Module P Prevention of Cold Stress tcfh2-4-14rev1.0

Prevention of Cold Stress

Cold related work illness is a real threat to our employees who work outside during months of cold weather. In order to lessen this threat, this program has been prepared.

All employees will be given instruction in this program prior to working outside where the possibility of frostbite and hypothermia exist.

On days when applicable environmental conditions exist (**temperatures or wind chill factors equal to or less than 30 degrees F**), the supervisor will, before the morning shift starts, remind workers of the danger of frostbite and hypothermia, the procedures to lessen its impact, and, in the worst case, the procedure for medical response.

All persons should recognize the symptoms of cold related illness.

FROSTBITE

(Sensations of coldness; tingling, stinging or aching feeling of the exposed area followed by numbness of ears, fingers, toes, cheeks, and noses. Frostbitten areas appear white and cold to the touch)

Seek medical assistance immediately.

Frostbitten parts should be covered with dry, sterile gauze or soft, clean cloth bandages.

**DO NOT** massage frostbitten tissue

Take measures to prevent further cold injury.

GENERAL HYPOTHERMIA

(Shivering, an inability to do complex motor functions, lethargy, and mild confusion)

Conserving remaining body heat. Providing additional heat sources. Seek medical assistance for persons.

SEVERE HYPOTHERMIA

(Unresponsive and not shivering) Seek medical attention immediately.

Reduce heat loss by:

1. obtaining shelter.
2. removal of wet clothing.
3. adding layers of dry clothing, blankets, or using a pre-warmed sleeping bag.

The four environmental conditions that cause cold-related stress are low temperatures, high/cool winds, dampness and cold water. Wind chill, a combination of temperature and velocity, is a crucial factor to evaluate when working outside. For example, when the actual air temperature of the wind is 40°F (4°C) and its velocity is 35 mph, the exposed skin receives conditions equivalent to the still-air temperature being 11°F. A dangerous situation of rapid heat loss may arise for any individual exposed to high winds and cold temperatures.

The purpose of this program is to take definitive measures prior to the onset of cold related illnesses so that medical response will not be necessary. If the above conditions do present themselves, the supervisor, who will always have access to a mobile phone, will follow our standard emergency procedures.

Definitive measures to prevent cold related illness include:

1. Personal Protective Clothing

Personal Protective Clothing is the most important step in fighting the elements is providing adequate layers of insulation from them. Wear at least three layers of clothing:

* 1. An outer layer to break the wind and allow some ventilation (like Gore-Tex® or nylon);
  2. A middle layer of wool or synthetic fabric (Qualofil or Pile) to absorb sweat and retain insulation in a damp environment. Down is a useful lightweight insulator; however, it is ineffective once it becomes wet.
  3. An inner layer of cotton or synthetic weave to allow ventilation.

Pay special attention to protecting feet, hands, face and head. Up to 40% of body heat can be lost when the head is exposed. Footgear should be insulated to protect against cold and dampness. Keep a change of clothing available in case work garments become wet.

1. Engineering Controls

Engineering Controls help reduce the risk of cold-related injuries.

* 1. Use an on-site source of heat, such as air jets, radiant heaters, or contact warm plates.
  2. Shield work areas from drafty or windy conditions.
  3. Provide a heated shelter for employees who experience prolonged exposure to equivalent wind-chill temperatures of 20°F or less.
  4. Use thermal insulating material on equipment handles when temperatures drop below 30°F.

3 Safe Work Practices

Safe Work Practices, such as changes in work schedules and practices, are necessary to combat the effects of exceedingly cold weather. Possible workable safe practices include:

1. Allowing a period of adjustment to the cold before embarking on a full work schedule.
2. Permitting employees to set their own pace and take extra work breaks when needed.
3. Reducing, as much as possible, the number of activities performed outdoors. When employees must brave the cold, selecting the warmest hours of the day and minimize activities that reduce circulation.
4. Ensuring that employees remain hydrated.
5. Establishing a buddy system for working outdoors.
6. Educating employees to the symptoms of cold-related stresses -- heavy shivering, uncomfortable coldness, severe fatigue, drowsiness, or euphoria.

Provision of water

Employees will have access to adequate quantities of potable drinking water.

Where the supply of water is not plumbed or otherwise continuously supplied, water will be provided in sufficient quantity.

Supervisor will provide frequent reminders to employees to drink frequently, and, if needed, more water breaks will be provided.

Drinking water will be dispensed in containers with a tight sealing lid and labeled as Drinking Water. Drinking water containers are to be cleaned daily. Water containers will be placed as close as possible to the workers.

Supervisors will monitor water consumption and water supply and ensure adequate levels are available to last the whole shift

Disposable/single use drinking cups will be provided to employees

Supervisors will remind employees that personal military style canteens may be worn containing water. In cold weather conditions, employees are encouraged to drink warm, sweet beverages (sugar water, sports-type drinks. They should avoid drinks with caffeine (coffee, tea, or hot chocolate). Employees are cautioned, however, that sharing water from a personal canteen is forbidden and, because of the health hazard to the user and the person with whom it is shared, disciplinary action will be taken

against both employees if they drink out of the same container. This disciplinary action will be documented using our disciplinary enforcement form.

Training

All employees will read this program and be given interactive training in its provisions. A copy of this program will be kept on the job site during applicable periods of cold weather.

All supervisors will read the below informational items prior to utilization of this program and have an opportunity for discussion and clarification with our Safety Director.

[OSHA Cold Stress QuickCard 3156](http://www.osha.gov/Publications/osha3156.pdf)