February 6, 2024 |

Briefs

Submission to the WCB on Part 5, Occupational exposure limits

Introduction

The BC Federation of Labour (“Federation,” “BCFED”) appreciates the opportunity to provide our recommendations with respect to the proposed amendments for Part 5, Occupational exposure limits.

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,” “Board”) 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.

The BCFED is pleased to have the opportunity to participate in the consultation on proposed occupational exposure limits based on the new or revised American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) for selected chemical substances.

We urge the Board of Directors to seriously consider our recommendations so we meet our goal to ensure that BC health and safety regulations set standards that will prevent workers from injury and death.

This submission was prepared in consultation with our affiliates.

We will address those sections of the regulation that we believe require further amendments.

Submission

Part 5: Consultation on proposed occupational exposure limits based on the new or revised 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Each year the ACGIH publishes a list of substances for which they have set new and revised TLVs, retained TLVs or withdrawn TLVs. The 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]

Despite these cautions, most provinces use the ACGIH list of TLVs (BC, Manitoba, New Brunswick, Newfoundland, Prince Edward Island and Nova Scotia). Ontario sets their own levels of allowable exposures in combination with ACGIH.

The ACGIH list is considered the gold standard for setting OELs by many professionals.

The Chemscape blog accurately describes our concerns, “the reality is their (ACGIH) recommendations are not always adopted due to insufficient technology to control or measure, and lack of funding and political will for regulatory updating and reviews.”[2]

At each yearly WCB TLV review we are presented with a list of chemical TLVs which the ACGIH has recommended lower levels of exposure that are accepted by the WCB and a second list of chemicals with recommended lower levels of exposure that are excluded. The primary reason for the exclusion is insufficient technology to control or measure the chemicals.

Our concern with the growing list of excluded chemicals will be addressed later in this submission.

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 approximately 429 exclusions is found in Policy Item R5.48-1.[3] 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.[4]

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.

The BCFED has made this recommendation in each submission regarding the review of the ACGIH TLVs. We remain disappointed that once again our recommendation has not been implemented by the WCB.

Recommendation

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

The WCB proposes to retain the existing Occupational Exposure Limits (OELs) for twenty substances

The BCFED does not support the ever-growing list of excluded substances. The rational for maintaining current WCB OELs is the lack of validated sampling methods and laboratory analysis for the lower ACGIH OELs.

We are particularly concerned with the exemption of the following chemicals:

1. Sulfoxaflor, a pesticide registered for use in Canada. The health effect designation is ACGIH Reproductive toxin.
2. Thiacloprid, a pesticide registered for use in Canada. The health effect designation is skin and a concern about cancer.
3. Chlordane is designated as an IARC 2B carcinogen. Although it is not currently approved for use in Canada as a pesticide, this chemical was widely used in the agricultural industry before it was banned. Chlordane is bio accumulative and can drift in the air, remaining in soil and water for 20 years, continuing to expose workers.[5]
4. 4-tert-Butylbenzoic has the health effect designation as a reproductive toxin.
5. 4,4'- Methylene bis (2-chloroaniline) is designated by ACGIH as a known carcinogen and is widely used in the manufacturing.
6. Sulfometuron methyl a pesticide used in Canada which can cause blood disorders.

These chemicals have the most serious health consequences for workers. As an example, there are two pesticide exemptions on this list that are designated as a reproductive toxin and a known carcinogen. The 2021 analysis of research into the link between pesticide exposures and cancers "Cancer and occupational exposure to pesticides: a bibliometric study of the past 10 years" found:

> Occupational exposure to pesticides has been identified as a major trigger of the development of cancer. Pesticides can cause intoxication in the individuals who manipulate them through either inhalation, ingestion, or dermal contact. Given this, we investigated the association between the incidence of cancer and occupational exposure to pesticides through a bibliometric analysis of the studies published between 2011 and 2020, based on 62 papers selected from the Scopus database. The results indicated an exponential increase in the number of studies published over the past decade, with most of the research being conducted in the USA, France, India, and Brazil, although a further 17 nations were also involved in the research on the association between cancer and pesticides. The principal classes of pesticides investigated in relation to their role in intoxication and cancer were insecticides, herbicides, and fungicides. The types of cancer reported most frequently were multiple myeloma, bladder

cancer, non-Hodgkin's lymphoma, prostate cancer, leukemia, and breast cancer. Despite the known association between pesticides and cancer, studies are still relatively scarce in comparison with the global scale of the use of these xenobiotic substances, which is related to the increasing demand for agricultural products throughout the world.[6]

Pesticide exposures are found to be harmful to workers' reproductive systems--causing infertility in men and miscarriages, low birth weight and decrease in fertility for women.

Workers most exposed to pesticides work in the agricultural industry. And these workers are most often Indigenous, Black and racialized, migrant and immigrant workers. These workers are less likely to be properly trained in how to apply pesticides and supplied with proper protective wear.

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 higher allowable TLVs 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 Occupational Exposure Limits (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.[7]
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].[8]

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 2020 Statistical Report shows a reduction in the Occupational Hygiene Sampling Activity to 112 samples from 146 in 2019.[9] This is attributed to the COVID-19 pandemic. Now that work activities have resumed, we hope to see an increase in sampling activity in 2023. Unfortunately, sampling activity is unreported in the 2021-2022 statistical reports.
5. The "As Low As Reasonably Achievable" (ALARA) principle should be used by the OELRC.
6. The BCFED recommends the WCB fund the development of an in-house lab that can perform the analysis on the new limits.
7. 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 Board 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 Board 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.**[10]***

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 (UNBC) to provide sampling and analytical capabilities to assess lower levels of exposure. An update on the lab accreditation efforts at UNBC was provided at the pre-consultation meeting on the TLVs. We heard there are challenges to obtaining funding to develop and validate methods which can take years to develop.

Recommendations

Therefore, the BCFED strongly urges the Board of Directors improve funding to the UNBC lab to continue and expand the availability of testing and analysis methods in BC.

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.

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

[2] https://www.chemscape.com/blog/occupational-exposure-limits-in-canada

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

[4] https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-05/5EE_Table

[5] http://www.cec.org/files/documents/publications/1967-chlordane-no-longer-used-in-north-america-en.pdf

[6] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8525621/

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

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

[9] https://www.worksafebc.com/en/resources/about-us/annual-report-statistics/2020-stats/2020-stats?lang=en

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