Prevent Cold Stress Injuries & Liability with Exposure Control Plan

If your workers work outdoors or in unheated indoor spaces, you'll need to equip them—physically and mentally—to handle the hazards of cold weather. As a safety coordinator, you know well that frostbite and hypothermia (which, for simplicity's sake, we'll refer to collectively as "cold stress") represent a serious threat that is not to be trifled with. They can paralyze, amputate and kill. But your workers might not get the message until it's too late.

Are you doing enough to protect your workers against the risks of cold-stress? If one of your workers should suffer a serious or fatal cold-stress injury, could you and your company be liable? This article will help you answer that question. We'll look at what the law requires employers to do to safeguard their workers against the dangers of cold stress. We'll also show you how to create an exposure plan to insulate your workers against injury and your company against legal risk. There's a Model Plan below.

What the Law Says About Cold Stress

There is a legal duty to guard workers against cold stress, even though OSHA doesn't have a specific standard on cold stress. The OSHA General Duty Clause (Section 5(a)(1) of the OSH Act) says that every employer must safeguard workers against "recognized hazards" that can cause great bodily harm or death. Cold stress can cause great bodily harm or death. And it's a recognized hazard. As a result, all employers must take steps to protect their workers against cold stress.

Many states also require employers to take specific measures against cold stress.

As you might expect, the OHS laws of all Canadian provinces and territories, without exception, recognize cold stress as a workplace hazard and require employers to take measures to protect workers against it. But the nature of the obligation varies from province to province. There are two basic patterns of regulation.

10 jurisdictions (BC, Fed, NB, NL, NS, ON, PE, QC, SK and YK) directly address cold stress in their OHS regulations and require employers to take specific measures. The level of detail in each regulation varies from provinces to province. So while ON and federal regulations simply state a minimum temperature level an employer must maintain, provinces like QC, BC and SK lay out an array of measures employers are supposed to take.

In the latter provinces, the preferred approach is to implement engineering controls to maintain thermal comfort; if use of engineering controls to eliminate the hazard is not "practicable," employers must use a combination of administrative controls and protective clothing and equipment to manage it. And, of course, employers are also required to warn and educate workers about the dangers of cold stress, including how to recognize and treat the various signs and symptoms of frostbite and hypothermia.

A typical example of a fully developed cold stress regulation is Part 7 of the BC OHS Regulation which requires employers to:

- Conduct a cold stress risk assessment and create an exposure control plan that provides for monitoring and worker education, among other things (Sec. 7.34);
- Implement engineering controls to reduce exposure to levels classified by ACGIH (American Conference of Government Industrial Hygienists) as of "little danger" (Sec. 7.35(1));
- If engineering controls are not "practicable," reduce exposure hazard through the use of administrative controls and PPE (Sec. 7.35(2));
- Provide a "nearby" heated shelter for workers exposed to a thermal environment with an equivalent chill temperature of less than -7o C (-19o F) (Sec. 7.36); and
- Ensure that workers exhibiting symptoms of cold stress are removed from further exposure and treated by a qualified first aid attendant or physician (Sec. 7.38).

Four provinces and territories (AB, MB, NT and NU) don't specifically mention cold stress in their OHS regulations. But, as we hope you know, employers aren't supposed to address only the hazards specifically mentioned in the OHS regulations. All OHS statutes include a General Duty clause requiring employers to furnish workers a safe place to work and take reasonable measures to eliminate foreseeable risks. The four provinces where there are no cold stress regulations interpret their General Duty clauses as applying to cold stress.

Two of these provinces, AB and MB, have issued guidelines setting out the measures employers should take to protect workers against cold stress. Although they don't carry the same legal authority as a regulation, when the government agency of a province prescribes specific guidelines for dealing with a hazard, employers concerned about their liability should give serious consideration to adopting those measures, or at the very least have a compelling justification for not doing so.

Why You Should Create a Cold Stress Exposure Plan

Simply reminding your workers to stay warm and to be careful in the cold isn't enough to protect them or ensure compliance with legal requirements regarding cold stress. You must also educate your workers about the dangers and apply appropriate engineering, administrative and work controls to manage those dangers.

BC and PEI require employers to implement a cold stress exposure plan. The other provinces don't mention anything about a plan; even so, creating such a plan and putting it into effect is a good strategy for protecting workers and managing liability risk no matter what part of Canada you come from.

How to Create a Cold Stress Exposure Plan

There's no such thing as a one-size-fits-all plan for cold stress exposure. Solutions, policies and procedures will vary according to industry, facility type, work process involved and the requirements of your province's law. But the Insider's Model Plan on page x can help you get organized and frame an appropriate plan. The

Model Plan, which is based on the cold stress guidelines prepared by the Government of BC, lays out the fundamental elements a basic plan should include. Just make sure you adapt it to meet your own needs and circumstances.

Like ours, your plan should:

Explain the Plan's Purpose. Help workers understand the dangers they are trying to prevent, such as frostbite and hypothermia, by explaining them in the plan.

Require Periodic Monitoring of Temperature, Wind Chill, and Other Factors. The legal obligation to protect workers against cold stress involves monitoring temperature and wind chill levels. But it doesn't stop there. Your supervisors should also consider whether the worker is performing light, moderate, or heavy work. While moderate work provides a warming effect, heavy work produces perspiration which makes workers more vulnerable to cold stress injuries. Another important factor is whether working conditions are wet – which would require additional protection – or dry.

Require Supervisors to Protect Workers Subject to Cold Exposure. Several provinces – including BC, NL, SK and YK – require employers to provide specific measures for protecting workers, including special equipment such as shelters, warm clothing, hot drinks, and limited work schedules. And virtually every province expects employers to schedule work breaks in accordance with recommendations published by the American Conference of Governmental Industrial Hygienists (ACGIH). You can obtain these recommendations by going to www.acgih.org and searching for "cold stress TLV" (without quotes). For a similar version that you won't have to pay for, take a look at Section G7.35-3 of British Columbia's cold stress guidelines: www2.worksafebc.com/Publications/OHSRegulation/GuidelinePart7.asp.

Insist that Workers Work in Groups. Like heat stress injuries, cold stress problems can creep up on a worker before he realizes what's going on. The best way to protect your workers is to have them work together, putting each worker in charge of another's safety.

Provide for Worker Training. The plan should require somebody at your facility to train all workers and supervisors about the signs, symptoms and prevention of cold stress. Too many workers regard being cold as a mere discomfort, something a "real man" (or woman) wouldn't complain about. Chances are, they don't know much about hypothermia; and, while they've all heard the term "frostbite," not many are likely to understand what the condition is and how it can hurt them. Because warming a person improperly can cause additional damage, your workers should also be trained on the appropriate first aid measures for each form of cold stress.

COLD EXPOSURE CONTROL PLAN

PURPOSE: ABC Company ("Company") is adopting this Cold Exposure Control Plan to ensure that workers are protected from exposure to cold stress injuries such as:

- Frostbite: destruction of body tissue (usually on the face, ears, fingers and toes) that can result in permanent damage and destruction, including amputation.
- Hypothermia: a life-threatening condition where the body's core temperature falls below normal (37°C) due to a sudden or prolonged exposure to cold such as falling into cold water or working outdoors for an extended period.
- Chillblains: mild cold injury due to prolonged and repeated exposure to cold temperatures that results in swollen, red, and itchy or painful skin.
- Trench Foot: cold, swollen, or numb feet that have been subjected to cool water

(often, at above-freezing temperatures) for prolonged periods, resulting in nerve and muscle damage.

These hazards can occur any time that workers are exposed to artificial or natural cold, including cold storage rooms, freezers, and refrigerated transportation units or unheated and outdoor work spaces during cold weather.

POLICY:

1. Supervisors must exercise due diligence for worker safety when assigning work in cold environments by monitoring and taking the following into account:
    - Air temperature;
    - Wind chill factor;
    - Level of work effort (light, moderate, or heavy); and
    - Work conditions (dry or wet).
2. Each supervisor shall ensure that workers are equipped with the following work controls when necessary to protect against cold stress hazards:
    - Appropriate clothing (including insulated footwear, layered garments, head coverings, and gloves or mittens) that protects against cold and water and provides traction to prevent slips and falls;
    - Appropriate protective equipment such as insulated sleeping bags and survival equipment that will allow a worker to endure natural elements until rescued;
    - Barricades or other structures to block air or reduce air velocity at the work location;
    - Machine controls and tools that workers may operate without removing protective clothing such as mittens or gloves;
    - Postponement of non-urgent tasks and rescheduling of work activities to allow for work during the warmest part of the day or when the wind is the most calm;
    - Heated shelters and warm liquids; and
    - Increased time to acclimatize to cold temperatures.
3. Workers at risk of exposure to the cold shall be permitted to take work/warm-up breaks in accordance with the guidelines recommended by the American Conference of Governmental Industrial Hygienists (ACGIH). In the event they are extremely uncomfortable, they shall be allowed to interrupt their work for an extended time period.
4. All workers subject to cold exposure shall work in groups of at least two workers each so that they may be observed by at least one other designated person in the workgroup. Workers who observe symptoms of cold stress must take the employee to a heated first aid room, contact his or her supervisor, and (if appropriate) call immediately for medical assistance.
5. All workers with the potential for exposure to conditions that could cause cold stress shall receive initial and annual refresher training on:
    - Recognizing signs and symptoms of cold stress illnesses and injuries;
    - Cold stress prevention, including proper clothing habits and safe work practices;
    - Factors that could increase the risk of cold stress injuries and illnesses, such as caffeine or alcohol consumption and direct contact with metal surfaces;
    - Increased risks associated with handling materials and equipment in extreme temperatures; and
    - Proper first aid response and emergency procedures for responding to cold injuries and illnesses.