

20.5



July 12, 2007

Cliff: 159032

Policy and Research Division
 WorkSafeBC
 P.O. Box 5350 Station Terminal
 Vancouver BC V6B 5L5

Dear Sir:

Re: Proposed regulatory amendments:
4.1.1, Terrain stability assessment;
4.1.2, Avalanche assessment;
20.14.1, Fills;
20.14.2, Stockpiles;
20.14.3, Unstable face of a stockpile.

This submission is the BC Ministry of Transportation's (the Ministry) response to the above noted draft amendments to the *Occupational Health & Safety Regulation (the Regulation)*, and is provided in support of our oral presentation at the June 19, 2007 public hearing. Each of the proposed sections are discussed separately as follows.

4.1.1, Terrain stability assessment

WorkSafeBC has proposed the following draft amendment to the *Regulation*:

4.1.1 Terrain stability assessment

- 1) *In this section, "terrain stability assessment" means an investigation and analysis of the terrain in and surrounding a workplace to determine if the workplace is at risk from a landslide or other unstable ground condition that exists or is likely to develop during work, and includes recommendations for*
 - a) *measures to eliminate or reduce the risk to people working in the workplace, and*
 - b) *procedures to be followed by persons working in the workplace.*

- 2) *Before work commences in a workplace where there is or may be a risk to a person working in the workplace from a landslide or other unstable*

ground condition, a qualified registered professional must conduct a terrain stability assessment.

- 3) *If a terrain stability assessment identifies a risk described in subsection (2), the measures recommended by the qualified registered professional to eliminate or reduce the risk to people working in the workplace must be implemented before work commences.*
- 4) *If a terrain stability assessment has recommended procedures to be followed by people working in a workplace, every person working in that workplace must be trained in, and comply with, any procedures applicable to that person's work.*

Discussion

The Ministry has long recognized that excavation and construction work may create or exacerbate unstable terrain. When constructing highways the Ministry follows a process by which the geotechnical conditions of the terrain are evaluated and then considered in the design and specifications for the work. Measures to address terrain instability and risks from landslides or other unstable ground conditions are thus integrated into the initial engineering and subsequent construction process. Road construction in the municipal sector utilizes a similar method. The Ministry feels that this approach meets the intent of this draft amendment in addressing the risks of unstable terrain, in spite of the fact that at no point is a document produced which could be termed a "*terrain stability assessment.*"

Recommendation

The Ministry suggests that this amendment be modified to recognize that there are a number of approaches to dealing with terrain stability with wording such as:

4.1.1 Terrain stability

- 1) ***Before work commences in a workplace where there is or may be a risk to a person working in the workplace from a landslide or other unstable ground condition, a qualified registered professional must assess the stability of the terrain.***
- 2) ***If the assessment of the terrain stability identifies a risk from a landslide or other unstable ground condition, the qualified registered professional must consider the risk in any design and specifications for the work.***
- 3) ***If there is no engineered design and specifications for the work then the qualified registered professional must make recommendations for:***

- a) *measures to eliminate or reduce the risk to people working in the workplace, and*
 - b) *procedures to be followed by persons working in the workplace.*
- 4) *The recommendations must be implemented before work commences. If the recommendations include procedures to be followed by people working in a workplace, every person working in that workplace must be trained in, and comply with, any procedures applicable to that person's work.*

4.1.2, Avalanche assessment

WorkSafeBC has proposed the following draft amendment to the *Regulation*:

4.1.2, Avalanche assessment

(1) *In this section:*

"avalanche assessment" means an investigation and analysis of the terrain in and surrounding a workplace to identify any avalanche hazard areas and includes recommendations for

(a) *measures to eliminate or reduce the risk to people working in the workplace, and*

(b) *procedures to be followed by persons working in the workplace;*

"avalanche hazard area" means a workplace or part of a workplace that is at risk if an avalanche occurs;

"avalanche risk watch" means the monitoring of snow conditions by an appropriately qualified person.

(2) *Before work commences in a workplace where there is or may be a risk to a person working in the workplace from an avalanche, a qualified registered professional must conduct an avalanche assessment.*

(3) *If an avalanche assessment identifies an avalanche hazard area, no work may be conducted in the avalanche hazard area at any time when snow conditions have the potential of creating an avalanche, unless an avalanche risk watch is being conducted and the person conducting the avalanche*

risk watch determines that it is safe for people to work in the avalanche hazard area.

(4) If an avalanche assessment has recommended procedures to be followed by people working in an avalanche hazard area, every person working in that area must be trained in, and comply with, any procedures applicable to that person's work.

Discussion

The Ministry has three main concerns with this amendment,

- It is based on the assumption that avalanche assessments and avalanche management will be done exclusively by professional engineers or geoscientists.
- It uses terminology which is different than that currently used in industry.
- It does not recognize or utilize the current body of industry best practices in avalanche management.

The Ministry has reviewed the submission on this matter presented to WorkSafeBC by the Canadian Avalanche Association (the CAA), which articulates these concerns in detail. The Ministry's concerns reflect those described by the CAA.

Recommendation

The Ministry concurs with the CAA in recommending that WorkSafeBC table its current draft of this amendment. Should WorkSafeBC wish to work with industry to develop standards for avalanche safety the Ministry would be pleased to collaborate on such an initiative.

20.14.1, Fills

WorkSafeBC has proposed the following draft amendment to the *Regulation*:

20.14.1 Fills

If an operator of mobile equipment on a fill, or a person working below the crest of the fill, would be endangered by a failure of the fill, the fill must be constructed, used and maintained in accordance with the written instructions of a professional engineer or professional geoscientist.

Discussion

The Ministry's concerns with this proposed amendment are similar to its concerns with draft amendment 4.1.1 regarding terrain stability. Most highway construction makes use of fill to some extent and the potential failure of the fill is addressed by the design and specifications for the project. These might include such considerations as the

composition, depth and compaction of the fill. Thus, measures to address the potential failure of any fill are integrated into the initial engineering and subsequent construction process. Road construction in the municipal sector utilizes a similar method. The Ministry feels that this approach meets the intent of WorkSafeBC's draft amendment and that further written instructions related to construction, use and maintenance are unnecessary.

Recommendation

The Ministry would suggest that this amendment be modified to recognize that there are a number of approaches to dealing with terrain stability with wording such as:

*If an operator of mobile equipment on a fill, or a person working below the crest of the fill, would be endangered by a failure of the fill, the fill must be constructed, used and maintained in accordance with **the design and specifications, or the written instructions, of a professional engineer or professional geoscientist.***

20.14.2, Stockpiles

WorkSafeBC has proposed the following draft amendment to the *Regulation*:

20.14.2, Stockpiles

If mobile equipment is or will be used on a stockpile, the stockpile must be constructed, used and maintained in accordance with the written instructions of a professional engineer or professional geoscientist.

Discussion

The Ministry's concern with this section is the interpretation of the word "on." If it is interpreted to mean "at" then the Ministry feels that this amendment, based upon its own experience, is unnecessary. The Ministry owns hundreds of stockpiles and has had extensive experience in their construction, use, and maintenance. That experience has not indicated that there are inherent hazards with mobile equipment working around or at stockpiles of materials. If "on" is interpreted to mean "on top of" the Ministry would concur with this draft amendment.

Recommendation

To clarify the intent of this draft amendment the Ministry suggests that the ambiguity of this section be eliminated with wording such as:

*If mobile equipment is or will be used **on top of** a stockpile, the stockpile must be constructed, used and maintained in accordance with the written instructions of a professional engineer or professional geoscientist.*

20.14.3, Unstable face of a stockpile

WorkSafeBC has proposed the following draft amendment to the *Regulation*:

20.14.3, Unstable face of a stockpile

The height of an unstable face of a stockpile must not exceed the maximum safe reach of the equipment being used to remove material from the stockpile.

Discussion

This amendment is based upon **Section 20.93** of the *Regulation*, which states:

20.93 Height limitations

In pits, quarries and similar excavations the height of unstable faces must not exceed the maximum safe reach of the excavating equipment being used.

The Ministry feels that this section is an inappropriate model to address stockpile safety. In a pit or an excavation the gravel or soil which forms the face may have enough cohesion to form a vertical face or even an overhang. A vertical or overhanging face may create a hazard if the face should collapse onto any excavating equipment. However, the face of a stockpile is commonly made up of free running material which, when excavated, will settle to a natural angle of repose. The Ministry would refer WorkSafeBC to **Sections 6.23.4 & 6.23.5** of the *Health, Safety and Reclamation Code for Mines in British Columbia 2003*, which the Ministry feels is a more appropriate model for regulatory language regarding stockpile safety than **Section 20.93** of the *Regulation*:

- 6.23.4 *Where material is being worked or removed, the vertical component of the mining face shall not be greater than 2 meters beyond the reach of the loading equipment.*
- 6.23.5 *Sections 6.23.3 and 6.23.4 do not apply*
(1) where material is removed by backhoe, excavator, dragline or similar equipment operating from above the face that it is excavating, or
(2) where a multiple bench system of mining is being carried on in accordance with conditions authorized by the chief inspector, or
(3) where the material is free running and the slope does not exceed 60 degrees or 30 meters in length.

Recommendation

To recognize the fact that working on the face of a stockpile presents less of a hazard than working on the face of a gravel pit the Ministry would suggest the following wording for this amendment:

*The height of an unstable face of a stockpile must not exceed the maximum safe reach of the equipment being used to remove material from the stockpile **unless the material is free running and the slope does not exceed 60 degrees from the horizontal.***

Respectfully submitted,

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From: Mortimer, Scot TRAN:EX [Scot.Mortimer@gov.bc.ca]
Sent: Friday, July 13, 2007 2:10 PM
To: Regulation Review - External Queries (SM)
Subject: Ministry of Transportation Submission
Attachments: MoT Reg Sub.pdf

Please find attached the Ministry of Transportation's submission with regard to the following proposed regulatory amendments:

- 4.1.1, Terrain stability assessment,
- 4.1.2, Avalanche assessment,
- 20.14.1, Fills,
- 20.14.2, Stockpiles, &
- 20.14.3, Unstable face of a stockpile

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