



# FINAL REPORT

REPEAL OF THE INDUSTRIAL  
EXCEPTION DATA GATHERING  
AND ANALYSIS RESEARCH  
PROJECT

Determining an Evidence-Based Case to Support  
the Repeal of the Industrial Exception

JANUARY 2017

**FINAL REPORT**  
**Repeal of the Industrial Exception**  
**Data Gathering and Analysis Research Project**

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Repeal of the Industrial Exception

January 2017

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## Executive Summary

PEO Council requested an analysis of whether evidence exists that the industrial exception is causally linked to worker injuries or fatalities in Ontario.

A data gathering and analysis project commenced December 2014. The research process involved gathering statistics, court prosecutions and reports from Ministry of Labour (MOL) investigations to analyze occurrences of worker injuries resulting from engineering work done by unlicensed employees on equipment or machinery used to make a product. MOL court prosecutions were selected as the primary source of data as it is believed this information would provide the largest subset of relevant information.

The research reveals evidence that links certain workplace injuries and fatalities to unsafe design or modifications to manufacturing equipment, and that engineering work was involved in either the associated design or evaluation of the equipment. There are at least four instances of equipment-related injuries or fatalities where the corresponding engineering work was done by unlicensed individuals. Two of these workplace incidents resulted in deaths, and a third involved a critical injury.

The research also indicates gaps in the effectiveness of the current regulatory framework. For example, completion of a pre-start health and safety review (PSR) was not identified in over half of the reviewed cases. Further, among the examined cases where PSRs were performed, worker injuries or fatalities still occurred. Additionally, a number of cases led to MOL orders for reviews of the subject equipment by a professional engineer.

PEO faced many barriers while collecting information for this research project. Much of the required information was obtained through successive Freedom of Information requests from the MOL, a process that took over a year to complete. It is recommended that PEO establish an information sharing agreement with the MOL and develop policy recommendations to strengthen PSR legislation.

The government declined to work with PEO on an evidence-based estimate of the corporate financial impact from the repeal of the industrial exception. PEO has no jurisdiction to compel companies to provide information, and it was deemed that a survey conducted solely by PEO would have limited value.

In conclusion, PEO found evidence of engineering work performed by an unlicensed person that led to a serious workplace injury. PEO also found evidence of engineering work performed by unlicensed persons that, although not strictly under the industrial exception, led to serious injury and deaths. This suggests that industry may be interpreting the exception more broadly than it was intended, that the industrial exception is a safety concern in Ontario and that the repeal of the exception ought to be proclaimed by the government as soon as possible.

## Background

PEO is reviewing if section 12.3(a) of the *Professional Engineers Act*, commonly known as the industrial exception to licensure, has led to a health and safety compromise within industry and to the public. At its 497th meeting on November 21, 2014, Council approved a data gathering and analysis plan to determine if an evidence-based causal link exists between the industrial exception and decreased workplace safety.

The industrial exception allows unlicensed employees to perform work that falls within the practice of professional engineering in relation to machinery or equipment in their industrial workplaces that is used to make product for their employer. The exception was introduced into the *Professional Engineers Act* in 1984, at the same time as both the limited licence<sup>1</sup> and the supervisory exception<sup>2</sup>. The intent of these changes was to allow technologists, technicians and tradespeople to perform engineering work on production machinery within an employer's engineering team. This goal was accomplished through the limited licence and supervisory exception, with regulatory oversight maintained by having a professional engineer as part of the team; however, the industrial exception has been identified as a regulatory gap in relation to PEO's principal object "to regulate the practice of professional engineering in order that the public interest may be served and protected."<sup>3</sup>

No other province in Canada allows for such an industrial exception. Newfoundland is the only province that has a very limited licence exception and it is only for the designing of special production machinery and equipment.

On October 25, 2010, the industrial exception was repealed in the Ontario legislature and received Royal Assent<sup>4</sup> as part of the *Open for Business Act, Bill 68*. The repeal was scheduled for proclamation on September 2013, but on June 12 of that year Ontario's cabinet reversed its three-year legislative commitment on the issue. As a result, the repeal legislation was left on hold to be proclaimed, renewed or cancelled by 2020.<sup>5</sup>

On November 26, 2015, the Ontario government advised PEO that they would cancel the pending repeal of the industrial exception. In their Fall Economic Statement, entitled *Building Ontario Up – Progress for Prosperity*, the government stated it would modernize the regulatory system within a strategy to accelerate the province's economic growth. On June 8, 2016, the government tabled a bill for the *Burden Reduction Act, 2016* that would make changes to 50 provincial statutes, including a repeal of the corresponding section of the *Open for Business Act*, which would effectively cancel the repeal of the industrial exception.<sup>6</sup>

The industrial exception allows unlicensed and unaccountable individuals to perform certain professional engineering work in Ontario. Repeal of the exception can improve accountability since an engineering licence provides the public with the assurance that qualified persons are doing or overseeing engineering work. An unlicensed worker has no specific liability, as this is borne by the employer, and there is no regulatory authority to enforce that good engineering practice is applied in relation to the work. However, PEO has the regulatory authority to set the qualifications for licensure and to investigate deficient engineering work; a licensed worker has defined responsibilities and is held accountable for their engineering work.

<sup>1</sup> section 18 of the *Professional Engineers Act*      <sup>2</sup> section 12.(3)(b) of the *Professional Engineers Act*

<sup>3</sup> section 2.(3) of the *Professional Engineers Act*      <sup>4</sup> Royal Assent of Bill 68, *Open for Business Act*, c. 16, Sched.2, section 5(18)

<sup>5</sup> section 10.1 of Ontario's *Legislation Act, 2006*, S.O.2006, c.21, Sched.F

<sup>6</sup> Bill 218, *Burden Reduction Act, 2016*, Sched.2, section 29



## Data Collected

PEO attempted to collect three types of data to identify a potential causal link between the use of the industrial exception and worker injuries:

- 1) Injury and fatality rates for workers in the manufacturing sector;
- 2) Prosecutions by the Ontario Ministry of Labour (MOL) involving an employer's equipment and machinery that contributed to a workplace incident; and
- 3) Corporate impact to businesses affected by the repeal.

### 1. Worker Injury and Fatality Statistics

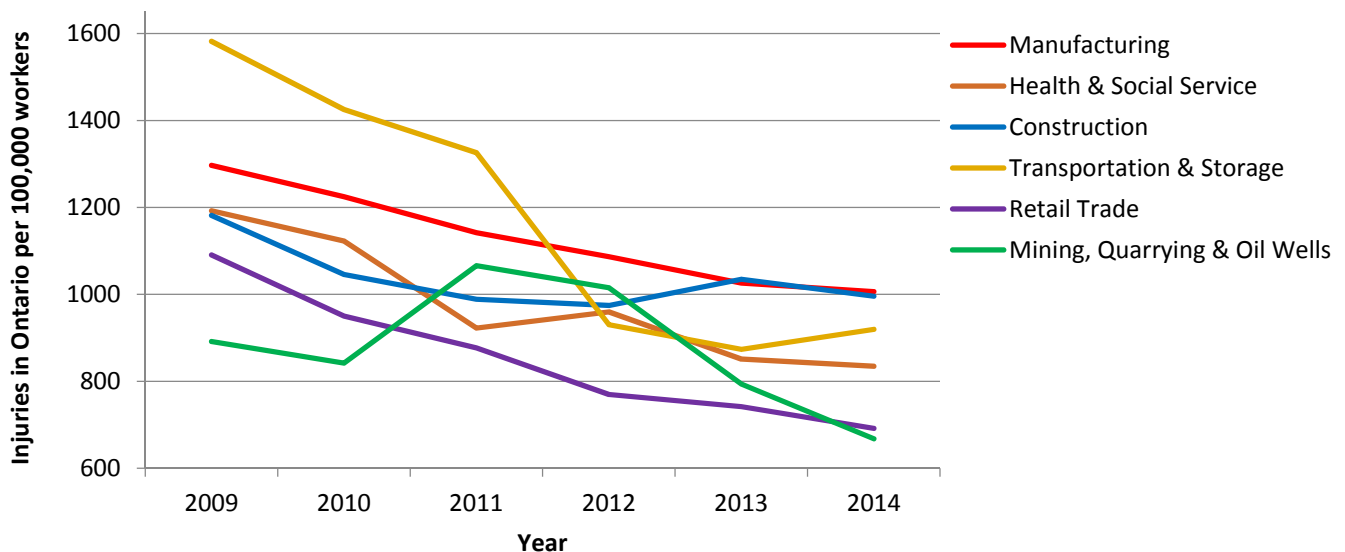
Worker injury rates in Ontario's manufacturing industry have been steadily declining between 2009 and 2014. In 2014, there were 1,007 lost-time worker injuries per 100,000 full-time and part-time workers (see Appendix A – Note 1).

At the same time, worker fatality rates in Ontario's manufacturing sector have been increasing slightly and continue to outpace the rest of Canada. In 2014, there were 11 worker fatalities per 100,000 full-time and part-time workers (see Appendix A – Note 2).

In 2014, Ontario's manufacturing sector saw the highest rates of worker injuries versus all other sectors, slightly surpassing the construction sector (see Appendix A – Note 3). The sector also ranked third overall for worker fatality rates behind both the mining and construction sectors (see Appendix A – Note 4).

In relation to the manufacturing sector across Canada, in 2014, 50 per cent of worker fatalities and 21 per cent of worker injuries occurred in Ontario (see Appendix A – Notes 5 & 6).

### Rate of Injuries by Sector in Ontario



Source: AWCBC, NWISP Reports, Table 15, Accepted Time-Loss Injuries; Statistics Canada, Table 282-0008 - Labour force survey estimates (LFS), manufacturing sector by North American Industry Classification System (NAICS), full and part-time employed

### Discrepancy in reported injury and fatality statistics

A discrepancy was discovered between the worker injury and fatality statistics for Ontario reported by the Association of Workers' Compensation Boards of Canada (AWCBC) and the corresponding statistics reported by the MOL. It was found that prior to 2013, the MOL under-reported injuries and fatalities versus what Ontario's Workers Safety and Insurance Board (WSIB) reported to AWCBC. When the MOL and WSIB developed a single reporting method, the definitions for injury and illness also changed (see Appendix A – Notes 7 & 8).

PEO has been using the AWCBC data to look at Ontario's performance versus the rest of Canada while organizations that oppose the repeal of the industrial exception, such as the Canadian Manufacturers and Exporters (CME), have likely been relying on the MOL data.

### No industrial accident data is collected by the Office of the Chief Coroner

Verdicts and recommendations from inquests by the Office of the Chief Coroner (OCC) were not relevant for this research as they do not cover manufacturing sites. The OCC does not have a Death Review Committee for industrial work accidents and only deaths resulting from an accident at a construction project, mining plant or mine bring with them a mandatory inquest pursuant to the governing act.

### Ambulance and hospital data does not identify the workplace of the patient

PEO investigated whether data on patients treated by medical first responders and hospitals might expose possible under-reporting of workplace accident statistics. It was found that while the National Ambulatory Care Reporting System captures patient conditions, such as an injury description or other symptoms, the Canadian Coding Standards can identify the location where a patient was injured, but do not identify whether the injury occurred while the patient was at work (see Appendix A – Note 9).

## 2. Ministry of Labour Prosecutions

The MOL has the authority to prosecute employers for violations of the *Occupational Health and Safety Act* (OHSA). The violations may include: failure to maintain equipment or machinery in good condition, failure to use equipment as prescribed, and failure to provide workers with sufficient information, instruction and supervision to protect their health and safety. The MOL can also prosecute for violations of R.R.O. 1990, Reg. 851, *Industrial Establishments*, and may include failure to complete pre-start health and safety reviews (PSR), lack of adequate machine guarding, improper material handling or inadequate equipment maintenance and repairs, to name a few.

### Analysis was conducted on 10 years of MOL prosecutions between 2005 and 2015

The research project examined MOL prosecutions between 2005 and 2015 for violations of the OHSA and Reg. 851. A small number of the prosecutions related to incidents classified under the corresponding regulations for Mines and Mining Plants (R.R.O. 1990, Reg. 854) and Construction Projects (O.Reg. 213/91). These were examined as they related to manufacturing processes or equipment, and were therefore relevant to the industrial exception. Cases were initially screened by information contained in MOL press releases, which were generally not available prior to 2005. Consequently, prosecutions prior to 2005 were not reviewed.

MOL enforcement statistics indicate that there were over 8,000 convictions for OHS violations between April 1, 2005 and March 31, 2014. From 2005 to 2015, the MOL issued a total of 833 press releases for successful prosecutions. These press releases were examined as part of the research study and 320 cases (38 per cent) were found to involve an employer’s production machinery in the matters that were prosecuted.

After obtaining the available case files from courthouses across Ontario, it was determined that 89 cases pertained to workplace injuries or fatalities where the cause may have been a process design, equipment design, or modification issue by an employee. PEO then made a Freedom of Information (FOI) request to the MOL to release the associated investigation summaries and engineering reports for these cases of interest.

The 89 cases corresponded to reports for 99 discrete workplace events. The reports were reviewed to determine whether an injury was caused by equipment or machinery, whether a PSR was completed, and to identify who designed, modified and/or certified the equipment or machinery involved. A number of the investigation reports required additional information that was later provided by the MOL (see Appendix B1).

The 99 workplace events were classified into broad categories based on the reported cause of injury. Eight events were excluded as they did not relate to production machinery. The events were classified as follows:

Cause of Injury	Number	Rationale for Classification
Equipment	22	Faulty design of equipment or modification; equipment did not operate as intended
Guarding	28	Lack of guarding, inadequate guarding, guarding removed or circumvented
Procedures	41	Procedures not provided or not followed; includes lock-out procedures, worker training
Not Applicable	8	Event did not relate to production machinery; involved construction or mining practices

The detailed summary of the 99 workplace investigations is provided in Appendix B2.

Events where the cause of injury was related to equipment design or guarding were correlated with instances where the equipment was reported as “not suitable” or modified from its original configuration. Although machine guarding is addressed by CSA Standard Z432, *Safeguarding of Machinery*, often the assessment of whether guarding is required will involve an evaluation by a professional engineer. From a sample of 50 incidents where the cause of injury was attributed to either faulty equipment or inadequate machine guarding, 21 incidents reported the equipment had been modified or was unsuitable to safely complete the required work and 30 incidents noted that the suitability of equipment or existence of modifications was reported as “not applicable” or otherwise not reported. Detailed findings appear in Appendix B3, Note 3.

There were four incidents that indicated critical engineering work was completed by unlicensed employees with disastrous results. Each case was prosecuted under the OHSA and included the stated fine plus a 25 per cent victim surcharge to assist victims of crime:

- On September 19, 2004, a worker at Hamilton's National Steel Car was struck in the head by part of a hydraulic jack assembly that failed during assembly of a gondola rail car. The impact caused a massive head injury that resulted in the worker's death. The non-standard tool was designed by unlicensed employees, despite an internal procedure that requires design to be done by the company's process engineering department. The company was fined \$200,000 for failure to take reasonable precaution to protect the worker from injury.
- A worker operating a hydraulic brake press at J.S.W. Manufacturing in Bracebridge on September 9, 2005, was struck below the nose by the free end of material that was not secured by the lower die of the press. The worker received a severe facial laceration, loss of consciousness, and loss of taste and smell following the injury. The press was designed and built in-house by unlicensed employees, and the MOL ordered an assessment by a professional engineer. The company was fined \$50,000 for failing to carry out prescribed measures and procedures, and failing to provide guarding to prevent injury.
- A worker at Excelcon Steel in Stittsville was using a cart to move cylindrical columns to the outdoor loading area on November 15, 2006. The columns rolled off the cart during transport and crushed the worker, who died from the injury. The cart was designed and constructed in-house, and did not have side rails or other mechanisms to prevent objects from rolling off the cart. The company had no engineers on staff when the equipment was installed or at the time of the incident. The company was fined \$130,000 for not carrying out prescribed measures and procedures, and for failing to provide adequate material handling equipment.
- On August 24, 2010, the metal form used to produce pre-cast concrete footings broke apart and fell onto the worker standing beside it. The worker received significant chest trauma and spent 15 days in a coma following the incident. The MOL investigation determined that the form design did not account for the applied loads and pressures during cement pouring. There was also no indication that the design of the form was prepared by an engineer. Con Cast Pipe of Guelph was fined \$55,000 for failure to take reasonable precaution to protect the worker from injury.

Detailed accounts of these cases are provided in Appendix B4.

#### The incidence of pre-start health and safety review (PSR) compliance was assessed

Of the 91 cases involving production machinery, only eight cases reported that a PSR had been completed for the subject equipment. This compares with seven cases where a required PSR was not done, and 23 cases where it was deemed that a PSR was not applicable to the incident. In over half of the cases, the MOL investigator provided no information on whether a PSR was applicable for the relevant machinery. Details are summarized in the table below.



PSR Compliance	Severity of Workplace Event				TOTAL	Percentage
	Fatalities	Critical Injuries	Other Injuries	No Injury		
Yes	2	2	4		8	9%
No	1	1	3	2	7	8%
Unknown	10	22	21		53	58%
N/A	4	11	7	1	23	25%
<b>TOTAL</b>	<b>17</b>	<b>36</b>	<b>35</b>	<b>3</b>	<b>91</b>	<b>100%</b>

PEO reviewed initial findings from the investigations with staff from the MOL's Occupational Health and Safety Branch. The MOL has maintained that there is a high level of compliance with the PSR requirements under section 7 of Reg. 851. This may be the case when incident investigations are combined with routine workplace inspections, however, there is significant variance among the examined investigation reports relating to workplace injuries.

An examination of the 91 incidents identified discrepancies in PSR compliance in 28 cases (see also Appendix B3 – Note 4):

Reported Status	Discrepancy from Investigation Report	
PSR Completed	Recommendations not implemented	5
	Lockout method not documented	1
	Equipment modified after PSR	1
	PSR completed after recurrent injuries	1
PSR Not Done	PSR ordered by MOL investigator	1
	Review completed following incident	1
	Stop Work Order issued by MOL	1
	Review would normally be required	1
	MOL Orders not completed	1
PSR N/A	PSR ordered by MOL investigator	1
Unknown	Evaluation by engineer ordered	4
	Deficiency in equipment design noted	2
	Described equipment would require PSR	2
	Referenced PSR was for other equipment	2
	Listed firms not qualified to do PSR	1
	Stop Work Order on equipment built in-house	1
	Equipment built in-house; silent on PSR	1
	Inadequate safety mechanisms identified	1
	<b>Total</b>	<b>28</b>

One incident where equipment was operated without completion of a PSR had a particularly tragic outcome (see Appendix B4 for a detailed account of the case):

- On April 11, 2011, a worker was killed while cleaning an industrial pasta maker at Pasta Quistini in North York. The machine was operating during the cleaning activity and the worker became entangled in its mixing blades. It was later determined that a PSR had not been completed and that a limit switch intended to stop machine motion when the machine cover was open did not meet the requirements for an interlocking device. The company was fined \$120,000 for failing to maintain the equipment in good condition and the supervisor was fined \$12,000 for failure to take reasonable precaution to protect the worker from injury.

A 2014 communication informed PEO that the MOL does not track industrial establishments that require PSRs, or specific compliance with section 7 of Reg. 851. The MOL is unable to identify incidents involving equipment at industrial establishments and it does not record issues with design, modification or maintenance of equipment in a searchable format. The mandate of the MOL under the OHSA is to determine responsibility for workplace injuries yet the ministry does not assess the accountability for any engineering work associated with the incidents.

The MOL does record orders issued pursuant to section 7, but these are reported as part of the MOL's aggregate enforcement statistics by program area and includes stop work orders and orders to complete other compliance actions. Although the OHSA allows for prosecution of an employer's failure to complete a PSR, there were no instances in the examined cases where the employer was charged with a specific violation of section 7 of Reg. 851.

PEO requested additional information from the MOL to better understand how PSR legislation and incident investigations are administered by ministry staff. The MOL's detailed response, along with its current enforcement statistics, is provided in Appendix B5.

### 3. Corporate financial impact of implementing the repeal

The researchers attempted to partner with the Ministry of Economic Development, Employment and Innovation (MEDEI) to determine the financial impact of repealing the industrial exception. It was thought that its database of Ontario businesses would indicate how many manufacturers currently rely on the exception and could be used to calculate the actual scope and business impact of the repeal. At a June 1, 2015 meeting, however, the minister informed PEO that no assistance with this evaluation would be offered. PEO has no authority to compel companies to report this information and a PEO-conducted survey for this research was determined to be of limited value.

The government provided an estimate to PEO in June 2013 that cited an approximate annual cost of \$200 million to implement the repeal. PEO reviewed the estimate and determined that certain assumptions were unfounded and that the aggregate cost to the manufacturing sector was closer to \$2 million.

When the government announced in November 2015 that it intended to cancel the repeal, the focus of the research shifted from corporate impact of the repeal to an analysis of outcomes from ministry prosecutions. The impact to the manufacturing sector and individual employers, along with representative costs for a voluntary compliance plan undertaken by Bruce Power, is provided in Appendix C.

## Challenges

The researchers encountered a series of challenges in accessing and collecting necessary information. Full investigation reports for the 89 cases of interest were requested from the MOL but due to the lengthy FOI process, this was modified to a release of the summary reports and engineering reports only, which gives a limited analysis of the subject investigation files.

Other challenges included:

1. There were no easily searchable public records of ministry investigations outside of press releases issued for MOL prosecutions in the courts. The press releases for the initial set of 833 prosecutions accounted for an average of 0.7 per cent of all recorded workplace injuries and fatalities from 2005 to 2014 (see Appendix D – Note 1).
2. The access to Ontario courthouse records was limited. For a number of the researched cases, no information was available or the files were older than retention limits and had been destroyed (see Appendix D – Note 2).
3. There were significant delays in the MOL's response to the FOI requests for investigation and engineering reports. The first request was made August 5, 2015 and the all documents were not received until late April 2016. This timeline exceeds the maximum response period of 30 days stated in section 26 of *Freedom of Information and Privacy Protection Act* (FIPPA). In addition, efforts to speak directly with MOL investigators were unsuccessful.
4. In over half of the reviewed cases, MOL investigators did not clearly identify whether a PSR had been completed for the subject equipment prior to its start-up or after modification. This made it difficult to assess strict compliance with the PSR regulations. In addition, MOL report details reflected inconsistencies in the enforcement of PSR requirements relating to some workplace incidents.
5. Both the WSIB and the Ontario Federation of Labour (OFL) have issued reports claiming under-reporting of workplace accident statistics. This puts into question the validity of the available statistics. Specifically, WSIB concluded a 20 per cent rate of under-reporting by injured workers and OFL reported a third of all lives lost since 2006 have been erased from workplace fatality statistics (see Appendix D – Note 3).

## Key Findings

The research sought to identify the engineering component of the actions that led to worker injuries and deaths, and project how this component would be affected by the repeal of the industrial exception.

The research relied on publicly accessible information obtained through the courts or through Freedom of Information requests from the MOL. This information, however, was limited in content, redacted due to privacy legislation and often incomplete in order to assess, for example, whether engineering work was done by a licensed or unlicensed person.

**Finding #1** – Current statistics published by the Association of Workers' Compensation Boards of Canada indicate a decline in the incidence of workplace injuries in the manufacturing sector, but the incidence of workplace fatalities has increased slightly, between 2000 and 2014. The corresponding rates for Ontario are higher than the balance of Canada and manufacturing has typically seen higher rates for workplace injuries than other sectors (see Appendix A and Appendix E – Note 1).

**Finding #2** – There is evidence that poor initial design and/or modification to manufacturing equipment was linked to a number of workplace accidents. Of 833 MOL prosecutions reported in press releases between 2005 and 2015, 91 incidents related to manufacturing sites and 50 cases included an equipment design or modification that resulted in a worker injury or fatality. Additionally, there is evidence that inadequate engineering work was at the source of several injuries and fatalities and, in at least four cases, that the inadequate engineering was done by unlicensed persons (see Appendix E – Note 3).

**Finding #3** – There is evidence of inconsistent compliance with pre-start health and safety review (PSR) legislation in a number of the reviewed cases. This includes instances where recommendations made in PSRs were not implemented, equipment was modified or operated without a PSR where one would be required by the regulation, or where the investigation report indicated a discrepancy regarding PSR compliance for the subject equipment. There were a total of 28 incidents among the examined cases where discrepancies in PSR compliance were noted, including a fatality from an equipment hazard, that would likely have been identified by a PSR (see Appendix E – Note 4).

## Recommended Next Steps

It is recommended that the following work be undertaken by PEO based on the findings of the research:

**Recommendation #1** – Share the findings from the research with key stakeholders to raise awareness of the impact of the industrial exception on workplace safety, and the limitations of the current regulatory regime in addressing engineering deficiencies in equipment design and the design of modifications for production.

**Recommendation #2** – Establish an information sharing agreement with the Ministry of Labour that will inform PEO about deficient engineering work, or work by unlicensed persons that falls outside the industrial exception, and that is identified in the course of incident investigations conducted by the MOL (see Appendix F – Note 1).

**Recommendation #3** – Develop policy recommendations to strengthen corporate compliance and enforcement of PSR legislation in order to prevent worker injuries and fatalities. Possible policy reform could include mandatory reporting of PSR compliance and mandatory compliance checks by ministry inspectors during field visits (see Appendix F – Note 2).

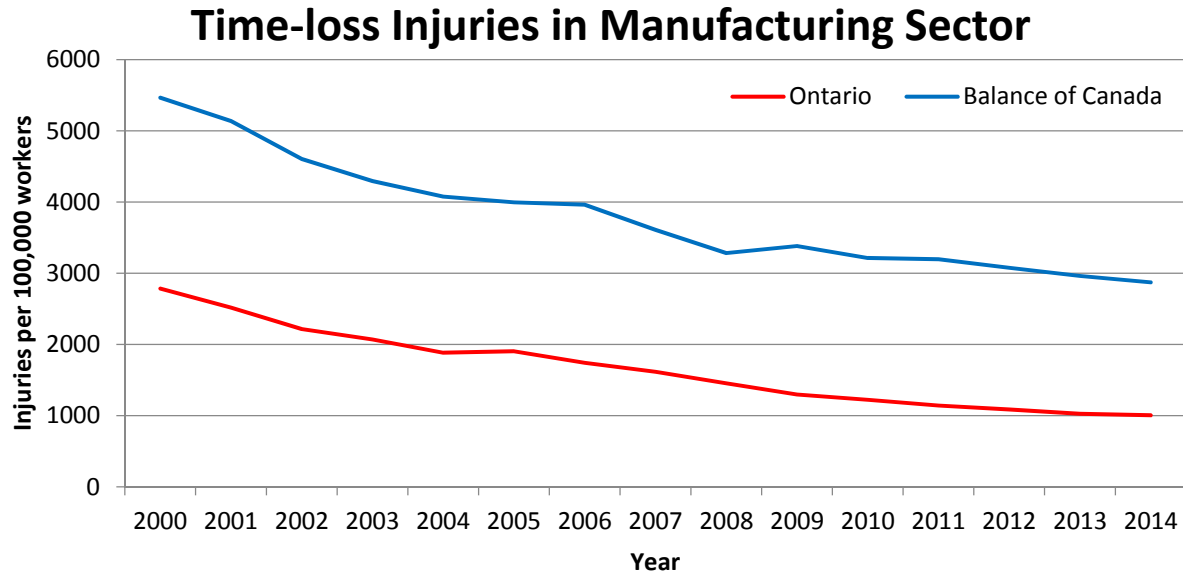
**Recommendation #4** – Consider moving PEO's PSR guideline to a performance standard to ensure that engineers are meeting an acceptable level of equipment review and to increase the confidence of employers in the value of the PSR.

**Recommendation #5** – If the repeal of the industrial exception is not implemented, continue to monitor the ministry's monthly court bulletins to identify any workplace incidents that may be of interest. PEO should obtain copies of relevant investigation reports for review and take action, as required, to raise awareness of the associated engineering relevant to these incidents.



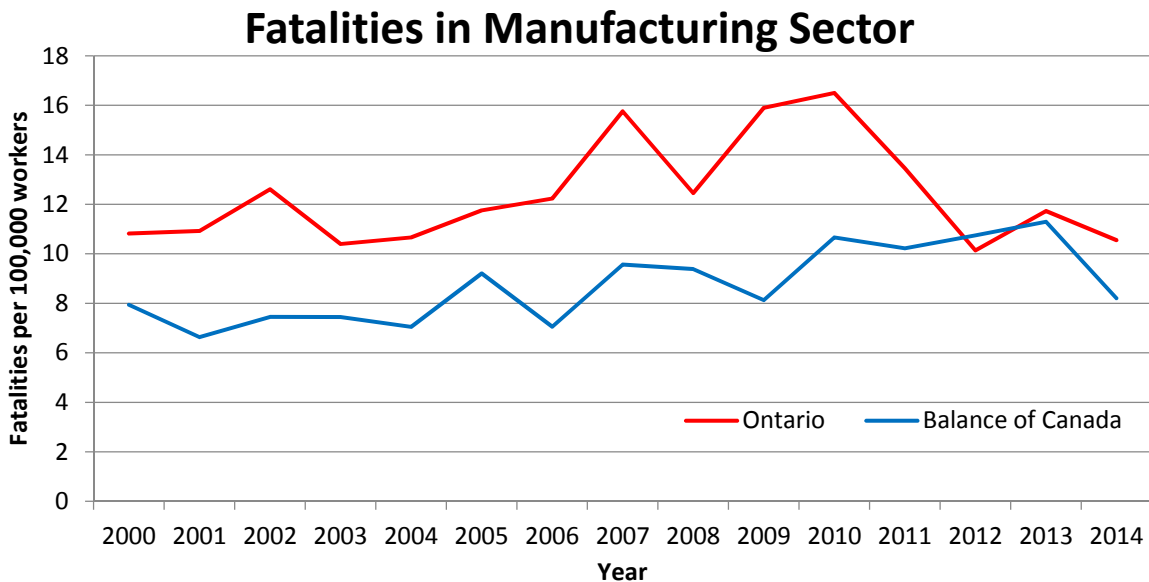
# Appendix A – Details of Injury and Fatality Statistics

1. In 2014, there were 1,007 worker injuries per 100,000 fulltime and part-time workers in Ontario's manufacturing sector.



Source: AWCBC, NWISP Reports, Table 15, Accepted Time-Loss Injuries; Statistics Canada, Table 282-0008 - Labour force survey estimates (LFS), manufacturing sector by North American Industry Classification System (NAICS), full and part-time employed

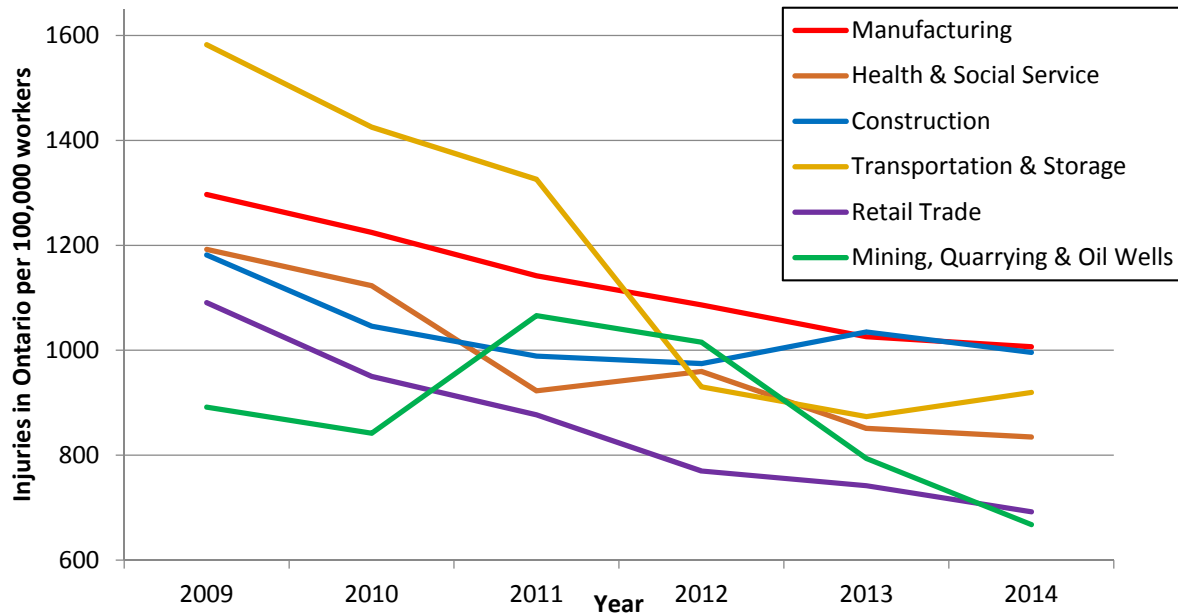
2. In 2014, there were 11 worker fatalities per 100,000 fulltime and part-time workers in Ontario's manufacturing sector.



Source: AWCBC, NWISP Reports, Table 36, Accepted Fatalities; Statistics Canada, Table 282-0008 - Labour force survey estimates (LFS), manufacturing sector by North American Industry Classification System (NAICS), full and part-time employed

- In 2014, Ontario's manufacturing sector ranked highest for worker injuries versus other sectors, such as construction, transportation, health, mining and retail.

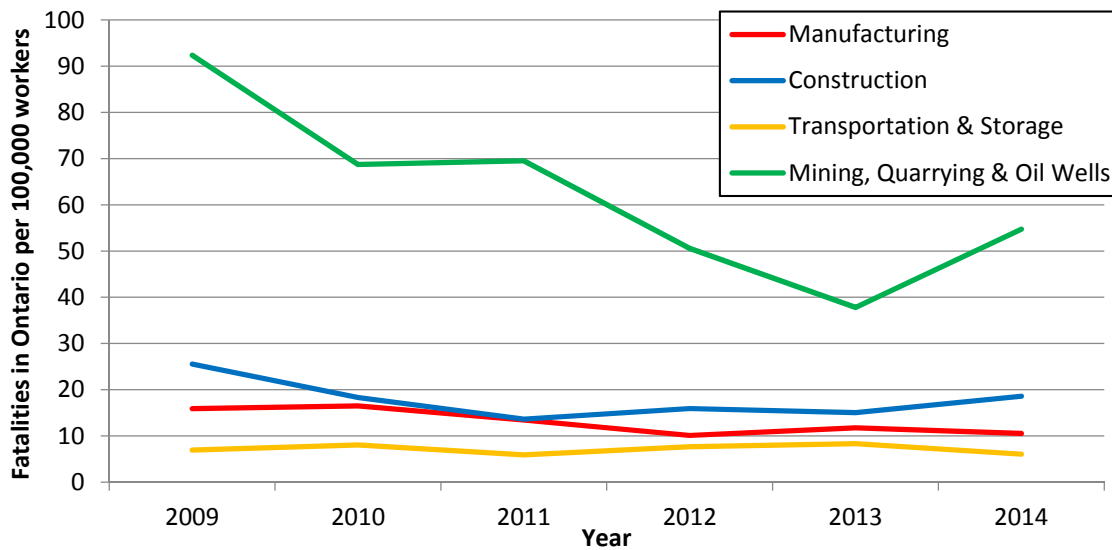
### Rate of Injuries by Sector in Ontario



Source: AWCBC, NWISP Reports, Table 15, Accepted Time-Loss Injuries; Statistics Canada, Table 282-0008 - Labour force survey estimates (LFS), manufacturing sector by North American Industry Classification System (NAICS), full and part-time employed

- In 2014, Ontario's manufacturing sector ranked third in the rate of worker fatalities, behind the mining and construction sectors.

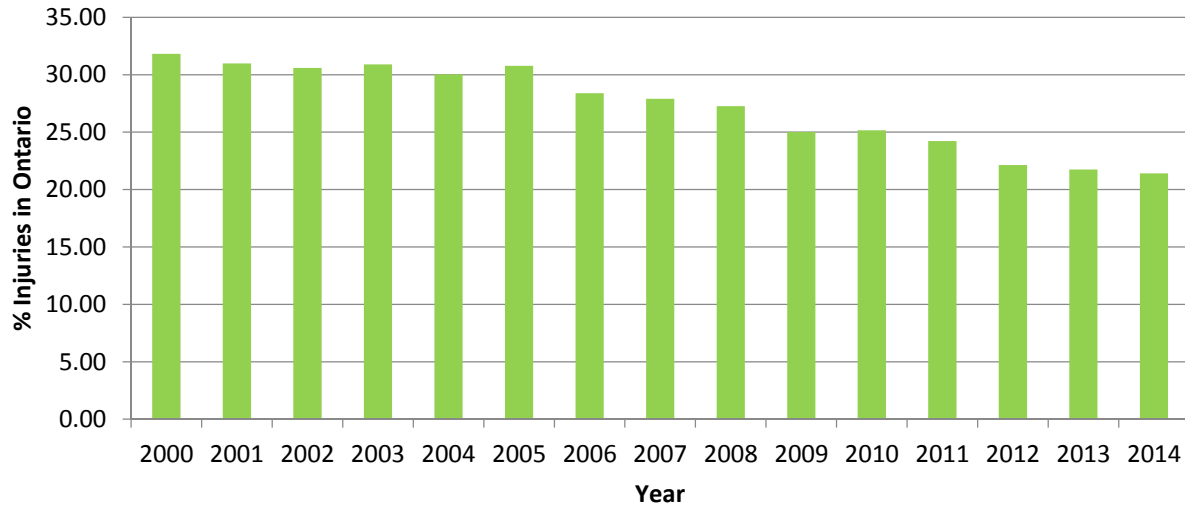
### Rate of Fatalities by Sector in Ontario



Source: AWCBC, NWISP Reports, Table 36, Accepted Fatalities; Statistics Canada, Table 282-0008 - Labour force survey estimates (LFS), manufacturing sector by North American Industry Classification System (NAICS), full and part-time employed

- 5. In 2014, 21% of worker injuries in Canada's manufacturing sector occurred in Ontario

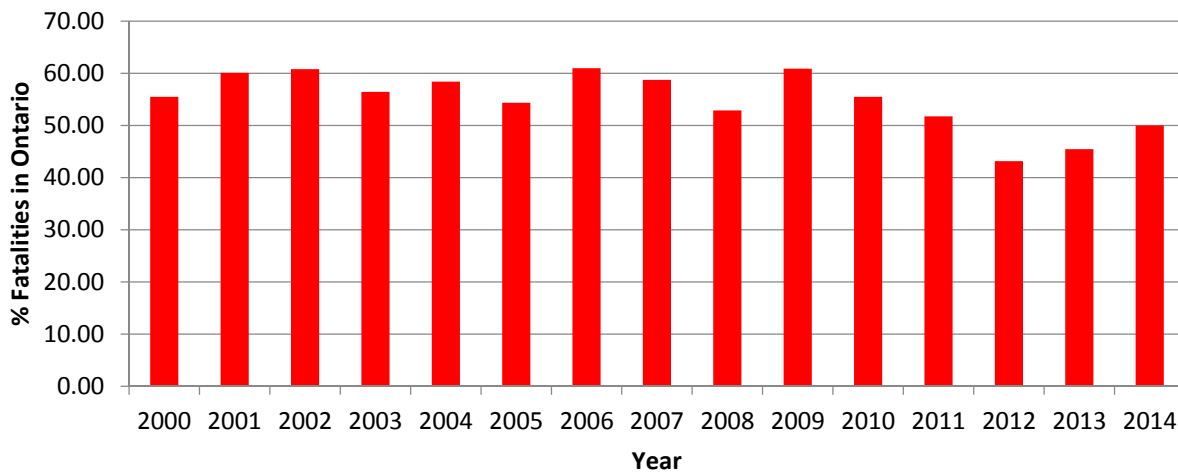
### Percentage of Injuries in Canada's Manufacturing Sector that Occur in Ontario



Source: AWCBC, NWISP Reports, Table 15, Accepted Time-Loss Injuries; Statistics Canada, Table 282-0008 - Labour force survey estimates (LFS), manufacturing sector by North American Industry Classification System (NAICS), full and part-time employed

- 6. In 2014, 50% of worker fatalities in Canada's manufacturing sector occurred in Ontario.

### Percentage of Fatalities in Canada's Manufacturing Sector that Occur in Ontario



Source: AWCBC, NWISP Reports, Table 36, Accepted Fatalities; Statistics Canada, Table 282-0008 - Labour force survey estimates (LFS), manufacturing sector by North American Industry Classification System (NAICS), full and part-time employed

7. Prior to 2013, the Ontario Ministry of Labour reported its injury and fatality statistics differently than the Workers Safety and Insurance Board (WSIB). And therefore the national comparison of workplace incidents through the Association of Workers Compensation Boards of Canada (AWCBC) that come from the WSIB organizations in each province reported higher numbers. The discrepancy stemmed from different reporting methods and different definitions.

Table 7A. Worker Injury Reported Statistics, 2009-2012

Data Source	2009	2010	2011	2012
Ontario Ministry of Labour	n/a	6,786	6,726	6,442
AWCBC	10,033	9,351	8,827	8,467

Table 7B. Worker Fatality Reported Statistics, 2009-2012

Data Source	2009	2010	2011	2012
Ontario Ministry of Labour	3	5	8	7
AWCBC	123	126	104	79

8. In 2013, the Ontario Ministry of Labour and the WSIB developed a new, single, consistent method of reporting injury rates and fatalities across Ontario.  
[http://www.iapa.ca/main/business/sb\\_industry\\_stats.aspx](http://www.iapa.ca/main/business/sb_industry_stats.aspx)

The change was positioned to increase transparency and the latest statistics are reported in the WSIB's 2014 Statistical Report.

Claims are now reported in two schedules:

- o Schedule 1 for employers for which WSIB is liable to pay benefit compensation for workers' claims, where employers are required by legislation to pay premiums to WSIB; and
- o Schedule 2, for employers that self-insure under the provisions of the *Workplace Safety and Insurance Act*, and they are liable to pay all benefit compensation and administration costs.

9. The Canadian Institute for Health Information produces customized reports from data derived from the Discharge Abstract Database, the National Ambulatory Care Reporting System (NACRS) and the Hospital Morbidity Database.  
<https://www.cihi.ca/en/data-and-standards/access-data>

## Appendix B1 – Requested Information for Selected Incident Investigations

Following a meeting with staff from the Ministry of Labour's (MOL) Occupational Health and Safety Branch, PEO requested additional information on eight investigations that was not available in the corresponding investigation reports. The requested information related to engineering involvement with the respective equipment, and details of orders issued by MOL investigators.

MOL sent its initial response on October 28, 2016, and a full response on November 15, 2016. The full response was as follows:

### **Response to Information Requested by Professional Engineers Ontario relating to Ministry of Labour Prosecutions of interest in their research**

The following information has been provided pursuant to section 63(4) of the Occupational Health and Safety Act.

#### ***Power of Director to disclose***

*(4) A Director may communicate or allow to be communicated or disclosed information, material, statements or the result of a test acquired, furnished, obtained, made or received under this Act or the regulations. R.S.O. 1990, c. O.1, s. 63 (4).*

### **Shell Canada Ltd. Western Region Case ID 01285GJCV310 (01285GHVV303/304)**

The investigation report refers to technical approvals for the Plant Change #2012-595 (page 16). There is also reference in the MOL engineer's report to a Plant Change Checklist (Appendix 6) and an HSE Questionnaire (Appendix 11).

It is not necessary for PEO to know the names of the persons who gave the approvals or prepared the checklists, but PEO would like to know whether any of these individuals held a P.Eng. designation at the time.

#### **Question:**

Can MOL check the names against PEO's member directory to determine whether any of the individuals are listed as holding a licence?

#### **Response:**

**The requested sections have been reviewed. One engineer is listed in the PEO's member directory.**

### **Suncor Energy Products Western Region Case ID 5664074**

This file relates to two separate events (July 27, 2006 and August 22, 2006) regarding exposure of workers to hazardous substances. There is limited detail provided in the respective investigation reports, and neither report identified either the classification of the injuries or made reference to an associated report by the MOL engineer. The investigation reports indicated deficiencies with a work procedure for one event, and with a process drawing for the other event.



**Question:**

PEO would like to know the classification of injuries for each event, and whether there are associated reports by an MOL engineer. Additionally, PEO would like to know whether the investigation identified the individuals responsible for preparation of the referenced work procedure (July event) and piping and instrumentation drawing (August event), and specifically whether any of these individuals appear in PEO's member directory.

**Response:**

**Both events were classified as critical injuries.**

**There was no MOL engineer involved in either event.**

**A total of three individuals were identified in relation to the work procedure and piping instrumentation documents. One of the three individuals identified is listed in PEO's member directory.**

**Vale Canada Western Region Case ID 02654FSRP139**

The investigation report indicated that employer failed to complete a "pre-development review" (PDR) as required under section 5.(1)(b) of R.R.O. 854 for mines and mining plants. The report also indicated that there was some confusion as to whether an engineer from Vale, or from a contractor involved in the pilot plant project, would have responsibility for this. The names of the engineers from Vale, Jordan Engineering, and Ausenco Sandwell are redacted in the investigation report.

PEO acknowledges that mining processes fall under a separate regulation, and do not require a Pre-Start Health and Safety Review (PSR), however the PDR requirements appear to be clear. The described activity would be defined as an industrial or manufacturing process under the *Professional Engineers Act*.

**Question:**

PEO would like to know whether the engineers whose names were redacted in the report are listed in PEO's member directory.

**Response:**

**Four of the engineers whose names were redacted in the report are listed in the PEO's member directory.**

**JSW Manufacturing Eastern Region Case ID 5082756**

The investigation report indicated that a Stop Work Order was issued to the employer, barring use of the equipment until it was evaluated by a professional engineer and deemed to be safe for operation. There was no reference to a report by an MOL engineer.

**Question:**

PEO would like to know whether an MOL engineer was involved in the investigation, and if any report was prepared. Additionally, PEO would like to know what follow-up was done by MOL regarding its order against the employer's equipment.

**Response:**

**An MOL engineer was not involved in this matter, therefore no report was generated. The employer removed the equipment from the workplace.**

### **Excelcon Steel Co. Ltd. Eastern Region Case ID 2916-357**

The investigation report described an in-house transport system that was inadequate for the specific task that resulted in a fatality. It appears that the inspector and MOL engineer deemed the fixed rail system to be material handling equipment that would be excluded from PSR requirements. It's not clear whether the employer had specific drawings or documents for the rail and trolley system, or if it was determined who had designed the system. The investigation report notes that a Stop Work Order was issued under section 45.(a) of O. Reg. 851, but it doesn't indicate whether the order referred to the specific equipment or the method.

#### **Question:**

PEO would like to know whether a determination was made as to whether the rail and trolley system was designed or reviewed by a professional engineer. It would also like to know the details of the Stop Work Order.

#### **Response:**

**The rail and trolley system in use at the time of the incident was not designed or reviewed by a professional engineer.**

**A replacement rail and trolley system, designed and reviewed by an engineer, was installed in response to the incident.**

**Stop work order issued;**

**Order 1, TIMU OHSA 1990 851 1990 45 a, 2050881**

**Pursuant to the Regulations for Industrial Establishments 851/90 Sec. 45 (a), the employer shall ensure that the Trolley/Cart used to carry/move steel material from the Shop to the Loading area be equipped with guards or other precautions as will ensure that the lifting, carrying or moving of material does not endanger the safety of any worker. At the time of inspection this Trolley had no side guards or other methods for securing the load to the cart while in motion.**

**Order 2, STOP OHSA 1990 57 6 b, 2050905**

**Pursuant to OHSA/90 Sec. 57 (6)(b), the above contravention, order # 2050881, is a danger or hazard to the health and safety of worker(s) employed in, or having access to this workplace, all use or productive work shall stop and be discontinued until this stop work order is withdrawn by an inspector.**

### **Lac des Iles Mines Ltd. Northern Region Case ID 5027074**

The investigation report makes reference to a report by an MOL engineer (Appendix K), and also to a report from Profor Engineering Services (Appendix F). These reports were not provided with the FOI release, and it's not clear whether it was determined who had designed the configuration for the failed equipment.

#### **Question:**

PEO would like to know whether either report identified the designer for the dewatering system, and if so, whether that individual is listed in PEO's member directory.

#### **Response:**

**The requested reports have been reviewed. The documents do not identify the designer of the dewatering system that failed.**

**Pasta Quistini, Inc. Central-East Region Case ID 6036492 (03241DKQZ004)**

The investigation report indicated that a PSR was required for the identified equipment, and that none had been completed. There is reference to a Stop Work Order being issued, but it's unclear whether an evaluation by a professional engineer was requested. It's not clear if an evaluation was waived because there was involvement of an MOL engineer in the investigation.

**Question:**

PEO would like to know the details of the Stop Work Order and also get confirmation on whether an evaluation of the equipment by a professional engineer was requested.

**Response:**

**Note: The first stop work order was issued for the entire workplace. The second stop work order was issued for the production area.**

**First stop work order issued;**

**Order 1, TIMU OHS 1990 851 1990 57 6 b, 03241DKQB012**

**Where an inspector makes an order under subsection (1) and finds that a contravention of this act or the regulations is a danger or hazard to the health and safety of a worker, the inspector may, order that the work at the workplace as indicated in the order shall stop until the order to stop work is withdrawn or cancelled by an inspector after an inspection. This premise, Pasta Quistini Inc shall stop work until such time as this order is lifted by the Ministry of Labour.**

**Order 2, Stop OHS 1990 57 6 b, 03241DKQB011**

**The above contravention is a danger or hazard to the health and safety of worker(s) employed in, or having access to this workplace, work at this workplace as indicated in the above order shall stop until the order to stop work is withdrawn or cancelled by an inspector after an inspection.**

**Second stop work order issued;**

**Order 1, TimeU OHS 1990 57 6 a, 03241DKQB010**

**Where an inspector makes an order under subsection (1) and finds that the contravention of this act or the regulations is a danger or a hazard to the health and safety of a worker, the inspector may, order that any place, equipment, machine, device article or thing or any process or material shall not be used until the order is complied with. A stop work order is in effect for the production area of this workplace until such time as it is lifted an inspector.**

**Order 2, Stop OHS 1990 57 6 b, 03241DKBQ009**

**The above contravention is a danger or hazard to the health and safety of worker(s) employed in, or having access to this workplace, work at this workplace as indicated in the above order shall stop until the order to stop work is withdrawn or cancelled by an inspector after an inspection.**

**The employer was not ordered to have the equipment evaluated by a professional engineer.**

**The employer engaged the services of a professional engineer in the process of achieving compliance with the stop work orders.**

## Appendix B2 - Summary of Reviewed Incident Investigations

Region	Event	Employer	Sector	Type	Event Description	Injury Description	Equipment Condition	Suitable	Modified	PSR Done	Regional Engineer's Report	Finding	Cause of Injury
OPRE	1	OPRE-01 SGS Canada	Industrial	Other Injury?	Weight dropped on worker's hand during sample removal	Bruises, lacerations, partial amputation of finger	Not maintained	Not stated	Not stated	Unknown	Provided	Equipment not properly maintained; inadequate safety mechanisms	Equipment
	2	OPRE-02 Prysmian Power Cables + Systems	Industrial	Other Injury?	Heated water and steam expelled from pressurized line	Burns to hand, forearm and chest	Not stated	Not stated	Not stated	Unknown	Provided	Pressure relief valve not opened; worker not trained/informed of hazard	Procedure
	3	OPRE-03 Riviera Inc	Industrial	Fatality	External contractor contacted 347V line during repair	Electrocution - entry at hand, exit at scalp	N/A	N/A	N/A	N/A	No reference made	Circuit not locked out; worker not trained on company lockout procedure	Procedure
	4	OPRE-04 JSW Manufacturing Inc	Industrial	Critical Injury	Work piece struck worker in face during machine cycle	Facial laceration, loss of blood, unconsciousness	Not stated	Not stated	Not stated	Unknown	No reference made	No guarding to prevent injury; P.Eng. Evaluation ordered	Guarding
	5	OPRE-05 Ottawa Fibre LP	Industrial	Critical Injury	Worker in restricted area struck by moving equipment	Soft tissue damage to neck and chest	Custom built	Not stated	Not stated	Unknown	Provided	Equipment not locked out; inadequate training on lockout procedure	Procedure
	6	OPRE-06 Excelcon Steel Co Ltd	Industrial	Fatality	Worker crushed by materials falling off transport cart	Asphyxiation due to crushing	Custom built	Not stated	Not stated	Unknown	Provided	Inadequate precautions for safe transport of materials	Equipment
	7	OPRE-07 Canadian Bank Note Company Ltd	Industrial	Other Injury?	Hand and wrist crushed by movement of press	Broken bones and swelling of hand and wrist	Not stated	Not stated	Not stated	Unknown	Provided	Inadequate precautions to restrict access or inform workers of hazard	Equipment
	8	OPRE-08 Infinity Marble	Industrial	Orders Only	Failure to comply with 15 MOL Orders	N/A	Not stated	Not stated	Not stated	Not done?	No reference made	Inadequate ventilation filtering of airborne particulates; improper storage of flammable materials	Equipment
OPRW	1	OPRW-01 Baffin Inc	Industrial	Critical Injury	Hand pinched by movement of mould during installation	Crushed hand; loss of two fingers	Not stated	Not stated	No	N/A	Not required	No written procedure for safe completion of task; no task specific lockout procedure	Procedure
	2	OPRW-02 Blount Canada Ltd	Industrial	Critical Injury	Sprayed of hot water and steam when opening storage drum	Burns to abdomen and legs	Not stated	No	Unknown	Unknown	No reference made	Inadequate training or warning of hazard conditions	Procedure
	3	OPRW-03 Bosch Rexroth Canada Corp	Industrial	Critical Injury	Pressurized oil hose struck service technician in the head	Broken bone, head injury, loss of consciousness	No flow relief valve	No	Yes	Unknown	Provided	No means to relieve accumulated pressure in hydraulic circuit	Equipment
	4	OPRW-04 Canadian General Tower	Industrial	Critical Injury	Worker's arm became entangled when rewinding scrap vinyl	Not described or redacted	Not stated	Not stated	Not stated	Unknown	Provided	Inadequate guarding for in-running nip hazard	Guarding
	5	OPRW-05 Cello Products Inc	Industrial	Other Injury?	Fingers crushed by moving machine while clearing misfed part	Not described or redacted	Not stated	No	Yes	Unknown	No reference made	Inadequate guarding for in-running nip hazard; no procedure for safe removal of misfed parts	Guarding
	6	OPRW-06 Con Cast Pipe Ltd	Industrial	Critical Injury	Metal form broke apart and struck worker while being filled	Crushed chest; trauma and coma	N/A	N/A	N/A	N/A	Provided	Inadequate design of concrete form; inadequate bracing or support	Equipment
	7	OPRW-07 CRS Specialties Inc	Industrial	Critical Injury	Clothing worn by student caught fire during welding	Burns to neck, throat, lungs, face, arm and hand	No defects	Yes	Not stated	N/A	No reference made	No requirement to wear flame retardant clothing; student not trained or informed of specific hazards related to welding.	Procedure
	8	OPRW-08 Dana Canada Corp	Industrial	Critical Injury	Equipment failure; part of machine dropped on repair worker	Hyperextension of neck and shoulder; loss of consciousness	Improperly guarded	No	Yes	Unknown	No reference made	Failed to block movement of equipment; failed to adequately maintain equipment	Procedure
	9	OPRW-09 Erie Greenhouse Structures Inc	Industrial	Other Injury	Finger pinched by dies while attempting to reposition part	Partial amputation of finger	Controls not operational	No	Not stated	Unknown	No reference made	Inadequate guarding; failure to maintain equipment in good condition	Guarding
	10	OPRW-10 Excell Stamping Inc	Industrial	Other Injury	Worker's hand caught in pinch point of clutch press	Amputation of fingers, partial amputation of thumb	Not stated	Not stated	Not stated	Unknown	No reference made	Inadequate guarding of pinch points	Guarding
	11	OPRW-11 Fisher+Ludlow Inc	Industrial	Other Injury	Worker's hand caught in machine during welding cycle	Burns to palm and thumb, loss of finger	Ineffective guarding	Yes	Yes	Ordered	No report provided	Inadequate guarding system to prevent worker access; machine not locked out	Guarding
	12	OPRW-12 Gates Canada Inc	Industrial	Critical Injury	Temporary worker's hand pinched by machinery	Tissue damage to fingers; loss of consciousness	Not stated	Not stated	Not stated	Yes	No reference made	Inadequate blocking or guarding of equipment; inadequate lockout system; lack of training for workers	Guarding
	13	OPRW-13 GEL Exploration Ltd	Mining	Critical Injury X2	Workers struck by rotating tools during service activity	Trauma to face of worker 1; trauma and fracture of Worker 2's arm	Internal brake not functional	Yes	Yes	Unknown	Field notes only	Equipment not maintained in good condition; modifications caused hazardous conditions	N/A
	14	OPRW-14 Johnson Controls	Industrial	Fatality	Worker struck by elevated lid of mould during maintenance	Head crushed by falling lid	Not stated	No	No	N/A	No reference made	Inadequate support of work piece; not blocked or suitable restrained	Procedure
	15	OPRW-15 Kellogg Canada Inc	Industrial	Other Injury	Hand struck by moving machinery during sample collection	Severed finger	Not stated	Not stated	Not stated	Unknown	No reference made	Failure to adequately guard access to moving machinery	Guarding
	16	OPRW-16A Linamar Corporation	Industrial	Fatality	Worker struck by closing equipment hood and crushed	Not described	Not stated	Yes	Not stated	Unknown	No reference made	No guard to prevent access to pinch point; no interlock to stop machine when operator leaves control panel	Equipment
		OPRW-16B Linamar Camtac Manufacturing	Industrial	Fatality	Worker contacted energized equipment surface during repair	Electrocution	Not stated	Yes	No	Unknown	Provided	Repair activity created electrical hazard with equipment under repair	Procedure
		OPRW-16C Linamar Camcor Manufacturing	Industrial	Work Refusal	Worker refused to work in area prone to oil spills	N/A	N/A	N/A	N/A	N/A	N/A	Worker had recent back injury caused by slip and fall in oily work environment	N/A
	17	OPRW-17 Linamar Roctel Manufacturing	Industrial	Critical Injury	Worker in restricted area struck by activated robot arm	Fractured arm	Almost new	Yes	N/A	Unknown	No reference made	Failure to lock out robot; failure to prevent accidental start-up of equipment	Procedure
	18	OPRW-18 Linamar Transgear Manufacturing	Industrial	Other Injury	Contacted with high voltage conductor during service activity	Burns to head and shoulder	Not stated	Yes	Yes	Unknown	Not available for site visit	Equipment not locked out or de-energized; inadequate signage or instruction of electrical hazard	Procedure
	19	OPRW-19 Martinrea Canada	Industrial	Critical Injury	Worker pinned by heavy die that shifted during normal work	Unspecified injury to leg and pelvis	N/A	N/A	N/A	N/A	N/A	Failure to provide safe work procedure; failure to ensure no unexpected movement of die	Procedure
	20	OPRW-20 Massilly	Industrial	Fatality	Worker struck and pinned by dropping conveyor assembly	Crushed skull	Not stated	Not stated	Not stated	Yes	Referenced, not provided	No lockout procedures in place for zero energy or controlled entry; equipment not locked out or blocked	Procedure
	21	OPRW-21 Meritor Suspension Systems Co	Industrial	Critical Injury	Foot and leg trapped in moving conveyor during maintenance	Unspecified (redacted) injury to foot and leg	Not stated	No	Yes	Unknown	No reference made	No guard to prevent access to pinch point; inadequate training on safe work procedure or associated hazards	Guarding
	22	OPRW-22A National Steel Car	Industrial	Fatality	Hydraulic jack failed and struck worker in head	Unspecified head trauma	Not stated	No	Yes	Unknown	Provided	Jack assembly not designed or approved by P.Eng.; improper modification/use of a tool	Equipment
	OPRW-22B National Steel Car	Industrial	Other Injury	Worker struck by falling assembly component	Unspecified (redacted) injury to hands and leg	Not stated	Yes	Not stated	Unknown	No reference made	Poor design of lifting jig allowed improper loading of parts; no safeguards to prevent falling material; no warnings of hazard	Equipment	
23	OPRW-23 O+E Farms Ltd	Industrial	Critical Injury	Worker entangled in rotating auger of fertilizer blender	Not described (redacted)	Not stated	Yes	Yes	Unknown	No reference made	No conclusions provided in report; appears to be unsafe work activity	Procedure	
24	OPRW-24 Oxford Plastics Inc	Industrial	Critical Injury	Worker struck by coil of piping and partially pinned	Ruptured spleen, fractured ankle and ribs	Not stated	No	Yes	Unknown	No reference made	Failure to protect worker from falling/tipping of equipment or material; failure to conduct hazard assessment	Procedure	

## Appendix B2 - Summary of Reviewed Incident Investigations

Region	Event	Employer	Sector	Type	Event Description	Injury Description	Equipment Condition	Suitable	Modified	PSR Done	Regional Engineer's Report	Finding	Cause of Injury
OPRW	25	OPRW-25 Parmalat Canada Inc	Industrial	Other Injury	Worker burned by hot water during maintenance activity	Burns to unspecified body locations	Not stated	Not stated	Not stated	Unknown	No reference made	Failure to protect worker from exposure to harmful substance; failure to instruct workers about hazard	Procedure
	26	OPRW-26 Shell Canada Ltd	Construction	Critical Injury	Workers exposed to toxic gas during cleaning activity	Loss of consciousness	N/A	N/A	N/A	Hazard assessment	Provided	Specific hazard not identified by assessment; Safe Work Procedure was inadequate for conditions	Procedure
	27	OPRW-27 Sherwin-Williams Canada Inc	Industrial	Other Injury	Worker's arm drawn into pinch point of machinery	Crushed forearm; extensive soft tissue injury	Not stated	Not stated	Not stated	Unknown	Provided	Failure to provide guarding at in-running pinch point; failure to train or inform worker of hazard	Guarding
	28	OPRW-28 Sifto Canada Corp	Mining	Fatality	Worker drawn into chute, engulfed by granular salt	Compression asphyxiation	Breakdown	Yes	No	Safe Work Procedure	No reference made	Failure to guard or fence opening; no fall arrest system; safe work procedure not followed	N/A
	29	OPRW-29 Southwest Glass	Industrial	Other Injury	Hand pulled around rotating roller of transfer conveyor	Partial loss of finger, removed skin	Temp. Manual Operation	No	Yes	Yes	Not Provided	Guardrail removed but no lock out of equipment; workers not trained/informed of hazard	Equipment
	30	OPRW-30 St Lawrence Cement Inc	Mining	Critical Injury	Jacking apparatus came apart, striking a worker	Blow to head, loss of consciousness	N/A	N/A	N/A	N/A	No reference made	Failure to identify non-routine hazardous task or instruct workers on hazard; no control of stored hydraulic energy	Procedure
	31	OPRW-31A Stelco Inc	Industrial	Other Injury X2	Equipment fell from lifting apparatus onto workers	Worker 1: broken toe; Worker 2: crushed thumbs	Cut Sling	Yes	No	N/A	No reference made	Failure to provide adequate instruction or supervision for task	Procedure
		OPRW-31B Stelco Inc	Industrial	Critical Injury	Worker pinned by moving transport devices during repair	Crushed leg requiring amputation	Well maintained	Yes	N/A	Unknown	Provided	Inadequate blocking of equipment to prevent movement during repair activity	Procedure
		OPRW-31C Stelco Inc	Industrial	Critical Injury	Worker struck by cycling material gate during repair activity	Crushed forearm; two broken bones	Well maintained	Yes	Unknown	Unknown	No reference made	No fence or guard to prevent access to pinch point; equipment not locked out or blocked	Guarding
	32	OPRW-32A Suncor Energy Products Inc	Industrial	Critical Injury	Exposure to hazardous vapour during routine maintenance	Treatment for hydrofluoric acid exposure	N/A	N/A	N/A	N/A	No reference made	Procedures inadequate to prevent exposure to hazardous vapours	Procedure
		OPRW-32B Suncor Energy Products Inc	Construction	Critical Injury	Exposure to hazardous substance during construction activity	Treatment for contact/inhalation of rich amine	N/A	N/A	N/A	N/A	No reference made	Failure to ensure uncommissioned pump was de-energized	Procedure
	33	OPRW-33 Vale Canada	Mining	Other Injury X5	Explosion of briquetter plant causing structural damage	Burns and bruises from flying debris	Not stated	Not stated	Not stated	No	Provided (2 reports)	Inadequate pre-development review for new process technology; insufficient precautions taken to protect workers	Equipment
	34	OPRW-34 Veltri Canada	Industrial	Other Injury	Collision of forklift with pedestrian at plant intersection	Closed head injury requiring surgery	N/A	N/A	N/A	N/A	N/A	No barriers or warning signs to protect pedestrians from forklift hazards; inadequate supervision or instruction of hazards	Procedure
	35	OPRW-35 Vincor International Inc	Industrial	Other Injury	Worker's hands entangled in drive belt of uncaser machine	Broken finger, lacerations and bruising to hands	Door interlock bypassed	No	Yes	Unknown	No reference made	Equipment was not guarded to prevent access or injury to workers	Guarding
	36	OPRW-36 Vomar Industries	Industrial	Incident	Fire and explosions at propane handling facility	No worker injuries	Not stated	No	Not stated	N/A	Letter with observations	Failure to maintain equipment, resulting in overfilled and leaking cylinders	Equipment
	37	OPRW-37 Washington Mills	Industrial	Critical Injury	Equipment fell during transport, striking and pinning worker	Crushed arm and shoulder	Not stated	Not stated	Not stated	Unknown	Provided	Inadequate clearance, barriers or warning signs for worker safety; Inadequate restraint of equipment during transport	Procedure
	38	OPRW-38 Westcast Industries Inc	Industrial	Fatality	Worker pinned between furnace hood and transport car	Unspecified fatal compression injury	Safety trip cable not functional	Yes	Yes	Unknown	No report provided	Inadequate guarding to prevent access to hazards; safety devices on transport car not maintained in good condition	Guarding
	39	OPRW-39 Woodstock Stampings	Industrial	Critical Injury	Worker struck by clamp ejected from press during set-up	Fractured sternum, partially collapsed artery	Not stated	Yes	No	Unknown	Letter provided	Failure to provide safe work instruction to workers; inadequate clearances between components of die set	Procedure
	OPRN	1	OPRN-01 FNX Mining	Mining	Critical Injury	Worker became stuck in sandfill during backfill activity	Chemical burns to legs, groin & buttocks	N/A	N/A	N/A	Unknown*	No reference made	Failure to provide safe access to workplace
2		OPRN-02A Bombardier Transportation	Industrial	Other Injury	Machine movement during setup/changeout activity	Crushed index finger later amputated	Not stated	Yes?	Unknown	Unknown	No reference made	Machine not locked out; no procedure	Procedure
		OPRN-02B Bombardier Transportation	Industrial	Other Injury	Electrocution during electrical test of passenger rail car	Hand contacted live conductor	N/A	N/A	N/A	N/A	Provided	Lack of training; PPE not used; no reference in procedure	Procedure
3		OPRN-03 Columbia Forest Products Ltd	Industrial	Fatality	Machine movement during maintenance activity	Worker pinned by equipment in cycle	Not stated	Yes?	Unknown	Unknown	Provided	Inadequate training; no specific lockout procedure for task	Procedure
4		OPRN-04 Columbia Forest Products Ltd	Industrial	Other Injury	Fingers caught in pinch point	Fingers cut by equipment	Not stated	Unknown	Unknown	Unknown	No reference made	Guards not properly adjusted; limited information in report	Guarding
5		OPRN-05A Essar Steel	Industrial	Critical Injury X3	Flame and molten material erupted from Blast Furnace	Burn injuries to workers	Not stated	Unknown	Unknown	Unknown	No reference made	Failed to limit exposure or implement engineering controls	Equipment
		OPRN-05B Essar Steel	Industrial	Critical Injury	Equipment fell during maintenance activity	Falling equipment fractured wrist & arm	Not stated	Unknown	Unknown	Unknown	No reference made	Inadequate notices of maximum safe working load; no inspection records	Procedure
		OPRN-05C Essar Steel	Industrial	Critical Injury	Work Cart fell when lifted to mezzanine by forklift	Struck by falling equipment	Not stated	Unknown	Unknown	N/A	Provided	Failure to operate forklift in a safe manner	Procedure
6		OPRN-06A Essar Steel Algoma Inc	Industrial	Critical Injury	Battery explosion during scheduled maintenance	Contact with face & eyes	No defects	Yes	No	N/A	No reference made	Eyewash and Deluge Shower not functional	Procedure
		OPRN-06B Essar Steel Algoma Inc	Industrial	Fatality	Falling material during pre-start check	Struck by falling material	Missing guards; Damaged controls	Unknown	Yes	Unknown	Provided	Lack of appropriate guards; recommend modifications to conveyor be assessed	Guarding
7	OPRN-07 Lac des Iles Mines Ltd	Mining	Critical Injury	Depressurization of water line	Struck in leg by equipment	Not stated	No?	Unknown	Unknown*	Not Provided	Inadequate design of dewatering system; MOL ordered P.Eng. review	N/A	
8	OPRN-08 Northern Sawmills Inc	Industrial	Other Injury X2	Dust collector explosion during fire investigation	Burns to faces and hands	Not stated	No?	Unknown	Not Done?	Provided	Failure to provide appropriate controls; review of collection system is recommended	Equipment	
9	OPRN-09 Terrace Bay Pulp Inc	Industrial	Fatality	Blow tank explosion during welding repair activity	Reference to Coroner's report	N/A	N/A	N/A	N/A	Provided	Failure to follow procedures; inadequate training of workers	Procedure	
10	OPRN-10 Vale Canada Stobie Mine	Mining	Fatality X2	Workers buried by "run of muck" (water & rock waste)	Asphyxiation?	N/A	N/A	N/A	Unknown*	Provided	Failure to prevent accumulation or flow of water	N/A	
OPCE	1	OPCE-01 Tower Automotive	Industrial	Other Injury?	Press equipment closed during part placement	Hand crushed by equipment	Excessive wear	Yes	Unknown	Unknown	Provided	Hand restraint failed to function as required; equipment not adequately maintained	Equipment
	2	OPCE-02 Bombardier Inc	Industrial	Other Injury?	Worker fell 60 inches from elevated lift	Head injury, shoulder dislocation, broken ribs	Safety features bypassed	No	Yes	N/A	No reference made	Failure to maintain lifting device in proper condition for safe use	Procedure
	3	OPCE-03 Metal Koting Continuous Colour Coat Ltd	Industrial	Critical Injury	Hand caught in pinch point of feeding rollers	Hand de-gloved, blood loss	Not stated	Yes	Unknown	Yes?	No reference made	Failure to provide guarding at in-running pinch point	Guarding



## Appendix B2 - Summary of Reviewed Incident Investigations

Region	Event	Employer	Sector	Type	Event Description	Injury Description	Equipment Condition	Suitable	Modified	PSR Done	Regional Engineer's Report	Finding	Cause of Injury
OPCE	4	OPCE-04 Earthfresh Foods Corp	Industrial	Other Injury?	Thumb caught in conveyor and drawn into pinch point	Severed thumb	No guards	Yes	No	Unknown	No reference made	Failure to provide guarding at in-running pinch point	Guarding
	5	OPCE-05 Electro-Pack Inc	Industrial	Other Injury?	Operator clearing material jam during machine cycle	Hand crushed by equipment	No guards	No	Yes	Yes	No reference made	Inadequate guard; modified door made interlock switch ineffective	Guarding
	6	OPCE-06 Food Directions Inc	Industrial	Other Injury?	Arm caught in moving blades of industrial mixer	Amputated arm & broken ribs	Disconnected interlock	No	Yes	Unknown	Provided	Equipment not locked out or blocked during cleaning	Equipment
	7	OPCE-07 General Motors of Canada Ltd	Industrial	Critical Injury	Equipment fell during maintenance activity	Struck by falling equipment	N/A	N/A	N/A	N/A	Provided	Failure to train or inform worker of safe procedure; failure to block movement of equipment	Procedure
	8	OPCE-08 Global Egg Corporation	Industrial	Other Injury?	Hair caught in rotating shaft during equipment setup	Hair and scalp? Damage	Not stated	Yes	No	Unknown	No reference made	Failure to adequately guard rotating equipment; failure to lock out equipment	Guarding
	9	OPCE-09 Goodyear Canada Inc	Industrial	Other Injury?	Arm drawn into pinch point during machine operation	Compound fracture of forearm	Not stated	No	Yes	Unknown	Provided	Failure to provide guarding at in-running pinch point: failure to train or inform worker of hazard	Guarding
	10	OPCE-10 Holt Renfrew Co Ltd	Industrial	Critical Injury	Struck by moving equipment during compactor operation	Multiple fractures to arm and leg	Good	Yes	Yes	Not done	No reference made	Failure to use manufacturer's instructions; worker not trained on correct operating procedure; inadequate guards	Equipment
	11	OPCE-11 Globe Spring + Cushion Co Ltd	Industrial	Fatality	Worker crushed by moving equipment	Crushed by equipment	Not properly maintained	No	Yes	Unknown	Provided	Equipment not effectively guarded to prevent worker access during operation	Guarding
	12	OPCE-12 Paramount Structures Ltd	Construction	Other Injury?	Concrete form dropped 20-24 inches on worker's foot	Broken bones in the foot	Missing part	No	Yes	N/A	Provided	Failure to maintain equipment in good condition	N/A
	13	OPCE-13 Pasta Quistini Inc	Industrial	Fatality	Worker entangled in mixing blades of pasta machine	Not described	Not stated	No	Yes	Not done	Provided	Operation without PSR; inadequate training; no lockout procedure	Equipment
	14	OPCE-14 Santa Maria Foods Corp	Industrial	Critical Injury	Worker entangled in moving parts of pasta shaper	Multiple fractures of arm; head injury	Not stated	Yes	No	Unknown	No reference made	Interlock device not properly maintained; no lockout procedure; inadequate training	Equipment
	15	OPCE-15 St Marys Cement	Mining	Other Injury	Struck by steel bar used to prevent rotation of valve	Fracture of facial bones	Not stated	No	No	N/A	Provided	Lack of training or preventive measures; braking system didn't function as intended	Equipment
	16	OPCE-16 Statum Designs Inc	Industrial	Critical Injury	Hand struck by rotating drum as it slowed rotation	Severed fingers and thumb	Not stated	No	Unknown	Unknown	No reference made	Lack of adequate guarding to prevent access to rotating parts; no lockout for controls	Guarding
	17	OPCE-17 Steelmatic Wire Inc	Industrial	Fatality	Worker drawn into machine when adjusting feed material	Severed fingers, succumbed to injuries	Not properly maintained	Not stated	Not stated	Yes	No reference made	Inadequate guarding; PSR findings not implemented; inadequate training, access to manuals	Guarding
18	OPCE-18 Union Felt Products Inc	Industrial	Other Injury?	Hand caught between rollers rotating due to inertia	Serious injuries to hand, resulting in loss to inertia	Not stated	Not stated	Not stated	Unknown	No reference made	Lockout procedure and guarding did not address inertial movement of equipment	Guarding	
19	OPCE-19 Vitafoam Products Canada Ltd	Industrial	Fatality	Equipment operated while maintenance worker inside	Specific injuries not described	Not stated	No	Not stated	Unknown	No reference made	Failure to lock out equipment; lack of written procedures and worker training	Procedure	
OPCW	1	OPCW-01 Cam Tool + Die Ltd	Industrial	Fatality	Work caught between dies of blow press during cycle	Head, shoulder and arm crushed by machine	Not stated	Not stated	Not stated	Unknown	Provided	Inadequate safeguards to prevent worker injuries	Equipment
	2	OPCW-02 Enbridge Gas Distribution	Construction	Property Damage	Leak of pressurized gas line in excavation ignited	N/A	Not stated	Yes	No	N/A	No reference made	Gas line was not shut off or drained prior to excavation	N/A
	3	OPCW-03 Jebco Industries Ltd	Industrial	Other Injury?	Moving part of work piece struck worker	Multiple fractures to hip and fingers	Not stated	Yes	No	N/A	No reference made	Capacity of crane derated to below weight of work piece; worker not informed/trained regarding hazard	Procedure
	4	OPCW-04 Jeld Wen Windows + Doors	Industrial	Other Injury?	Work piece kicked back when using unguarded saw	Severed fingers and thumb	Not stated	Not stated	Not stated	Unknown	No reference made	Unguarded table saw blade; worked not adequately trained/informed of hazard	Guarding
	5	OPCW-05 Plastcoat-Magna International	Industrial	Other Injury?	Molten plastic ejected from machine during maintenance	Burns to head, neck, face, arms and leg	Obstructed	No	Yes	Yes	No reference made	Inadequate lockout procedure to ensure zero energy state	Procedure
	6	OPCW-06 Bateman Manufacturing	Industrial	Other Injury	Lifting bracket came loose; steel plate dropped onto foot	Crushed foot	Not stated	Yes	No	N/A	No reference made	Inadequate training of crane operator	Procedure
	7	OPCW-07 Norampac Inc	Industrial	Critical Injury	Worker's hand and arm injured when clearing paper jam	Hand and arm pinched by rotating machinery	Not stated	Not stated	Not stated	Unknown	No reference made	Failure to guard in-running pinch point; equipment not locked out	Guarding
	8	OPCW-08 ODC Manufacturing Ltd	Industrial	Other Injury?	Hand caught in die cast machine when clearing lodged part	Not described	Not stated	Yes	Yes	Yes	No reference made	Guard interlocks did not operate as designed; failed to prevent access to pinch point	Equipment
	9	OPCW-09 Petro Canada Lubricant Centre	Industrial	Critical Injury	Worker burned by burst of pressurized steam	Burns to foot and ankle	Not stated	Yes	Yes	Unknown	No reference made	Workers not effectively trained in interim procedure	Procedure
	10	OPCW-10 QBD Cooling Systems Inc	Industrial	Critical Injury	Worker pinned inside machine during mould change	Not described	Not stated	Not stated	Not stated	Unknown	Provided	Machine not locked out; workers not trained/informed of associated risks	Procedure
	11	OPCW-11 Royal Edge Inc	Industrial	Orders Only	Failure to comply with 24 of 44 MOL Orders	N/A	Not stated	Not stated	Not stated	Not done?	No reference made	Failure to adequately guard equipment; failure to complete PSRs	Guarding
	12	OPCW-12 Sure Fresh Foods Inc	Industrial	Fatality	Explosion during a welding repair in a confined space	Third degree burns resulting in death	N/A	N/A	N/A	N/A	No reference made	Lack of training, written procedures, testing equipment for confined space entry	Procedure
	13	OPCW-13 Talon Systems Inc	Industrial	Critical Injury?	Worker struck by moving equipment in restricted area	Initial impact to back, and subsequent to head	Not stated	Yes	No	Unknown	Provided	Inappropriate guarding for moving equipment; equipment not locked out	Guarding

## Appendix B3 – Notes on Ministry of Labour Prosecutions

1. Since 2005, the Ontario Ministry of Labour has issued press releases for 833 cases that it successfully prosecuted for violations of the *Occupational Health & Safety Act (OSHA) and Ont. Reg. 851*. Upon examination of those cases, 360 or 43% occurred at a manufacturing site. The balance of cases prosecuted by the Ministry related to violations of the *Employment Standards Act* or occurred at industrial establishments that did not manufacture a product, and therefore not in the scope of this research.

Year	Total Cases*	Cases at a Manufacturing Site	Percentage
2005	88	28	32%
2006	86	44	51%
2007	77	31	40%
2008	97	41	42%
2009	95	32	34%
2010	89	41	46%
2011	90	23	26%
2012	62	37	60%
2013	51	22	43%
2014	59	35	59%
2015	39	26	67%
<b>Total</b>	<b>833</b>	<b>360</b>	<b>43%</b>

\*Cases that the Ministry issued a press release.

2. By examining prosecutorial disposition forms (PDFs) issued by the Ministry, the cases were categorized as to their relevance to the industrial exception. The 320 cases classified as Type 1 and Type 2 were deemed to be the most relevant.
  - Type 1 cases involved a manufacturing process design issue or an equipment modification issue, both examples of professional engineering work.
  - Type 2 cases involved a policy, procedure or supervision issue, including insufficient machine guarding or lock out procedures. These cases were assumed less likely to involve professional engineering work.
  - Type 3 cases involved a product design issue or the work of a third party designer. These were considered to fall outside the scope of the industrial exception, which only applies to professional engineering work done by an employee of the manufacturer, on a process to make a product for that same manufacturer. Therefore, the engineering work of a third party designer or a Certificate of Authorization holder falls outside the scope of the industrial exception, as does engineering design work on the product itself. These

cases could be enforced by PEO today under its enforcement or discipline provisions of the *Professional Engineers Act*.

Type of Case	Number	Percentage
Type 1 – most relevant	82	23%
Type 2 – less relevant	238	66%
Type 3 – outside the scope	40	11%
<b>Total</b>	<b>360</b>	<b>100%</b>

3. After obtaining court files from courtrooms across Ontario, it was determined that 89 of the Type 1 and Type 2 cases appeared to involve workplace accidents where the cause was a process design, equipment design or equipment modification issue by an in-house employee.

Investigation summaries and engineering reports were obtained through Freedom of Information (FOI) requests to the Ministry for the 89 cases of interest. These reports were reviewed for whether the equipment or machinery was the cause of the worker accident, for who designed, modified and/or certified the equipment or machinery involved, and if a PSR was done on the equipment or machinery of interest.

A detailed review of the 89 cases of interest identified 50 incidents where the cause of the reported injury or fatality was attributed to faulty equipment or inadequate machine guarding.

There were 21 incidents from this sample that reported equipment that had been modified or was unsuitable to safely complete the required work, as detailed in the table below:

Employer	Type	Event Description	Injury Description	Suitable	Modified	Cause of Injury
Electro-Pack Inc	Other Injury	Operator clearing material jam during machine cycle	Hand crushed by equipment	No	Yes	Guarding
Food Directions Inc	Other Injury	Arm caught in moving blades of industrial mixer	Amputated arm & broken ribs	No	Yes	Equipment
Goodyear Canada Inc	Other Injury	Arm drawn into pinch point during machine operation	Compound fracture of forearm	No	Yes	Guarding
Holt Renfrew Co Ltd	Critical Injury	Struck by moving equipment during compactor operation	Multiple fractures to arm and leg	Yes	Yes	Equipment
Globe Spring + Cushion Co Ltd	Fatality	Worker crushed by moving equipment	Crushed by equipment	No	Yes	Guarding
Pasta Quistini Inc	Fatality	Worker entangled in mixing blades of pasta machine	Not described	No	Yes	Equipment
St Marys Cement	Other Injury	Struck by steel bar used to prevent rotation of valve	Fracture of facial bones	No	No	Equipment
Statum Designs Inc	Critical Injury	Hand struck by rotating drum as it slowed rotation	Severed fingers and thumb	No	Unknown	Guarding
ODC Manufacturing Ltd	Other Injury	Hand caught in die cast machine when clearing lodged part	Not described	Yes	Yes	Equipment
Essar Steel Algoma Inc	Fatality	Falling material during pre-start check	Struck by falling material	Unknown	Yes	Guarding
Northern Sawmills Inc	Other Injury	Dust collector explosion during fire investigation	Burns to faces and hands	No	Unknown	Equipment
Bosch Rexroth Canada Corp	Critical Injury	Pressurized oil hose struck service technician in the head	Broken bone, head injury, loss of consciousness	No	Yes	Equipment
Cello Products Inc	Other Injury	Fingers crushed by moving machine while clearing misfed part	Not described or redacted	No	Yes	Guarding
Erie Greenhouse Structures Inc	Other Injury	Finger pinched by dies while attempting to reposition part	Partial amputation of finger	No	Not stated	Guarding

Employer	Type	Event Description	Injury Description	Suitable	Modified	Cause of Injury
Fisher+Ludlow Inc	Other Injury	Worker's hand caught in machine during welding cycle	Burns to palm and thumb, loss of finger	Yes	Yes	Guarding
Meritor Suspension Systems Co	Critical Injury	Foot and leg trapped in moving conveyor during maintenance	Unspecified (redacted) injury to foot and leg	No	Yes	Guarding
National Steel Car	Fatality	Hydraulic jack failed and struck worker in head	Unspecified head trauma	No	Yes	Equipment
Southwest Glass	Other Injury	Hand pulled around rotating roller of transfer conveyor	Partial loss of finger, removed skin	No	Yes	Equipment
Vincor International Inc	Other Injury	Worker's hands entangled in drive belt of uncaser machine	Broken finger, lacerations and bruising to hands	No	Yes	Guarding
Vomar Industries	Incident	Fire and explosions at propane handling facility	No worker injuries	No	Not stated	Equipment
Wescast Industries Inc	Fatality	Worker pinned between furnace hood and transport car	Unspecified fatal compression injury	Yes	Yes	Guarding

There were also 30 incidents from the sample where the suitability of the equipment or existence of modifications was reported as “not applicable” or was otherwise not reported. These incidents are detailed in the table below:

Employer	Type	Event Description	Injury	Suitable	Modified	Cause of Injury
SGS Canada	Other Injury	Weight dropped on worker's hand during sample removal	Bruises, lacerations, partial amputation of finger	Not stated	Not stated	Equipment
JSW Manufacturing Inc	Critical Injury	Work piece struck worker in face during machine cycle	Facial laceration, loss of blood, unconsciousness	Not stated	Not stated	Guarding
Excelcon Steel Co Ltd	Fatality	Worker crushed by materials falling off transport cart	Asphyxiation due to crushing	Not stated	Not stated	Equipment
Canadian Bank Note Company Ltd	Other Injury	Hand and wrist crushed by movement of press	Broken bones and swelling of hand and wrist	Not stated	Not stated	Equipment

Employer	Type	Event Description	Injury	Suitable	Modified	Cause of Injury
Infinity Marble	Orders Only	Failure to comply with 15 MOL Orders	N/A	Not stated	Not stated	Equipment
Canadian General Tower	Critical Injury	Worker's arm became entangled when rewinding scrap vinyl	Not described or redacted	Not stated	Not stated	Guarding
Con Cast Pipe Ltd	Critical Injury	Metal form broke apart and struck worker while being filled	Crushed chest; trauma and coma	N/A	N/A	Equipment
Erie Greenhouse Structures Inc	Other Injury	Finger pinched by dies while attempting to reposition part	Partial amputation of finger	No	Not stated	Guarding
Excell Stamping Inc	Other Injury	Worker's hand caught in pinch point of clutch press	Amputation of fingers, partial amputation of thumb	Not stated	Not stated	Guarding
Gates Canada Inc	Critical Injury	Temporary worker's hand pinched by machinery	Tissue damage to fingers; loss of consciousness	Not stated	Not stated	Guarding
Kellogg Canada Inc	Other Injury	Hand struck by moving machinery during sample collection	Severed finger	Not stated	Not stated	Guarding
Linamar Corporation	Fatality	Worker struck by closing equipment hood and crushed	Not described	Yes	Not stated	Equipment
National Steel Car	Other Injury	Worker struck by falling assembly component	Unspecified (redacted) Injury	Yes	Not stated	Equipment
Sherwin-Williams Canada Inc	Other Injury	Worker's arm drawn into pinch point of machinery	Crushed forearm; extensive soft tissue Injury	Not stated	Not stated	Guarding
Stelco Inc	Critical Injury	Worker struck by cycling material gate during repair activity	Crushed forearm; two broken bones	Yes	Unknown	Guarding
Vale Canada	Other Injury	Explosion of briquetter plant causing structural damage	Burns and bruises from flying debris	Not stated	Not stated	Equipment
Vomar Industries	Incident	Fire and explosions at propane handling facility	No worker injuries	No	Not stated	Equipment
Columbia Forest Products Ltd	Other Injury	Fingers caught in pinch point	Fingers cut by equipment	Unknown	Unknown	Guarding

Employer	Type	Event Description	Injury	Suitable	Modified	Cause of Injury
Essar Steel	Critical Injury	Flame and molten material erupted from Blast Furnace	Burn injuries to workers	Unknown	Unknown	Equipment
Essar Steel Algoma Inc	Fatality	Falling material during pre-start check	Struck by falling material	Unknown	Yes	Guarding
Northern Sawmills Inc	Other Injury	Dust collector explosion during fire investigation	Burns to faces and hands	No	Unknown	Equipment
Tower Automotive	Other Injury	Press equipment closed during part placement	Hand crushed by equipment	Yes	Unknown	Equipment
Metal Koting Continuous Colour Coat Ltd	Critical Injury	Hand caught in pinch point of feeding rollers	Hand de-gloved, blood loss	Yes	Unknown	Guarding
Statum Designs Inc	Critical Injury	Hand struck by rotating drum as it slowed rotation	Severed fingers and thumb	No	Unknown	Guarding
Steelmatic Wire Inc	Fatality	Worker drawn into machine when adjusting feed material	Severed fingers, succumbed to injuries	Not stated	Not stated	Guarding
Union Felt Products Inc	Other Injury	Hand caught between rollers rotating due to inertia	Serious injuries to hand, resulting in loss	Not stated	Not stated	Guarding
Cam Tool + Die Ltd	Fatality	Work caught between dies of blow press during cycle	Head, shoulder and arm crushed by machine	Not stated	Not stated	Equipment
Jeld Wen Windows + Doors	Other Injury	Work piece kicked back when using unguarded saw	Severed fingers and thumb	Not stated	Not stated	Guarding
Norampac Inc	Critical Injury	Worker's hand and arm injured when clearing paper jam	Hand and arm pinched by rotating machinery	Not stated	Not stated	Guarding
Royal Edge Inc	Orders Only	Failure to comply with 24 of 44 MOL Orders	N/A	Not stated	Not stated	Guarding

4. A detailed review of 91 discrete incidents relating to the 89 cases of interest also led to questions regarding compliance to pre-start health and safety reviews (PSR). There were 28 incidents where there were discrepancies noted in PSR compliance, as detailed in the table below.

Employer	Type	Event Description	Equipment Condition	Suitable	Modified	PSR Done	Discrepancy	Cause of Injury
Gates Canada Inc	Critical Injury	Temporary worker's hand pinched by machinery	Not stated	Not stated	Not stated	Yes	Lockout method not documented in PSR	Guarding
Massilly	Fatality	Worker struck and pinned by dropping conveyor assembly	Not stated	Not stated	Not stated	Yes	PSR Recommendations not implemented	Procedure
Southwest Glass	Other Injury	Hand pulled around rotating roller of transfer conveyor	Temp. Manual Operation	No	Yes	Yes	PSR Recommendations not implemented	Equipment
Metal Koting Continuous Colour Coat Ltd	Critical Injury	Hand caught in pinch point of feeding rollers	Not stated	Yes	Unknown	Yes	PSR Recommendations not implemented	Guarding
Electro-Pack Inc	Other Injury	Operator clearing material jam during machine cycle	No guards	No	Yes	Yes	Equipment modified after PSR	Guarding
Steelmatic Wire Inc	Fatality	Worker drawn into machine when adjusting feed material	Not properly maintained	Not stated	Not stated	Yes	PSR Recommendations not implemented	Guarding
Plastcoat-Magna International	Other Injury	Molten plastic ejected from machine during maintenance	Obstructed	No	Yes	Yes	PSR Recommendations not implemented	Procedure
ODC Manufacturing Ltd	Other Injury	Hand caught in die cast machine when clearing lodged part	Not stated	Yes	Yes	Yes	PSR completed after recurrent injuries	Equipment
Fisher+Ludlow Inc	Other Injury	Worker's hand caught in machine during welding cycle	Ineffective guarding	Yes	Yes	Ordered	PSR ordered by MOL investigator	Guarding
Northern Sawmills Inc	Other Injury	Dust collector explosion during fire investigation	Not stated	No?	Unknown	Not done	PSR would normally be required	Equipment
Holt Renfrew Co Ltd	Critical Injury	Struck by moving equipment during compactor operation	Good	Yes	Yes	Not done	Review completed following incident	Equipment
Pasta Quistini Inc	Fatality	Worker entangled in mixing blades of pasta machine	Not stated	No	Yes	Not done	Stop Work Order issued by MOL	Equipment
Royal Edge Inc	Orders Only	Failure to comply with 24 of 44 MOL Orders	Not stated	Not stated	Not stated	Not done	MOL Orders for PSRs not completed	Guarding
Baffin Inc	Critical Injury	Hand pinched by movement of mould during installation	Not stated	Not stated	No	N/A	PSR ordered by MOL investigator	Procedure



Employer	Type	Event Description	Equipment Condition	Suitable	Modified	PSR Done	Discrepancy	Cause of Injury
SGS Canada	Other Injury	Weight dropped on worker's hand during sample removal	Not maintained	Not stated	Not stated	Unknown	Inadequate safety mechanisms identified	Equipment
JSW Manufacturing Inc	Critical Injury	Work piece struck worker in face during machine cycle	Not stated	Not stated	Not stated	Unknown	Evaluation by professional engineer ordered	Guarding
Ottawa Fibre LP	Critical Injury	Worker in restricted area struck by moving equipment	Custom built	Not stated	Not stated	Unknown	Equipment built in-house; silent on PSR	Procedure
Excelcon Steel Co Ltd	Fatality	Worker crushed by materials falling off transport cart	Custom built	Not stated	Not stated	Unknown	Deficiency in equipment design noted	Equipment
Canadian Bank Note Company Ltd	Other Injury	Hand and wrist crushed by movement of press	Not stated	Not stated	Not stated	Unknown	Referenced PSR was for other equipment	Equipment
Bosch Rexroth Canada Corp	Critical Injury	Pressurized oil hose struck service technician in the head	No flow relief valve	No	Yes	Unknown	Deficiency in equipment design noted	Equipment
Dana Canada Corp	Critical Injury	Equipment failure; part of machine dropped on repair worker	Improperly guarded	No	Yes	Unknown	Evaluation by professional engineer ordered	Procedure
Linamar Transgear Manufacturing	Other Injury	Contacted with high voltage conductor during service activity	Not stated	Yes	Yes	Unknown	Identified firms not qualified to do PSR	Procedure
Oxford Plastics Inc	Critical Injury	Worker struck by coil of piping and partially pinned	Not stated	No	Yes	Unknown	Evaluation by professional engineer ordered	Procedure
Tower Automotive	Other Injury	Press equipment closed during part placement	Excessive wear	Yes	Unknown	Unknown	Evaluation by professional engineer ordered	Equipment
Food Directions Inc	Other Injury	Arm caught in moving blades of industrial mixer	Disconnected interlock	No	Yes	Unknown	Described equipment would require PSR	Equipment
Globe Spring + Cushion Co Ltd	Fatality	Worker crushed by moving equipment	Not properly maintained	No	Yes	Unknown	Referenced PSR was for other equipment	Guarding
Cam Tool + Die Ltd	Fatality	Work caught between dies of blow press during cycle	Not stated	Not stated	Not stated	Unknown	Described equipment would require PSR	Equipment
QBD Cooling Systems Inc	Critical Injury	Worker pinned inside machine during mould change	Not stated	Not stated	Not stated	Unknown	Stop Work Order on equipment built in-house	Procedure

## Appendix B4 – Five Cases Relevant to the Research Project

### **National Steel Car Ltd.**

### **Fatality**

**September 19, 2004**

National Steel Car is a manufacturer of rail cars and rail car components in Hamilton, and is classified as an Industrial Establishment under the *Occupational Health and Safety Act*.

On September 19, 2004, a worker was struck in the head by a steel spacer bar that failed during the assembly of a new model of gondola car. The impact of the blow caused a massive head injury that resulted in the worker's death.

The spacer was part of a hydraulic jack assembly used to hold apart the side walls of the rail car while the worker welded in place a temporary brace or "dog" between the side and end walls of the rail car. The bottom edges of the walls had been welded to the bed of the rail car, and the jack assembly was used to push out the top of the side walls to be made square with the end walls prior to adding the dog.

The Ministry of Labour investigation noted that the jack assembly was constructed contrary to in-house procedures, which required that it be designed and fabricated by the company's process engineering department. The report by the Ministry's regional engineer determined that the jack assembly was built in-house, by unlicensed persons and not designed, fabricated or approved by a professional engineer, or in accordance with any engineering standard. The engineer's report also noted that the jack assembly was operated at a hydraulic pressure of 8,000 psi, and that the pump's specifications allowed a maximum pressure of 5,000 psi when used with a jack pin attachment. The Ministry engineer further determined that the assembly failed at a connection between the jack pin and its socket. The investigation did not comment on whether a pre-start health and safety review under O.Reg. 851, *Industrial Establishments* was applicable for the jack assembly.

National Steel Car was prosecuted under Section 25(2)(h) of the *Occupational Health and Safety Act* (failure to take reasonable precaution to protect a worker). This resulted in a conviction by the Ontario Court of Justice at Hamilton, on October 17, 2008. The company was fined \$200,000, plus a 25 percent victim fine surcharge to assist victims of crime.

National Steel Car is an unlicensed employer of engineers, and there is no record that the company has ever held a certificate of authorization from PEO.

The non-standard jack assembly would be considered to be production equipment that was used during the rail car assembly process. Although the company has an internal procedure that assigns the design and fabrication of such assemblies to its process engineering department, this was not followed.

National Steel Car's formal design process for such tool assemblies indicates that such work may not be strictly exempted by the industrial exception. Since no engineers were involved in the design of the jack assembly, there can be no investigation or complaint against any of the company's licensed employees.

J.S.W. Manufacturing operates a custom metal fabrication and welding plant in Bracebridge, and is classified as an Industrial Establishment under the *Occupational Health and Safety Act*. The company provides general welding and fabrication services, equipment repair and millwrighting.

On September 9, 2005, a worker was operating a 40-ton hydraulic brake press to bend a 28-inch long piece of ½” steel in small increments. During the first bend, the free end of the piece sprang up, striking the worker below the nose. The worker received a severe facial laceration, with blood loss and a period of unconsciousness. The worker’s doctor reported that the worker lost the senses of taste and smell following the injury.

The Ministry of Labour investigation reported that the brake press had been constructed by the employer in or about 1989, and was unguarded at the time of the incident. A prior Ministry inspection on July 5, 2004 had identified the machine as a hazard and issued an Order that the employer “provide a guard, or other device for the die of the brake press, that will prevent any worker from coming in contact with the die’s pinch points”.

The Ministry inspector issued a new Order, concurrent with the investigation, that the brake press not be operated until it was evaluated by a professional engineer and guarded sufficiently. Subsequent to the initial site visit, the investigation was reassigned to another inspector. It’s unclear whether construction and maintenance records for the brake press were obtained as part of a subsequent search warrant that was executed by the new inspector. The Ministry did not assign a regional engineer to participate in the investigation however, the subject equipment was subsequently removed from the workplace.

J.S.W. Manufacturing was prosecuted under Section 25(1)(c) of the *Occupational Health and Safety Act* (prescribed measures and procedures were not carried out) and Section 26 of Regulation 851, *Industrial Establishments* (failure to provide guarding to prevent injury). This resulted in a conviction by the Ontario Court of Justice at Bracebridge, on June 14, 2007. The company was fined \$50,000, plus a 25 percent victim fine surcharge to assist victims of crime.

The brake press that was involved in the workplace injury is considered to be production equipment that was designed in-house by the employer for use in the fabrication of its products. The industrial exception applies to this scenario.

The age of the equipment pre-dates the introduction of a pre-start health and safety review as required under O.Reg. 851, *Industrial Establishments*, and the associated engineering work was permitted under the industrial exception. PEO has no record that J.S.W. Manufacturing has ever had an engineer on staff, and consequently has no mechanism to investigate engineering work that might relate to the design of this equipment.

Excelcon Steel is a manufacturer of steel structures for construction projects in Stittsville, and is classified as an Industrial Establishment under the *Occupational Health and Safety Act*.

On November 15, 2006, a worker was using a cart on a fixed rail arrangement to move two cylindrical steel columns from the welding shop to the outdoor loading area, when the columns rolled off the cart and onto the worker. The columns were 7 metres long and had a total weight of approximately 590 kg. The weight of the columns crushed the worker, resulting in mechanical compression and asphyxiation, and the worker died from the injury.

The Ministry of Labour investigation included a report by its regional engineer regarding the design of the transport cart involved in the incident. The investigation determined that the cart and associated track were built in-house in or about 1996. The regional engineer noted that the cart did not have any mechanism, such as side rails, to prevent cylindrical objects from rolling off the cart, and the columns were not secured to the cart to prevent movement. The Ministry determined the rail and trolley transport system was not designed or reviewed by a professional engineer, and issued a Stop Work Order to discontinue use of the equipment. A new transport system, designed and reviewed by an engineer, was subsequently installed.

Excelcon Steel was prosecuted under Section 25(1)(c) of the *Occupational Health and Safety Act* (prescribed measures and procedures were not carried out) and also under Section 45(a) of Regulation 851, *Industrial Establishments* (failure to provide adequate precautions for handling of materials). This resulted in a conviction by the Ontario Court of Justice at Ottawa, on May 15, 2008. The company was fined \$130,000, plus a 25 percent victim fine surcharge to assist victims of crime.

Although the Ministry investigation identified the rail and trolley system to be material handling equipment, it's unclear whether it would be classified as production equipment or equipment that would require a pre-start health and safety review (PSR). It's possible that the company believed the associated design work was allowed under the industrial exception, given PSR requirements had not been introduced and the existing regulation was otherwise unclear.

Excelcon Steel is an unlicensed employer of engineers and its founder and president reportedly has training in civil engineering but no record that he has ever been licensed by PEO. The company had employed a structural engineer prior to the incident, and has since hired two engineers with backgrounds in civil-structural design. It's assumed that their roles related to the design of the company's products, rather than equipment used for product fabrication or material handling. Since there were no professional engineers on staff at when the equipment was introduced, or at the time of the incident, there is no practitioner that can be investigated by PEO regarding design of the equipment.

## Con Cast Pipe Inc.

## Critical Injury

August 24, 2010

Con Cast Pipe is a manufacturer of concrete infrastructure products in Guelph, and is classified as an Industrial Establishment under the *Occupational Health and Safety Act*.

On August 24, 2010, a metal form used to produce a pre-cast concrete footing broke apart and fell on top of a worker who was standing beside it. The worker received a significant crush injury that resulted in chest trauma, and spent 15 days in a coma following the incident.

The form collapsed during a production cycle, as it was being filled with wet concrete. The pre-cast footing required five cubic metres of concrete, and reportedly collapsed after approximately three cubic metres had been poured into the form. The weight of the wet concrete pushed one of the form walls off of the form table and was not sufficiently attached to the adjacent wall to prevent it from falling on the worker. The Ministry of Labour investigation found that the form was not properly designed to account for the applied loads and pressures when pouring the cement.

The Ministry investigation included a report by its regional engineer based upon a field visit following the incident. The report identified potential causes of the form's collapse, but noted that the form had been modified since the incident, and the specific failure mechanism could not be identified. The engineer's report also noted that there was no indication that the formwork had been designed by an engineer, and no documents to prove otherwise.

Con Cast Pipe was prosecuted under Section 25(2)(h) of the *Occupational Health and Safety Act* (failure to take reasonable precaution to protect a worker). This resulted in a conviction by the Ontario Court of Justice at Guelph, on March 12, 2012. The company was fined \$55,000, plus a 25 percent victim fine surcharge to assist victims of crime.

Con Cast Pipe was an unlicensed employer of two engineers at the time of the incident. One of these is currently the chief design engineer at Con Cast and the other left the company within six months following the incident. It's assumed that the engineers' roles related to the design of the company's products and design of the associated forms may be incidental to the work, but not necessarily a primary consideration for the engineers.

It's unclear whether the form design would fall under the industrial exception. Similar form work design at a construction site is normally done by a structural engineer. It's possible that the company believed the associated design work was allowed under the industrial exception. Without documents to identify the involvement of an engineer in the design of the form, the only means for PEO to investigate the deficient engineering work would be via a complaint against one of Con Cast's licensed employees.

## **Pasta Quistini Inc.**

## **Fatality**

**April 11, 2011**

Pasta Quistini Inc, is a manufacturer of pasta, sauces and prepared foods in North York, and is classified as an Industrial Establishment under the *Occupational Health and Safety Act*.

On April 11, 2011, a worker was cleaning an industrial pasta maker that was used to mix, knead and cut pasta dough. The worker used a mobile platform ladder to access the hopper portion of the machine while it continued to operate, and became entangled in the mixing blades of the machine's interior auger. The worker was killed as a result of multiple traumatic injuries.

The hopper portion of the machine was equipped with a cover gate and a limit switch to act as an interlock device intended to shut off the machine when the gate was open during the cleaning activity. The Ministry of Labour investigation concluded that the gate was open at the but the machine continued to operate. The machine's emergency stop button was located on the opposite side of the unit and beyond the reach of the worker. Further, the company did not have a lock out/tag out program in place at the time of the incident.

An assessment by the Ministry's regional engineer determined that a pre-start health and safety review, as required under O.Reg. 851, *Industrial Establishments*, had not been completed prior to operating the equipment at this location. The engineer noted that several slats were missing from the cover gate, creating large openings above the auger section, and that the limit switch failed to detect when the cover gate was open. The regional engineer concluded that the limit switch did not meet the requirements for an interlocking device.

Pasta Quistini was prosecuted under Section 25(1)(b) of the *Occupational Health and Safety Act* (failure to maintain equipment in good condition), and the worker's supervisor was prosecuted under Section 27(2)(c) of the Act (failure to take reasonable precaution to protect a worker). This resulted in a conviction by the Ontario Court of Justice at Toronto, on June 19, 2013. The company was fined \$120,000, and the supervisor was fined \$12,000, plus a 25 percent victim fine surcharge to assist victims of crime.

The Ministry of Labour investigation noted that the subject equipment had been involved in two prior incidents that resulted in less serious injuries. The Ministry did not order the employer to have the equipment evaluated by a professional engineer, and it was noted that the machine was inoperable as a result of alterations made to extract the worker from the mixing blades.

A number of contraventions in the workplace were observed by the Ministry inspector during the initial field visit, and a stop work order was issued for the entire workplace. This was later replaced by a stop work order for the production area only. Pasta Quistini subsequently engaged the services of a professional engineer to achieve compliance with the stop work orders.

## Appendix B5 – Additional Information from the Ministry of Labour

Following a meeting with staff from the Ministry of Labour's (MOL) Occupational Health and Safety Branch, PEO posed a number of questions regarding how MOL enforces the regulation for Pre-Start Health and Safety Reviews, and its process for investigation of workplace incidents.

A. MOL provided the following responses on October 28, 2016:

**1 Who determines whether a PSR is required for a specific piece of equipment? Is this left to the employer to make this determination?**

It is the employer's duty to ensure that the measures and procedures prescribed are carried out in the workplace [Occupational Health and Safety Act (OHSA) clause 25 (1)(c)]. The Industrial Establishment Regulation (Reg. 851) prescribes the circumstances whereby an employer would be required to conduct a PSR [Reg. 851 clause 7].

**2 How does MOL define compliance for PSRs? Is there a policy document or set of guiding principles that is used?**

The inspector may request to view, or order an employer to provide, a copy of an existing PSR report as verification of compliance [OHSA clause 54 (1)(c)].

**3 What actions are taken by MOL inspectors to achieve compliance (e.g., inspections, audits, orders, etc.)?**

Where an inspector finds that a provision of the Act or the regulations has been contravened the inspector may order the employer to comply with the provisions and may require the order to be complied with within such time period as the inspector specifies [OHSA clause 57 (1)]. The inspector may re-attend the workplace to conduct follow up field visits as necessary. Every person who contravenes or fails to comply with an order is guilty of an offence and on conviction is liable to a fine of not more than \$25,000 or to imprisonment for a term of not more than twelve months, or to both [OHSA clause 66(1)]. In the case of a corporation, the maximum fine that may be imposed upon the corporation is \$500,000 [OHSA clause 66(2)].

**4 Is there any public information on PSR compliance or compliance statistics, and where can this information be found? Does MOL report both aggregate and detailed statistics on compliance?**

The MOL website previously contained a document known as Guidelines for Pre-Start Health and Safety Reviews: How to Apply Section 7 of the Regulation for Industrial Establishments. This document is currently being updated and will be re-posted upon completion.

The MOL website contains program based enforcement statistics. The posted information can be accessed at:

<https://www.labour.gov.on.ca/english/hs/pubs/enforcement/index.php>

- 5 MOL investigation reports often contain checklists that include details of the involved equipment's condition, and may include information regarding PSR completion. The meanings of "Yes", "No" and "Not Applicable" are easily understood, but how should it be interpreted if one or more of the equipment condition parameters are not recorded by the inspector?**

An investigation report is completed by the inspector based on the information gathered in the course of the investigation. Checklists are just one type of document which may be found in an investigation report. Other supporting documentation should be taken into consideration in situations where one or more equipment condition parameters are not recorded in the checklist. The interpretation and application of said information would be unique to each particular investigation.

- 6 Under section 54.(1)(k) of the *Occupational Health and Safety Act*, the MOL inspector may issue a written request for the employer to arrange an evaluation by a professional engineer. What is the mechanism that compels the employer to do this?**

Please refer to the response to question 3 as noted.

The inspector may also write an order preventing the use of the piece of equipment pending the professional engineer's evaluation [OHS Act clause 54(1)(l)].

- 7 Is there an MOL policy or other mechanism that triggers a request for an engineer's evaluation if an inspector determines that a PSR was required for a piece of equipment but was not actually completed? How are these latent discoveries of missed PSRs reflected in overall compliance?**

The inspector makes the initial determination whether or not an engineer's evaluation is required based on the facts at the time of the investigation. The inspector may consult with an MOL engineer in making this determination. The inspector may write an order to have an engineer's evaluation conducted [OHS Act clause 54(1)(f), 54(1)(k), 54(1)(m), 54(1)(n) or 54(1)(o)].

- 8 Some MOL investigations are completed entirely by the assigned inspector, and others will involve an MOL regional engineer. How is it determined whether a regional engineer is needed to evaluate technical aspects of an investigation, and who makes that determination?**

The inspector makes the initial determination whether or not to involve a regional engineer, based on the facts at the time of the investigation. The inspector may consult with their manager, regional program coordinator, provincial engineer or other MOL staff as may be appropriate in the circumstance.

#### Reference documents

The Occupational Health and Safety Act can be accessed at:

<https://www.ontario.ca/laws/statute/90o01>

The Industrial Regulation can be accessed at:

<https://www.ontario.ca/laws/regulation/900851>



## B. Tracking of PSR compliance was addressed in a prior e-mail sent on May 26, 2014:

**From:** Sackville-Duyvelshoff, Carol (MOL)  
**To:** Buchanan, Susan (MOL); Marisa Sterling  
**Cc:** Ray, Michael (MOL); Campbell, Scott (MOL); Jeffreys, Roger (MOL)  
**Subject:** RE: PEO FOI request - Access Request #14-230  
**Date:** Monday, May 26, 2014 12:29:43 PM

Marisa

I just wanted to give you an update on where we are at with your information request. As we have discussed previously, we have don't collect all of the information you have requested. We have been able to analyze your request from April.

Unfortunately we do not track industrial establishments that require Pre Start Health and Safety Reviews, nor do we track compliance with section 7 of Regulation 851 of the Act. We do however record section 7 orders issued. I understand that we have previously provided you with that information.

We also cannot readily identify industrial establishments that have incidents involving equipment or devices, as this is not coded within our systems and a keyword search for names of devices and machinery would involve a manual review and would not be practical. Moreover, we do not record issues involving the design, modification or maintenance of equipment in any searchable way (item 2 of your request). Consequently, we cannot provide a response to items 3 or 4, which are subsets of item 2.

For item 5, we previously provided a list of orders issued under these sections and can provide you with an update to this information to present. Unfortunately we cannot indicate which of these orders were issued as a result of modifications by owners or under third party contract, as this information is not necessarily recorded in this way.

For item 6, please note that section 57(1) of the Act relates to powers dealing with orders and does not constitute an enforceable section per se.

Lastly, for item 7, this relates to information maintained by our Legal Services and the Ontario Labour Relations Board and I will need to consult with these offices to check whether or not this information is available.

Please don't hesitate to contact me if you have any questions or comments.

Thanks  
Carol

Carol Sackville-Duyvelshoff  
Director, Occupational Health and Safety Branch  
Operations Division  
Ministry of Labour



## Enforcement Statistics

Revised: July 2014  
Content last reviewed: July 2014

The Ministry of Labour and the Workplace Safety and Insurance Board have developed a single, consistent method of reporting injury rates and fatalities across Ontario. This will help keep workers safe and further reduce workplace injuries, by increasing transparency and accuracy of these occurrences in Ontario workplaces.

Data is updated annually. Any updates will reflect changes that occur as injury and fatality claims that are pending or being appealed are decided.

View the [current statistics](#).

## Ministry of Labour Enforcement Statistics

The annual enforcement data reflects the number of health and safety inspectors available through the year.

### Field Visits

A field visit occurs when a ministry inspector visits a workplace and meets with the workplace parties in order to enforce the Occupational Health and Safety Act (The Act). Field visits may be for the purpose of an **inspection**, **investigation** or a **consultation**.

Total Field Visits by Program Area (inspections, investigations and consultations)

Program/Total	2002/03	2003/04	2004/05	2005/06	2006/07
Construction	20,454	23,563	21,008	28,164	30,638
Industrial	24,133	24,609	23,755	44,167	51,083
Mining	2,716	2,902	2,749	3,158	3,267
SPS	4,700	5,028	5,161	5,922	5,741
Total	52,093	56,102	52,673	81,411	90,729

Total Field Visits by Program Area (inspections, investigations and consultations)

Program/Total	2007/08	2008/09	2009/10	2010/11	2011/12
Construction	37,611	32,992	30,604	28,091	29,841
Industrial	53,505	52,163	48,497	45,890	42,794
Mining	4,716	3,912	3,652	3,821	2,750
SPS	5,443	4,752	5,657	6,448	5,492
Total	101,275	93,819	88,410	84,250	80,877

### Notes:

1. SPS means Specialized and Professional Services staff including diving inspectors, engineers, ergonomists, hygienists, physicians and radiation protection officers.

### Inspections

The Ministry of Labour inspects workplaces to monitor compliance with occupational health and safety legislation, and to promote the internal responsibility system. These are considered to be proactive field visits. The Ministry targets workplaces and/or sectors of the economy that have a history of poor compliance or high levels of work-related injuries.

Inspections by Program Area

Program/Total	2002/03	2003/04	2004/05	2005/06	2006/07
Construction	17,212	19,274	15,620	20,809	22,987
Industrial	13,719	12,895	13,884	30,756	36,689
Mining	2,242	2,293	2,129	2,509	2,767
SPS	2,542	2,524	2,897	3,216	3,090
Total	35,715	36,986	34,530	57,290	65,533

Inspections by Program Area

Program/Total	2007/08	2008/09	2009/10	2010/11	2011/12
Construction	29,490	25,106	23,212	20,363	21,241
Industrial	37,791	35,085	32,886	26,615	23,418
Mining	4,081	3,312	3,391	3,245	2,159
SPS	3,263	2,727	3,449	3,860	3,235
Total	74,625	66,230	62,938	54,083	50,053

## Investigations

These are reactive field visits for the purpose of investigating a fatality, critical injury, work refusal, complaint, occupational disease, or other health and safety-related events in the workplace.

Investigations by Program Area

Program/Total	2002/03	2003/04	2004/05	2005/06	2006/07
Construction	2,898	3,858	4,276	5,431	5,656
Industrial	9,623	10,887	9,395	12,947	14,016
Mining	391	506	534	542	421
SPS	1,871	2,026	1,997	2,426	2,516
Total	14,783	17,277	16,202	21,346	22,609

Investigations by Program Area

Program/Total	2007/08	2008/09	2009/10	2010/11	2011/12
Construction	6,947	6,688	6,577	7,081	7,813
Industrial	15,340	16,566	15,092	18,917	18,885
Mining	503	464	335	461	493
SPS	1,924	1,712	1,975	2,412	2,073
Total	24,714	25,430	23,979	28,871	29,264

## Consultations

These field visits are made to advise workplace parties of their rights, duties and responsibilities under the Act, and of the policies and procedures of the Ministry.

Consultations by Program Area

Program/Total	2002/03	2003/04	2004/05	2005/06	2006/07
Construction	344	431	1,112	1,924	1,995
Industrial	791	827	476	464	378
Mining	83	103	86	107	79
SPS	377	478	267	280	135
Total	1,595	1,839	1,941	2,775	2,587

Consultations by Program Area

Program/Total	2007/08	2008/09	2009/10	2010/11	2011/12
Construction	1,174	1,198	815	647	787
Industrial	374	512	287	358	491
Mining	132	136	158	115	98
SPS	256	313	233	176	184
Total	1,936	2,159	1,493	1,296	1,560

## Orders Issued

Orders are issued by inspectors to achieve compliance with health and safety legislation and regulations. When an inspector finds an instance where legislation or regulations are not being complied with, a written order is issued to comply within a certain time period.

Orders Issued by Program Area (including stop work orders)

Program/Total	2002/03	2003/04	2004/05	2005/06	2006/07
Construction	35,486	41,736	40,605	54,405	68,430
Industrial	31,310	30,021	42,641	96,008	99,421
Mining	3,317	3,478	3,279	4,036	3,499
SPS	2,409	2,539	3,616	4,501	3,984
Total	72,522	77,774	90,141	158,950	175,334



Orders Issued by Program Area (including stop work orders)

Program/Total	2007/08	2008/09	2009/10	2010/11	2011/12
Construction	81,832	89,109	57,759	53,133	60,340
Industrial	88,589	79,188	75,677	71,220	70,389
Mining	4,733	4,728	3,432	3,711	3,443
SPS	3,535	2,034	2,536	2,970	2,657
Total	176,669	155,057	139,404	131,034	136,809

### Stop Work Orders

When a contravention of the OHS Act poses an immediate danger or hazard to the health and safety of a worker, a stop work order is issued to immediately halt the particular task or process.

Stop Work Orders by Program Area

Program/Total	2002/03	2003/04	2004/05	2005/06	2006/07
Construction	3,101	4,149	3,849	5,068	6,460
Industrial	1,265	1,369	1,760	3,892	3,835
Mining	303	323	298	536	375
SPS	125	114	141	202	268
Total	4,794	5,955	6,048	9,698	10,938

Stop Work Orders by Program Area

Program/Total	2007/08	2008/09	2009/10	2010/11	2011/12
Construction	7,790	6,062	5,249	5,094	5,563
Industrial	3,621	3,268	2,470	2,342	2,255
Mining	452	493	345	596	539
SPS	201	69	71	84	95
Total	12,064	9,892	8,135	8,116	8,452

### Work Refusals

Under the Act, workers have the right to refuse work they believe is likely to endanger themselves or another person. The Act sets out a process for addressing work refusals. The statistics listed here indicate any work refusal that has been reported to the Ministry, regardless of the stage of the work refusal process.

Work Refusals by Program Area

Program/Total	2002/03	2003/04	2004/05	2005/06	2006/07
Construction	11	14	6	7	13
Industrial	370	361	295	259	257
Mining	8	14	18	29	14
SPS	0	1	2	0	0
Total	389	390	321	295	284

Work Refusals by Program Area

Program/Total	2007/08	2008/09	2009/10	2010/11	2011/12
Construction	5	4	4	4	9
Industrial	196	208	135	150	117
Mining	6	4	2	7	8
SPS	0	0	0	0	1
Total	207	216	141	161	135

### Complaints

The Ministry receives complaints about workplace conditions, contraventions of legislation or regulations and other workplace concerns. Many complaints result in field visits to the workplace, but some are dealt with in other ways.

Complaints by Program Area

Program/Total	2002/03	2003/04	2004/05	2005/06	2006/07
Construction	1,464	1,896	1,848	2,867	2,942
Industrial	3,814	4,064	3,613	5,062	5,032
Mining	78	82	94	130	115
SPS	41	57	114	40	8
Total	5,397	6,099	5,669	8,099	8,097

Complaints by Program Area

Program/Total	2007/08	2008/09	2009/10	2010/11	2011/12
Construction	3,086	3,296	3,413	3,925	4,405
Industrial	4,983	4,713	4,495	6,775	7,682
Mining	95	99	79	135	164
SPS	5	3	0	0	134
Total	8,169	8,111	7,987	10,835	12,385

### Prosecution Statistics

Charges can be laid for violations of the Occupational Health and Safety Act and its regulations. Charges may be laid against workplace parties, including employers, supervisors and workers. If convicted, an offender may be fined by the court.

In the table below, the **number of convictions** and **total amount of fines** are listed as totals for all areas (construction, industrial and mining) by year:

- data for 1996-2004 is listed by calendar year (January 1 - December 31)
- data for 2005-2014 is listed by fiscal year (April 1 - March 31).

More than one conviction may be related to a single incident.

The statistics encompass Part I contested tickets, Part I summonses and Part III prosecutions.

Number of Convictions and Amount of Fines: 1997-2002

Convictions/Fines	1997	1999	1998	2000	2001	2002
Number of Convictions (per year)	313	309	283	333	287	459
Amount of Fines (per year)	\$3,746,893	\$6,545,260	\$4,582,638	\$5,155,775	\$7,300,715	\$9,157,860

Number of Convictions and Amount of Fines: 2003-2009

Convictions/Fines	2003	2004	2005/06	2006/07	2007/08	2008/09
Number of Convictions (per year)	618	386	326	856	1,191	1,303
Amount of Fines (per year)	\$7,115,725	\$6,292,835	\$6,069,251	\$8,821,360	\$12,007,535	\$14,136,060

Number of Convictions and Amount of Fines: 2009-2014

Convictions/Fines	2009/10	2010/11	2011/12	2012/13	2013/14
Number of Convictions (per year)	1,164	948	903	814	780
Amount of Fines (per year)	\$12,909,435	\$11,291,560	\$9,771,230	\$10,695,290	\$9,307,130

## Appendix C – Details on Corporate Impact of the Repeal

1. The current assumption, based on the corporate response to PEO's 2011 voluntary compliance program, is that between 1,000 to 1,561 Ontario companies may be impacted by repealing the industrial exception.

**Table 1A. Estimate of the Number of Companies Impacted by the Repeal**

Type of Establishment	Number of Employer Establishments
All Ontario <sup>1</sup>	413,071
Ontario Manufacturing <sup>1</sup>	21,129
Ontario Manufacturing that appears to be within the scope of the industrial exception <sup>2</sup>	5,891 – 9,148
Ontario Manufacturing that are estimated to have some impact from repealing the industrial exception <sup>3</sup>	1,001 – 1,561

Data Sources:

- 1 – Statistics Canada, Canadian Business Patterns Database, December 2013.
- 2 – Statistics Canada, number of business registrants filed, excluding machine shops and businesses outside the scope of the industrial exception, but not confirmed is if the businesses are current or active.
- 3 – PEO estimates that one in 6 businesses, or 17%, may be impacted by a repeal of the industrial exception. This is based on a survey of businesses conducted by PEO in 2013 that found 83% of companies self-declared no impact from the repeal.

**Table 1B. Number of Companies Assumed Impacted by the Repeal**

PEO assumes 1,561 companies and 7,444 employees affected whereas the Ministry of Economic Development, Employment and Infrastructure (MEDEI) assumes 2,433 companies and 5,922 employees affected.

	Number of Businesses in Ontario's Manufacturing Sector <sup>1</sup>		Number of Businesses Assumed Impacted by the Repeal <sup>2</sup>		Number of Staff Affected	
	PEO	MEDEI	PEO	MEDEI	PEO	MEDEI
Small	7,977	12,600	1,356	2,142	2.9	1
Medium	1,087	1,547	185	262	2.6	10
Large	120	172	20	29	19	40
<b>TOTAL</b>	<b>9,148</b>	<b>14,319</b>	<b>1,561</b>	<b>2,433</b>	<b>4,793</b>	<b>5,922</b>

Small businesses assume 5-99 employees

Medium businesses assume 100-499 employees

Large businesses assume 500+ employees

<sup>1</sup> Both PEO and MEDEI used Statistics Canada information to calculate the number of businesses operating in Ontario's manufacturing industry. The data represents the number of business registrations filed, but it does not confirm that these companies have active businesses. The reason for the discrepancy between MEDEI's assumptions and PEO's is that PEO removed businesses that are machine shops and that manufacture equipment or machinery as their end product. These two types of businesses would not qualify for the industrial exception. Therefore, PEO's estimate of number of businesses in the manufacturing sector that the industrial exception can apply to is more accurate than MEDEI's.

<sup>2</sup> Both PEO and MEDEI assume 17% or 1 out of 6 manufacturing companies would be impacted by the repeal. This assumption comes from PEO's survey of companies in 2012 and response rate.

**Table 1C. Financial Impacted to Employer Assumed by the Repeal**

- PEO has assumed an employer cost of \$415 per employee to complete the licensing process.
- Bruce Power shared that they negotiated with their union to cover \$11,294 in costs per employee to complete the licensing process.
- MEDEI has assumed an employer cost of more than \$54,127 per employee to cover the impact of licensing employees to comply with the repeal.

	PEO	Bruce Power	MEDEI
Cost to Licence – initial application fee	\$0 – since waived by PEO through FCP program		
Cost to Licence – balance of application	\$415	\$415	\$415
Cost of EIT program	\$0 – since waived by PEO through FCP program		
Cost to Licence – annual fee <sup>1</sup>	\$0	\$220	\$220
Training <sup>2</sup>	\$0	\$259	\$310
PPE Exam	\$0	\$165	\$0
Increased wages due to licensure <sup>3</sup>	\$0	\$10,400	\$13,099
Time off for PPE training and exam writing <sup>4</sup>	\$0	\$0	\$928
Redundancy <sup>5</sup>	\$0	\$0	\$39,155
Corporate Insurance <sup>6</sup>	\$0	\$0	10% increase
Shutdown <sup>7</sup>	\$0	\$0	\$1.5million/hr
Consulting <sup>8</sup>	\$0	\$0	10-20% project increase
<b>TOTAL</b>	<b>\$415</b>	<b>\$11,459</b>	<b>\$54,127++</b>

<sup>1</sup> The annual licensing fee is an expense of the employee and not assumed that the employer will pay.

<sup>2</sup> PPE preparatory training course is optional as it is a self-study exam. PEO offers a free ½ day seminar as well as a free online seminar for PPE preparation.

<sup>3</sup> PEO assumes no increased wages since the person's job description doesn't change, they only are now licensed to continue to do the same work they were doing under the repeal. Bruce Power delays its normal salary increase now until the employee obtains their P.Eng. MEDEI assumed a salary increase from an engineering technologist position to an engineer position, but this would not be accurate as the engineering technologist could obtain a limited licence and comply with the repeal and keep their current job description.

<sup>4</sup> PEO and Bruce Power assume the employee will study and take the PPE exam on their own time. PEO offers the PPE at a company's location for free so that employees don't need to take time off. MEDEI assumed 4 days for studying and the exam and lost wages during these days.

<sup>5</sup> PEO and Bruce Power assume no impact from redundancy however, MEDEI assumes a ½ time engineer salary to be on site at all times.

<sup>6</sup> PEO and Bruce Power assume no increase in the corporation's insurance rates but MEDEI assumes the company has to incur additional insurance for the newly licensed engineers. PEO inquired with insurer and none stated increased insurance rates. Employee engineers do not need to hold their own insurance or be separately insured.

<sup>7</sup> PEO and Bruce Power assume no additional shut down costs but MEDEI assumes that shut downs will take more time with engineers now on staff. By having engineering work now reviewed by an accountable engineer, it can be assumed that less equipment-related problems and therefore shut-downs would occur.

<sup>8</sup> PEO and Bruce Power assume no additional consulting costs but MEDEI assumes the need to hire 3<sup>rd</sup> party engineers as well. However, businesses have the option to decide which is more cost-effective for them project by project: to either contracting out their engineering work or having a licensed employee engineer oversee the work.

### Table 1D. Net Financial Impacted Assumed by the Repeal

- PEO assumes a net financial impact in the first year of \$2 million and no ongoing costs.
- Bruce Power’s cases study suggests a net financial impact of \$5.1 million and no ongoing costs.
- MEDEI’s assumption is a net financial impact of \$209 million in the first year and \$200 million ongoing.

	Total Estimated First Year Costs			Total Estimated Annual Costs		
	PEO	Bruce Power	MEDEI	PEO	Bruce Power	MEDEI
Small	\$1.6M	\$4.2M	\$116M	\$0	\$0	\$112M
Medium	\$200,000	\$509K	\$69M	\$0	\$0	\$66M
Large	\$158,000	\$402K	\$24M	\$0	\$0	\$22M
<b>TOTAL</b>	<b>\$2.0M</b>	<b>\$5.1M</b>	<b>\$209M</b>	<b>\$0</b>	<b>\$0</b>	<b>\$200M</b>



2. On March 2016, an interview with Bruce Power, a company who entered into a voluntary compliance plan with PEO in 2012, revealed the following impact for repeal the industrial exception:

#### Voluntary Compliance Administration

- Line management, union and HR were all engaged
- Took 6 months to develop the voluntary compliance plan
- Formed a “hit team” that met every 2 weeks to review impact to current staff

#### Number of Employees Impacted

- There are 2,454 P.Engs employed, out of approximately 4000 employees
- More than 50% of employees have a P.Eng.
- Positions assessed that required a P.Eng. were 170
- Positions requiring a P.Eng. that didn't have a licensed employee were 81 (48%)
- Positions requiring a P.Eng. that don't have a licensed employee as of March 2016 were 57 – 24 employees have been licensed between 2012-2016 (taking a long time to go through the application)
- The biggest group needing the P.Eng was the Engineering Division of 170 employees. Evaluated that only 50% maximum need a licence due to the supervisory exception.

#### Redundancy

- Taken into consideration in the evaluation of the need for 170 positions with a P.Eng.
- Plan includes the minimum number of people needed to perform day-to-day duties

#### Costs

- Spent \$28,000 in financial assistance over 4 years (2012-2016) for 24 fulltime employees to get their P.Eng. licence. This included paying for the employees' licence and preparatory costs
  - \$259 – OSPE PPE prep course
  - \$84.75 times 2 for EIT enrollment for 2 years
  - \$415 – application fee
  - \$220 – current year registration fee
  - \$165 – PPE exam
- Spent \$10,000 in prep courses at Bruce Power over 4 years from 2011-2015. Ran them before each PPE exam held at Bruce Power.
- No cost for employee time off or travel to attend PPE prep courses. They were attended by employees on their own time.
- No cost to write the PPE exam as they were all administered by PEO locally.

### Job Descriptions

- Revised job descriptions to include P.Eng. as a requirement going forward. Created new job descriptions titled, Engineering Trainee and Engineer. The Senior Technical Officer job description was phased out.
- Workflow documents outside of the engineering department were adjusted.
- There was no impact to the workflow for a slowdown or a shutdown.

### Employee Licensing

- Younger workforce understood the need for the P.Eng. and applied for licence.
- Long-time employees without a bachelor of engineering had more difficulty understanding the need for the P.Eng. They were encouraged to apply for a Limited Licence. They were given more time to complete the application since the process took longer than the P.Eng. application.
- Created a “transition period” of about 9 years in total to allow some employees to “retire-out” who didn’t apply for licence.
- Re-organized so any older employees without their P.Eng. or who don’t pursue licensing are supervised by a P.Eng. to meet the supervisory license exception. There was no cost impact of this re-organization since already had P.Engs supervising unlicensed employees.

### Employee Compensation

- Reviewed compensation structure for new hire employees – they are required to obtain their P.Eng. within 2 years of being hired. Their salary is held during those 2 years and only once they get their P.Eng. does the employee get a salary bump of about \$200/week, to the target salary for that position
- Employee policy that they won’t progress any further in the organization if they don’t get their P.Eng.
- There was no reduction in pay due to the requirement to have a licence
- There was wage pressure from the employee union but that was resolved by a letter of understanding with employees to the salary step increase once they obtain their P.Eng. license.

### Insurance

- Legal department confirmed that employees did not need additional insurance once they obtained their P.Eng. since they were still employees of Bruce Power
- Article 13 of the Society of Energy Professionals confirmed that there was no change and no need for additional insurance for employee once they are licensed to cover liability if there was an error or an accident
- There was no impact to the corporate insurance

## Appendix D – Notes on Challenges to the Research

1. The research did not review all workplace incidents since 2005 but instead reviewed only those incidents investigated by the Ministry of Labour, that lead to charges being laid under the *Occupational Health and Safety Act*, and that resulted in a successful prosecution. The reason for this limited review was that there were no publicly searchable records of Ministry investigations unless they led to prosecutions in the courts, and the Ministry issued a press release. Also, no prosecutions prior to 2005 were reviewed since the Ministry advised that these files were not accessible.

Data that PEO could not access as it was not in the public domain included:

- Prosecutions by MOL that failed, i.e., charges were laid but the company was not convicted due to a successful defense
- Investigations by the Ministry that did not result in charges being laid within 24 months of the incident

	Number of Injuries & Fatalities <sup>1</sup>	Number of Press Releases <sup>2</sup>	Percentage
2005	20,378	88	<b>0.4%</b>
2006	17,492	86	<b>0.5%</b>
2007	15,341	77	<b>0.5%</b>
2008	12,959	97	<b>0.8%</b>
2009	10,156	95	<b>0.9%</b>
2010	9,477	89	<b>0.9%</b>
2011	8,931	90	<b>1.0%</b>
2012	8,546	62	<b>0.7%</b>
2013	7,959	51	<b>0.6%</b>
2014	7,615	59	<b>0.8%</b>
<b>AVERAGE</b>			<b>0.7%</b>

<sup>1</sup> – as reported by AWCBC, in the manufacturing sector only

<sup>2</sup> – Press Releases issued by the Ministry of Labour

2. In order to analyze the relevance of the 360 cases prosecuted by MOL against manufacturing companies, the respective court files were obtained from provincial courts across Ontario. However, seven of the 46 court houses did not provide any information and in the case of ten court houses, the files were considered too old and had been destroyed. It was learned that any court file dating back seven years since all fines were paid, or dating back before 2008, could not be obtained due to a document retention policy to destroy old files. Furthermore, it was found that several court clerks at the courthouses impeded the ability to gather files due to lack of knowledge of the rules surrounding disclosure of court files to the public and busy schedules not allowing the clerks time to respond to PEO's inquiries.

3. The WSIB recognizes that claim suppression, namely actions taken by an employer to induce a worker not to report an injury or illness, or under-report the severity of the illness or injury, or the amount of lost time attributable to said injury or illness, is a serious problem. In April 2013, PRISM Economics prepared a report for the WSIB entitled, *Workplace Injury Claim Suppression: Final Report*.  
<http://www.wsib.on.ca/cs/groups/public/documents/staticfile/c2li/mdex/~edisp/wsib011817.pdf>

The inducements may be coercive, via actual and perceived threat of sanctions, or accommodating, such as offering a worker benefits in lieu of claiming their entitlement under WSIB.

A literature review found that WSIB concluded 20% is a plausible estimate for worker under-reporting, for a myriad of reasons including the avoidance of a reputation for carelessness, perception that injury or illness is not severe, or uncertainty about eligibility. WSIB also found approximately 8% of employer non-reporting incidents, with 3-10% of employers misreporting.

The WSIB did not answer inquiries by PEO to receive the raw data tables used to create their 2014 Statistical Report. Therefore, it was not possible to analyze the worker injury and fatality assumptions.

The Ontario Federation of Labour (OFL) has also claimed under-reporting of worker fatality statistics by the WSIB. In April 2014, the Ontario Federation of Labour (OFL) produced a report entitled, *Comparison of WSIB Fatality Data*  
[http://ofl.ca/wp-content/uploads/Comparison-WSIB.Fatality.Data\\_.pdf](http://ofl.ca/wp-content/uploads/Comparison-WSIB.Fatality.Data_.pdf)

And in April 2015 issued a report entitled, “OFL Demands to Know Why the WSIB is Covering Up 1,150 Deaths”.  
<http://ofl.ca/index.php/wsibdata/>

The OFL reported that when they cross-referenced recently released WSIB data with previous reports, the agency ‘erased’ 1,150 fallen workers, a third of all lives lost in the preceding nine year period. The report claims that the revised statistics published by WSIB in April 2015, dating back 10 years, under-report workplace fatalities by an average of 128 each year.

## Appendix E – Notes on Research Findings

### 1. Rate of workplace accidents

Workplace accident rates in Ontario's manufacturing sector have been declining over the past 14 years, but they aren't dropping as quickly as they are in other sectors such as transportation and mining. The manufacturing sector ended 2014 with the highest incidence of injuries, slightly above the construction sector.

Worker fatality rates in Ontario manufacturing have only slightly decreased over the past five years. They remain below those in the mining and construction sectors. However, they continue to surpass the fatality rates in manufacturing across the balance of Canada.

### 2. Evidence of under-reporting of injury and fatality statistics

The discrepancy in reported worker injury and fatality statistics between PEO and the CME and the Ministry of Labour was resolved. This discrepancy helps to explain why the CME and the Ministry of Labour have cited different statistics than PEO in meetings discussing the repeal between 2011 and 2013. The discrepancy in reporting was resolved due to the Ministry and WSIB aligning their reporting from 2013 onwards.

However, it was since uncovered from reports for WSIB and OFL that there appears to be as much as 20% worker under-reporting, 8% employer non-reporting and 3-10% employer misreporting.

In light of the findings questioning the accuracy of the accident statistics reported in Ontario, it brings into question the number of accidents that actually happen each year and their severity. It also raises concerns that the government and other stakeholders like the CME are making policy decisions to cancel the repeal without getting under the surface of what the actual accident rates are in Ontario.

### 3. Evidence linking manufacturing equipment and machinery design and modifications to workplace incidents

In an attempt to gather all available and relevant workplace accident data, only successful prosecutions by the Ministry of Labour over a 10-year period were analyzed. This was due to the public accessibility of the data. Only the successful prosecutions are written up by the Ministry in press releases that PEO could publicly search. PEO could not find public listings of unsuccessful prosecutions or listings of all Ministry investigations. This information can be accessed through the Freedom of Information (FOI) process, but PEO first had to know of a specific event to inquire about. PEO did make use of news clippings to learn of specific accidents.

It was found that 43% of the Ministry's successful prosecutions under OHS Act since 2005 related to manufacturing workplaces. This is consistent with the statistics that although workplace incidents in manufacturing have been steadily declining over the past 14 years, it continues to be a sector with one of the highest accident rates.

#### 4. Evidence of non-compliance and ineffectiveness of the PSR legislation

When an employer modifies equipment particularly in a way that affects a safety feature, or when an employer custom designs equipment, a Pre-Start Health and Safety Review (PSR) is required prior to the equipment start-up.

For seven events, it was found that the PSR was not done, was not completed or the employer had failed to implement the recommendations prior to the equipment start-up. Five of those events resulted in a worker injury or fatality.

A further eight events reported that a PSR was done but worker injuries or fatalities still resulted. Reasons included the equipment not being properly maintained after start-up, the equipment being modified after start-up, the guard interlocks did not operate as designed and the lock-out procedure was inadequate.

The findings call into question the robustness of the PSR legislation and whether the Ministry takes enforcement action when PSRs are not completed. The Ministry does not report on whether the employer complied with the recommendations of a PSR, nor does it report on compliance checks following modifications to equipment after a PSR.

It is relevant to note that the PSR regulation does not apply to mining operations. There were six events in mining operations that resulted in three fatalities and ten critical worker injuries. Lack of compliance to the pre-development review process as well as unsafe process design and inadequate machine guarding contributed to the accidents.

## Appendix F – Notes on Recommendations

1. Request an information sharing agreement with the Ministry of Labour to collect additional information from their inspectors:  
It is recommended to approach the Ministry for improved information sharing through vehicles such as an information sharing agreement modeled after the *Regulatory Modernization Act 2007* that aims to increase cooperation and information sharing between Ontario ministries and regulatory agencies and through access to interviews with the respective Ministry investigators
2. Develop policy recommendations to strengthen corporate compliance to the PSR regulation  
It is recommended that PEO attempt to open up the dialogue with the Ministry on Regulation 851 reform by raising public awareness of the specific cases where a PSR was required and a worker injury occurred regardless of whether a PSR was actually completed. A possible policy reform would be mandatory reporting for PSR compliance in O.Reg. 851 and mandatory compliance checks by Ministry inspectors in their administrative instructions for field visits.

3. Additional Research Items

PEO could obtain further information by continuing research in the following areas:

Request WSIB data to validate under-reporting of workplace incidents

Request WSIB to respond with evidence to reports of under-reporting of workplace incident data before the government makes a policy decision to cancel the repeal legislation.

Refine PEO's estimate of corporate impact of the repeal

Attempt a better estimate of the number of companies to be impacted by the repeal by cross-referencing PEO's licence database against the list of Ontario manufacturing companies with the assumption that those who don't have an engineer on staff would be more likely affected.

Calculate proportion of incidents where there are employee engineers

Attempt to calculate the rates of workplace accidents between those operations with engineers and those without, by cross-referencing the list of companies prosecuted against PEO's licence database.

Survey other companies with voluntary compliance plans on costs and impact

Attempt to survey companies of interest from this research who also filed voluntary compliance plans with PEO in 2013, to attempt to quantify the costs and impact of the accident and prosecution against the proactive implementation of the repeal.