



# OCCUPATIONAL EXPOSURE LIMITS

SUBMISSION  
TO THE  
MINISTRY OF LABOUR

BY THE  
ONTARIO FEDERATION  
OF LABOUR

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ONTARIO FEDERATION OF LABOUR (CLC) • FÉDÉRATION DU TRAVAIL DE L'ONTARIO

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The Ontario Federation of Labour (OFL) is the central labour organization in the province of Ontario. It has an affiliated union membership of over 700,000 members from all regions of the province. With most unions in Ontario affiliated, membership includes nearly every job category and occupation.

As a province-wide central labour body, the OFL works to develop and coordinate policies as passed at our conventions and by our executive bodies. One of the key roles of the OFL is to try to influence public policies that affect all working people, their families and communities. One of the most important areas of public policy that we try to influence is the prevention of work related injuries and illnesses, including occupational cancers.

We welcome the opportunity to comment on these latest proposed revisions to the Regulation respecting Control of Exposure to Biological or Chemical Agents (O. Reg. 833).

## **INTRODUCTION**

If we are to prevent future occupational disease, we must aim now, to reduce the use of existing toxic substances or processes and provide the framework for development of new, non-toxic substances and processes in production. This goal has much in common with environmental objectives. The successful reduction of toxic substances and processes in the workplace will also play a key role in diminishing environmental pollutants.

## **STATEMENT OF ENVIRONMENTAL VALUES**

In previous consultations on proposed changes to Ontario's occupational exposure limits, we commented on the Ministry of Labour (MOL) Statement of Environmental Values (SEV), which it had prepared as is prescribed under O. Reg. 73/94. According to an earlier version of the statement, one of the ways that the MOL contributes to the environmental well-being of the province is **"encouraging the substitution of hazardous substances with those that are less hazardous."**

We were at that time unable to find a single occasion in which the MOL had actually been "encouraging the substitution of hazardous substances with those that are less hazardous" and concluded that the MOL had not incorporated this commitment into its activities in the field. In previous submissions, we encouraged the MOL to take steps to actually follow through on this commitment.

We see that the MOL has now revised the SEV and has maintained the position that it is “encouraging substitution”. We have yet to see a formal policy and procedure for this. Once again, we encourage the MOL to expedite the development of a formal policy and procedure to address this issue and make the substitution of hazardous substances a priority initiative. A priority initiative should include a priority list of substances that the MOL will target and clear goals for the reduction and elimination of the use of those targeted substances. The MOL needs to prepare a Toxic Use Reduction plan to make this initiative effective.

Substances that the MOL should make a priority to include carcinogens, mutagens and teratogens. In fact the report *Prevention of Occupational and Environmental Cancers in Canada: A Best Practices Review and Recommendations*<sup>1</sup> published in May 2005 identifies substitution as one of the best practices for preventing exposures to carcinogens.

## **MANDATORY SUBSTITUTION**

While a policy of “encouraging the substitution of hazardous substances with those that are less hazardous” would be a nice first step, we feel very strongly that mandatory substitution is needed to drive toxic use reductions to protect the health of workers. The result of a survey by KPMG interestingly enough support our position. The KPMG Canadian Environmental Management Survey of Canadian Corporate Executives reported:

- 16% were motivated to take action on environmental issues when government programs were voluntary and
- 95% were motivated to take action on environmental issues to ensure compliance with government regulations.

The Canada Labour Code and regulations in Newfoundland and Quebec contain substitution requirements. British Columbia also has a limited requirement for substituting toxic substances.

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<sup>1</sup> This Report was prepared by the members of the **National Committee on Environmental and Occupational Exposures**, a tripartite and multi stakeholder sub-committee of the Primary Prevention Action Group of the Canadian Strategy for Cancer Control.

This Canadian strategy is being developed by the Public Health Agency of Canada working in partnership with the Canadian Association of Provincial Cancer Agencies, the Canadian Cancer Society and the National Cancer Institute of Canada and other stakeholders.

In the U.S.A., Massachusetts established the Toxic Use Reduction Act (TURA) in 1989. This law encourages a reduction in the amount of toxins used and generated as a result of an industrial process or operation. It is reportedly the preferred mechanism for complying with all legislation governing workers and environmental health and applies to companies with ten or more full-time workers manufacturing 25,000 pounds or more of a “reportable” toxic substance. TURA requires companies to report on toxin use, not toxin release. Central to TURA is a facility based plan to reduce toxins.

Massachusetts also, provides support for these facilities or companies in the form of training and research into alternative substances. The information accumulated over an eight year period and reported in 1997 demonstrated that companies generated 41 per cent less toxic waste and reduced use of toxic chemicals by 24 per cent.

Ontario would not be breaking new ground by bringing in substitution requirements. Clearly, the MOL would need to work with other ministries in Ontario, to introduce what has been working in Massachusetts for many years.

Massachusetts also established the Toxics Use Reduction Institute (TURI) to aid employers in reducing their reliance on toxic materials.

The Massachusetts experience was used as an example of best practice in the previously discussed report prepared for the Canadian Strategy for Cancer Control. The lack of mandatory substitution requirement was identified as a gap in legislation and government policy in that same report.

According to a report prepared by the Cancer and the Environment Stakeholder Group<sup>2</sup>, Ontario would benefit from the establishment of an institute similar to the TURI. This report was released in August of 2007 and is entitled *Cancer and the Environment in Ontario: Gap Analysis on the Reduction of Environmental Carcinogens*.

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<sup>2</sup> As a result of the action plan described in the *Cancer 2020 report*, the **Cancer and the Environment Stakeholder Group** was created by CCO with support from the CCS with the objective of developing and supporting the implementation of an environmental cancer prevention strategy in Ontario.

Members of the group include health, professional and environmental organizations, charities, and labour groups.

## **TOXIC USE REDUCTION**

In August of 2008, the Ministry of the Environment (MOE) released a discussion paper for a Toxic Reduction Strategy. On September 15, 2008, the MOE held a workshop on this paper in Toronto. While representatives from different levels of government including the provincial government participated, the MOL was conspicuous by its absence.

The MOE claims that it is shifting from its “end of pipe” focus to one of pollution prevention by reducing the use of toxic substances. If the MOL is truly working to encourage substitution of toxic substances then the MOL and the MOE need to work to bridge the silos that the two ministries are currently working in.

## **LABOUR’S CONCERN OVER THE USE OF TLVs**

Our position on the use of the ACGIH TLVs as legal limits is well documented with the Ministry of Labour. We have provided detailed critiques of these limits and the MOL practice of relying on them to protect workers. Our submission to the MOL in March of 2000 on the proposed revisions to the Occupational Exposure Limits provided this information. We do not feel it necessary to reproduce that information as our position has not changed and we refer the Ministry to that document for the details.

We will simply say that the ACGIH TLVs, the MOL is proposing to have been set at levels that protect the interests of employers, not the health of workers.

## **AS LOW AS REASONABLY ACHIEVABLE**

The As Low As Reasonably Achievable (ALARA) principle is widely used in the nuclear industry to reduce worker exposure to levels much lower than the legal limit. The use of OEL tends to be interpreted as permission to expose workers up to the limit. Legal exposure limits, when they are obeyed if at all, tend to be treated like highway speed limits. That is, if the employer finds the workplace at or below the limit, then there is no incentive to reduce exposure further, even when the limits are known to be inadequate. It would be better to treat exposure limits like minimum wage legislation as a minimum standard upon which most workplaces should be expected to improve.

The evidence that the ACGIH TLVs will not protect the health of workers is clear. The government should introduce the ALARA principle as another tool to control worker exposure to toxic substances.

The absence of the use of the ALARA principle was identified as a gap in legislation and government policy in the previously discussed report prepared for the Canadian Strategy for Cancer Control.

## **ACTION LIMITS**

The use of "action limits" to trigger exposure reduction efforts before the Time Weighted Average (TWA) limit is reached should be another tool to protect the health of workers. Once again, we addressed this in detail in our March 2000 submission.

## **PRIOR TOXICITY TESTING**

One method of preventing new toxic substances or processes from being introduced into the workplaces is to require prior toxicity testing. The requirement to add toxicity testing to the research and development phase of new products and processes will help to bring occupational health concerns into the earliest stages of planning and design of production instead of being afterthoughts.

Prior toxicity testing is an important part of a preventive regulatory strategy to stop the introduction of new, highly toxic substances into the workplace. It forces health and safety considerations to the top of the agenda in the introduction of new substances to the workplace and to the economy.

The lack of toxicity data including carcinogenicity was identified as a gap in legislation and government policy in the previously discussed report prepared for the Canadian Strategy for Cancer Control.

## **BIO-HAZARDS**

One very important method for protecting workers from bio-hazards is to introduce a regulation requiring the use of safety-engineered sharps. Manitoba has already passed legislation requiring the use of safety-engineered devices and Saskatchewan is in the process of drafting a regulation. Ontario should follow this lead.

## CONSTRUCTION

The OFL has raised concerns in a number of submissions that those working in the construction sector do not even have even the same minimal protection for toxic substances provided to workers in other sectors.

Section 2 of Ontario Regulation 833 Respecting Control of Exposure to Biological or Chemical Agents specifically excludes construction workers from any restriction in the amount and duration of exposure to hazardous chemical substances in their workplaces. This section reads, “This regulation does not apply at a project and to an employer who primarily carries on the business of construction or to workers of such employer.”

We have argued that if the Ministry of Labour is serious about its stated commitment to make Ontario workplaces among the safest in the world, it needs to end this discrimination against construction workers. Unfortunately, we have been ignored each time we raise this issue.

We would like to point out that equality before and under the law and equal benefit of the law without discrimination is guaranteed by section 15 of the Canadian Charter of Rights and Freedoms.

It is the opinion of the Ontario Federation of Labour that the Ontario Ministry of Labour may be violating the equality rights under section 15 of the Canadian Charter of Rights and Freedoms by denying workers in the construction sector a statutory protection enjoyed by other occupational groups in Ontario.

Further, the OFL feels that there is a positive obligation on the Ontario government to provide legislative protection of occupational health hazards for workers in the Ontario construction sector equal to that provided to other occupational groups in Ontario.

Section one of the charter does allow some limits to the guaranteed rights. That section reads as follows:

“The Canadian Charter of Rights and Freedoms guarantees the rights and freedoms set out in it subject only to such reasonable limits prescribed by law as can be demonstrably justified in a free and democratic society.”

We would argue that excluding workers in the construction sector from the legislated occupational exposure limits enjoyed by other occupational groups is not a “reasonable limit” nor can it be “demonstrably justified in a free and democratic society.”

The Ontario government should now follow through on its moral, and we would argue constitutional, obligation to provide this legislative protection for workers in the construction and building trades by enacting the changes into law.

## **SECONDARY VICTIMS**

Controls protecting workers also protect family members and those in the surrounding community. The spread of toxins is not stopped at the employer's door. Toxic substances are often unknowingly brought home, exposing members of the worker's family. There are known cases where spouses and children of asbestos workers have died as a result of contracting mesothelioma. The only known cause of mesothelioma, a cancer of the lining around the lungs, is inhalation of asbestos fibres.

In addition, many substances affect the reproductive outcomes of workers and their spouses. These outcomes include visible birth defects, learning disabilities, or problems with social integration. For women workers, even after delivering a healthy baby, there is the issue of breast milk contamination. Some toxic substances are stored by the body in the tissues of a woman that are used to produce milk. These contaminate then concentrate in the breast milk. In the case of the environmental contaminant, dioxin, the average breast-fed baby receives its total recommended maximum lifetime dose of dioxin in the first six months of its life.

Providing workers with real protection from toxic substances will also reduce the toll of secondary victims. Unlike working people, these victims have the right to sue for damages.

## **PROTECTIVE REASSIGNMENT**

Quebec has had a requirement for protective reassignment for pregnant women or nursing mothers for many years. This provision is very important for women workers and their children who may be exposed to harmful chemicals. The Canada Labour Code also has provisions providing protective reassignment of pregnant and breast-feeding workers. Ontario needs a similar provision to protect the workers and their children.

Recent research involving the Motherisk Program at the Hospital for Sick Children in Toronto has demonstrated that the children of women exposed to organic solvents in the workplace had neurodevelopmental problems as a result. This research published in the journal, *Archives of Pediatrics and Adolescent Medicine* in October 2004, found that these children have poorer language, memory and attention skills and were more hyper-active. The researchers concluded, in part, "that reducing exposure in pregnancy is merited."

Another study published in *Neurotoxicology* in August of 2005 found vision abnormalities in young children who were exposed prenatally to organic solvents. These findings were so significant that it stimulated the researchers to conclude that there is a “need for a re-evaluation of current occupational exposures for pregnant women”.

Previous research has also found that children exposed in utero to workplace toxins suffered lasting effects from those exposures including major foetal malformations. Other researchers have concluded that women's exposure to organic solvents should be minimized during pregnancy.

Given the scientific evidence, the MOL has a moral obligation to protect the next generation by passing protective reassignment legislation for pregnant women and nursing mothers.

## **OTHER ACGIH GUIDELINES**

The ACGIH TLV booklet has sections dealing with ergonomics, ionizing and non-ionizing radiation fields and thermal stress. The MOL should adopt these limits in addition to the TLVs.

The regulation should also contain a clause requiring any new or existing ventilation system intended to limit inhalation exposure to a regulated substance to meet or exceed the applicable design specifications and operating parameters recommended in the ACGIH Industrial Ventilation Manual.

## **PRECAUTIONARY PRINCIPLE**

The precautionary principle is an approach to eliminating hazards before they cause harm. We have provided detailed comments on this in our previous submission and refer the MOL to that section.

One of the most substantive developments in this area is new legislation entitled Recognition, Evaluation, and Authorization of Chemicals (REACH), which has been proposed by the European Union. This initiative attempts to remedy the prevailing policy failure that has allowed thousands of substances to be introduced into workplaces without adequate knowledge about their environmental or health effects. REACH explicitly restricts the use of carcinogens and mutagens, and forces consideration of alternatives as part of the chemical licensing process.

This government has an opportunity to become proactive in the approach to protecting the health of working people and their families. This can be done by adopting the precautionary principle approach to the introduction of new substances, processes or job designs into a workplace. The lack of a precautionary principle approach was identified as another gap in legislation and government policy in the previously discussed report prepared for the Canadian Strategy for Cancer Control.

This report also identifies REACH as one of the best practices for preventing exposures to carcinogens.

The Ontario Ministry of the Environment now references the precautionary principle as one of its guiding principles in its decision making process. This despite the fact that the precautionary principle is not referenced or defined in the Environmental Protection Act.

## **BANNING/LICENSING TOXIC SUBSTANCES**

Prohibiting or restricting the use of highly toxic substances is an effective method to protect workers from the unnecessary use of highly toxic substances. Implementing a licensing system for these substances when there is a demonstrated need for their use with requirements to protect workers can be a very effective control strategy. Employers using such substances will be registered and this can be used as part of an enforcement strategy. Employers who do not properly protect workers exposed would stand to lose their right to use the substance.

The use of bans and restrictions was another best practice identified in the previously discussed report prepared for the Canadian Strategy for Cancer Control.

## **EXTENDED PRODUCER RESPONSIBILITY**

Extended Producer Responsibility (EPR) shifts the burden for recycling products discarded by consumers from the public sector back to the private sector, or rather the original manufacturer. This way, manufacturers are inspired to implement design changes that incorporate effective material and product recycling and reuse. To realize this level of effectiveness manufacturers would in turn look to reduce or eliminate toxins that would potentially contaminate reusable material.

Two prominent examples of EPR legislation are European Union (EU) directives for automobiles and electronic and electrical equipment waste. Under the Directive on End-of-Life Vehicles, vehicles on the European market after July 2003 may not contain lead, cadmium, or hexavalent chromium. Accompanying, the Waste Electrical and Electronic Equipment Directive (WEEE Directive) which was adopted in February 2003, is another entitled the Directive on the Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS Directive). This directive prohibits the use of lead, mercury, cadmium, and hexavalent chromium in any new electrical and electronic equipment on the market. Countries within the EU are introducing legislation to make the directive national law.

Environment Canada has been promoting EPR primarily as a method of waste diversion. We recognize that EPR would involve more than just the MOL but there is an opportunity for the MOL to take a leadership role in a provincial EPR initiative as a means to drive toxic use reduction. This would lead to better protection for the health of workers and communities.

EPR and specifically the WEEE and RoHS Directives have been identified as examples of best practices for preventing exposures to carcinogens in the previously discussed report prepared for the Canadian Strategy for Cancer Control.

## **ENFORCEMENT**

Enforcement of Ontario's occupational health and safety legislation is a vital element of a comprehensive approach to occupational health and safety. This is another area that the OFL has provided detailed comments on, in both our March 2000 document and our "Labour's Program for an Effective Enforcement System" and we refer the MOL to those documents for the details of our position.

## **NANO-MATERIALS**

Nanotechnology is advancing faster than our understanding of the long term health consequences. Researchers are manipulating substances and engineering them into hollow spheres or tubes using interconnecting hexagons or pentagons at sizes less than 100 nanometres. These engineered nano-materials have chemical, mechanical, electrical and biological properties which are unique and very different from the bulk properties of the individual substances and compounds. These unique properties give them their own molecular identity which distinguishes them from the existing substances which share the same molecular structure. This uniqueness has created a great deal of interest in the commercial and medical potential of these new materials. This uniqueness also means that many of the OELs currently in place are meaningless for these nano-materials.

While research has show great promise for the potential usefulness of these materials, we know from experience that just because a substance is useful does not mean it is safe for human health or the environment. Examples such as asbestos, CFCs, DDT, tetraethyl lead and others remind us of this fact. We are also reminded of the consequences of poor regulation and control before these substances were widely used in commerce. We have an opportunity to learn from the mistakes of the past and ensure that workers and the environment are protected. The consequences of not doing so may lead to tragic consequences for workers, their families and their communities as well as costly clean up efforts, legal and political battles.

Researchers are already raising alerts with initial studies showing that some engineered nano-materials can cross a variety of protective barriers of living organisms, barriers such as intestinal, placental and even the blood-brain barrier as well as individual cellular barriers. Research on animals has shown a wide range of toxic effects from short term exposures.

The IRSST in Quebec has recently published two reports on the issue of nano-materials and health. Both of these are available in English and can be downloaded from their website.

*Nanoparticles: Actual Knowledge about Occupational Health and Safety Risks and Preventive Measures* R-470

<http://www.irsst.qc.ca/files/documents/PubIRSST/R-470.pdf>

In this report the researchers concluded in part "...that current protection methods might not be as effective as previously thought."

One of the recommendations is as follows:

"To prevent an increase in occupational disease, the introduction of strict preventive measures should be promoted."

*Health Effects and Nanoparticles* R-469

<http://www.irsst.qc.ca/files/documents/PubIRSST/R-469.pdf>

In this report the researchers concluded, "The documented toxic effects on animals and the physicochemical characteristics of nanoparticles justify immediate application of all useful measures, based on the precautionary principle, to limit exposure and protect the health of potentially exposed individuals."

We have an opportunity to learn from the past and take precautionary measures today to prevent another tragedy in the future.

## **METALWORKING FLUIDS**

We provided detailed comments on our position regarding these fluids in our March 2000 submission so we do not need to repeat them here. This government needs to act now to provide better protection for workers from this known human carcinogen.

## **DIESEL EMISSIONS**

This is another issue on which we have previously provided detailed comments. Again, we refer the MOL to our March 2000 submission. We will simply say here that the scientific evidence linking diesel emissions to ill health is overwhelming. The government must act now to protect workers from this toxic, human carcinogen.

## **OCCUPATIONAL HEALTH RESOURCES**

Increasing efforts by unions and community groups to prevent occupational disease, legislative changes and the increase in public awareness that these generate are placing greater demands on the resources of the Occupational Health Clinics for Ontario Workers (OHCOW) as well as the Workers Health & Safety Centre (WHSC). The funding for OHCOW & WHSC should be increased to allow them to improve the resources necessary to respond to the emerging trends around occupational disease and its' prevention.

The MOL's own resources also, need to be increased. Additional, professional staff such as occupational health physicians, nurses, hygienists and technicians is needed so the Ministry can deal with these issues in a meaningful way.

## **PROCESS-SPECIFIC REGULATIONS**

Process-specific regulations are another area we provided detailed comments on in March 2000. We continue to support this concept and refer the MOL to that document.

Respectfully submitted by:

**THE ONTARIO FEDERATION OF LABOUR**