OVERVIEW

TITLE: Avalanche Assessment and Safety Plan

Part 4, General Conditions
Section 4.1.1, Snow avalanche assessment

1. NATURE OF THE PROBLEM TO BE SOLVED

In 2007, amendments were proposed to Part 4 of the Occupational Health and Safety Regulation to expand the avalanche regulations to apply to all workplaces where a risk of avalanche exists (as opposed to apply to forestry operations alone as was the case prior to the amendments). The amendments also specified the standard for avalanche risk assessments and established qualifications to perform avalanche risk assessments and develop avalanche safety plans. The proposed amendments were taken to public hearings in 2007 and 2008 and came into effect on September 1, 2009.

Following introduction of the avalanche amendments, a number of implementation issues arose, including reference to CAA guidelines that were not intended to serve as a comprehensive guide, inappropriate scope of practice for qualified registered professionals and qualified avalanche planners, and the questionable relevance of several of the prescriptive measures imposed. As a result, the Senior Vice President, Operations issued a VP Directive to delay enforcement of section 4.1.1.

2. PURPOSE OF THE PROPOSED AMENDMENT

The purpose of the proposed amendments is to introduce effective avalanche risk assessment regulations that apply to all workplaces where a person working in the workplace is at risk from an avalanche.

3. SOURCE OF REQUEST

WorkSafeBC Worker and Employer Services
Canadian Avalanche Association
Policy and Practice Consultative Committee
Ministry of Transportation and Infrastructure
Various employers
PART 4: GENERAL CONDITIONS

BUILDINGS, STRUCTURES, EQUIPMENT AND SITE CONDITIONS

4.1.1 In this section:

“active avalanche safety program” means a program for monitoring daily, or more frequently if conditions warrant, the weather, snow and avalanche conditions, determining temporal fluctuations of avalanche hazards and implementing safety measures, closures or other methods specified in the program to reduce avalanche risk that has not been mitigated through use of passive measures;

“avalanche” means snow avalanche;

“avalanche risk assessment” means an assessment, done in accordance with CAA guidelines, of the terrain in and surrounding a workplace to determine if any person working at the workplace is at risk from a snow avalanche;

“avalanche risk zone” means a workplace or part of a workplace where an avalanche risk assessment determines that avalanches pose a risk to any person working at the workplace and risk control measures are required to make the area safe for work to be conducted;

“avalanche safety plan” means a documented plan meeting CAA guidelines, specifying passive measures to mitigate or reduce the avalanche risk to any person working at the workplace and any active avalanche safety program necessary to monitor and manage any avalanche risk that has not been mitigated through use of passive measures;


“passive measures” means the application of CAA guidelines and other relevant standards and practices in engineering, geoscience and forestry to worksite and facility planning, location, design and use to mitigate or reduce the risk from avalanches without reliance on an active avalanche safety program, and may include the design and construction of physical defenses against avalanches;

“qualified avalanche planner” means either of the following:

(a) a qualified registered professional;

(b) a person who

(i) has training and experience in the development and implementation of active avalanche safety programs and is

(A) a professional member of the Canadian Avalanche Association,

(B) a certified guide and a member of the Association of Canadian Mountain Guides, or

(C) a certified guide and a member of the Canadian Ski Guide Association, and
(ii) on and after September 1, 2011, meets the requirements of the CAA Recommended Minimum Training and Experience for Qualified Avalanche Planners published by the Canadian Avalanche Association in August 2008.

(2) Before work commences in a workplace where there is or may be a risk from an avalanche to a person working in the workplace, an avalanche risk assessment must be prepared as follows:

(a) for workplaces involving buildings, construction, logging, transportation corridors or other work areas that will be occupied by any person working in the workplace on a permanent, seasonal or scheduled basis, by a qualified registered professional;

(b) for wilderness operations where any person working in the workplace undertakes short-duration activities in undeveloped terrain, by a qualified avalanche planner.

(3) If an avalanche risk assessment conducted under subsection (2) identifies an avalanche risk zone, no work may be conducted in the avalanche risk zone at any time when snow conditions have the potential to create an avalanche unless an avalanche safety plan has been developed and implemented.

(4) If any part of an avalanche safety plan

(a) requires passive measures, that part must be prepared by a qualified registered professional, and

(b) requires an active avalanche safety program, that part must be prepared by a qualified avalanche planner.

(5) If the avalanche safety plan required by subsection (3) includes an active avalanche safety program, a copy of that active avalanche safety program must be readily available to each person who administers or implements the avalanche safety program for the workplace.

(6) An avalanche safety plan must be reviewed to ensure that the plan is appropriate and relevant to the conditions and activities for the workplace as follows:

(a) whenever there is a significant change to the workplace activities contemplated by the plan;

(b) whenever there is a significant change to the surface terrain or forest cover in or surrounding the workplace.

(7) An active avalanche safety program must be reviewed to ensure that the program is appropriate and relevant to the conditions and activities for the workplace at least once every 60 months.

(8) The review required under subsection (6) or (7) must have any passive measures reviewed by a qualified registered professional and any active avalanche safety program reviewed by a qualified avalanche planner, and following the review the avalanche safety plan must be amended as necessary by the person or persons who conducted the review.

(9) On and after September 1, 2011, every active avalanche safety program approved before September 1, 2011 must have been prepared by, or reviewed and approved by,
(a) a qualified registered professional, or
(b) a qualified avalanche planner who is not a qualified registered professional but who meets the requirements of the CAA Recommended Minimum Training and Experience for Qualified Avalanche Planners published by the Canadian Avalanche Association in August 2008.

(10) If an avalanche safety plan specifies procedures to be followed by persons working in an avalanche risk zone, each person working in the risk zone must be trained in, and comply with, any procedures applicable to that person’s work.

Avalanche risk assessment and safety plan

“avalanche risk assessment” means the assessment referred to in subsection (2) (a);
“avalanche safety plan” means the plan referred to in subsection (2) (b);
“avalanche safety program” means the program referred to in subsection (6);
“avalanche” means snow avalanche.

(2) Subject to section 4.1.2, if a person working at a workplace may be exposed to a risk associated with an avalanche, the employer must ensure that no work is carried out at the workplace until

(a) a written avalanche risk assessment is completed, and
(b) if the avalanche risk assessment indicates that a person working at the workplace will be exposed to a risk associated with an avalanche, a written avalanche safety plan is developed and implemented.

(3) The avalanche risk assessment must be conducted by a qualified person.

(4) In conducting the avalanche risk assessment, the qualified person must consider all of the hazards and risks associated with an avalanche, including, without limitation, the following:

(a) the topography and vegetation in the area of the workplace;
(b) the snow conditions in the area of the workplace;
(c) the history of avalanches in the area of the workplace;
(d) the nature and duration of work activities to be carried out at the workplace;
(e) the extent, if any, to which the nature and duration of work activities to be carried out at the workplace may affect the topography, vegetation or snow conditions in the area of the workplace;
(f) the nature of the workplace and the buildings and structures at the workplace.
(5) The avalanche safety plan must be developed by a qualified person, and subject to subsection (6), must include measures to eliminate the risks associated with an avalanche.

(6) If eliminating the risks associated with an avalanche is not practicable, the avalanche safety plan must include measures and procedures to minimize those risks, including an avalanche safety program that provides for

(a) the regular monitoring of weather, snow and avalanche conditions in the area of the workplace, at intervals the qualified person considers will be effective,

(b) the implementation of closures or other measures, as specified in the avalanche safety program, and

(c) safe work procedures to be followed by persons working at the workplace.

(7) If, despite the avalanche safety plan, a person working in a building or structure at the workplace will be exposed to a risk associated with an avalanche, the building or structure must be certified, by a professional engineer, as being capable of withstanding any stresses that an avalanche may impose on the building or structure.

(8) Whenever there is a significant change in the hazards or risks associated with an avalanche in the area of the workplace, the employer must do the following, unless the change is already addressed by the avalanche safety plan:

(a) ensure that a qualified person reviews the avalanche risk assessment and the avalanche safety plan;

(b) make changes to the avalanche risk assessment and the avalanche safety plan, as considered necessary by the qualified person, to reflect the current hazards and risks associated with an avalanche in the area of the workplace.

(9) The employer must make a copy of the avalanche safety program readily available to each person who administers or implements the avalanche safety program for the workplace.

(10) If the avalanche safety plan includes procedures applicable to a person’s work at the workplace,

(a) the employer must provide information and training to the person respecting the procedures, and

(b) the person must comply with the procedures.

Avalanche risk assessment and safety plan exception

4.1.2 (1) Section 4.1.1 does not apply to work carried out to evaluate whether a person working at the workplace may be exposed to a risk associated with an avalanche.

(2) Section 4.1.1 does not apply if compliance with that section is not practicable when carrying out the following types of work at a workplace where a person may be exposed to a risk associated with an avalanche:

(a) work that is carried out intermittently, involves moving through the workplace without stopping for a significant length of time in a particular area of the workplace and has minimal potential to trigger an avalanche;
(b) work related to an emergency;  
(c) work carried out to complete an avalanche risk assessment or to develop an avalanche safety plan under section 4.1.1 (2).

(3) Before a person carries out work to which subsection (2) applies, the employer must ensure that

(a) written safe work procedures are in place to minimize the risks associated with an avalanche, and  
(b) the person

(i) understands the risks associated with an avalanche, and  
(ii) is trained in the procedures referred to in paragraph (a).

(4) The safe work procedures required under subsection (3) must be developed by a qualified person and must set out the following:

(a) the qualifications and training a person must have in order to be eligible to carry out work to which subsection (2) applies;  
(b) the procedures the person must follow to identify and address risks associated with an avalanche;  
(c) the requirements the person must comply with when using equipment.

(5) A person carrying out work to which subsection (2) applies must comply with the safe work procedures required under subsection (3).

Explanatory Notes:

Currently, section 4.1.1 of the Occupational Health and Safety Regulation (“OHSR”) requires that, for every workplace where there is or may be a risk from an avalanche, an avalanche risk assessment be conducted by a qualified avalanche planner (“QAP”) or a qualified registered professional (“QRP”), depending on the nature of the workplace. Industry stakeholders have advised WorkSafeBC that there are not enough QAPs or QRPs to meet the demand for snow avalanche assessments. Employers cannot, therefore, meet the requirements of section 4.1.1. As a result of the implementation issues with current section 4.1.1, the Senior Vice President, Operations issued a VP Directive to delay enforcement of this section.

The purpose of the proposed amendments is to address the implementation issues with current section 4.1.1 and introduce avalanche assessment regulations that employers are able to comply with. Under the amended regulations, employers will be required to ensure that a qualified person conducts a risk assessment and develops an avalanche safety plan to eliminate, where practicable, or minimize the risks to persons working in the workplace.

It is proposed to delete current section 4.1.1 in its entirety and replace it with new requirements relating to avalanche risk assessments and safety plans.

Proposed section 4.1.1(1) contains definitions for four key terms used in the regulation: “avalanche risk assessment”, “avalanche safety plan”, “avalanche safety program”, and “avalanche”. The definitions are provided for clarity.

Proposed section 4.1.1(2) requires employers to ensure a written avalanche risk assessment is conducted when a person working at the workplace may be exposed to risk from an avalanche. If the
avalanche risk assessment identifies a risk, the employer must ensure an avalanche safety plan is developed and implemented.

Under the proposed new requirements, risk assessments will no longer need to be prepared by a QAP or QRP; this will address the implementation issues with the current regulation regarding the shortage of available QAPs and QRPs to perform this work. Instead, proposed section 4.1.1(3) specifies that the avalanche risk assessment must be conducted by a “qualified person”. Section 1.1 of the OHSR defines “qualified” to mean “being knowledgeable of the work, the hazards involved and the means to control the hazards, by reason of education, training, experience or a combination thereof”.

Proposed section 4.1.1(4) outlines hazards and risks that must be considered when conducting the avalanche risk assessment. This is not an exhaustive list; all other risks and hazards relating to an avalanche must also be considered as part of the assessment.

Proposed section 4.1.1(5) specifies that the avalanche safety plan must be developed by a qualified person. This new regulation will eliminate the current requirement to have QAPs or QRPs prepare the avalanche safety plan. Proposed subsection (5) also specifies that the avalanche safety plan must include measures to eliminate the risks associated with an avalanche.

Proposed section 4.1.1(6) applies if it not practicable to eliminate the risks associated with an avalanche. In that case, the avalanche safety plan must include an avalanche safety program that includes measures and procedures to minimize the risks.

Proposed section 4.1.1(7) requires buildings and structures to be certified by a professional engineer where a person working in a building or structure at the workplace is exposed to a risk associated with an avalanche, despite the measures and procedures implemented under the avalanche safety plan. Where, as a result of the avalanche safety plan, a person working in a building or structure is not exposed to a risk associated with an avalanche, the requirement for engineering certification does not apply.

Proposed section 4.1.1(8) applies whenever there is a significant change to any of the hazards or risks associated with an avalanche in the area of the workplace. The employer is required to ensure the avalanche risk assessment and avalanche safety plan, which includes the avalanche safety program, are reviewed by a qualified person and to make changes to the avalanche risk assessment and avalanche safety plan as necessary. The avalanche risk assessment and avalanche safety plan do not have to be reviewed by a qualified person where the change has already been considered and addressed in the avalanche safety plan.

Proposed section 4.1.1(9) requires the employer to provide a copy of the avalanche safety program to each person who administers or implements the program for the workplace.

Proposed section 4.1.1(10)(a) requires the employer to train each person in the procedures contained in the avalanche safety plan that are applicable to that person’s work. Proposed section 4.1.1(10)(b) requires each person to comply with the procedures in the avalanche safety plan that are applicable to his or her work.

Proposed new sections 4.1.2(1) and (2) provide exceptions to the requirements of section 4.1.1. The purpose of proposed sections 4.1.2(1) and (2) is to account for situations where it is not practicable to formalize a written risk assessment prior to the worker entering the workplace due to the nature of the work being performed. “Practicable” is defined in Part 1 of the OHSR to mean “that which is reasonably capable of being done.”

Proposed section 4.1.2(1) applies to work carried out to evaluate whether proposed section 4.1.1 applies to the workplace (i.e. to determine if a person working at the workplace may be exposed to a risk associated with an avalanche). In this situation, there is no need to perform a risk assessment and develop an avalanche safety plan until after a determination has been made that a risk exists.
The types of work to which proposed section 4.1.2(2) would apply includes work that is relation to an emergency or to the conducting of an avalanche risk assessment/development of an avalanche safety plan. It also includes work that is intermittent (e.g. work that is sporadic/periodic, is not carried out at that workplace often, or is not in the normal course of work), involves continuously moving or travelling through the portion of the workplace where the avalanche risk is present, and has minimal potential to trigger an avalanche (e.g. activity that is not likely to generate significant air or ground vibration). Timber cruising, surveying, and wildlife studies are occupational activities that could fall into this category.

In situations where section 4.1.2(2) applies, the employer would be required to have written safe work procedures in place to minimize the risk to workers. The safe work procedures must be developed by a qualified person and set out, at a minimum, appropriate training and qualifications, procedures to be followed to assess risks, and requirements for the use of equipment. The employer will also be required to ensure the person working in the workplace understands the risks associated with an avalanche and is trained in the safe work procedures.