Central Zone Operations

Alpine - Barona - Bonita - El Cajon - Lakeside - La Mesa
Lemon Grove - San Miguel - Santee - Sycuan - Viejas
Heartland Communications

C-06 Heat Illness Prevention

PURPOSE

This guideline provides Central Zone procedures to protect firefighter health and safety through the provision and use of common-sense guidelines to ensure safe and effective outdoor training or emergency activities during periods of extremely hot and/or humid weather conditions.

The intent of this guideline is to provide sensible procedures for determining whether current weather conditions involving high heat and/or humidity are suitable for strenuous outdoor training activities and the awareness of firefighter health and safety on the emergency scene. The consensus of environmental health experts is that strenuous physical exertion while wearing full personal protective equipment (PPE) is considered a high-risk activity. And, while it is impractical to cancel outdoor training or remove PPE requirements at an emergency every time there's a hot day in Southern California, certain criteria can be used to determine if weather conditions on a given day pose a particularly high risk to the health and safety of fire personnel.

POLICY

It is the policy of the Central Zone to promote member health and safety by establishing a heat illness prevention training program and requiring member participation. In addition to the safety precautions described in the Heat Illness Prevention Program Policy, the Central Zone Agencies shall ensure that effective training is provided to members before the member begins work that should reasonably be anticipated to result in heat illness (8 CCR 3395(h)).

HEAT INDEX

During periods of unusually hot and/or humid weather conditions, it shall be the procedure of the Officer in Charge to utilize the Heat Index to determine if outdoor training or other non-essential activities should be suspended. If the combination of heat and humidity creates a Heat Index at or within the range of 105 to 130 degrees Fahrenheit, outdoor training or other non-essential activities shall be suspended. The Heat Index shall be utilized on the emergency scene to establish the rotation of crews that are working an emergency incident to provide appropriate rest periods and sufficient water to ensure proper hydration.
When outdoor training has been scheduled during excessively hot and/or humid weather conditions, Company Officers shall contact their respective Officer in Charge and determine the appropriateness of the scheduled activities. This guideline also applies to Department personnel involved in academy and explorer training.

- The Company Officer, working with his or her respective, Officer in Charge shall use a weather instrument to determine the current air temperature and relative humidity.

- Using the Heat Index Chart, the Officer in Charge shall cross-reference the recorded air temperature and relative humidity to determine the Heat Index. (See attached color coded chart)

- If the Heat Index falls into the (Red) 105 to 130-degree (F) range, the scheduled outside training shall be evaluated by the Officer in Charge for suspension.

- When the Heat Index falls into the (Yellow) 91 to 104 degree (F) range, Company Officers shall provide appropriate rest periods and sufficient water to ensure proper hydration.

- Subsequent to suspending the scheduled outside training or activities, the Company Officer shall work with the Officer in Charge and reschedule the canceled training session.

AWARENESS AND PREVENTION

Environmental risk factors for heat illness are work conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources (e.g., generators, engines, etc.), conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.

Personal risk factors for heat illness include an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medication that affect the body's water retention or other physiological responses to heat.

There is no absolute cut-off below which work in heat is not a risk. With heavy work at high relative humidity or if workers are wearing protective clothing, even work at 70 degrees Fahrenheit (70°F) can present a risk. In the relative humidity levels often found in hot areas of California (20% to 40%) employers need to take some actions to effectively reduce heat illness risk when temperatures approach 80°F. At temperatures above 90°F, especially with heavy work, heat risk reduction needs to be a major concern.

C-06 Heat Illness Prevention

The IC and supervisors of training should recognize the hazard and consider mitigation actions. All crew members should be briefed on hazards mitigations and reporting of heat stress prior to commencing training.

- Since an individual may produce as much as two to three gallons of sweat per day, drinking plenty of water frequently is vital to workers exposed to the heat. There must be an adequate supply of clean, cool, potable water available at the work site. Employees who are working in the heat should drink three to four glasses of water per hour, including at the start of the shift, in order to replace the water lost to sweat. For an eight-hour day this means employers must provide two or more gallons per person. Thirst is an unreliable indicator of dehydration. Employees often need ongoing encouragement to consume adequate fluids, especially when the workload or process does not encourage breaks.

- The direct heat of the sun can add as much as 15 degrees to the heat index. If possible, work should be performed in the shade. If not, employers must provide a shaded area for breaks and when employees need relief from the sun. Wide brimmed hats can also decrease the impact of direct heat.

- People need time for their bodies to adjust to working in heat. This is particularly important for employees returning to work after a prolonged absence, recent illness, or recently moving from a cool to a hot climate. Monitor employees closely for signs and symptoms of heat illness, particularly when they have not been working in heat for the last few days, and when a heat wave occurs.

- Rest breaks are important to reduce internal heat load and provide time for cooling.

- Heat illness occurs due to a combination of environmental and internal heat that cannot be adequately dissipated. Breaks should be taken in a cool shaded area if available. Rest breaks also provide an opportunity to drink water.

- Recognizing the symptoms of heat illness and providing an effective response requires promptly acting on early warning signs. If you or a co-worker start to feel symptoms such as nausea, dizziness, weakness or unusual fatigue, let your supervisor know and rest in a cool shaded area. Keep in mind, progression to more serious illness can be rapid and can include unusual behavior, nausea/vomiting, weakness, rapid pulse, excessive sweating or hot dry skin, seizures, and fainting or loss of consciousness. Any of these symptoms require immediate attention.

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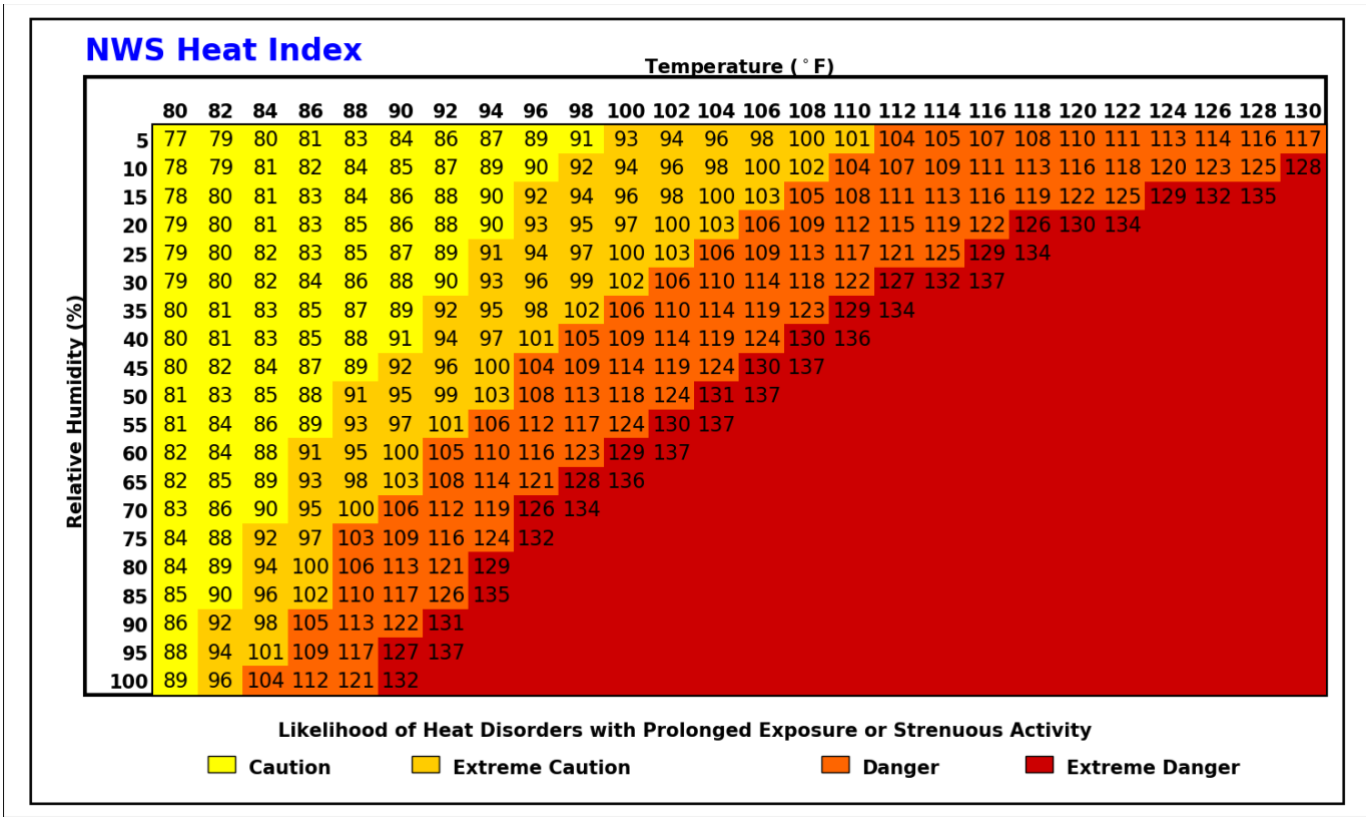

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5	77	79	80	81	83	84	86	87	89	91	93	94	96	98	100	101	104	105	107	108	110	111	113	114	116	117
10	78	79	81	82	84	85	87	89	90	92	94	96	98	100	102	104	107	109	111	113	116	118	120	123	125	128
15	78	80	81	83	84	86	88	90	92	94	96	98	100	103	105	108	111	113	116	119	122	125	129	132	135	
20	79	80	81	83	85	86	88	90	93	95	97	100	103	106	109	112	115	119	122	126	130	134				
25	79	80	82	83	85	87	89	91	94	97	100	103	106	109	113	117	121	125	129	134						
30	79	80	82	84	86	88	90	93	96	99	102	106	110	114	118	122	127	132	137							
35	80	81	83	85	87	89	92	95	98	102	106	110	114	119	123	129	134									
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136										
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65	82	85	89	93	98	103	108	114	121	128	136															
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100	89	96	104	112	121	132																				

The Heat Index shows the effect of the combination of heat and humidity. The apparent temperature is the heat your body thinks it is. To use the chart, locate the temperature along the top row and the humidity along the left-hand column. Where the two intersect is the current Heat Index.

REVISED: 8/26/2023