

TEXAS DEPARTMENT
OF
CRIMINAL JUSTICE

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SUPERSEDES: AD-10.64 (rev. 5)
September 19, 2006

ADMINISTRATIVE DIRECTIVE

SUBJECT: TEMPERATURE EXTREMES IN THE TDCJ WORKPLACE

AUTHORITY: Texas Government Code §493.006

Reference: American Correctional Association (ACA) Standards: 4-4153
and 4-4337

APPLICABILITY: Texas Department of Criminal Justice (TDCJ or Agency)

POLICY:

The TDCJ shall establish guidelines to assist unit administration in adapting offender work assignments to temperatures in the work environment that cannot be controlled by the Agency. Guidelines for outside recreation are found in the TDCJ *Recreation Department Policy Manual*.

Every reasonable effort shall be made to prevent extreme temperature-related injuries in the workplace. Since the TDCJ has units throughout the State of Texas, the decision to expose offenders to extreme temperature (i.e., cold/heat) shall be made by the appropriate on-site staff.

TDCJ offenders are, at times, required to work in conditions of extreme cold or extreme heat. Frequently, situations may occur requiring specific work be completed regardless of the temperature or weather conditions.

PROCEDURES:

Prior to exposing offenders to extreme temperature conditions (i.e., cold/heat), the Warden and involved Department Supervisors shall ensure appropriate measures are instituted which prevent extreme temperature-related injuries. The Warden and involved Department Supervisors are encouraged to consult medical staff to ascertain specific hazards. In all cases of temperature-related incidents or injuries, the unit medical staff and the unit Risk Manager shall be notified immediately. Upon arrival on the scene, medical staff shall take control of the individual's medical care. The injured offender shall be removed from the environment by the most expeditious means available to receive proper medical treatment.

I. Procedures and exposure charts (Wind Chill Index [Attachment A] and Heat and Humidity Matrix [Attachment B]) are provided to assist unit officials in determining safe working conditions in extreme temperature conditions.

A. During work assignments, offenders shall be exposed to no more than three (3) or four (4) hours at a time, until acclimated to existing weather conditions. Work periods may then be extended as the offender physically adjusts to the weather conditions. Appropriate clothing shall be worn to protect the offender from extreme temperature conditions at all times.

B. Unit staff shall monitor the temperature once every hour between 6:30 a.m. and 6:30 p.m. The temperature shall be announced over the radio and documented on the Temperature Log (Attachment C). If conditions warrant, the Warden may also request additional readings.

C. Temperature Log

1. The Warden shall designate a central location to maintain the Temperature Log.

2. The Temperature Log shall indicate the wind chill or heat index.

3. Temperature information is available through the following:

a. The National Oceanic and Atmospheric Administration (NOAA) website (www.noaa.gov);

b. NOAA Weather Radio;

c. Local weather radio and television stations; or

d. Onsite weather instrumentation (if available).

4. Temperature Logs shall be maintained in accordance with the TDCJ *Records Retention Schedule*.

II. Extreme Cold Conditions

A. Determination

1. The Warden shall use the Wind Chill Index, the local news/weather media and/or weather conditions recorded by instruments located at the unit/picket in determining the safety of cold weather working conditions.

2. Clothing considered appropriate for offenders working in cold weather shall include: thermal underwear, insulated jackets, cotton or leather gloves, insulated hoods, work shoes and socks. The Wind Chill Index shall be used to determine the need for insulated hoods and leather gloves. Appropriate clothing shall be issued even when the index indicates little danger of exposure injury.
3. If guidance is needed, medical staff shall be contacted to determine appropriate clothing and footwear needed to prevent cold injury.
4. Care shall be taken to prevent perspiration which could soak clothing and thus compromise the clothing's insulating value.
5. Layers of clothing shall be removed or added according to the effective temperature and level of physical activity.

B. Symptoms

1. Hypothermia is a condition occurring when the body loses heat faster than the body can produce it. With the onset of this condition, blood vessels in the skin constrict (i.e., tighten) in an attempt to conserve vital internal body heat, thus affecting the hands and feet first.
2. If one's body continues to lose heat, involuntary shivers begin. This reaction is the body's way to produce more heat and is usually the first real warning sign of hypothermia.
3. Further heat loss produces speech difficulty, forgetfulness, loss of manual dexterity, collapse and finally death.

C. Types of Hypothermia

Hypothermics are divided into the following three (3) categories, depending on the degree of injury.

1. Category One

Injured individuals are conscious, but cold, with a rectal temperature above 90 degrees Fahrenheit (°F). These individuals shall be handled carefully, insulated and transported to medical care.

2. Category Two

Injured individuals are unconscious and with a rectal temperature of 90°F or below. These individuals shall be handled carefully and insulated from

further heat loss. The individual shall be transported to the unit Medical Department for additional care.

3. Category Three

Injured individuals are comatose with no palpable pulse and no visible respiration. Although these individuals appear to be deceased, the injured individual may have a slight chance of recovery if the rectal temperature is 60.8°F or higher. If possible, medical staff shall proceed as follows:

- a. Apply positive pressure ventilation with oxygen.
- b. Judge the possibility of administering successful cardiopulmonary resuscitation (CPR). Consideration shall be given to the following prior to administering CPR:
 - (1) The difficulty in verifying that the heart has stopped without medical equipment;
 - (2) The compromise of rescuers to administer procedure during evacuation;
 - (3) The ability to continue CPR during rescue;
 - (4) The probability of chest compressions fibrillating or stopping a slow-beating, sensitive heart; and
 - (5) Continuing circulation by compressing a cold, stiff chest and heart muscle is unlikely.
- c. The injured individual shall be insulated and transported to a medical care facility.

III. Extreme Heat Conditions

A. Determination

- 1. Guidelines assisting the Warden in making the determination can be found in the Heat and Humidity Matrix. Weather conditions recorded by instruments on the unit/picket or reports by the local news media shall be used confirming specific temperature and humidity conditions. When the temperature is over 85°F, the Warden shall use the Heat and Humidity Matrix to determine the heat index. The heat index shall be used as an indicator of the risk for heat-related injury.

2. At any point when the Heat and Humidity Matrix indicates the possibility of heat exhaustion or heatstroke, the Warden shall instruct the appropriate staff to immediately initiate the precautionary measures identified in the Heat and Humidity Matrix.
3. If guidance is needed, medical staff shall be contacted prior to exposing offenders to extremely hot working conditions to evaluate the hazards of the current temperatures and humidity, including indoor work areas (e.g., boiler room). The hazard of sunburn and other results of ultraviolet (UV) radiation shall also be closely monitored.
4. Offenders shall be provided and required to wear clothing appropriate for the effective temperatures and the hazards imposed by UV radiation (e.g., light-colored hats can be used to an advantage in high heat and direct sunlight).
5. Drinking water shall always be available to offenders in conditions of hot weather. According to individual medical advice, liquids containing sodium may be used depending on an offender's state of acclimatization to hot weather conditions.
6. Newly assigned offenders, who may not be acclimated to the heat, shall be medically evaluated prior to exposure to significant heat stress and closely monitored by supervisors for early evidence of heat intolerance.
7. High water intake, according to the Heat and Humidity Matrix, shall be enforced.
8. Offenders under treatment with diuretics or drugs inhibiting sweating require special medical evaluation prior to assignment to work in extreme heat.

B. Symptoms

1. Heat stroke symptoms include:
 - a. Diminished or absent perspiration (sweating);
 - b. Hot, dry and flushed skin; and
 - c. Increased body temperatures, which if uncontrolled may lead to delirium, convulsions and even death. Medical care is urgently needed.

2. Heat cramp symptoms include:
 - a. Painful, intermittent spasms of the voluntary muscles following hard physical work in a hot environment; and
 - b. Cramps usually occurring after heavy perspiring, and often beginning at the end of a work shift.
3. Heat exhaustion symptoms include:
 - a. Profuse perspiring, weakness, rapid pulse, dizziness and headaches;
 - b. Cool skin, sometimes pale and clammy, with perspiration;
 - c. Normal or subnormal body temperature; and
 - d. Nausea, vomiting and unconsciousness may occur.

IV. Emergency Treatment

- A. In all cases of temperature-related incidents or injuries:
 1. The first aid process shall be initiated immediately by security or other unit staff.
 2. Medical staff and the unit Risk Manager shall be notified immediately.
- B. In extreme cold conditions, staff shall:
 1. Bring the injured offender out of the cold and remove wet clothing;
 2. Wrap the injured offender in warm blankets or clothing;
 3. If frostbite exists, gently heat the affected area with warm water or warm towels. Do not rub the affected area; a heating pad or hot water bottles may also be used to treat the affected area;
 4. Continue the treatment upon arrival at the site or when the offender is delivered to medical staff's care;
 5. Apply the "ABC" of life support (open Airway, assist Breathing and restore Circulation), if necessary; and

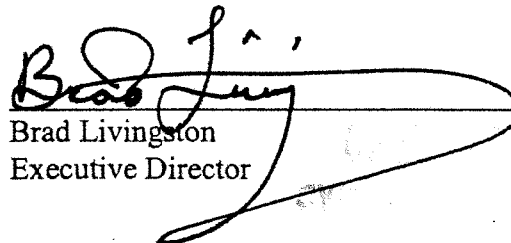
6. If cold injury is sustained, the following first aid procedures shall be administered immediately:
 - a. Restrict the offender from further duties or activities until severity is evaluated;
 - b. Remove all constricting items of clothing and footgear from injured areas;
 - c. Remove wet clothing and insulate the offender with dry clothing and blankets, ensuring the injured area is covered;
 - d. Do not rupture blisters;
 - e. Encourage consumption of warm, sweetened liquids;
 - f. If a lower extremity is affected, treat as a stretcher patient by slightly elevating the affected lower extremity;
 - g. If evacuation from cold requires travel on foot, do not thaw the affected area until the offender reaches medical help; and
 - h. Transport the offender to medical care as soon as possible.

C. In extreme heat conditions, staff shall:

1. Immediately begin an attempt to decrease the offender's temperature by placing the offender in a cool area;
2. Only force oral fluid intake if the offender is conscious and able to safely swallow;
3. Remove heavy clothing or excess layers of clothing; saturate remaining lightweight clothing with water. Position the offender in the shade with air movement past the offender. Fan the offender if necessary to create air movement;
4. If ice is available, place ice packs in armpit and groin areas;
5. Take all of these measures while moving the offender in the most expeditious means available to continue with and obtain proper medical treatment; and
6. Ensure, whenever medical staff are on-site, to continue treatment as directed by the physician or medical staff.

V. Training

- A. Each Warden shall ensure training in the prevention of temperature extreme injury is provided by unit medical staff to all supervisors designated by the Warden. Cold Training shall be completed in September, and Heat Training shall be completed in May of each year.
1. Supervisors shall be responsible for training employees and work assigned offenders.
 2. Non-work assigned offenders shall be notified of heat awareness via the dayroom bulletin boards and/or other common use areas (i.e., *The Echo*, *Offender Orientation Handbook*).
- B. A copy of all training rosters shall be provided to the unit Risk Manager and Human Resources Representative (staff training). The unit Risk Manager shall forward a copy of the training roster to the respective Regional Risk Manager. The Regional Risk Manager shall forward the total number of employees and offenders trained to the Risk Management Central Office.
- C. A standardized training program shall be developed by the TDCJ Department of Preventive Medicine in conjunction with the University of Texas Medical Branch (UTMB) Department of Education and Professional Development.
1. The initial extreme temperature conditions training is provided in the Pre-Service Training sessions, and additional training shall be provided in annual In-Service Training sessions.
 2. The training is given in a group setting.
 3. All units are responsible for conducting an annual standardized training program utilizing unit-based medical staff.
 4. Requests for selected unit training shall be submitted to the Director for Preventive Medicine.


Brad Livingston
Executive Director

WIND CHILL INDEX

Wind Speed in MPH	ACTUAL THERMOMETER READING (°F)									
	50	40	30	20	10	0	-10	-20	-30	-40
	EQUIVALENT TEMPERATURE (°F)									
CALM	50	40	30	20	10	0	-10	-20	-30	-40
5	48	37	27	16	6	-5	-15	-26	-36	-47
10	40	28	16	4	-9	-21	-33	-46	-58	-70
15	36	22	9	-5	-18	-36	-45	-58	-72	-85
20	32	18	4	-10	-25	-39	-53	-67	-82	-96
25	30	16	0	-15	-29	-44	-59	-74	-88	-104
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116
Over 40 MPH (little added effect)	LITTLE DANGER (for properly clothed person)				INCREASING DANGER			GREAT DANGER		
					(Danger from freezing or exposed flesh)					

The human body senses "cold" as a result of both the air temperature and wind velocity. Cooling of exposed flesh increases rapidly as the wind velocity increases. Frostbite can occur at relatively mild temperatures if wind penetrates the body insulation. For example, when the actual air temperature of the wind is 40°F and its velocity is 30 mph (48 km/h), the exposed skin would perceive this situation as an equivalent still air temperature of 13°F.

Clothing considered appropriate and currently available in the inventory is thermal underwear, insulated jackets, cotton and leather gloves, insulated hoods, work shoes and socks. Again, caution shall be taken when exposure occurs for longer periods of time.

HEAT AND HUMIDITY MATRIX

Relative Humidity	AIR TEMPERATURE (°F)										
	70	75	80	85	90	95	100	105	110	115	120
	Apparent Temperature										
0%	64	69	73	78	83	87	*91	*95	*99	*103	**107
10%	65	70	75	80	85	*90	*95	*100	**105	**111	**116
20%	66	72	77	82	87	*93	*99	**105	**112	**120	***130
30%	67	73	78	84	*90	*96	*104	**113	**123	***135	***148
40%	68	74	79	86	*93	*101	**110	**123	***137	***151	
50%	69	75	81	88	*96	**107	**120	***135	***150		
60%	70	76	82	*90	*100	**114	***132	***149			
70%	70	77	85	*93	**106	**124	***144				
80%	71	78	86	*97	**113	***136					
90%	71	79	88	*102	**122						
100%	72	80	*91	**108							

* Heat exhaustion possible

** Heatstroke possible

*** Heatstroke imminent

Heat Exhaustion: Staff shall ensure adequacy of water intake, look for signs of exhaustion. Five (5) minute rest breaks every hour.

Heatstroke Possible: Staff shall promote high water intake, five (5) minute rest breaks every one-half (1/2) hour; lay down, feet up. Reduce work by one-third (1/3).

Heatstroke Imminent: Secure outside work or reduce work pace by one-half (1/2) to two-thirds (2/3). Ten (10) minute break every one-half (1/2) hour; lay down, feet up. Insist on excessive water intake.

Heat and Humidity: At high temperatures, the human body normally cools itself through the evaporation of perspiration, but humidity interferes with this process. The above table, from the National Weather Service, shows how discomfort and health risks grow as heat and humidity increase. Remember: Apparent temperatures may run 15 to 30 degrees higher in urban areas with their vast expanses of concrete and asphalt.

TEXAS DEPARTMENT OF CRIMINAL JUSTICE
Temperature Log

Unit: _____

Date:	Outside Air Temperature	Humidity or Wind Speed	Heat Index or Wind Chill	Person Recording
6:30 a.m.				
7:30 a.m.				
8:30 a.m.				
9:30 a.m.				
10:30 a.m.				
11:30 a.m.				
12:30 p.m.				
1:30 a.m.				
2:30 p.m.				
3:30 p.m.				
4:30 p.m.				
5:30 p.m.				
6:30 p.m.				