ONTARIO SOCIETY OF PROFESSIONAL ENGINEERS

Pre-Start Health and Safety Review Consultation Response

Pre-Start Health and Safety Reviews

Ontario Society of Professional Engineers (OSPE)

OSPE is a member-driven professional association that welcomes the entire engineering community to contribute knowledge, skills and leadership to help create a better future for our profession and society at large. OSPE provides non-partisan, evidence-based input on policy, planning and budget decisions, and has become a trusted advisor to all levels of government.

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ONTARIO SOCIETY OF PROFESSIONAL ENGINEERS

The Canadian economy is going through a fundamental technological and economic shift. This creates demand for a highly skilled, technical workforce that engineers can fulfill. Engineers are innovative problem solvers who develop solutions by considering costs, benefits, sustainability, public safety, and the complete lifecycle and integration of projects

The Ontario Society of Professional Engineers (OSPE) is pleased to present the following submission concerning the Pre-Start Health and Safety Reviews in Factories Consultation.

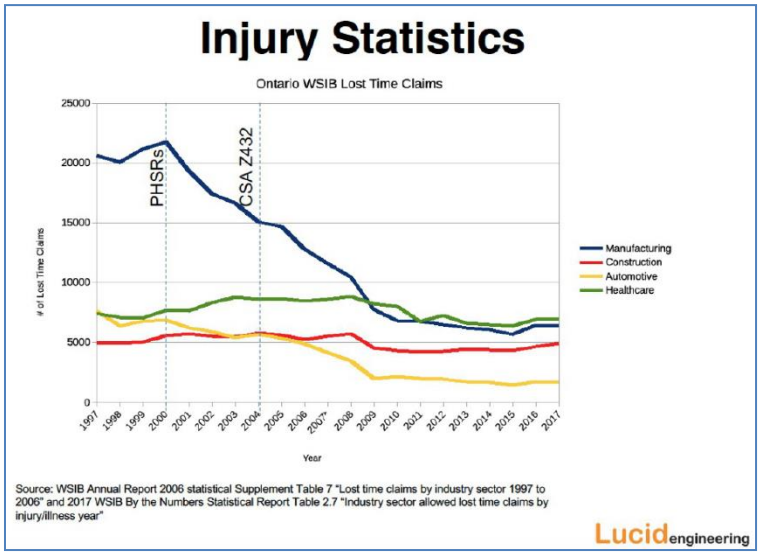
Context

The underlying challenge facing governments and industry today is that the marketplace for apparatus and processes is global and the safety standards to which they are designed, manufactured, and installed are not equal. Not only does this inequality potentially endanger the worker but also the Ontario-based industries that provide safe current applicable standards equipment to our workplaces. This consultation seeks to continue this balance using the legal structures that the Ministry of Labour, Training and Skills Development (MLTSD) already has in place and identifying elements that could be improved to meet the objectives of streamlining, triggering clarity and ease enumerated in the Context.

In providing health and safety direction to the province the PSR administration needs improvement of the delivery system for the equipment manufacturer, the installer, the engineering practitioner, and the workplace. It needs to be standardized with documents, training, qualifications, regulation, and enforcement if it is to have meaningful effect.

The intent of this submission is to provide expertise on how to improve the workings of the present system by the objects requested in the context above; reduction, triggering clarity and ease.

It is generally accepted that the items covered by the PSR legislation are the most hazardous conditions in the workplace. They are all candidates for critical injury and fatality. It is fair to say that the legislation had a positive effect on improving factory workplace safety. The adjacent chart demonstrates this. It is reasonably evident that the workplace lost time claims began to fall in the manufacturing sector around the time of the introduction of the Pre-Start Health and Safety Review and improved steadily for about the next ten years and flattened at the current levels thereafter. A drop of 68%. In the same period Ontario's GDP grew from $530B to $730B, a 38% increase.



Engineers and engineering graduates represent both the understanding of business, technology, and safety equally and the independent cohort of professionals performing PSRs operate in a free market that responds evenly to legislation, business conditions and the global standards that govern technology. They weave together this technological responsibility with responsiveness that serves the

interests of law, economics, and the wellbeing of society. When a PSR is conducted they provide an indemnity to the employer that ensures the employer provides a safe workplace for their employees.

Clearly benefits have been realized and in the spirit of continuous improvement and lean practices it makes sense to revisit the value to the customer. Therefore, it is recommended that the underlying intent be formed around the notion that safe apparatus and processes be defined as compliant to current applicable standards in the Province of Ontario.

Within this Context the existing delivery system for Pre-Start Health and Safety Reviews demonstrates some disconnects that, if corrected, could reduce the work of delivering PSRs and improve exemption opportunities for the workplace while increasing their value, improving accountability, and maintaining or improving the health and safety outcomes.

Delivery Framework

The table below shows in general terms the factors in the delivery of the PSR and the tools that they have at their disposal. What it demonstrates is that the elements are all there but that they may not be properly connected to one another. This section presents what the most important disconnects are in the delivery of safely commissioned Section 7 Items to the workplace.

Table 1 - Delivery framework - the stakeholders and their tools

Legislation	MLTSD	PEO	Workplace	Engineer	Marketplace
OHSA Reg 851 PE Act	Inspection Enforcement Training Registries PSR Guideline	PSR Practice Guideline (currently under review)	Employer - Factory JHSC Certified Member Competent Person Evaluation **1 - No PSR** **2 - Exemption** **3 - PSR triggered**	**PSR**	Apparatus, structure, protective element, or process Manufacturer Installer Applicable Standards

Online Guide

The Competent Person Evaluation

The online guide provided by the MLTSD makes mention of an evaluation that should be performed in the workplace to determine whether a PSR is required or not. The guide indicates that the person performing this evaluation should be a competent person as defined in the Act. Further that the employer should "ensure an evaluation is conducted" or "establish a process through documentation". Unlike other areas of the regulation there is no requirement for the involvement of a *Competent Person in Section 7*. As a result of this deficiency the process for the evaluation is not legislatively triggered.

This triggering is important for several reasons. Worker safety is not protected, the employer's due diligence is not fulfilled, and the intent of the Regulation has diluted force. The competent person evaluation has three possible outcomes, which are:

- a document is generated indicating that a PSR is not required, or
- an exemption applies and is then created, or
- a PSR is triggered.

Without changing the legislation the Ministry could make its expectations known through the guideline in a more clear and certain matter that when an employer is inspected and is found to have PSR qualifying apparatus and/or processes then it will review these with the competent person. It is important to ensure for the competence of this person that knowledge of the work of current applicable standards must exist. To fulfill the objects, a document standard for the evaluation and the exemption could be created and training could be offered within the sector specific legislated training programs for the competent person.

The Exemption

There are many opportunities for exemptions under the regulation. Exemptions should be undertaken with the same compliance for health and safety regulation as the PSR which they legally replace. The person authorizing them should be sufficiently competent to represent them in court, should it be necessary. The documents required to support the exemption could be set out in a standard format that would be presentable to the JHSC and the MLTSD Inspector. It is recommended that to ensure these exemptions do not expose the competent person or the employer to undue liabilities that where possible the exemption document be standardized and that legislated training be provided to the competent person.

To protect the employer and its competent person it is important to create standardized exemption documents for the manufacturer and the installer, the purpose of which is to legally bind them to their declarations with enforceable consequences for their representations. Enforceability would require that the manufacturer have a legally liable entity in a jurisdiction that the MLTSD can reach. They must have an entity subject to OHSA penalty to issue a qualifying exemption declaration. Manufacturers could then be seen as Suppliers under 31 (1) of Regulation 851. Otherwise equivalency with a PSR or an Ontario manufacturer will not be achieved.

Online Registry

The Ministry operates a registry that assists employers in finding training resources for their legislated training requirements. A key disconnect in the PSR process is the inability of employers to find a qualified PSR engineer. It is suggested that the Ministry add such a registry to their website, or contract one out, to enable employers to find engineers as it does trainers.

I. Section 7 Requirements

A. Application of Pre-Start Reviews (PSRs)

It is important to note that this legislation has been part of Regulation 851 for almost twenty years and there are still questions around its application. For larger organizations that have health and safety personnel on staff, this is less likely, as they will be well informed. However, smaller organizations, which may not have dedicated health and safety staff available, may not be aware of the requirements at all. In many cases, there is confusion about the PSRs being more of a check list than a professional review.

It is important to note that many engineering students and Professional Engineers have not taken Occupational Health and Safety Courses, nor are they directly required to be knowledgeable or proficient in the requirements outlined in Occupational Health and Safety Act (OHSA) or the applicable OHS Regulations.

Certainly there are other workplaces that do not fit the description of a factory and we respectfully leave it to the Ministry to determine in their own mind whether at law workers exposed to the same hazards should all be subject to the same health and safety protections.

1. **Are there other types of workplaces that should be subject to PSRs? Are there types of factories at which PSRs should not be required? Are there any other changes to subsection 7(2) that you would recommend?**

The focus should not be placed on workplaces, but rather on a detailed assessment of the risk itself. Risk should be analyzed using a holistic approach. For example: If a workplace is handling flammables, safeguarding devices that signal a stop, a spray booth, or a dust collector with a risk of ignition – each of these are potential triggers. However, the regulation only applies in factories. In a mining facility, the same circumstances could be present but no PSR is required. It should not matter where the circumstances take place, but rather which item of the table applies. A commercial kitchen is another example. Commercial kitchens should be subject to PSRs, there are many that have health and safety concerns. OSPE members has seen many installations signed off by Fire Officials, not knowing the contents of NFPA 96 or the Natural Gas and Propane Code B149. Many Chief Building Officials are not fluent in these standards. TSSA only enforces B149 but not NFPA 96. It is only a qualified engineer, who ties all these elements together, and who can effectively determine the safety of the equipment.

B. Exemptions

1. **The ministry is considering amending the existing Table in Section 7 to add references to the exemptions in the table. Would this change make the requirements for PSRs easier to understand?**

   Section 7 has 15 sub sections which become clear after careful and thorough consideration. The method used to convey the information could be reconsidered. For example, the original guideline from 2001 included Flow Chart 1. This provided clear guidance on determining when a PSR is required and directed the user to review the exemption criteria for those triggers with potential exemptions.

   When exploring exemptions specifically related to racking installations, there should be guidance for employers to establish competency of installers. As the exemption criteria in the guideline currently exist, an exemption can be established using design and manufacturing documentation – no mention of a competent installation. The engineering drawing exists for a reason and the quality of installation can impact how well the structure performs.

   Properly executed exemptions may be of equal value to a PSR in protecting the workplace and as such offer an opportunity for streamlining, clearer understanding, improved triggering and burden relief. They may also be much less expensive, less work and more easily created. The Ministry should set out in their online Guideline what the components of a well-documented exemption would look like and what elements it should contain. For example, an exemption could be founded on a declaration from each of the Manufacturer, the Installer and Competent Person. Further exemption criteria are included in the answers to specific Items.

   It would be of value to ensure that workplace parties are trained on exemptions in order that a workplace competent person can take responsibility for such exemptions given that they will be familiar with the work of understanding the current applicable standards that apply in the circumstance. In circumstances wherein the workplace party feels that they cannot fulfill or does not want this responsibility the guideline should suggest that the workplace party consult with a professional engineer.

A table reflecting the opportunities for exemptions is set out below and would be a useful tool in the guideline. Applicable Circumstances of Table in S. 7 of O.Reg. 851 under OHSA

Item	Circumstances	Feature-specific Exemptions	Applicable provisions of this Regulation
1	Flammable liquids are located or dispensed in a building, room or area.	None	22(1), (2), (4)
2	Any of the following are used as protective elements in connection with an apparatus: 1. Safeguarding devices that signal the apparatus to stop, including but not limited to safety light curtains and screens, area scanning safeguarding systems, radio frequency systems and capacitance safeguarding systems, safety mat systems, two-hand control systems, two-hand tripping systems and single or multiple beam systems. 2. Barrier guards that use interlocking mechanical or electrical safeguarding devices.	The equipment and protective elements are manufactured / modified and installed in accordance with, and meets, current applicable standards (Requires review to assess)	24, 25, 26, 28 31, 32 (centrifuges and tumbling dryers only)
3	Material, articles or things are placed or stored on a structure that is a rack or stacking structure.	The structure is designed and tested for use in accordance with current applicable standards	45(b)
4	A process involves a risk of ignition or explosion that creates a condition of imminent hazard to a person's health or safety.	The process is inside spray booth that is manufactured and installed in accordance with current applicable standards	63
5	The use of a dust collector involves a risk of ignition or explosion that creates a condition of imminent hazard to a person's health or safety.	None	65
6	A factory produces aluminum or steel or is a foundry that melts material or handles molten material.	None	Sections 87.3, 87.4, 87.5 and 88, subsections 90 (1), (2) and (3), and sections 91, 92, 94, 95, 96, 99, 101 and 102
7	The construction, addition, installation or modification relates to a lifting device, travelling crane or	The device is on its originally designed supporting structure, and capacity does not exceed original design capacity	51, 53
	automobile hoist.	The hoist is certified as meeting current applicable standards	63
8	A process uses or produces a substance that may result in the exposure of a worker in excess of any exposure limit set out in Regulation 833 of the Revised Regulations of Ontario, 1990 (Control of Exposure to Biological or Chemical Agents), Ontario Regulation 278/05 (Designated Substance — Asbestos on Construction Projects and in Buildings and Repair Operations) or Ontario Regulation 490/09 (Designated Substances) all made under the Act.	None	127, 128

C. Conducting Pre-Start Reviews and Writing the Report

1. **Do you agree with the current requirement that a professional engineer carry out the PSRs related to items 1 to 7, or are there circumstances in which someone other than a professional engineer should be able to conduct the PSR? If so, what would those circumstances be? And what should the qualifications of the person be?**

   OSPE agrees with the current requirement that a professional engineer carry out the PSRs related to items 1 to 7. Qualified professional engineers possess the technical knowledge to be able to perform this duty. Over the past twenty years a competent cohort of independent engineering practitioners has evolved to serve the marketplace and provide technical solutions as well as employment. This engineering community has the expertise, legal and ethical obligation, insurance, network, employee base and legal standing to indemnify the employer for liability. The only parties that should be authorized to carry out PSRs are those sanctioned to do so at law by the Professional Engineers Ontario under a license or limited license issued for such a purpose except as currently exists for Item 8 of the Section 7 Table.

However, it is important to note that because specific designations within the various disciplines in engineering are not established, and Professional Engineers Ontario (PEO) has yet to implement mandatory continuous professional development requirements, and with the incorporation and adoption of new technology in the workplace, it is extremely important that engineers continue to independently develop their expertise and knowledge to properly assess established codes and practices. Our members have found that the quality of reports varies significantly from engineer to engineer. Therefore, the government, through the Ministry of Labour, Training and Skills Development (MLTSD) or the Attorney General, should work with PEO to establish a certification, micro-credential, or professional development process to address this.

2. **Regulation 941 under the Professional Engineers Act requires seals to be affixed to any plans, drawings, specifications, reports, and other documents prepared as part of a service to the public that falls within the practice of a professional engineer. Would you support revising clause 7(13)(b) to remove references to sealing the report? Are there any other changes to the requirements for written reports that you would recommend?**

OSPE agrees with the need of clause 7(13)(b), which requires professional engineers to affix his or her seal to the report. However, OSPE recommends that the government work with PEO to establish a digital verification process to ensure that reports are being sealed properly by license holders. OSPE members have encountered numerous cases of fraudulent use of engineering stamps. This verification process is necessary to ensure the safety of all individuals in the workplace.

II. Costs and Overlap

1. **In your experience, approximately how much does it cost to complete a PSR? What changes would you recommend to reduce the administrative or operational costs associated with the PSR requirements, or otherwise improve the process?**

   Engineers face an obligation to fulfill the requirements of the Professional Engineer's Act which obligates them to follow the PSR Guideline that the engineering regulator, PEO, publishes. Substantively, this guideline establishes the administrative and operational PSR costs. This guideline is currently under review by the PEO. The Ministry can contact PEO and see whether there are collaborative efforts that they might mutually engage in to assist this cost and improvement objective.

   The cost of a PSR depends on the complexity of the equipment and other circumstances such as location or staffing capacity. It could become increasingly expensive if an employer required an engineer to travel to a remote location. Some companies have engineers on a retainer, which leads to lower costs, but having to contract an external engineer to conduct the review would be more expensive. However, it is important to note that costs should always be considered secondary to ensuring the occupational health, safety, and wellness of an Ontario worker, as well as ensuring the effective operation of equipment. And for many reasons beyond health and safety the cost of good design is a benefit in and of itself.

2. **Do you have one or more professional engineers on staff who are licensed in Ontario and who can carry out a PSR in your workplace, or do you contract with a third-party company to do it?**

   OHSA, under subsection 31(2), assigns personal liabilities to employee engineers who conduct PSRs that survive the employment relationship, potentially, in perpetuity. To protect those engineers beyond the employment relationship, employers are reluctant to purchase professional liability insurance. Even with employee-employer waivers it is not possible for an engineer to be released from statutory law. Furthermore, if the engineer is an employee then the employer is liable as the party providing the engineering service to the public even though they do not require a certificate of authorization. As such it is our experience that employers generally prefer to contract out PSRs and be indemnified in that manner.

   Notwithstanding the above entanglement, the employer receives a substantial protection at law from the PSR should a need arise to defend their due diligence in court.

3. **The Building Code (O. Reg. 332/12, made under the Building Code Act, 1992) establishes minimum requirements related to the construction, demolition or renovation of buildings, including fire protection, explosion venting, design of hazardous areas, ventilation, and racking. If your workplace has carried out a PSR related to items 1, 3, 4, 5, or 8, was there any duplication between the PSR report and the documentation that you needed to provide during the building permit approval process?**

   There are no minimum standards when it comes to PSRs. Engineers will use existing codes, legislation as well as good engineering practice documents like consensus standards. PSR often go beyond the requirements of the OBC. To support the PSR process engineers need to belong to such organizations as American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) & Canadian Standards Association (CSA). An investigation should be conducted regarding potential overlaps.

   Generally speaking, there are no duplications. The Ontario Building Code (OBC) applies to the construction requirements of new buildings. For example, it does not cover processing of flammable liquids or potentially explosive processes. Most fire and building officials are asking for the PSR to cover the process and operational aspects of the employer's undertakings inside of the building. As such, the PSR brings the building and process together and permits the building official to see the whole picture. The PSR is a trusted tool to the building and fire officials. It is recommended that MLTSD investigate whether municipal fire and building officials have divested themselves of some of the skills required for PSRs over the twenty years that PSRs have been available to them as support. If this is so, then it should be noted that this is a benefit to the services provided by governments generally as it places the cost of providing such a legislated requirement only on the end user that requires it, in this case the factory employer. The service is also privatized which is a general direction of government.

   Having said that, the recent January 1, 2020 amendment of the OBC included clause 4.1.8.18 for harmonization with the NBC. This clause severely increases the costs to employers for racking additions which will now require a building permit that potentially exceeds the cost of the addition.

III. Resources and Educational Materials

A free guideline is currently available on the Ministry of Labour, Training and Skill Development's website that explains the requirements and lists current applicable standards that, if met, would support exemptions from specific circumstances outlined in the Table.

1. **Are you aware of this guide and have you used it?**
   Yes.

2. **Are there any changes to the existing guideline that you would recommend**?
   Yes, the original guideline in 2001 was made available as a PDF but the current guideline is only available on the website and is not available for download. This is a great resource but may not be well known. If the Ministry is concerned about people using out-of-date versions, they could refer the reader of the PDF to the website for the current and applicable document. In addition, if would be helpful if the guideline included:
   - The decision flowchart that it originally had. A sign that the flowchart was a useful tool is that the PEO Guideline refers to it to this day.
   - A link to the PEO directory (https://www.peo.on.ca/directory) for individuals and companies in order that the employer can verify that the person they retained to decide about or provide a PSR is a bonafide engineer who is licensed to offer services to the public.
   - Guidance for the competent person such as a decision flowchart and directions to use in order to comply with the employer's obligation to undertake an evaluation as to whether or not a PSR is required and how to document that evaluation.
   - A full description of the components required for an exemption, such as a statement of the competent person, a manufacturer's declaration, and an installer's declaration. Including guidance for Manufacturers and Installers to fulfill the exemption requirements.
   - Downloadable standardized exemption documents that are properly drafted to legally bind the manufacturer and the installer to the consequences of their exemption representations (specifically the penalties at law) and that indemnify the employer and competent person for such representations.
   - A recommendation to the employer and competent person that if they are unable or unwilling to accept responsibility for the PSR evaluation, which will have OHSA consequences, that they should contact an engineer for an opinion or assistance in preparing the evaluation, exemption or if required a PSR.
   - Assistance to the Certified Members and JHSCs to help them in understanding the what, where, when and why of a PSR or exemption.

3. **Are there any additional non-regulatory resources that the ministry should have that would help assist workplaces in complying with PSR requirements?**

We would encourage the update of the document. It would be of value to ensure that PSR legislative requirements are included in the legislated awareness training, certified member training, joint health and safety committee (JHSC) member training and/or sector specific training

where these apply to factory workers. The Ministry guideline is written from an end user perspective, the PEO guidelines helps those that are executing the review. Therefore, training resources should be made available to the competent person (the PSR starting point) appointed by the employer who assumes responsibility for PSR evaluations. There should be more awareness about these guidelines. It is imperative for people to know the content of a good report.

There is no legislated requirement for the evaluation to determine when a PSR or a PSR exemption is required. The evaluation arises only in the online guideline where it is set out that the person conducting the evaluation is required to be a competent person. Therefore, it is important that the MLTSD utilizes their online guideline to reinforce the importance of the evaluation as clearly as possible to ensure enforceability of such a requirement.

IV. Circumstances Requiring a PSR

A. Risks of Fire and Explosion (Items 1, 4 and 5)

1. **The Ontario Fire Code (O. Reg. 213/07, made under the *Fire Protection and Prevention Act, 1997*) establishes standards for fire prevention and fire safety in buildings that are in use. Part IV applies to flammable and combustible liquids and Part V to hazardous materials, processes, and operations (e.g. spray applications using flammable and combustible liquids; combustible dust producing processes). Do you support the ministry reviewing the fire and explosion prevention provisions in Regulation 851 with current Fire Code requirements and other Ontario legislation to see if there is opportunity to potentially streamline and/or harmonize requirements?**

There is an opportunity to streamline the process, but it would require coordinated efforts by Fire Officials, Building Officials, and those conducting PSRs – the government must establish an effective way to harmonize these requirements.

Practitioners of PSRs for these circumstances have encountered officials who are grateful for the support that the PSR provides. It has been the experience of practitioners that when confronted by these circumstances building and fire officials have recommended or required a PSR. It may be worth considering that after twenty years the fire and building groups may have shed these skills knowing that they are available from engineers in the PSR marketplace.

The PSR brings in a great many more considerations to this circumstance than the legislation directs the officials to, particularly considering the vast range of possibilities beyond the Part IV and Part V flammable, combustible, hazardous materials, and liquids that these processes and operations might involve. These advantages flow from the current and applicable standards that require the practitioner to evaluate a much broader range of hazards that are relevant to the safe operation of these building spaces. Unless calculation and design information is sealed on a drawing for such elements as ventilation systems and blowout walls by an engineer, fire and building officials may not be aware of the requirement nor may they be able to verify the correct installation of the equipment. Furthermore, fire and building officials may not be able to ascertain whether the detection and control systems meet the performance level required by the process or operation.

There is also the very important distinction to be made between the building owner and constructor as opposed to the operator or employer. Oftentimes the spaces within the buildings are repurposed and a PSR is sought by the employer as an obligation under the Act whereas, not being the owner, they do not see such an obligation under the Building or Fire Codes. Performed under the auspices of a PSR the outcome can be more effective (safe) and less costly. Owing to the ongoing repurposing of buildings and the continuing evolution of applicable standards the use of the PSR is a preeminent tool over the codes.

2. **If the room or area in which flammable liquids are stored meets the requirements of the Fire and Building Codes, does there also need to be a PSR requirement for storage of flammable liquids? Why or why not?**

   The PSR practitioners believe that the Fire and Building Code requirements will not fulfill the requirement for the workplace storage of flammable liquids. The PSR is a complementary tool that experience has shown more often than not identifies a deficiency in the room or area that makes it unsafe. One of the chief areas of deficiency is the lack of the requirement for bonding. Oftentimes there are flammables requiring high device performance levels that have not been met to provide sufficient detection and prevention, as it relates to ventilation.

3. **A PSR related to item 4 is not required if the process is conducted inside a spray booth that is manufactured and installed in accordance with current applicable standards (see subsection 7(8)). The only current applicable standard listed in the PSR Guideline is NFPA 33 – Standard for Spray Application Using Flammable or Combustible Materials. Would you support an exemption to item 4 that directly references this standard? Why or why not?**

To determine whether to support the exemption to item 4 that directly references this standard, it is imperative to understand what documentation is required to establish the exemption. In this case the following documents are acceptable in establishing such an exemption:

1. A notice in writing from the manufacturer, or certification from an accredited organization, declaring that the spray booth is manufactured to current applicable standards, and
2. A notice in writing from the installer stating that the spray booth is installed in accordance with the manufacturer's instructions and current applicable standards.

In keeping with the necessary documents that might be required to support an exemption, the spray booth may be manufactured and installed to current applicable standards (including NFPA 33), however, if the process that goes on inside of it has not been taken into account an unsafe circumstance may evolve. Ventilation of the space and the necessary make-up air are examples that can compromise the integrity of the surrounding space or building surrounding the spray booth. In some circumstances exhaust air has been sent to populated areas or parking garages and make-up air has caused negative pressure for heating appliances resulting in the intake of CO2 to the workplace.

Apart from just spray booths, throughout these types of spaces incorrect electrical code classifications have been noted which have the potential to create highly hazardous environments. Additional ventilation considerations need to be taken into account such as the impeller type, height of stack or whether the exhausted product is lighter or heavier than air (a common mistake).

In summary, establishing an exemption for such spaces, including spray booths, is a problematic

and potentially hazardous circumstance if left to the employer, the competent person, the manufacturer and the installer.

B. Safeguarding Devices and Barrier Guards (Item 2)

The main understanding under which engineers operate is that a safe machine or process is one which is designed, manufactured, and installed to current applicable standards in Ontario.

1. **Are the types of safeguarding devices and barrier guards requiring a PSR the correct ones? Are there any similar devices or guards that should be added? Are there any that should be removed?**

   As the list of safeguarding devices and barrier guards includes the phrase “including but not limited to” any device that is reasonably interpreted to “signal the apparatus to stop” triggers a PSR. Therefore, at this time the list of devices need not be expanded. There is an emergence of safety camera applications which have yet to evolve but the current language can be read to incorporate such devices when or if the time comes.

   It is recommended that for clarity the phrase “… but not including emergency stop devices” be added to the end of paragraph 1 after “… multiple beam systems.” or as a new paragraph 3. While this is not a misunderstanding of the engineering community or the MLTSD it is commonly misunderstood by the employer.

2. **Subsections 7(5) and (6) set out the conditions where the protective elements described above would not require a PSR and the PSR Guideline lists current applicable standards that can be used to establish an exemption. How could the ministry help businesses, especially small businesses, ask manufacturers or equipment distributors for this sort of documentation when purchasing machines and equipment**?

   Someone must determine if the standards are met. Installation is part of the PSR. The government should focus on generating awareness, specifically when considering small businesses, which do not have the health and safety staff to guide this process. It is a challenge that small businesses could buy machines that do not meet the legislation or the standards.

   A consideration should be made on whether only safe machinery be on the market in Canada. However, OSPE recognizes that there are jurisdictional challenges when enacting these types of regulations. Therefore, awareness is very important. Employers and buyers need to know which questions to ask – for example, checking on standards to ensure that the machinery is safe.

   The Ministry could be helpful for business regarding conditions that would not require a PSR for protective elements through several ways:

   a. By the development of a standardized exemption declaration to be submitted and signed by the manufacturer over the name of a technically competent person or any other person able to lawfully bind the manufacturer to the statements made in the declaration,

specifically citing, but not limited to, the current applicable standards to which the apparatus was designed and manufactured. This declaration should identify the entity present in the Province of Ontario that would be legally accountable to such a declaration should the need arise to represent the declaration in a court of law. Such a declaration should have force under OHSA - Duties of Suppliers. If the manufacturer cannot provide an entity that is subject to penalty under the Ontario Health and Safety Act (OHSA) then they should not qualify for an exemption. This would achieve equivalency with the PSR. As with projects and complex process design this would be an excellent remedy for off-the-shelf machinery and helpful to small businesses.

b. As it is required to form an exemption, the same manner of declaration should be standardized for the installer of the apparatus that is installed in the workplace of the employer (et al). Professional engineering PSR services may include a review of the installation of the apparatus or process so this equivalency is warranted.
c. The Ministry could provide an example of what a good exemption should look like so that employers can seek to emulate that format. Included with this could be training for the employer-appointed Competent Person at the workplace who compiles the exemption. Consideration should also be given to indemnification for that competent person wherein it is established that the representations made by the manufacturer or installer were incompetent, negligent, or otherwise failed to meet the “current applicable standard” threshold.
d. The list of current applicable standards changes from time-to-time, it is important for the Ministry to assist by keeping the list up to date. When a revision is made to a standard the engineering community or the manufacturer might regard the revision to be the one that is currently applicable, yet the Ministry’s website might not list the revision making applicability unclear.
e. As is the case with legislated training it may be helpful for the Ministry to provide a link on its website for employers to find PSR providers or to contract this out to another body (PEO, WSPS, etc.).

D. Lifting Devices, Travelling Cranes and Automobile Hoists (Item 7)

1. **The ministry would like to clarify the circumstances that would trigger a PSR for item 7 by proposing the following: “a travelling crane, overhead crane, monorail crane, gantry crane, jib crane, or other lifting device suspended from or supported by a structure, rail, framework, or post, or an automobile hoist”. Does this proposal list the types of lifting devices that should require a PSR? Should any be added or removed?**

   This proposal lists the types of devices that should require a PSR. No devices should be removed. It could be helpful to provide more clarity on what is meant by lifting devices. The description of Item 7 in the table currently reads: “The construction, addition, installation or modification relates to a lifting device, travelling crane, or automobile hoist.” It is also presently the case that a vast array of below-the-hook lifting (Figure 2 below) devices are left out. Also, manipulators (Figure 1 below) are not mentioned which are arms that act as an alternative to cranes. Manipulators are present everywhere in industry and are mass-produced for use globally. In a typical auto-assembly plant, manipulators and cranes are used interchangeably

and in equal numbers. Experience indicates that most customers ask for PSRs on below-the-hook lifting devices and manipulators and they are treated in exactly the same way as a crane in a PSR.

In addition to what is being proposed, possible wording could include: "Lifting equipment including bridge cranes, jib cranes, monorail cranes, gantry cranes, industrial manipulators, automobile hoists and below-the-hook lifting devices, including supporting structures, that have been constructed, modified or installed."

Figure 1 - Typical Manipulator

Figure 2 - Typical Below-the-Hook Lifting Device

2. Clause 7(9)(a) currently exempts lifting devices and travelling cranes from the PSR requirements "if it is in or on a supporting structure originally designed for it and its capacity does not exceed the capacity provided for in that original design". Would you support amending the exemption to clarify that it applies if the supporting structure was originally designed for the capacity of the lifting device or travelling crane that is being installed or used? Why or why not?

Yes, if it is originally designed for this purpose there should be existing engineering documentation to support the exemption. he existing exemption, Section 7 para. 9a, states, "a prestart health and safety review is not required, in the case of a travelling crane, if it is in or on a supporting structure originally designed for it…"

This exemption wording suffers from potential misinterpretation as all cranes are on a structure originally designed for the crane and possibly all cranes are exempt. The structure is usually less relevant anyway because the crane, manipulator or below-the-hook lifting device is far more complex and requires far more attention to detail. Also, it is possible to exempt all manipulators and below-the-hook lifting devices in the same way, because they "are on a supporting structure originally designed for it".

We believe that the wording should be, "When Item 7 of the table applies, a PSR is not required if a) the manufacturer of the equipment certifies that the equipment meets all applicable standards or b) if the organization modifying the equipment certifies that the

modification meets all applicable standards." This wording would make the exemption more consistent with that of Safeguarding Devices and Barrier Guards.

3. **For the automobile hoist exemption in clause 7(9)(b), the only applicable standard listed in the PSR Guideline is the ANSI/ALI ALCTV Standard for Automotive Lifts – Safety Requirements for Construction, Testing, and Validation. Would you support amending the exemption to directly reference the standard and/or certifying organization?**

   Automotive Lift Institute (ALI) is an independent, third-party certification body and should be considered as a resource to support exemption.

E. Racks and Stacking Structures (Item 3)

1. **Please indicate whether you think Regulation 851 should include specific requirements for rack safety, as suggested above, and the reasons why or why not? If so, what topics or issues should the requirements address?**

   Apart from new installations, racking systems tend to be subject to ongoing use changes by the employer and are often repurposed and reconfigured with previously designed elements and frames (modified). British Columbia has recently updated their legislative requirements for racking structures. These expanded requirements should be examined and considered for addition in Regulation 851. In addition, the PSR guideline should include the CSA A344 (User guide for steel storage racks) as well as CSA S16 (Design of steel structures) as a reference for racking structures.

   A key element of CSA-A344.17 are expert conducted inspections which will greatly enhance safety across multiple industries. Critical to the role of the inspectors are inspection frequency, time frame for deficiency repair and deficiency classification. Inspectors will also be able to detect changes in loading and the occurrence of dynamic loads which may not have been considered in the original design. Such inspections will reduce the frequency of catastrophic failure and assist in the detection of repurposed racking systems.

   Nevertheless, it is our opinion that Regulation 851 should have a separate clause for the inspection of racks. The clause need not be complex, as CSA A344 already defines the requirements for Expert inspection. The clause need only read "Storage structures shall be inspected by persons that are competent in the practice of inspection of structures, including storage racks. The frequency of inspection and methods used shall be in accordance with current applicable standards."

2. **Are there certain types of racks or stacking structures (such as industrial pallet racks, moveable shelf racks, stacker racks, drive-through and drive-in racks, or cantilever racks) that should be subject to more stringent requirements and, if so, what should those requirements be?**

Racking systems should continue to be governed by good engineering design practices, including risk assessments based on use, design, condition, damage, and environment. The associated documentation should bear the seal of the engineer that completed the design. It should be noted that the designer would not be able to influence how the racking system is used after its installation. Modifications that end users make will impact performance. For example, use of damaged pallets, placing plywood between storage beams and other poor operating practices will impact worker safety. As previously noted, end users should be encouraged to review and apply the operating principles from CSA A344 and their reliance on professionally liable expert inspections

Racking systems resemble both machinery and building structures, particularly, in the design and use of shelf and rack system structures that support people and machinery such as conveyors. Increasingly, life safety considerations need to be incorporated into the evolving rack systems.

3. **If Regulation 851 were amended to include specific requirements for racks, should section 7 be amended so that the PSR requirements only applied to racks or stacking structures that were installed prior to the day the new requirements come into effect?**

   Any storage structure which might for example be a rack, a platform or a mezzanine should be subject to professional review in accordance to current and applicable regulations and standards including and not limited to the Ontario Building Code.

   Also, this is an opportunity to consider exemptions for elements of racking and storage structures which have been verified by a professional engineer. However, professional engineering approval should be required for the racking and storage structure including the foundation. Given where we are today, with CSA A344 & CSA S16 Annex N, it seems the previous concept of an exemption is not applicable to racking in that these standards demand approval by professional engineers, in other words a PSR. As well, racks are generally adjustable, so a PSR is triggered when the structure is “modified”, thereby making an exemption a postponement of the PSR, which will then be considerably more expensive to perform once the structure has been in service, as a site verification is typically a mandatory requirement.

F. Ventilation Systems and Occupational Exposures

1. **Should the circumstances described above be amended so that a PSR is only required when a ventilation system is first installed, and not for subsequent modifications? After installation, other requirements, such as those in Regulation 833, would continue to apply.**

   Modifications can expose the occupants to conditions not meeting the current requirements. Meeting ASHRAE 62.1 should always be a guideline to Acceptable Indoor Air Quality. Therefore, it should be reviewed with the PSR engineer.

2. **Should these processes be subject to a PSR or is the control of airborne exposures to hazardous substances better addressed through specific regulatory provisions specifying control measures, including for ventilation. Why or why not?**

   For exposure, a hygienist can do the review – either profession can assess the system accordingly. Otherwise, a PSR should always be required.

OSPE believes that these recommendations are essential to ensure the safety of Ontario's workers and to improve the PSR process. We look forward to working with the government to further develop these recommendations. If you have any additional questions please contact Andrea Carmona, OSPE Policy and Government Relations Lead at acarmona@ospe.on.ca or 416-223-9961 ext. 243.

Sincerely,

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