


A photograph of a renewable energy farm at sunset. In the foreground, rows of solar panels are visible, reflecting the golden light of the setting sun. In the background, several wind turbines stand on a grassy hillside. The sky is a clear, light blue, and the sun is low on the horizon, creating a bright lens flare effect.

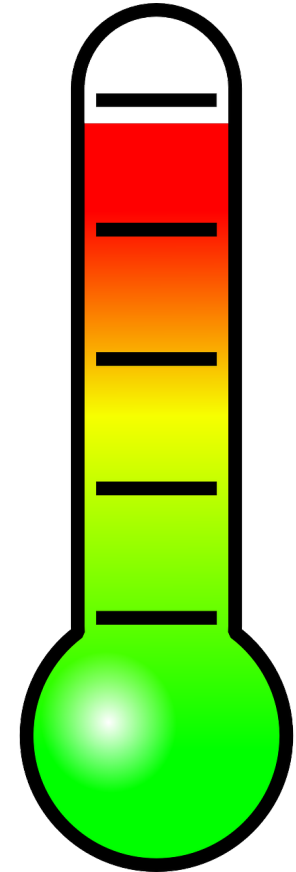
Heat-Related Injury Prevention



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- Many people are exposed to heat on the job, in both indoor and outdoor heat environments.
- Operations involving high air temperatures, radiant heat sources (e.g., sunlight, hot exhaust), high humidity, direct physical contact with hot objects, or strenuous physical activities have a high potential for causing heat-related illness.





Factors That Put Workers at Greater Risk

Most outdoor fatalities, 50% to 70%, occur in the first few days of working in warm or hot environments because the body needs to build a tolerance to the heat gradually over time. The process of building tolerance is called heat acclimatization. Lack of acclimatization represents a major risk factor for fatal outcomes.

Factors That Put Workers at Greater Risk

Environmental	High temperature and humidity Radiant heat sources Contact with hot objects Direct sun exposure (with no shade) Limited air movement (e.g. enclosed spaces, no breeze, wind or ventilation)
Job-Specific	Physical exertion Use of bulky or non-breathable protective clothing and equipment
Personal	Non acclimatized workers Illness Medications Previous heat stress illness Poor physical condition/fitness

Heat Stress Index

Heat Stress Index									
Relative Humidity									
°F	10%	20%	30%	40%	50%	60%	70%	80%	90%
104	98	104	110	120	132				
102	97	101	108	117	125				
100	95	99	105	110	120	132			
98	93	97	101	106	110	125			
96	91	95	98	104	108	120	128		
94	89	93	95	100	105	111	122		
92	87	90	92	96	100	106	114	122	
90	85	88	90	92	96	100	106	114	122
88	82	86	87	89	93	95	100	106	115
86	80	84	85	87	90	92	96	100	109
84	78	81	83	85	86	89	91	95	99
82	77	79	80	81	84	86	89	91	95
80	75	77	78	79	81	83	85	86	89
78	72	75	77	78	79	80	81	83	85
76	70	72	75	76	77	77	77	78	79
74	68	70	73	74	75	75	75	76	77
NOTE:	Add 10°F when protective clothing is worn. Add 10°F when in direct sunlight.								

Humiture °F	Danger Category	Injury Threat
Above 130°	EXTREME DANGER	Heat stroke imminent!
105° to 130°	DANGER	Heat cramps or exhaustion likely, heat stroke possible if exposure is prolonged and there is physical activity.
90° to 105°	EXTREME CAUTION	Heat cramps and heat exhaustion possible if exposure is prolonged and there is physical activity.
80° to 90°	CAUTION	Fatigue possible if exposure is prolonged and there is physical activity.
Below 80°	NONE	Little or no danger under normal circumstances.

This chart does not take into account job-specific factors, as such, please consider the influence the items discussed on the previous slide may have when assessing your risk for the task to be performed.

Hot Weather Awareness

- Excessive exposure to heat can cause a range of heat-related illnesses, from heat rash and heat cramps to heat exhaustion and heat stroke. Heat stroke can result in death and requires **immediate medical attention**.
- Exposure to heat can also increase the risk of injuries because of sweaty palms, fogged-up safety glasses, dizziness, and burns from hot surfaces or steam.



**Call 911
for heat
stroke!**

Hot Weather Awareness

Heat Rash	Clear or red bumps and itching. Try to work in a cooler, less humid environment when possible and keep the affected area dry.
Heat Cramps	Muscle cramps or spasms, pain usually in abdomen, arms, or legs. Stop work and cool down and rehydrate. Report this condition immediately and transport to admin. area.
Heat Exhaustion	Headache, nausea, excessive sweating, weakness, etc. Stop work and cool down and rehydrate. Report this condition immediately and transport to admin. area.
Heat Stroke	Confusion, fainting, seizures, hot and dry skin, high body temperature, racing heart, flushed skin means a medical emergency. Call 911 and activate the Emergency Action Plan.

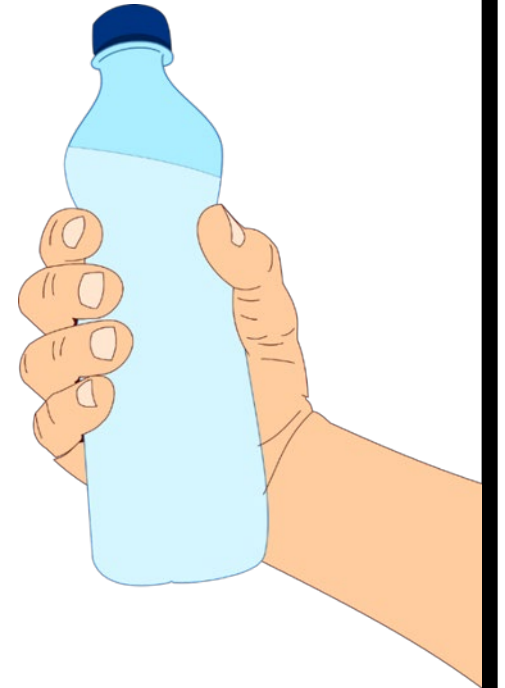
Hot Weather Awareness

- Loss of water through sweating can cause dehydration.
- High humidity, PPE, and exertion can accelerate both heating and dehydration – even at lower temperatures.

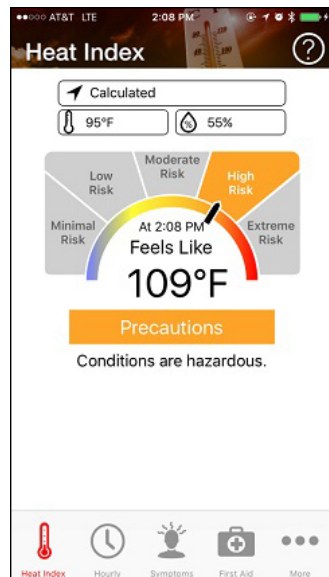
HEAT EXHAUSTION	OR	HEAT STROKE
Faint or dizzy		Throbbing headache
Excessive sweating		No sweating
Cool, pale, clammy skin		Body temperature above 103° Red, hot, dry skin
Nausea or vomiting		Nausea or vomiting
Rapid, weak pulse		Rapid, strong pulse
Muscle cramps		May lose consciousness
<ul style="list-style-type: none">• Get to a cooler, air conditioned place• Drink water if fully conscious• Take a cool shower or use cold compresses		CALL 9-1-1 <ul style="list-style-type: none">• Take immediate action to cool the person until help arrives
Weather.gov/socialmedia Weather.gov/heat		@SacramentoOES SacramentoReady.org

Hot Weather Awareness

- Hydration and regular meals are essential in preventing heat stress and dehydration. Consider replacing one (1) cup of water with one (1) cup of electrolyte drink.
- Ensure personnel are in a fit condition and have not experienced a previous heat illness. This should not preclude a person from work, but be aware, monitor closely and take precautions.
- Report any symptoms as soon as they are apparent. Activate Emergency Action Plan if appropriate.



OSHA-NIOSH Heat Safety Tool App



- A visual indicator of the current heat index and associated risk levels specific to your current geographical location.
- Precautionary recommendations specific to heat index-associated risk levels.
- An interactive, hourly forecast of heat index values, risk level, and recommendations for planning outdoor work activities in advance.
- Editable location, temperature, and humidity controls for calculation of variable conditions.
- Signs, symptoms, and first aid information for heat-related illness.

References

The National Institute for Occupational Safety and Health (NIOSH)

<https://www.cdc.gov/niosh/topics/heatstress/heatapp.html>

Occupational Safety and Health Administration (OSHA)

<https://www.osha.gov/heat-exposure>



Thank you.

Questions? Contact safety@cleanpower.org