



## **COLD STRESS PREVENTION PROGRAM**

### **I. POLICY**

This program provides the minimum safety requirements for protecting Tate Engineering Systems, Inc. employees from potential injuries and illnesses associated with cold work environments. By following these basic safety principles and maintaining proper safety awareness, employees should be able to avoid serious injury.

### **II. PURPOSE AND SCOPE**

The purpose of this program is to provide Tate Engineering Systems, Inc. employees with the basic information for protecting themselves from cold work environments, which can cause serious injuries and illnesses to occur. Each employee is expected to follow the guideline provided within this section. Supervisors shall be responsible for initiating disciplinary action against employees who do not follow the guidelines within this section.

The information in this program applies to all Tate Engineering Systems, Inc. employees working in cold environments below 50°F with or without wind chill present. Employees who are required to work in cold weather conditions receive training regarding the health effects of cold exposure.

Client site access points to Tate work areas and other regularly used walkways and travel ways shall be sanded, salted, or cleared of snow and ice as soon as possible by the client, prior to being walked on or having materials staged on by Tate employees. Tate employees will be informed of the dangers associated with working around the client site unstable snow and ice build ups by the client when work has been contracted.

Cold weather supplies; hats, coats will be regularly inspected and restocked by Tate Marketing when necessary. Gloves are available year round in the PPE closet at each branch.

### **III. DEFINITIONS**

**Frostbite** – is the freezing or the local effect of a partial freezing of some part of the body. High surface-area-to-volume ratios such as the fingers, toes, ears, nose, and cheeks are most susceptible to frostbite. Improper re-warming (i.e. rubbing and pouring water over) an affected area can cause additional damage or death to the tissue. Have the victim elevated and wrap the affected area with dry sterile bandages and get medical attention. If medical attention is delayed, immerse affected area in warm, not hot water, unless there is a chance that the affected area will get cold again.

**Hypothermia** – is a severe drop in core body temperature due to overexposure to low temperatures. If the condition is not recognized and treated, death can result. Hypothermia often occurs at moderate temperatures (40°F) during periods of heavy precipitation. For cases of mild hypothermia move victim to a warm area, remove wet cloths and replace with dry ones or a blanket and keep them active. For more severe cases do everything listed above for mild cases, but place hot packs on head, neck chest and groin, warming the arms and legs last and get medical attention.

**Trench Foot** – is caused by having feet exposed to wet cold environments or immersed in cold water for long periods of time. Victims will generally complain of tingling, itching or burning sensations and blisters may form in affected areas. Have the victim elevated, wash with warm water and dry the affected area and get medical attention.

**Wind Chill** – a measure of the rate of heat loss from exposed skin caused by the combined effects of high winds and low temperatures. The wind chill temperature is what the temperature "feels like" during cold weather as a result of the wind. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature. Once temperatures drop below 10 °F and the wind is gusting, conditions are ripe for cold-related illnesses.



#### **IV. COLD STRESS PROGRAM**

##### **WORK CONSIDERATIONS**

One aspect of the work environment that must be taken into consideration when planning and conducting projects in winter months (e.g. November through March) is the occurrence of adverse and harsh weather conditions. Cold weather can cause physical discomfort, loss of efficiency, and possibly injury or death. The Service Manager will be responsible for the daily monitoring of temperature and wind speed, which may result in cold stress to Tate Engineering Systems, Inc. personnel who's jobs and tasks for a specific client site will require them to work primarily outdoors.

##### **SAFE WORK PRACTICES**

**The following practices can help prevent cold stress and related injuries:**

- Ensure workers have suitable clothing for working in cold conditions.
- Postpone outdoor work if temperatures are less than 40 degrees with or without wind chill, during freezing rain conditions or high winds.
- Conduct outdoor operations during the middle of the day to take advantage of solar heat load.
- Provide a heated space for workers to take breaks, to include trucks.
- Ensure worker stay adequately hydrated.
- Workers and Supervisors should know the signs and symptoms of cold-related illness.
- Workers should practice the buddy system and monitor other workers on the crew for signs and symptoms of cold-related illness.
- Supervisors should remind workers of the dangers, and signs and symptoms of cold related illness during daily and weekly safety briefings during periods of low temperatures.

In addition, Tate Engineering Systems, Inc. personnel should be kept aware of the effects of cold stress. When outdoor temperatures are expected to be below (50o F), near freezing (30o F) or below, Tate Engineering Systems, Inc. personnel should pace themselves, especially if wearing heavy clothing, and take frequent rest breaks if directly involved with strenuous activities (e.g. lifting, pushing, etc.). Proper intake of non-caffeinated beverages (e.g. water, commercial electrolyte balanced drinks) is encouraged periodically throughout the workday in order to maintain proper fluid level retention and avoiding dehydration.

##### **SIGNS AND SYMPTOMS**

**If an employee experiences one or more of the following:**

- pale, cool moist skin,
- heavy or no sweating
- muscle spasms
- pain in hands, feet, or abdomen
- strong, rapid, pulse rate
- dizziness or nausea
- confusion
- fainting



- red, hot, or drier than normal skin

It is strongly advised that they should immediately sit down and attempt to alert a coworker to notify the site supervisor, who will take appropriate measures.

**If a worker experiences the following disorders, especially during exhaustive, high physical activity periods outdoors in winter months:**

- uncontrollable shivering
- vague or slowed speech
- memory lapses
- incoherence
- drowsiness
- changing color of skin
- decreasing blood pressure, pulse rate, or respiration

That person may be exhibiting early warning signs of cold stress. It is imperative to get this person acclimatized to a warmer (preferably indoors, at ambient temperatures) location as soon as possible and re-hydrated with non-caffeinated, sweetened beverages.

Workers should notify the Site Safety Officer if the worker has a medical condition that would pre-dispose him or her to cold stress. These conditions may include heart disease, high blood pressure, pulmonary diseases, obesity, lack of acclimatization, etc.

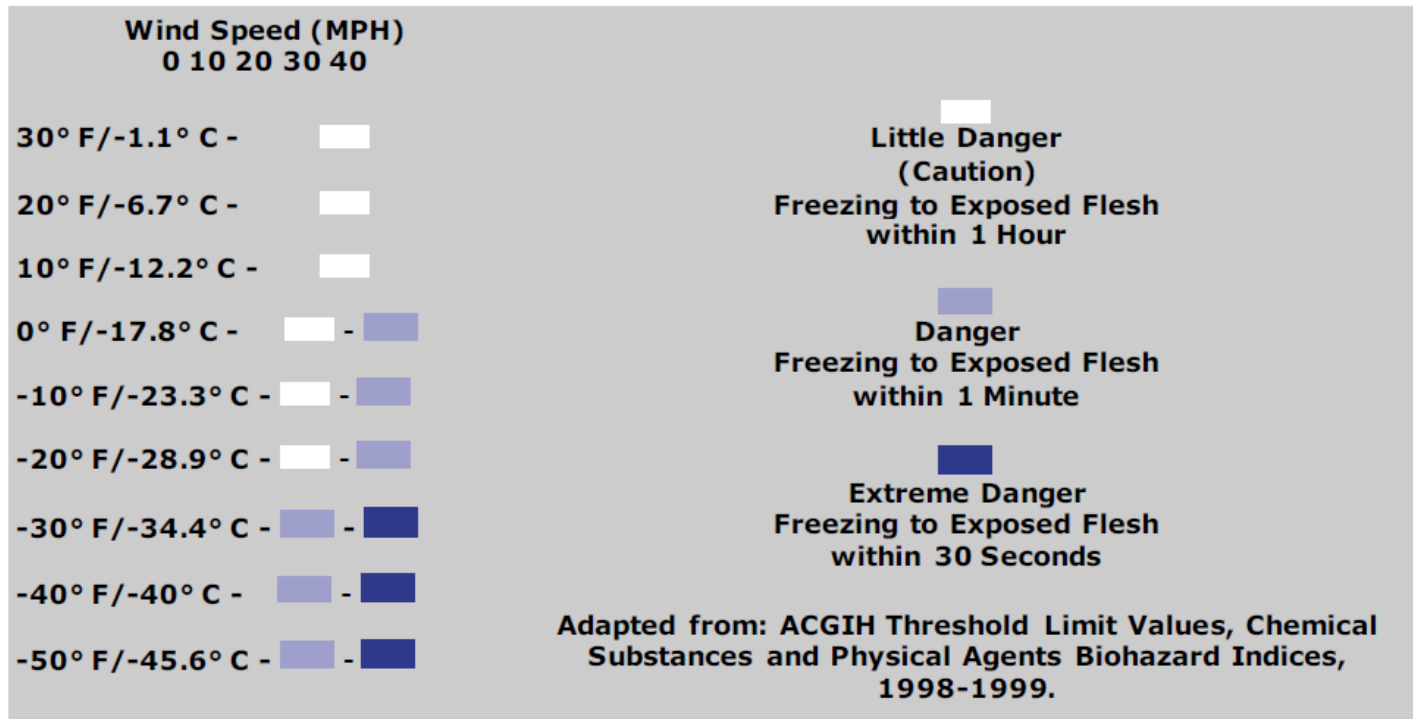
#### **TRAINING REQUIREMENTS**

All Tate Engineering Systems, Inc. employees will be trained on the hazards on working in cold environments. The training will consist of the information contained within this procedure. Retraining will be conducted when warranted by an accident or other evidence of the employee's lack of understanding or compliance with the program.



## APPENDIX A - THE COLD STRESS EQUATION

Low Temperature + Wind Speed + Wetness = Injuries and Illnesses



## APPENDIX B - WIND CHILL CHART

