

# INDUSTRY WIDE LABOR-MANAGEMENT SAFETY COMMITTEE

## SAFETY BULLETIN #34

### GUIDELINES FOR WORKING IN EXTREME COLD TEMPERATURE CONDITIONS

#### INTRODUCTION

When working in cold conditions, the two most common hazards are hypothermia and frostbite. With proper awareness and pre-planning, these hazards can be eliminated.

#### HYPOTHERMIA

Hypothermia is a potentially deadly condition, which results in an abnormally low body temperature. This drop in temperature occurs when the body loses heat faster than it is produced. Anyone exposed to near freezing temperatures for prolonged periods of time should be familiar in the prevention and treatment of hypothermia. A combination of cold, wet and windy conditions will result in hypothermia for anyone who is inadequately prepared and protected.

#### **Certain conditions will increase your risk:**

- Improper dress for the conditions
- Poor physical condition
- Fatigue
- Illness
- Poor diet
- Alcohol, tobacco or drug use

An individual's physiology may affect the body's ability to acclimate, possibly increasing the risk of hypothermia.

#### **Early symptoms of hypothermia are often overlooked, they include:**

- Intense shivering
- Muscle tension
- Fatigue
- Intense feeling of cold or numbness

To some people, these may just seem like normal consequences of exposure to winter conditions. Ignoring these early signs can be very dangerous. If you or a co-worker experience early symptoms of hypothermia, take action.

**Also watch for additional behavioral signs including:**

- Slurred speech
- Difficulty performing tasks
- Loss of coordination
- Lethargy
- Erratic behavior, poor decisions
- Irritability
- Slow breathing and heart rate

At the first sign of any of these conditions, notify your supervisor and seek medical attention (*i.e.*, set medic, studio hospital or medical provider). Go inside and get warm before you attempt to complete the job or project you are working on.

**HYPOTHERMIA PREVENTION**

Preventing hypothermia is not difficult. In fact, it is much easier to avoid hypothermia than to treat it after the fact. You can prevent hypothermia if you pre-plan, know what the conditions are expected to be and plan your clothing accordingly.

**Some clothing tips to remember:**

- Clothing does not warm you, it provides insulation to preserve your warmth; layer your clothing.
- As much as half of your body heat is lost through your head and neck, so keep them covered.
- Keep rain and wind out of your clothing.
- Avoid overheating and sweating by ventilating as needed.
- Wool clothing is best, followed by synthetics; down is okay, if kept dry, but cotton is a bad choice.

**Food and behavior:**

- Watch what you eat, minor changes to your normal behavior are an important step in preventing hypothermia.
- This is not the time for a starvation diet, it is important to maintain your optimal metabolism.
- Take extra steps to stay warm and dry by preventing exposure to wind and water.

**If you are working in cold weather, remember these tips:**

- Do not diet; give your body the appropriate nutrients.

- This will increase your metabolism and help keep you warm.
- Continue to drink fluids; water is best, do not drink alcohol.

**Consider the following:**

- If you do not need to be outside, go inside, even if it is only for a few minutes.
- If you cannot go inside, exercise, jog in place, shake your arms; these activities will increase your circulation and increase heat.

**If someone is showing signs of hypothermia:**

- Hypothermia symptoms should receive medical treatment as soon as possible.
- Prevent further heat loss by sheltering from exposure to wind and water.
- Bring the crew member inside to a warm area, if possible.
- Treat the crew member gently.
- Seek medical attention (i.e., set medic, studio hospital or medical provider).
- Remove any wet clothing and replace with dry clothing.
- Wrap the crew member in blankets and cover their head.
- Caffeine, alcohol, drugs or tobacco should not be used.

**FROSTBITE**

Frostbite is more common than hypothermia. It is the result of the freezing of the extracellular fluid in the skin, which can permanently damage the tissue. This condition usually affects the extremities, such as the tips of fingers, the ears and nose, but other exposed areas can also be affected. Like hypothermia, a combination of elements usually leads to frostbite, not cold air alone. In fact, most frostbite is the result of conduction, the rapid transfer of heat, for example, touching cold metal surfaces with bare hands. Exposure to cold temperatures and wind can quickly result in frostbite.

**Factors that can increase your risk of frostbite are:**

- Improper dress for the conditions
- Poor physical condition
- Fatigue
- Illness
- Poor diet
- Alcohol, tobacco or drug use

**Signs and Symptoms of Frostbite**

Mild frostbite affects the outer skin layers and appears as a blanching or whitening of the

skin. This usually disappears as warming occurs, but the skin may appear red for several hours.

In severe cases, the skin will appear waxy-looking with a white, gray-yellow or gray-blue color. The affected parts will have no feeling and blisters may be present. The tissue will feel frozen or "wooden".

Other indicators are: swelling, itching, burning and deep pain as the area is warmed.

### **Frostbite Prevention**

Just as with hypothermia, frostbite is much easier to prevent than it is to treat. All of the items listed above for hypothermia would also apply for frostbite.

### **Summary**

- Wear proper clothing which insulates from the cold and provides protection from wind, rain and snow.
- Cover your neck and head.
- Protect your hands and feet (mittens are warmer than gloves but may limit activity).
- Keep clothing and shoes loose to ensure good circulation.
- Drink plenty of fluids.
- Do not diet; give your body the appropriate nutrients.
- Alcohol, tobacco or drugs should not be used.
- Keep moving, do not stand still.
- Take breaks to go inside and warm up.
- Never touch a cold metal object with your bare hands.

### **Frostbite Treatment**

If you think you may have frostbite, even a mild case, immediately seek medical attention. The following list will provide some guidelines for treating frostbite:

- Get to a place where you can stay warm after thawing, do not allow the affected body area to refreeze.
- Seek medical attention (i.e., set medic, studio hospital or medical provider); re-warming should be conducted under medical supervision.
- Warm water is best for re-warming; do not rub or massage the area, or use dry heat (such as a sunlamp, radiator or heating pad).
- If blisters are present, leave them intact.

- Alcohol, tobacco or drugs should not be used.

### **GENERAL PRECAUTIONS**

The following are some additional steps the production can take to minimize the risks:

- Monitor local weather forecast information daily and conduct cold stress assessments for all areas.
- Provide adequate heated shelters for cast and crew.
- Maintain a suitable thermometer and anemometer (wind measuring device) at the site; these will be used to determine the equivalent wind chill temperature.
- Charts for establishing acceptable working conditions based on temperature and wind speed are in Addendum 34A, attached.
- Establish safe areas and paths, no wandering or sightseeing, this will reduce the risk of getting lost.