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Briefs

Proposed amendments to Occupational Health & Safety Regulation Part 5, Chemical and biological agents: ACGIH TLVs proposed for adoption as new, revised or retained BC exposure limits; and Part 20, Construction, excavation and demolition: concrete pumping

A PDF of the complete submission can be found here.

Introduction

The BC Federation of Labour (“Federation”, “BCFED”) appreciates the opportunity to provide our submission with respect to the proposed amendments to:

Part 5: Consultation on proposed occupational exposure limits based on the new or revised or retained 2016, 2017, and 2018 the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) for selected chemical substances; and

Part 20: Construction, excavation and demolition: Concrete pumping

The Federation represents more than 500,000 members of our affiliated unions, from more than 1,100 locals working in every aspect of the BC economy. The Federation is recognized by the Workers' Compensation Board (WCB) and the government as a major stakeholder in advocating for the health and safety of all workers in BC and full compensation for injured workers and their surviving dependents.

The BCFED is pleased with the implementation of the pre-consultation process with stakeholders to discuss the proposed occupational exposure limits (OEL) revisions.

This submission was prepared in consultation with our affiliates.

Submission:

Part 5: Consultation on proposed occupational exposure limits based on the new or revised 2016, 2017, and 2018 ACGIH TLVs for selected chemical substances

Each year the ACGIH publishes a list of substances for which they have set new and revised TLVs, retained TLVs or withdrawn TLVs. ACGIH is a scientific organization that publishes guidelines for occupational exposure limits for workplaces.

A TLV is an airborne concentration of a chemical substance where nearly all workers are believed to experience no adverse health effects over a working lifetime.

The BCFED has expressed concern in past submissions regarding the ACGIH's cautionary statements about the use of their list of TLVs by statutory bodies:

- *ACGIH® proposes guidelines known as TLVs® and BEIs® for use by industrial hygienists in making decisions regarding safe levels of exposure to various hazards found in the workplace.*
- *ACGIH® is not a standard setting body.*

- *Regulatory bodies should view TLVs® and BEIs® as an expression of scientific opinion.*
- *TLVs® and BEIs® are not consensus standards.*
- *ACGIH® TLVs® and BEIs® are based solely on health factors; there is no consideration given to economic or technical feasibility. Regulatory agencies should not assume that it is economically or technically feasible to meet established TLVs® or BEIs®.*
- *ACGIH® believes that TLVs® and BEIs® should NOT be adopted as standards without an analysis of other factors necessary to make appropriate risk management decisions.*
- *TLVs® and BEIs® can provide valuable input into the risk characterization process. Regulatory agencies dealing with hazards addressed by a TLV® or BEI® should review the full written documentation for the numerical TLV® or BEI®.* ***[1]***

The BCFED continues to be very concerned about the difficulty in finding the ACGIH list of TLVs, as many workers will be unaware that the list can be found in the Guidelines.

The ACGIH list is referenced throughout Part 5: Chemical agents and biological agents in: Section 5.1 Definitions; Section 5.48 Exposure limits; Section 5.57 Designated substances; and Section 5.58 Protective policy, but there is no reference in these sections where to find the ACGIH list of TLVs.

Recommendation

The BCFED again recommends the addition of a note to Part 5 informing users where to find the ACGIH lists of TLVs to provide clarity.

Even more problematic is accessing the list of excluded chemicals. This list, which has grown to over 300 exclusions is found in Policy Item R5.48-1. [2] We are also concerned the list of exclusions does not include the column for notations found in the ACGIH list. The purpose of the notation is explained in the guideline as follows:

> *Notations identify substances considered to be carcinogens, sensitizers and those with adverse reproductive effect under section 5.57 of the OHS Regulation. Section 5.57 deals with requirements for substitution and keeping exposure as low as reasonably achievable below the*

exposure limit. [3]

Anyone, including workers, researching the excluded chemicals list will have to go back to the ACGIH list to find information on the health effects of the chemical exposure.

Recommendation

The BCFED recommends the list of excluded chemicals be amended to include the notations column.

The proposed 2016, 2018 and 2019 new or revised ACGIH TLVs are as follows:

- Boron Trifluoride (8 -hour Time Weighted Average (TWA))
  - Proposal to adopt the revised ACGIH level of 0.1 eight-hr TWA to minimize respiratory tract irritation and pneumonitis;
  - Current ceiling limit of one ppm is maintained because the ACGIH level of 0.7 ppm is outside of the analytical detection range of the validated measurement methods.
- Butyl acetate, all isomers
  - Proposal to adopt the new ACGIH eight-hour TWA of 50 ppm and a 15-minute STEL of 150 ppm to minimize potential for eye and upper respiratory tract irritation;
  - Chemical is widely used as a solvent in manufacturing of food, pharmaceutical products and cosmetics.
- Cyanoacrylates Ethyl and Methyl
  - Proposed adopt the eight-hr TWA of 0.2 ppm to align with ACGIH;
  - Will not adopt 15-min STEL of 1 ppm as this is outside the analytical detection range of the validated measurement methods;
  - Minimize respiratory tract irritation and asthma.
- Dimethylformamide (DMF)

    - Proposed to decrease the WCB eight-hour TWA by adopting the ACGIH TLV for eight-hour TWA as
    - DMF is designated as IARC: 2A and by ACGIH as skin;
    - As a 2A classification DMF is subject to the requirements of Regulation 5.57(1) substitution and Regulation 5.58(1) protective policy;
    - DMF is widely used as a solvent in various manufacturing processes.
- Propyl acetate isomers
    - Proposed to decrease the WCB eight-hour TWA to 100 ppm and the STEL to 150 ppm to align with current ACGIH TLVs to minimize eye, and upper respiratory irritation and central nervous system impairment;
    - These chemicals are used as solvents in a wide variety of manufacturing processes.
- Stearates including Zinc stearate (to be withdrawn)
    - Proposed to decrease the WCB eight-hour TLV to 10 mg/m3 (inhalable) and 3 mg/m3 (respirable) to minimize lower respiratory tract irritation;
    - Stearates are widely used in food, cosmetic and plastics manufacturing.

The BCFED supports the adoption of the proposed lower ACGIH OELs. Obviously, lower levels of allowable exposure provide improved protection for workers.

The WCB proposes to retain the existing OELs for the following substances:

- Aldicarb
    - The WCB proposes to continue to have no TLV as there is no valid sampling method for the 2018 ACGIH TLV of 0.000 mg/m3(IFV);
    - Designated by ACGIH as skin, and exposure can cause cholinesterase inhibition;
    - Aldicarb was used as an insecticide and is no longer registered with Health Canada’s Pest Management Regulatory Agency (PMRA) and application licence expired in 1996;

- In 2010 the use of Aldicarb was discontinued 25 years after 2,000 Americans became ill after eating watermelon contaminated with Aldicarb. [4]

- Allyl Methacrylate
  - The WCB proposes to continue to have no eight-hour, STEL or Ceiling Limit TLV as there is no validated sampling method for the 2018 ACGIH TLV of 1 ppm;
  - Health effects of exposure are potential for liver damage and designation is ACGIH skin;
  - Used as in plastics, and silanes manufacturing.

- Bendiocarb
  - The WCB proposed to continue to have no Els for eight-hour, STEL and ceiling limit as there is no validated sampling method for 2018 ACGIH TLV of 0.1 mg/m3 (IFV);
  - Health effects of exposure is potential for cholinesterase inhibition;
  - A carbamate pesticide that has not been used in the US since 2001 and is not registered with the PMRA, license to use expired in 2013.
- Tert-Butyl hydroperoxide
  - WCB proposes to continue to have no ELS for eight-hour TWA, STEL or ceiling limit as there are no validated sampling method for 2018 ACGIH TLV of 0.1 ppm;
  - ACGIH designation: skin and potential health effects are upper respiratory irritation, mutagenic and reproductive effects;
  - Widely used in the pharmaceuticals and agrochemicals industries.

- Carfentrazone-ethyl

- WCB proposes to continue to have no ELS for current eight-hour TWA as there are no validated sampling methods for the 2018 ACGIH TLV of 1 mg/m3 (inhalable);
- Exposures can potential liver damage and porphyrin effects;
- No ACGIH designation;
- A pesticide currently registered with the PMRA and used as an herbicide defoliant under the name Quicksilver.

- B-Chloroprene

- WCB proposes to maintain current eight-hour TWA of 10 ppm as the 2017 ACGIH TLV of 1 ppm is outside the analytical detection range of validated measurement methods;
- Designated as ACGIH: A2; Skin and IARC: 2B;
- Exposure potential for lung cancer, upper respiratory and eye irritation;
- Used in the manufacturing of neoprene and latex.

- Fludioxonil
  - The WCB proposes to continue to have no ELS for eight-hour, STEL or ceiling limit as there are no validated sampling methods for the ACGIH eight-hour TLV of 1 mg/m3 (inhalable);
  - No designation but exposures have potential to cause liver and kidney damage;
  - Used as an agricultural fungicide on a variety of food crops and currently registered with the PMRA;
  - Reason for proposal to maintain current ACGIH and WCB TLVs of eight-hour 10 mg/m3 and 15-minute 20 mg/m3 is lack of validated sampling methods for 2017 ACGIH TLV.

- Paraquat
  - WCB proposes to maintain the current ELS of 0.5 mg/m3 (total) and 0.1 mg/m3 (respirable) as there are no validated sampling methods for the 2018 ACGIH TLV of 0.05 mg/m3 (inhalable);
  - ACGIH designation as skin;
  - Used as an agricultural herbicide, restricted use in the US and banned in 32 countries including the EU and China;
  - Currently registered with the PMRA but not being marketed until the producer produces a plan approved by Health Canada whereby the product is dispensed with an auto-transferring system to eliminate/minimize contact.

- Thioglycolic Acid and salt
  - WCB proposes to maintain current eight-hour TWA at 1 ppm for Thioglycolic Acid and no ELS for Thioglycolic Acid and salt as there is no validated sampling method of the 2018 ACGIH TLV of 1 ppm;

- ACGIH designations: DSEN, skin;
- Exposure can cause eye and respiratory irritation;
- Wide use in the cosmetics and pharmaceuticals industries.

The BCFED does not support the ever-growing list of excluded substances. The single rational for maintaining current WCB OELs is the lack of validated sampling methods and laboratory analysis for the lower ACGIH OELs. We question the need to continue including pesticides such as Aldicarb and Bendiocarb in the TLV list when they are no longer listed by the PMRA and used in Canada is not approved.

Recommendations

The BCFED again makes the following recommendations in the belief there are other requirements and practices that should be used to deal with chemicals with no OELs to ensure worker health and safety:

1. One of the chemicals on the excluded list is a confirmed human carcinogen and it is unacceptable that workers will continue to be exposed to higher OELs. Carex Canada has released a new report “Burden of Occupational Cancer in Canada” with goal of “describing and identifying occupational exposure and burden estimates by industry and/or province for the most important cancer risk factors in Canada.” The report proposes policy recommendations and workplace opportunities for reducing exposures to occupational carcinogens.[5]
2. The BCFED believes adverse health effects from chemical exposures should carry more weight in the WCB’s OEL Review Committee (OELRC) decision-making process, especially when there is a lack of validated sampling methods and lab analysis, and economic and technical feasibility issues.
3. The BCFED recommends the WCB adopt The National Institute of Health and Safety (NIOSH) process for classifying chemicals without OELs called Occupational Exposure Banding (OEB), also known as hazard banding, a process intended to quickly and accurately assign chemicals into specific categories (bands), which correspond to a range of exposure concentrations

designed to protect worker health. These bands are assigned based on a chemical's toxicological potency and the adverse health effects associated with exposure to the chemical [McKernan et al. 2016]. [6]

4. Part 5, Chemical agents and biological agents, requirements for designated substances, exposure control plans and controlling exposures by elimination and substitution, must be subject to greater WCB enforcement for those chemicals on the excluded list. The WCB 2018 Statistical Report shows a dramatic reduction in the Occupational Hygiene Sampling Activity to 88 samples from 194 in 2017. [7]
5. The "As Low As Reasonably Achievable" (ALARA) principle should be used by the OELRC.
6. The BCFED recommends the WCB use some of the $2.6B surplus to develop an in-house lab that can perform the analysis on the new limits. The WCB should be also be pushing labs to develop and implement updated methods.
7. The BCFED is pleased the WCB has issued a Request for Proposal for research projects to develop, implement and /or validate analytical sampling methods for ACGIH chemicals that have no validated sampling methods and have Limit of Quantification issues.

Priority substances and interests:

a. Chromium (and its different physical and valence states)
b. Diesel exhaust
c. Pesticides
d. Isocyanates
e. Surface sampling, e.g., ACGIH TLV-Surface Limits

8. The BCFED recommends the implementation of an external working group to annually review the OELs. Such a group was in place from 1992 to 1998 and was made up of the WCB, occupational hygienists, researchers, employers and labour.

The BCFED believes while the WCB's go-to method is to maintain current levels of OELs, changes will not be made by employers, professionals, manufacturers and the WCB, and workers will continue to be exposed to dangerous levels of chemicals.

The BCFED would like to remind the WCB Board of Directors (BOD) of their duty to ensure there is a robust and ongoing review process of the ACGIH TLVS:

Under Section 115 of the *Workers Compensation Act* (WCA), the WCB Board of Directors has a general duty to conduct reviews of its regulations including ongoing reviews of the ACGIH TLVs.

> *The Board must undertake a process of ongoing review of and consultation on its regulations to ensure that they are consistent with current workplace practices, technological advances and other changes affecting occupational health and safety and occupational environment.[8]*

Year after year the list of excluded chemicals grows, due mainly to the lack of validated sampling methods for the lower ACGIH levels. The BCFED has for many years and in many submissions consistently recommended there is a need to solve this problem to better protect workers from chemical exposures.

Therefore, we were delighted to hear of the recent agreement between the WCB and the University of Northern BC to provide sampling and analytical capabilities to assess lower levels of exposure.

Recommendations

The BCFED recommends the Policy, Regulation and Research Division (PRRD) present the details of this agreement to the Policy and Practices Consultation Committee this fall.

The BCFED strongly urges the BOD improve funding and resources to the PRRD to continue and expand this leading-edge work.

Conclusion: Part 5

The BCFED is pleased to have participated in the consultation for these amendments to the list of the WCB OELs and we urge the WCB to seriously consider and implement our proposed amendments.

Part 20: Construction, excavation and demolition, concrete pumping

Note: Only the sections of the proposed regulation amendments that the BCFED disagrees with or has recommendations for further amendments will be addressed in this submission.

According to the Explanatory Notes, the purpose of the proposed amendments is to enhance worker safety in construction sites by requiring concrete pump operators to hold a certificate granted by a certification authority designated by the WCB.

Concrete pump operators' certificates are currently being granted by the British Columbia Construction Safety Alliance (BCCSA), a health and safety association for the construction industry and funded by the WCB. The current certification requires applicants to pass a written test and a practical assessment. The BCCSA has not been designated as a certification authority by the WCB.

The BCFED generally supports the proposed amendments to regulate the certification for concrete pump operators and we thank our affiliate union the International Union of Operating Engineers for their assistance with this submission.

Part 20: Section 20.26.4 Duty to ensure operators competence

Section 20.26.1 sub section (1) sets the requirement for an employer to ensure, prior to operation, the person who operates the concrete pump or placing boom is competent and can do so in a safe manner. An employer must consider the following criteria in determining competency,

a. The class or type of concrete pump or placing boom being operated, and
b. The circumstances of the workplace.

The BCFED believes the “circumstances of the workplace” in (b) could better be described by amending to “site specific circumstances.” The word “site” is a commonly used term to describe the workplace, for example a “construction site”.

Recommendation

The BCFED recommends the proposed amendment be further amended to “site specific circumstances” to provide clarity.

Section 20.26.4 (2)

The BCFED supports the clarification that employer’s duty applies to the prime contractor and the owner of the workplace, reinforcing the requirements for employers under the WCA Sections 24 and 25.[9]

Section 20.26.5 Certification authority

Subsection (1) provides the WCB the authority to designate a certification authority for the purposes of the operator certification program.

Subsection (1)(a) requires the WCB to review the certification program to ensure that it meets the requirements of one or more of the following standards:

i. ISO/IEC 17024:2012, Conformity Assessment – General Requirements for Bodies Operating Certification of Persons;
ii. ANSI/ICE 1100: 2019, Standard for Assessment-Based Certificate Programs; and
iii. ASTM International ASTM E2659-18, Standard Practice for Certificate Programs.

The BCFED believes the ISO standard has the most comprehensive requirements and should be the standard with which the certification authority must comply. The 2012 ISO standard was reviewed

and confirmed in 2018.[10] The ISO has been developed with the object of establishing a globally accepted process for assessment and periodic reassessments of the competence of certified workers.

Therefore, the BCFED does not agree it is necessary to include neither the ANSI/ICE 1100:2019 standard nor the ASTM E2659-18 standard as options for the certification authority to develop their program.

Recommendation

The BCFED recommends the ISO/IEC-2012 Conformity Assessment- General Requirements for Bodies Operating Certification of Persons be the only option for program development.

Section 20.26.6 Operator certification

Subsection 20.26.6(4) (a) requires the applicant to have reached a minimum age specified by the certification authority.

The BCFED believes minimum age should not be left up to the discretion of the certification authority but should be described in the regulation. The explanatory notes state the reason for proposing regulatory change to require certification of concrete pump operators is the hazardous nature of this work. Therefore, we believe that the age requirement should be 18 years.

The Industry Training Authority (ITA) has the following policy regarding age requirements for their certified programs:

> *Your age will NOT be a constraint to attend any of these programs as long as you meet all other eligibility.* ***[11]***

Some of the other requirements are a preference for Grade 12 graduation and some levels of practical experience in the field. By the time a student has met these qualifications they will more than

likely have reached 18 years.

Recommendation

The BCFED recommends a further amendment to Subsection 20.26.6(4)(a) to require a minimum age of 18 years.

Subsection 20.26.6 (4)(d) requires the certificate applicant must pay the certification authority a fee that is established by the authority to cover the costs of administering the written test and practical assessment.

The BCFED believes this fee should be paid by the employer as an investment in their training program and their workers. We understand the current fee is $1,500.00. We are concerned that some workers may not be able to afford the fee and as a condition of their employment they may be at risk of losing their job. It is important to embed this requirement in the regulation to protect workers in the future.

Recommendation

The BCFED recommends subsection (4)(b) be further amended to require the employer to pay the fee for the certification.

Subsection 20.26.6 (8)(b) states the certification authority may impose conditions of the certificate relating to “safety matters.” The BCFED believes the term “safety matters” needs to be clarified by further defining the safety matters being considered. This section is connected to Subsection (9)(b) whereby an operator certification can be cancelled if the operator fails to operate the equipment in a competent and safe manner. It is critical that operators have a clear understanding of the meaning of “safety matters” and “safe manner.”

Recommendation

The BCFED recommends the WCB consider further amending Subsections 20.26.6 (8)(b) and (9)(b) to provide clarification on the meaning of “safety matters” and “safe manner.” At a minimum these should be clarified in the guidelines.

Conclusion: Part 20

The BCFED is pleased to have participated in the consultation on the certification for concrete pump and placing boom operators. We agree, as noted in the Explanatory Notes, these are complex pieces of equipment which should be operated by qualified and competent workers. We urge the WCB to seriously consider implementing our proposed amendments.

[1] https://www.acgih.org/tlv-bei-guidelines/tlv-chemical-substances-introduction

[2] https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-policies/policies-part-05

[3] https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-05#EL_Table

[4] https://www.scientificamerican.com/article/toxic-pesticide-banned-after-decades-of-use/

[5] https://www.carexcanada.ca/burden-of-occupational-cancer-in-canada/

[6] https://www.cdc.gov/niosh/topics/oeb/default.html

[7] https://www.worksafebc.com/en/about-us/shared-data/facts-and-figures/statistical-reports page 79

[8] https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/workers-compensation-act/part-2-occupational-health-and-safety#SectionNumber:Part2Div2Sec17

[9] https://www.bclaws.ca/civix/document/id/complete/statreg/19001_02

[10] https://www.iso.org/obp/ui/#iso:std:iso-iec:17024:ed-2:v1:en

[11] https://www.itabc.ca/frequently-asked-questions