	STANDARD	DATE 4/20/2010	Incident Commander Bill Hodson
	OPERATING	APPROVED	Safety Officer Leonard Garcia
	GUIDELINE	TITLE: Heat Illness Prevention Plan	

I. INTRODUCTION

CALFIRE ICT-6 recognizes that employees are subjected to the various climatic components within our workplace and are to work in any of the climatic conditions within a short time frame. CALFIRE ICT-6 is required by the following codes and regulations to provide as safe a working environment as possible:

- Cal-OSHA regulations required, Title 8, General Industry Safety Orders,
- CAL FIRE Section 3203 (Injury and Illness Prevention Program (IIPP))
- CAL FIRE Section 1700/1702 Health Safety Hand Book

Due to the variety of weather and other climatic conditions that our employees may encounter, it is critically important that all employees are trained and educated in the importance of preventing heat-related illnesses and injuries. CALFIRE ICT-6 will seek to control employee exposure to the hazards of heat stress as much as feasible. CALFIRE ICT-6 has therefore implemented a Heat Illness Prevention Plan to prevent, reduce and respond to heat-related illnesses and/or injuries.

A. 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.

"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 participants.

"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 temporary 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 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.

II. PROCEDURE

A. General Considerations

When persons work, train, or engage in outdoor activities subjected to heat and high temperatures, precautions must be in place to prevent heat related illnesses and injuries. Heat related illnesses and injuries can lead to a serious medical condition and may even be fatal when emergency treatment is not provided or delayed. An effective approach to preventing a heat related illness or injury is vital to protecting the lives of persons involved in outdoor activities that are subjected to heat and high temperatures.

Heat related illnesses and injuries result from a combination of factors including environmental temperature and humidity, direct radiant heat from the sun or other sources, air speed, and workload. Personal factors such as age, weight, level of fitness, medical condition, use of medications and alcohol, and acclimatization affect how well the body deals with access heat.

When persons work and perform activities in hot conditions, heated environments, or in outdoor situations, provisions must be taken to prevent heat related illnesses and injuries. In order to ensure that persons are protected from heat related illness and injuries, a Heat Illness Prevention Program must be in place. There are seven key components to CALFIRE ICT-6 Heat Illness Prevention Program. The key components are:

1. Responsibilities
2. Workplace Assessment
3. Heat Control Measures
4. Compliance
5. Investigations
6. Record Keeping
7. Program Review and Evaluation

B. Responsibilities

The Incident Commander is the individual responsible for the overall effective implementation of this plan. Various components will be delegated but the overall authority for implementation, revisions, compliance and audits belongs to the I.C.

Safety Officers shall be responsible for implementing the plan within their scope of authority and responsibility. They shall insure that this plan and any geographic or site specific plans are in writing, effective and understood by Command & General Staff.

During team activations where a formalized Incident Action Plan (IAP) is used, the Safety Officer will incorporate when appropriate, heat illness prevention, safety message in the IAP. The Medical Unit will have a plan to address heat-related injuries/illnesses, when appropriate, within the Medical Plan portion of the IAP.

Non-emergency work sites exposed to hot conditions shall maintain compliance with the components of this plan.

C. Workplace Assessment

Safety Officers will assess work site locations involving an exposure of employees to a risk of excessive exposure to heat. The tasks being performed will also be assessed. These work site locations include fixed facilities, work projects, emergency related activities and special assignments. Control measures will be implemented on sites that have been determined to expose employees to the potential for heat-related illnesses. Factors such as, but not limited to: environmental conditions (temperature, relative humidity), personal protective clothing and equipment's physical and physiological impact on the wearer, level of strenuous work being performed, exposures to both radiant and thermal heat, work/rest cycles and availability of appropriate rest areas, personal adaptation (acclimatization factor), and availability of potable water, will be considered in assessing heat risk exposures. Employees will be advised of the heat exposure risk and provided and guidance on how to mitigate illnesses or injuries.

D. Heat Control Measures

Command & General Staff and supervisors will utilize appropriate control measures to prevent and/or minimize excessive heat exposures.

1. Acclimatization:

Employees will be trained, instructed and perform techniques to become acclimated to their current (normal) work sites and to places where they may be anticipated to fight fires. To the extent feasible, employees will be provided the opportunity during normal working hours to undertake

activities which will increase their level of acclimatization to the environmental heat conditions of sites to which they may be mobilized on short notice. Recognizing that it may not be possible in all cases for employees to be fully acclimatized for all emergency mobilizations, management of incident response activities such as planning of task assignments and supervision of individual employees will take into account limitations with respect to their level of acclimatization to the extent feasible.

2. Hydration:

Employees will be provided access to potable water in sufficient quantities to prevent de-hydration and heat-related illnesses. Employees will be trained on the importance of appropriate fluids, fluid intake, and the importance of maintaining hydration. Company Officers shall be responsible for monitoring employees' hydration. Factors such as environmental conditions, personal monitoring and medical assessment shall be included in the training.

3. Work/Rest Cycles:

Employees shall be provided adequate rest during the course of work consistent with emergency response. Non-emergency activities shall have a work/rest cycle that includes breaks in shaded areas and of sufficient duration to help lower core body temperatures. During emergency activities Safety Officers and Company Officers will monitor the physical condition of employees for acclimatization and fitness and monitor the work environment for availability of shaded areas, and availability of potable water. Scheduled rest cycles may not be feasible during emergency incidents and close monitoring of employees is necessary.

4. Personal Monitoring:

Employees will be trained on pulse rate monitoring as an assessment of core body temperature and the potential for heat-related illnesses. Company Officers will oversee employees' personal monitoring in the field.

5. Personal Protective Clothing:

Employees shall be provided information on the physical impact and physiological stresses imposed on them by the various types of personal protective clothing and equipment (PPE) that they are required to wear. Employees shall be allowed to loosen and or remove PPE when they are safely away from flames, or other hazards. Employees shall be trained on how to minimize their physiological stresses.

6. Emergency Medical Treatment:

All employees who would or could work in conditions that can create a heat stress environment will be trained on the following:

- (a) Recognition on the signs and symptoms of heat stress (cramps,

heat exhaustion, heat stroke) on both themselves and other personnel.

- (b) Appropriate levels of medical treatment for each level of heat stress.
- (c) Safety Officers, Company Officers, and Incident Commanders will have in place a mechanism (Medical Plan, Emergency Response Plan, Job Hazard Analysis, etc.) to facilitate rapid responses by emergency medical personnel to treat employees exhibiting or reporting symptoms possibly indicating heat illness.

7. Environmental Factors:

Safety Officers and Company Officers shall ensure that employees are aware and trained in the environmental factors that can cause heat stress. These factors include, but are not limited to: ambient dry bulb temperatures, relative humidity, extended days of high temperatures, temperature/humidity variables, moving from temperature/humidity extremes, sun exposure, and working in various temperature/humidity, topographical, and elevation environments.

E. Investigations

Any injury or illness that meets the criteria of Cal-OSHA reporting shall be investigated.

H. Record keeping

CALFIRE ICT-6 will maintain documentation on:

- 1. Heat-related illness/injuries
- 2. Heat-related fatalities
- 3. Periodic program reviews
- 4. Investigations

I. Program review and evaluation

The Safety Officer will instruct appropriate level CALFIRE ICT-6 members to conduct periodic assessments of the implementation of this plan to ensure that everyone is aware of the plan, understands the components of the plan, and to determine if the plan is current and meeting its purpose. Part of the audit will include a review of reported heat illness/injuries cases and fatalities to assess that all possible measures were appropriately taken to minimize the extent of the illness or injury.

III. Forms.

1. Heat Related Illnesses and Injuries- Symptoms and Treatment

Heat Related Illnesses and Injuries Symptoms and Treatment

	Symptoms	Treatment
Heat Cramps	<ul style="list-style-type: none"> • Muscle spasms in legs or abdomen 	<ul style="list-style-type: none"> • Move person to cooler location • Stretch muscles for cramps • Give cool water or electrolyte-containing fluid to drink
Heat Exhaustion	<ul style="list-style-type: none"> • Headaches • Clumsiness • Dizziness / lightheadedness / fainting • Weakness / Exhaustion • Heavy Sweating / clammy moist skin • Irritability / confusion • Nausea / vomiting • Paleness 	<ul style="list-style-type: none"> • Move person to cool place • Loosen or remove clothing • Provide small amounts of water to drink • Fan person, spray with cool water, apply wet towels to head, neck, or other skin • Provide further medical attention
Heat Stroke	<ul style="list-style-type: none"> • Sweating may or may not be present • Red or flushed, hot dry skin • Bizarre behavior • Mental confusion or loss of consciousness • Panting or rapid breathing • Rapid or weak pulse • seizures 	<ul style="list-style-type: none"> • Activate emergency medical procedures • Move person to a cool place • Provide rapid cooling • Loosen or remove clothing • Provide oxygen as needed • Obtain and constantly monitor vital signs. • Fan person, spray with cool water, apply wet towels to head, neck, or skin.

How dehydrated are you?



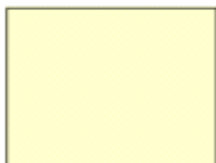
Highly dehydrated!
Go drink a large bottle of
water immediately!!!



You are still seriously dehydrated.
Drinking a bottle of water now
will make you feel much better.



Moderately dehydrated.
You lose water on a regular basis
throughout the day.
Drink more water.



You're almost there.
Get some water in your system
to flush out all those toxins
from your workout.
Stay hydrated and healthy!



Great job!
Now don't let yourself get dehydrated.
Drink at least 8-12 large glasses of
water throughout the day.

- Caffeinated drinks dehydrate - limit your consumption.
- Sport drinks can provide supplementary electrolytes, but

WATER is the Key!

