services Contact Procedures**

When an employee has been impacted with a heat related illness, or any emergent medical condition, the District has the following process in place:

1. When an employee appears to be suffering from a heat related illness, contact 9-1-1 immediately. Use a public telephone, an available District telephone, a District cellular telephone, or a private cellular telephone. At the District main office, all 9-1-1- calls or emergency service (including most cellular telephone calls) are received by the local emergency systems dispatch representative(s). Advise the dispatch representative that an employee is suffering from a heat related emergency.

Do not hang up the phone. The emergency dispatch representative will require further information from the calling party.

2. If the affected employee is able to walk, get them out of the sun, begin active cooling, and advise the emergency dispatch representative of the patient's location. Be as precise as possible, if the dispatcher requests that the employee be moved to a more convenient location that is easier for emergency services (Police and Fire/EMS responders) to access, advise the dispatcher if you think that can be done without further injury.
3. If the patient cannot be re-located, provide the emergency dispatch representative(s) with the precise location. If other employees or outside help is available, direct them to the nearest street to assist in directing emergency services to the patient.

**NOTE:** The District uses definitions and treatment modalities Promulgated the American Red Cross curriculum First Aid/CPR/AED for the workplace.

### **Types of Heat Related Illness**

1. Heat Cramps- are painful muscle spasms that usually occur in the legs hamstrings) and abdomen. Heat cramps are treatable, and are the least severe form of heat related illness.
2. Heat Exhaustion (heat syncope)- is an early indicator that the body's cooling system is becoming overwhelmed. Signals of heat exhaustion include:
  - Cool, moist, pale, ashen or flushed skin.
  - Headache, nausea, dizziness.
  - Weakness, exhaustion.
  - Heavy sweating (a capstone sign)
3. Heat Stroke-is a profound medical emergency. Heat stroke occurs when the body's systems are overwhelmed by heat and stop functioning. Heat stroke is a life threatening condition and requires professional emergency medical intervention. Signals of heat stroke include:

- Red, hot, dry skin.
- Changes in the level of consciousness (LOC).
- Vomiting.

## **First Aid Care for Victims of Health Related Illness**

### **For employees suffering from heat cramps or heat exhaustion:**

- Move the employee out of the sun, to a cool shaded place
- Loosen tight or restrictive clothing, and remove any personal protective equipment over garments.
- Remove perspiration soaked clothing.
- Apply cool, wet towels to the skin.
- Fan the employee gently.
- If the person is conscious, provide small sips of cool water, (not a sports drink).

### **For employees suffering from heat stroke:**

- This is a profound medical emergency, and cannot be successfully treated in the field. Immediate and decisive action is required.
- Call 9-1-1 and calmly advise the emergency response dispatch of the situation, Ensure that accurate directions and all information is provided to Dispatch so medical assistance is not delayed. Move the employee to a place out of the sun, or provide shade for them.
- Loosen tight clothing, and begin active cooling methods (active fanning, pouring cool water over the body core, placing ice packs in the arm pits, behind the neck, and in the groin.

- Place the employee on their back (supine position) and gently roll them onto their side, with their airway (mouth) pointed down toward the ground in the recovery (Haines) position. Maintain open airway.
- Continue to cool the person by using ice or cold packs on the employee's wrists, ankles, groin, neck, and armpits.
- Remain with the employee until medical assistance arrives, and provide assistance to responders as required.

## Hydration Techniques

For most employees who are well acclimated to exterior conditions in the work environment, proper hydration is a simple matter of drinking sufficient potable water prior to exposure to heat, and at least one quart per hour of cool potable water during the work involving exposure to high heat. **Drink before you get thirsty.** If you are working in high heat conditions, and become thirsty, you cannot replace the fluid loss you have sustained orally.

To restate what Cal/OSHA recommends, an employee must consume up to four (4) cups per hour of cool, potable water during work in high heat conditions. For reference a 500 ml bottle of commercially available water is equal to approximately two (2) cups of water. Thus, consuming two (2) 500 ml bottles of water per hour would equal 4 cups.

Preventing heat related illness in employees is preferable to responding to a victim of heat illness. **It is very important to "pre-hydrate" prior to beginning work in a high heat environment. If possible, employees should consume at least one bottle of water, or 2 cups, before beginning work in a high heat environment.**

The Cal/OSHA standard requires Districts to provide potable, "cool" water for employees. For reference, public drinking fountains that are not electrically refrigerated provide water at between 75 degrees F and 76 degrees F. If supervisors choose to supply drinking water out of insulated water coolers, the contents needs to be kept at that relative temperature. Additionally, if a water cooler is provided, it must be sanitary, and have a valve for dispensing the water into individual cups, one for each employee, or disposable cups. The use of a communal dipper is not permitted.

**The use of salt pills or electrolyte “sports” drinks is not recommended for normal hydration and fluid replacement.**

Water is the preferred fluid, taken in the amounts discussed. Do not over-hydrate, or try to consume more than the recommended amount and rate. Water intoxication can occur, where so much water is ingested that electrolyte balance is disturbed, which can lead to heart arrhythmias and other circulation problems.

In summary, anticipate high heat conditions, ensure that heat illness risk factors are eliminated or controlled, pre-hydrate before beginning work in high heat and humidity, and consume at least (4) cups of water per hour during work in high heat.

**Know the signs and symptoms of heat related illness. Keep an eye on co-workers, and respond quickly when you see signs of heat related illness in others.**

### **Baseline Vital Sign Thresholds**

#### **Pre-Entry Medical Monitoring (Hazardous Materials Response)**

There are three reasons to conduct medical monitoring on employees designated to wear Full Body Protective Clothing (FBPC) and enter an area contaminated by a hazardous materials release:

1. To establish baseline vital signs and physical assessment (for comparison with post entry physical conditions.)
2. To identify and preclude from participation in the hot zone and warm zone activities individuals at increased risk for sustaining injury and illness as a result of on-scene activities.
3. To provide early recognition and treatment of personnel with adverse physiological responses as a result of on-scene activities.

The following orthostatic vital sign thresholds are pre-entry maximum values. Employees who exceed any of these values must not be assigned to work in Full Body Protective Clothing (FBPC).

Physical signs that disqualify employees from wearing Full Body Protective Clothing (FBPC):

1. Blood pressure-diastolic greater than 105 mm Hg.
2. Pulse-greater than 70 percent of the maximum heart rate (220- age).
3. Respiratory rate-greater than 24 per minute.
4. Temperature- greater than 99.5 degrees F (oral) or greater than 100.5 degrees F (core) or less than 97.0 degrees F or less than 98.0 degrees F (core).
5. Skin evaluation- open sores, large area of rash or significant sunburn.

Managers and/or supervisors (**Hazardous Materials Team Leaders**) Shall:

Obtain these readings, and record them in the appropriate position on the Site Safety Plan (Hazardous Materials Contingency Plan).

Managers and/or supervisors (**Hazardous Materials Team Leaders**) Shall:

Obtain post entry vital signs and skin evaluations, and shall record them in the appropriate position on the Site Safety Plan. **Hazardous materials team members who have exited the hot and warm zones and been decontaminated shall have at least as much recovery time as suit time.**