

Technical Standards and Safety Authority

Annual State of Public Safety Report

2015 Edition

A Review by Daniel Hoornweg PhD, PEng

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Province of Ontario

September 2015

Summary

The Annual State of Public Safety Report (ASPR) provides an important source of information on progress in Ontario's public safety sector, particularly in the delegated areas overseen by Technical Standards and Safety Authority (TSSA). This year's ASPR provides the third year of the predictive measure 'risk of injury or fatality', to facilitate prediction of the expected injury burden during the course of the upcoming year (based on the last year) as well as trend analysis over a rolling eight (or five) year average. The metric as a common global standard enables cross-sector and cross-jurisdiction comparisons, thereby providing a valuable public policy tool.

This report is accompanied by an inaugural discussion document – Ontario Risks Outlook 2015 – a possible complement to the ASPR.

Specific Comments and Recommendations

- I. In each program-specific discussion provide the status of regulatory underpinnings, e.g. when was legislation last updated, is there a review process underway (if so, expected schedule).
- II. Lower bound and upper bound compliance rate prediction interval is not well defined. The benefits of including this information are not clear.
- III. A causal pathway for BPVs and OEs, similar to the other sectors could be useful (if practical).
- IV. With more than five years of compliance data, and levels of compliance commonly ranging from a high of 96% (BPVs) to a low of 12% (EMs), with most sectors typically around 40% compliance, perhaps a more fulsome definition of compliance is warranted. There may be merit in having *compliant* mean roughly the same thing across TSSA sectors.
- V. Consistency in the ASPR between 'last year', last five years, and last eight years would be useful. How many orders were issued in the last (fiscal) year and how does this compare to the overall five-year (or eight) average, would be useful.
- VI. Item A, page 6 – reduction of risk at fuels dispensing sites – can this be (statistically) attributed to risk informed inspection approach?
- VII. Figure 6 is a great addition. Would it be possible to add a fourth item to risk assessment at some point, i.e. economic risk (although this is not strictly public safety, highlighting also the economic impact of activities, this might influence public behaviour and enables better comparison across sectors and types of risk).
- VIII. Page 11 "Occasionally, it is necessary to make restatements to results reported in previous years." This is understandable but might benefit from more explanation. Also, in each year going forward, perhaps an annex could be added to the ASPR showing specific compliance levels in the previous five years. This would capture trends and reduce the need to refer to previous ASPRs. Similarly at end of this section (page 12)

the impact of reporting biases is raised and inability to account for the bias explained. This is also understandable, but is there a time limit to this inability?

- IX. On EDs (and possibly escalators) can a short discussion be added on risk of inoperability? This is not strictly a risk metric of existing inspection regime, however absence of elevator (escalator) service can pose serious risks that could be acknowledged.
- X. Page 46 the contractor rating system is a great idea, as is the suggestion of a clear time-bound strategy for improving compliance levels. Is there a timeframe for this?

General Topics

- I. Can information be provided on disaggregated risk? E.g. certain risks in Northern Ontario vs metro Toronto, relative to the Province overall.
- II. A short discussion on data integrity would be useful. Quality of data, trends on availability, etc. Especially in the fuels sector where a risk informed approach is scheduled. Similarly the data set for institutions with vulnerable populations should be discussed with respect to the special buildings pilot.
- III. On USA proposal to conduct inspections at independent retailers and development of a risk-informed approach is there a timeframe for this, can this be defined relative to other jurisdictions, and can public risk be better defined (e.g. majority of orders issued from the 6,000 inspections focus on manufacturers not being registered in Ontario). Also is there a longer term plan on proposed USA inspection in light of e-commerce for example (Ontario now has its first online mattress distributor, with no retail outlet).
- IV. Appendix A and D are particularly useful. These would be useful as separate discussion documents that could be available on the website and sent (maybe annually as updated) to partners.

Risk Sciences International (RSI) Draft Report, Benchmarking Risk of Injury and Death from TSSA-Regulated Activities against Other Jurisdictions

The report (70 pages) accompanies the ASPR for the third year. The report particularly focusses on risks of carbon monoxide poisoning across benchmarked jurisdictions.

- I. Updating the previous fatality table (2013 and 2014) would be useful. Annex D provides a detailed list of CO₂ studies (39 pages), that could be omitted from this particular version of the report.
- II. The final paragraph on Page 20 (Sec 4.3) lamenting the challenges of benchmarking and recommending a 'stronger cross-jurisdictional collaboration and associated technical infrastructure in order to facilitate inter-jurisdictional communication and harmonization,' is excellent. This was proposed in earlier reports, ASPRs and CSRO reports. A simple template for information sharing would be particularly useful.
- III. In light of TSSA's considerable success in developing relations with Finland, Singapore's willingness to partner, and other provincial agency interest, this collaboration for shared

(technical) communication should be fast-tracked. Perhaps the upcoming workshop can promote this. As mentioned in earlier reviews, sectors may need to be prioritized. Elevators, BPVs and fuels seem to be the priority. Also see CSRO benchmarking report of Elevators.

- IV. Perhaps an 'Ontario Risks Outlook' report (draft provided this year) could be developed that contextualizes TSSA-mandated risks with other common Ontario risks.

Annual Public Safety Report (Public Brochure)

This is the first of an expected annual summary of the ASPR targeted to a general audience. The report (49 pages) is a relatively succinct, visually appealing publication that conveys well the key messages of the ASPR.

- I. The report is engaging and likely to be a positive addition to TSSA's overall messaging. Congratulations.
- II. There's mention in para 3 and at several places in report is how TSSA is 'working harder to form partnerships.' Good; excellent idea. But these could be better defined, monitored, and assurances given that the partnership is being further developed. This could also be discussed in the main ASPR.
- III. As the report outlines there was a 5% decrease in risk across all sectors over the previous year. This metric is qualified in main ASPR, and the statistical validity may need confirmation, therefore that statement may also need to be more tempered in the general public document.
- IV. "The 5-year decreased trend in the number of accidents caused by operators' non-compliance with the laws we enforce speaks to our effectiveness as a safety regulator". Not clear which operators these are. And in most sectors the regulatory gap is less than 1% or 2% percent of the risk, therefore this statement may also need to be tempered somewhat.
- V. The top safety priorities for 2015 on page 7 is an effective way of conveying the key priorities. Where is this stated in the ASPR? Could this be linked?

The Ontario Risks Outlook – 2015, accompanies this report. The report intends to provide a means of placing TSSA's mandated risk profile in context with other Ontario risks. Many initiatives are applicable to a wide array of risks – not just those for which TSSA is mandated. This may help to better make the economic case for risk management, as well as contribute to a broader 'risk as innovation.'¹

Ontario Risks Outlook – 2015

The Ontario Risks Outlook provides a consolidated snapshot of Ontario's risk landscape. Risks are projections of future impacts of both injury burden and potential economic losses borne by

¹ Innovation: Managing Risk, Not Avoiding It. Annual Report of the Government Chief Scientific Officer, United Kingdom, 2014

Ontarians. The risks include regional downscaling of global risks 2015 from the World Economic Forum and ranking of Canada's leading rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010 (Institute for Health Metrics and Evaluation, 2015). The Health Metrics and Evaluation report provides ranking and relative quantification in terms of years of life lost to unintentional or intentional injury, such as self-harm, road injury, falls, and interpersonal violence. Costs of preventable injuries are quantified through Parachute Canada in collaboration with the Conference Board of Canada.

For comparative purposes the list includes the top five causes of injury in Ontario (direct and indirect impacts) and proposed top five regionally manifested large-scale risks (potential impacts). The draft list is now under peer review and will be finalized later in 2015.

An annual Ontario-specific source of risk outlook is proposed (ranking based on potential impact). The potential risks can be compared against existing trends (e.g. personal injury) and global risks as defined through annual World Economic Forum surveys of professional risk managers (and their relevance to Ontario).

This is the first known attempt to compare these two types of risk – personal injury and large-scale trends (macro issues). By using a common metric (burden of disease and financial costs) public policy initiatives can be designed to maximize potential risk mitigation benefits across sectors. The mandate of TSSA within the broader Ontario risk landscape, provides ancillary economic benefits and relevant metrics outside the delegated sectors. Falls, for example, exact a very large economic burden on Ontario. TSSA's work on elevating devices, and the critical nature of user behavior, bears this out. Public safety messaging for elevators developed by TSSA may readily be adapted to other areas typical of falls. Unintentional poisoning is another area with wide public messaging potential.

The draft top Ontario's Risks Outlook – 2015 draft is as follows:

- Failure of critical infrastructure – including cyber attacks
- Failure of climate change adaptation – extreme weather events
- Falls
- Transport Incidents
- Self-harm
- Unintentional poisoning
- Spread of infectious disease
- Water crises (supply and quality)
- Conflict – including terrorism, collapse of governance, and weapons of mass destruction
- Violence (personal)

Inspection Processes for Elevating Devices: Benchmarking Comparable Jurisdictions

A benchmarking exercise was started by the CSRO as outlined in the 2015 work plan. Elevating devices were selected as the first sector to review. A summary table of comparable jurisdictions was provided in the August 2015 draft Annual Report. The jurisdictions compared are New York City, Illinois, France and New Zealand.

The final document (in support of the Annual Report) provides a template for further benchmarking (longer duration, more sectors, and more jurisdictions). The tables could be placed on the TSSA website (or elsewhere) to start a repository of information from comparable jurisdiction.

Carbon Monoxide Poisoning

Carbon monoxide poisoning remains TSSA's largest mandated risk. The RSI report corroborates this trend for other jurisdictions around the world. Most of the CO poisoning risk in Ontario is manifest in private residences, where TSSA has limited access. Recognizing this, TSSA is already working with the Consumers Advisory Council and industry representatives to develop comprehensive home safety initiatives. Several agencies have similar interests in residential safety programming, e.g. Electrical Safety Authority, Fire Marshal's Office, Ontario Injury Prevention Resource Centre, home heating contractors, insurance industry (especially as homes attempt to increase resilience in response to climate changes).

TSSA should provide no later than the 2016 ASPR Edition a 'partnership program' to address CO poisoning in Ontario. The program should list key partners, notional tasks and budgetary allocations, and timelines for key activities.

Special Buildings

As outlined in the ASPR (page 70), recognizing the unique nature and disproportionately high-risk profiles associated with some buildings TSSA (fuels sector) initiated a three-year pilot of targeted inspections. Year one of the pilot is complete – most buildings inspected were found to be non-compliant. The Special Buildings Inspections Pilot (SBIP) initially focused on inspecting long term care and retirement homes. There may be merit in expanding the pilot to include targeted inspections of elevating device and boilers and pressure vessels (if on-site). The pilot might also benefit from inclusion of other government agencies, such as Ontario Retirement Homes Regulatory Authority and Long Term Care Association. Most of these special buildings are government managed (and financed) facilities, e.g. hospitals and schools, therefore punitive fees and shutting down elevators and fuel systems, may target the wrong people. A comprehensive program with a consolidated, integrated maintenance program is likely the most effective way to enhance compliance in a cost-effective manner, while also meeting other ancillary facilities requirements.

TSSA should provide no later than the 2016 ASPR Edition a discussion on Special Buildings that includes a comprehensive description of the issue and its specific relevance to TSSA-mandated sectors (and notionally to other non-mandated sectors).

Annual State of Public Safety Report - Background

This is TSSA's seventh enhanced Annual Public Safety Performance Report; now Annual State of Public Safety Report (ASPR). Publication of the ASPR is consistent with reporting requirements stipulated in the Technical Standards and Safety Act, 2000. The CSRO's mandate as amended October 25, 2010, includes "review, analyze and report on TSSA's annual safety performance reports."

This year's ASPR includes 'Full Report' (107p), Summary 'Annual Public Safety Report, 2015' (52p document prepared for general public) and accompanying 'Benchmarking Risk of Injury and Death from TSSA-Regulated Activities against Other Jurisdictions' prepared by RSI, Risk Sciences International (70p).

General Overview

The ASPR provides an important state-of-the-Province risk-metric benchmark the value of which goes well beyond the delegated remit of TSSA. As discussed in previous reviews, TSSA's mandated risk reduction efforts represent only about 0.1% of Ontario's fatality rate due to unintentional injuries. And even within TSSA's scope of oversight as stipulated in the Technical Standards and Safety Act, 2000, often more than 95% of the residual risk of injury or fatality in the delegated sector is caused by external factors, such as user behaviour, rather than inadequate regulatory systems.

TSSA's risk informed decision making (RIDM) framework and the term "risk of injury or fatality"² provides an objective, evidence-based assessment and decision-making approach that helps TSSA's Statutory Directors discharge and assess their regulatory responsibilities as trends and impacts can be readily monitored. The framework also enables development and monitoring of associated educational campaigns; and increasingly, expansion of risk reduction efforts to related activities, for example fuels and carbon monoxide poisoning in residences).

About two-thirds of the estimated overall risk under TSSA's review is caused by external factors, largely related to carbon monoxide poisoning; most of this in residences. This highlights the need for TSSA to increasingly work with partners. Strong potential collaborators are emerging, e.g. the newly re-constituted Parachute Canada.

This year's ASPR provides the third year of the predictive measure, 'risk of injury or fatality,' to facilitate prediction of the expected injury burden during the course of the upcoming year (based on the last year) as well as trend analysis over a rolling five or eight year average. The metric enables cross-sector and cross-jurisdiction comparisons thereby providing a valuable public policy tool.

Application of risk of injury or fatality is useful for TSSA's internal planning and programming as well as reviewing risk analysis across other Ontario sectors. Trade related developments, e.g. the Europe-Canada Trade Agreement, open data sets, and Ontario and Canada-wide risk programming like Health Canada's new initiatives, are all supported by the approach outlined again in this year's ASPR (see Appendix A-F).

Reviewing the Data

The ASPR and its fundamental underpinning through RIDM are based on probabilistic risk assessments from collected and inferred data. These evaluations, when based on sound and defensible data, are becoming sufficiently robust to enable risk-based responses, e.g. timing of inspections in sectors such as licensed propane facilities. This can provide significant cost savings (without increasing risk) and help to focus inspections and regulations on areas of greater risk. As much of TSSA's risk profiling is based on available and interpreted data, this information should be as public and readily accessible as possible. Over time this should

² RIDM – risk informed decision-making – is a general risk industry standard that originated in systems engineering. Complex systems and their human interactions, like amusement devices, ski hills, elevators, and fuel systems can be assessed through RIDM, and quantified by metrics like disability adjusted life year (DALY) or the simpler "risk of injury or fatality" (used within TSSA's ASPR beginning 2012/2013 edition). 'Risk of injury or fatality' denotes a consistent unit that enables comparison of risk across time, societies and activities.

enhance data quality and public trust in the data, and its application. The ASPR makes a genuine effort to present much of this data – this effort should be commended, and expanded. **Data management and publication protocols need to be clearly articulated and administered. As a minimum, starting with elevating devices, no later than May 1, 2016 TSSA should have at least its Elevating Devices data publicly available on its website (or alternate location). As much as possible, access and usability of the data should be consistent with other ‘Open Ontario’ data sets.**

Sector Reports 2015

Boilers and Pressure Vessels (BPV) – 96% compliance; no observed trend in compliance rate (presumed similar rates of compliance for insured facilities).

From last year’s review, is there a target date of standardizing all orders TSSA and insured facilities?

Operating (Power) Engineers (OE) – 40% compliance rate; no observed trend in compliance rate; 7% of orders issued as ‘high risk’, 13% ‘medium risk’, 74% ‘low risk’, 5% ‘unassessed’; 3,000 plants and 12,700 operating engineers in Ontario. As quickly as practicable TSSA should publish the names of Operating Engineers licence holders, similar to Professional Engineers Ontario.

Amusement Devices (AD) – 2,300 permitted devices; risk of injury or fatality 0.09 FE/mpy; increasing occurrences and non-permanent injuries of 8% per year; 95% of risk due to external factors (outside TSSA regulatory mandate, e.g. user behavior); waterslides represent 50% of total risk on amusement devices (60% of injury burden); 5 year median compliance rate – 64%; no observable trends in fatalities and injuries over the last seven years.

Key issues: specific targeting of reduced risk on water slides; need for more complete reporting of incidents by operators; continued and expanded public safety campaign.

Elevating Devices (ED) – approx. 53,900 elevators in Ontario; fatality-equivalents increased by 6% over last year (overall occurrences demonstrate an increasing trend of approximately 15% per year); 82% of estimated risk may be caused by factors external to regulatory requirements; one third of ‘high-risk’ devices located in hospitals and rental buildings; risk of injury or fatality 0.81 FE/mpy; five year median compliance rate of 29%.

As recommended last year, with some 54,000 elevators currently in Ontario – and a fast growing stock – TSSA should develop a plan to have much of this data, e.g. licenses and inspection dates, publicly available; perhaps as part of the Province of Ontario’s ‘Big Data’ efforts. As suggested in this year’s CSRO Annual Report a specific target date (and scope of data publication) should be proposed by TSSA, notionally propose as May 2016. Applicability of this data (e.g. by hospitals, homes for the aged, public housing, schools, rental residential buildings, commercial, etc.) should be assessed. As soon as practicable, TSSA should publish when elevators (and escalators) are ordered shut-down.

Escalators and Moving Walks – over 2,200 regulated by TSSA; 12% 5-year compliance rate (decreasing by 3%-5% per year); 97% of risk may be caused by factors external to regulatory requirements; risk of injury or fatality of 0.08 FE/mpy; 11% of periodic inspections fully compliant.

Key issues: Continued focus at mass transit facilities that represent 16% of Provincial inventory and more than 60% of risk of injury or fatality.

Ski Lifts – approximately 300 ski lifts in Ontario; 97% of estimated risk caused by factors external to regulatory requirements; no discernible trend for occurrences, fatalities or injuries; 44% inspection compliance rate; risk of injury or fatality of 0.01 FE/mpy.

Key Issues: understanding and influencing user behavior; addressing major non-compliance through complimentary inspections and regulation; continued partnership development with Canadian Ski Instructors Alliance, Association of Day Care Operators, and Chirp (Owl Kids) and Chickadee.

Fuels – fuels represent the largest risk center under TSSA's oversight. 72% of the risk of injury or fatality (1.39 FE/mpy) is attributed to non-compliance with the regulatory system; 3% decrease from 2014 FY; 52% of occurrences at dwellings; 5-year compliance rate of liquid fuel licenced sites of 32% (4,300 sites); 5-year compliance rate of propane licenced sites of 70% (1,400 sites).

Emerging Issues in Fuels Safety

Liquefied natural gas (LNG) for small plants; refueling and vehicles standards development; stated goal of fuels standards harmonization by Prime Minister Harper and President Obama, August 2014; increasing incidence of carbon monoxide poisoning in residential buildings (where TSSA has limited regulatory capacity); implementing revisions to propane regulations; Special Buildings Inspections Pilot; closure of fuel stations, particularly in Northern Ontario.

Upholstered and Stuffed Articles – 75,032 orders issued 2010 – 2015. About 6,000 inspections conducted over the past five years. 19,267 inspection orders issued in 2013/2014. TSSA does not have any reports of actual health impacts. Similar to last year the top compliance infraction of “Manufacturer not registered in Ontario.”

Emerging Issues in Upholstered and Stuffed Articles

Mattresses by Mail? Ontario now has a company selling mattresses on-line and delivered directly to homes³. Trade issues and online purchases.

³ Mattresses by mail? Canadian start up joins the memory-foam party. Globe and Mail. Jul 29, 2015.

Messages from Statutory Directors

As discussed in the review of last years' ASPR, the messages from statutory directors are important annual 'check points.' They can provide very useful information and an overview of the Director's envisaged key priorities (success in last year and key plans going forward). These sections would still benefit from strengthening in two areas:

1. Directors should present key performance targets for the upcoming year. These performance targets (safety related) should be measurable and results should be reported in the subsequent ASPR. Perhaps at least one of these KPI could be set in the context of another jurisdiction (and comparable using common metrics).
2. Directors have an excellent understanding of their delegated sector: trends, areas of concern, value for (regulatory) money, jurisdictional overlaps and missing aspects. The ASPR provides an excellent venue for Statutory Directors to opine on 'state of their sector' in a broad Provincial and even global context (while maintaining their primary focus on matters that directly impact the safety of Ontarians).

References

Chief Scientific Officer, United Kingdom, 2014. Innovation: Managing Risk, Not Avoiding It. Annual Report of the Government

Risk Sciences International (RSI). Benchmarking Risk of Injury and Death from TSSA-Regulated Activities Against Other Jurisdictions. August 7, 2015. 70p

Technical Standards and Safety Authority. Annual State of Public Safety Report: 2015 Edition. Full Report (107p); August, 2015

Technical Standards and Safety Authority. Annual Public Safety Report: 2015. Public Report (52p); September, 2015



Action Plan to Address TSSA Undertakings to Chief Safety and Risk Officer (CSRO) Review of Annual State of Public Safety Report for FY15

The following table summarizes the status of pending actions arising from the Chief Safety and Risk Officer's Review of TSSA's Annual State of Public Safety Report for FY15. For ease of reference, action items that are completed are shaded in grey and will be deleted from the next report.

TSSA Index No.	TSSA Identified Theme	CSRO's Comments	TSSA's Response	Champion	Scheduled Completion
Specific Comments and Recommendations					
2015-1	Enhancements and Future State	(Pg. 1) In each program-specific discussion provide the status of regulatory underpinnings, e.g. when was legislation last updated, is there a review process underway (if so, expected schedule).	<p><i>Upholstered & Stuffed Articles (USA) – Dara Vorkapic</i></p> <p>The USA Regulation was last reviewed in December 2008. The Ministry of Government and Consumer Services (MGCS) and TSSA are currently conducting a review of the USA Regulation. A review of the regulation has been completed by a third-party consulting firm, which outlined options for strengthening the program, repealing the regulation and modernizing the regulatory regime. TSSA is currently developing options to modernize the program, which will be incorporated into a public consultation paper being developed by the MGCS. Public consultations on whether to repeal or modernize the regulation are expected to be launched later this winter.</p>	Statutory Directors & Stakeholder Relations	Timing to be determined in conjunction with MGCS.



Action Plan to Address TSSA Undertakings to Chief Safety and Risk Officer (CSRO) Review of Annual State of Public Safety Report for FY15

TSSA Index No.	TSSA Identified Theme	CSRO's Comments	TSSA's Response	Champion	Scheduled Completion
2015-1	Enhancements and Future State	(Pg. 1) In each program-specific discussion provide the status of regulatory underpinnings, e.g. when was legislation last updated, is there a review process underway (if so, expected schedule).	<p>The Elevating Devices and Amusement Devices (EDAD) program has completed a comprehensive review of all codes and standards referenced in the Elevating Devices Code Adoption Document (CAD) (last updated May 2013) and the Amusement Devices CAD (last updated April 2012).</p> <p>The EDAD program is currently in the process of rafting proposed CAD revisions that will adopt new codes for the elevating, amusement devices and passenger ropeways sectors. Draft CAD's will be distributed for stakeholder comment in early in calendar year 2016. Expected adoption, pending stakeholder feedback, will likely be in the fall of 2016.</p>	Elevating & Amusement Devices (ED) Statutory Director – Roger Neate	Fall 2016
2015-1	Enhancements and Future State	(Pg. 1) In each program-specific discussion provide the status of regulatory underpinnings, e.g. when was legislation last updated, is there a review process underway (if so, expected schedule).	The Propane regulation has been revised three times since the 2008 Sunrise incident. Ontario Regulations 215, 211, 212 have had minor revisions for retail assembly of consumer products. MGCS and TSSA are currently conducting a regulatory review on the need for a specific Liquefied Natural Gas (LNG) regulation.	Fuels Safety (FS) Statutory Director – John Marshall	Ongoing



Action Plan to Address TSSA Undertakings to Chief Safety and Risk Officer (CSRO) Review of Annual State of Public Safety Report for FY15

2015-1	Enhancements and Future State	(Pg. 1) In each program-specific discussion provide the status of regulatory underpinnings, e.g. when was legislation last updated, is there a review process underway (if so, expected schedule).	<p>The Boiler and Pressure Vessels (BPV) and Operating Engineers (OE) Regulations have not been updated since they were first promulgated. The BPV Code Adoption Document (CAD) was last updated Jan 2014.</p> <p>MGCS and TSSA are currently conducting two separate regulatory reviews for the BPV and OE Regulation. The BPV Regulatory seeks to better align accountabilities with responsibilities, in particular for insurers conducting periodic inspections and TSSA's oversight of insurers. A joint MGCS-TSSA proposal has been developed and industry consultations are expected to be launched this winter.</p> <p>The OE project seeks to comprehensively review the OE Regulation to address changes in technology, industry practices and address long-standing errors and omissions in the regulation. Additionally, the review will consider structural changes to the regulation and assess the advantage of a Code Adoption Document. A jurisdictional scan has been completed and stakeholder interviews are underway to develop an issues inventory. TSSA is currently developing an OE Scope Paper to outline the organization's position on a restructured and updated OE Regulation, which is expected to be completed later this winter.</p>	Boilers and Pressure Vessels and Operating Engineers (OE) Statutory Director – Mike Adams	BPV – Jan 2017 OE – Jan 2018
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Action Plan to Address TSSA Undertakings to Chief Safety and Risk Officer (CSRO) Review of Annual State of Public Safety Report for FY15

TSSA Index No.	TSSA Identified Theme	CSRO's Comments	TSSA's Response	Champion	Scheduled Completion
2015-2	Enhancements and Future State	(Pg.1) Lower bound and upper bound compliance rate prediction interval is not well defined. The benefits of including this information are not clear.	TSSA will provide clarification on these terms as requested as part of future reports. Prediction intervals provide an estimate of an interval in which a new observation (in this case, compliance rate) will fall based on what has been observed. As it provides context into potential future outcomes, it can be used as a tool to enable a decision maker to take proactive or precautionary action where applicable and/or necessary. In the case of some program areas, this interval may be wide, reflecting historical observations in addition to the uncertainty associated with estimating a single point value.	PSRM	ASPR 2016
2015-3	Enhancements and Future State	(Pg. 1) Can a causal pathway be provided for BPVs and OEs?	As indicated in the 2014/2015 ASPR, there are insufficient number of occurrences and injuries reported to the Boilers & Pressure Vessels and Operating Engineers program areas to construct causal pathways. This suggestion was therefore rejected.		Complete



Action Plan to Address TSSA Undertakings to Chief Safety and Risk Officer (CSRO) Review of Annual State of Public Safety Report for FY15

TSSA Index No.	TSSA Identified Theme	CSRO's Comments	TSSA's Response	Champion	Scheduled Completion
2015-4	Clarification	(Pg. 1) With more than five years of compliance data, and levels of compliance commonly ranging from a high of 96% (BPVs) to a low of 12% (EMs), with most sectors typically around 40% compliance, perhaps a more fulsome definition of compliance is warranted. There may be merit in having <i>compliant</i> mean roughly the same thing across TSSA sectors.	TSSA is currently working on establishing risk based mechanisms in reporting on compliance, which will clearly indicate the safety impact of the non-compliances and, more importantly, indicate the effect of TSSA performance on compliance activities. A program specific pilot has been initiated, however, cross program application of this approach is dependent on the TSSA 20/20. In the interim, the risk-based reporting on inspection outcomes as currently included in the ASPR will continue.	PSRM	Ongoing
2015-5	Clarification	(Pg. 1) Consistency in the ASPR between 'last year', last five years, and last eight years would be useful. How many orders were issued in the last (fiscal) year and how does this compare to the overall five-year (or eight) average, would be useful.	TSSA will provide this additional piece of information as requested as part of future reports.	PSRM	ASPR 2016
2015-6	Clarification	(Pg. 1) Page 1 – the term 'threshold' is introduced but it is not clear what this is, or what it refers to specifically.	Has been addressed by TSSA in the 2014/2015 ASPR by removing the reference to 'threshold' and clarifying the reference as 'risk acceptability criteria'		Complete
2015-7	Clarification	(Pg. 1) The terms MIACC and ALARP should be further defined.	Has been clarified by TSSA in the 2014/2015 ASPR in the <i>List of Acronyms</i> section and the <i>State of Safety Highlights</i> section (body text and footnotes).		Complete
2015-8	Clarification	(Pg. 1) Is 'RiskTherm' a common industry term? Although longer, 'acceptable level of risk' (Fig 4) might be easier for the public to understand?	Has been accepted by TSSA in the 2014/2015 ASPR by replacing the 'RiskTherm' reference to 'Risk of Injury or Fatality'.		Complete



Action Plan to Address TSSA Undertakings to Chief Safety and Risk Officer (CSRO) Review of Annual State of Public Safety Report for FY15

TSSA Index No.	TSSA Identified Theme	CSRO's Comments	TSSA's Response	Champion	Scheduled Completion
2015-9	Clarification	(Pg. 2) Figure 4 is excellent. Would it be possible to (somewhat) disaggregate the fuels safety risk? E.g. the total risk figure in the Fuels section has several topic areas.	Has been clarified by TSSA in the 2014/2015 ASPR by occurrence type and location, where appropriate (Figures FS-4 to FS-8).		Complete
2015-10	Clarification	(Pg. 2) Item A, page 6 – reduction of risk at fuels dispensing sites – can this be (statistically) attributed to risk informed inspection approach?	While there are correlations as indicated in the ASPR between an increase in compliance rates at these locations and a corresponding decrease in risk, it is difficult to estimate a statistically valid causative relationship. TSSA will continue to review data and explore possible mechanisms of establishing the causative significance.	PSRM	ASPR 2016 (if feasible)
2015-11	Clarification	(Pg. 2) Figure 6 is a great addition. Would it be possible to add a fourth item to risk assessment at some point, i.e. economic risk (although this is not strictly public safety, highlighting also the economic impact of activities, this might influence public behaviour and enables better comparison across sectors and types of risk).	TSSA recommends that this request be considered and addressed through the proposed changes to the external benchmarking report (future revisions of the third party report). This ensures the integrity of this report is maintained to depict safety results.	PSRM/Third Party	ASPR 2016 (if feasible)



Action Plan to Address TSSA Undertakings to Chief Safety and Risk Officer (CSRO) Review of Annual State of Public Safety Report for FY15

TSSA Index No.	TSSA Identified Theme	CSRO's Comments	TSSA's Response	Champion	Scheduled Completion
2015-12	Clarification	(Pg. 2) Page 11 "Occasionally, it is necessary to make restatements to results reported in previous years." This is understandable but might benefit from more explanation. Also, in each year going forward, perhaps an annex could be added to the ASPR showing specific compliance levels in the previous five years. This would capture trends and reduce the need to refer to previous ASPRs. Similarly at end of this section (page 12) the impact of reporting biases is raised and inability to account for the bias explained. This is also understandable, but is there a time limit to this inability?	TSSA recognizes this limitation and is currently working on establishing a formal plan to address the need for and the nature of future restatements and associated time limits in accordance with international best practices.	PSRM	ASPR 2016
2015-13	Clarification	(Pg. 2) Figure AD-2 'based on period ending 2015'. Is this calendar or fiscal year-end?	Has been clarified by TSSA in the 2014/2015 ASPR by providing a definition of TSSA's fiscal year in the Glossary of Terms.		Complete
2015-14	Director's Response	(Pg. 2) Page 36 hydraulic cylinder replacement was to be completed by May 1, 2015. Any indication of success?	Has been accepted by TSSA in the 2014/2015 ASPR. Details of this initiative have been provided on page 37 of the FY15 Annual State of Public Safety Report.		Complete
2015-15	Director's Response	(Pg. 2) Page 37 – is there a date of compliance for Director's order (267/14)?	Has been clarified by TSSA in the 2014/2015 ASPR.		Complete
2015-16	Clarification	(Pg. 2) On EDs (and possibly escalators) can a short discussion be added on risk of inoperability? This is not strictly a risk metric of existing inspection regime, however absence of elevator (escalator) service can pose serious risks that could be acknowledged.	TSSA will undertake to review the issue of inoperability with MGCS to determine if there is a desire to pursue legislation changes to address this issue.	Roger Neate (ED)	To be determined in collaboration with MGCS



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2015-17	Director's Response	(Pg. 2) Page 46 the contractor rating system is a great idea, as is the suggestion of a clear time-bound strategy for improving compliance levels. Is there a timeframe for this?	TSSA is currently working with contractors and setting specific targets and timelines with respect to improving compliance levels. TSSA will provide a formal report on the progress with this strategy as part of next year's ASPR.	Roger Neate	ASPR 2016
2015-18	Clarification	(Pg. 2) On Fig FS-4 the private dwellings (0.22) and commercials (0.05) are the same for CO Release, Explosions, Fire and Vapour Release. Is this accurate? The FS appears to have missing values overall.	These values have been clarified by TSSA in the 2014/2015 ASPR.		
General Topics					
2015-19	Enhancements and Future State	(Pg. 2) Can information be provided on disaggregated risk? E.g. certain risks in Northern Ontario vs metro Toronto, relative to the Province overall.	TSSA recommends that this request be considered and addressed through the proposed changes to the external benchmarking report (future revisions of the third party report). This ensures the integrity of this report is maintained to depict safety results.	PSRM/Third Party	ASPR 2016 (if feasible)
2015-20	Enhancements and Future State	(Pg. 2) A short discussion on data integrity would be useful. Quality of data, trends on availability, etc. Especially in the fuels sector where a risk informed approach is scheduled. Similarly the data set for institutions with vulnerable populations should be discussed with respect to the special buildings pilot.	TSSA will include this discussion in future versions of the report and specifically when reporting on the special buildings pilot as part of next year's report.	PSRM/John Marshall (FS)	ASPR 2016



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2015-21	Director's Response	(Pg. 2) On USA proposal to conduct inspections at independent retailers and development of a risk-informed approach is there a timeframe for this, can this be defined relative to other jurisdictions, and can public risk be better defined (e.g. majority of orders issued from the 6,000 inspections focus on manufacturers not being registered in Ontario). Also is there a longer term plan on proposed USA inspection in light of e-commerce for example (Ontario now has its first online mattress distributor, with no retail outlet).	<p>This is being addressed as part of the recommendation by TSSA to the KPMG Regulatory Review Report and will be shared with CSRO, once finalized.</p> <p>Proposals to develop a risk-informed approach to USA regulation and consideration for addressing e-Commerce distribution will be part of TSSA's contributions to the MGCS public consultation paper on USA.</p>	Stakeholder Relations/ Dara Vorkapic (USA)	To be determined in collaboration with MGCS
2015-22	Clarification	(Pg. 3) Appendix A and D are particularly useful. These would be useful as separate discussion documents that could be available on the website and sent (maybe annually as updated) to partners.	These appendices are available on the TSSA website		Complete
Inspection Processes for Elevating Devices: Benchmarking Comparable Jurisdictions					
2015-23	Clarification	(Pg. 5) The report provides a template for further benchmarking (longer duration, more sectors, and more jurisdictions). The tables could be placed on the TSSA website (or elsewhere) to start a repository of information from comparable jurisdiction.	This report is available on the TSSA website		Complete



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Carbon Monoxide Poisoning					
2015-24	Enhancements and Future State	(Pg. 5) TSSA should provide no later than the 2016 ASPR Edition a 'partnership program' to address CO poisoning in Ontario. The program should list key partners, notional tasks and budgetary allocations, and timelines for key activities.	TSSA will be enhancing its CO strategy to raise its profile as a public health issue. The strategy will build on existing public education elements and explore technical and regulatory enhancements. TSSA will share this strategy with the CSRO as soon as it is developed and will report on it in the ASPR next year.	David Scriven/ John Marshall (FS)	ASPR 2016



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Special Buildings					
2015-25	Enhancements and Future State	(Pg. 5) There may be merit in expanding the pilot to include targeted inspections of elevating device and boilers and pressure vessels (if on-site). The pilot might also benefit from inclusion of other government agencies, such as Ontario Retirement Homes Regulatory Authority and Long Term Care Association.	Enhanced risk-informed inspections have been introduced in the ED and Operating engineers programs which will base its inspection schedule based on the risk profile. Institutions are already covered as part of this profile.	Roger Neate (ED)	Complete
			The OE Program already covers all institutions with regulated plants and maintains zero backlog of them all.	Mike Adams (OE)	Complete
2015-26	Enhancements and Future State	(Pg. 6) TSSA should provide no later than the 2016 ASPR Edition a discussion on Special Buildings that includes a comprehensive description of the issue and its specific relevance to TSSA-mandated sectors (and notionally to other non-mandated sectors).	TSSA will provide a comprehensive report of the status of special buildings.	Statutory Directors/P SRM	ASPR 2016
Sector Reports 2015					
2015-27	Enhancements and Future State	(Pg. 7) Boilers and Pressure Vessels From last year's review, is there a target date of standardizing all orders TSSA and insured facilities?	While orders are standardized in the program, their availability is dependent on the outcomes of the TSSA 20/20 program. They are already functional in the OE program.	Mike Adams (BPV)	TSSA 20/20



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2015-28	Enhancements and Future State	(Pg. 8) As recommended last year, with some 54,000 elevators currently in Ontario – and a fast growing stock – TSSA should develop a plan to have much of this data, e.g. licenses and inspection dates, publicly available; perhaps as part of the Province of Ontario's 'Big Data' efforts. As suggested in this year's CSRO Annual Report a specific target date (and scope of data publication) should be proposed by TSSA, notionally propose as May 2016. Applicability of this data (e.g. by hospitals, homes for the aged, public housing, schools, rental residential buildings, commercial, etc.) should be assessed. As soon as practicable, TSSA should publish on a public website when elevators (and escalators) are ordered shut-down.	TSSA is working, as part of its 20/20 program, to meet this expectation and the Province's Open Data program.	Roger Neate (ED)	TSSA 20/20 Program
Message from Statutory Directors					
2015-29	Enhancements and Future State	(Pg. 9) Directors should present key performance targets for the upcoming year. These performance targets (safety related) should be measureable and results should be reported in the subsequent ASPR. Perhaps at least one of these KPI could be set in the context of another jurisdiction (and comparable using common metrics).	While TSSA is collecting Incident/Complaint data and will provide this information in the next APSR. USA program will evaluate the potential for comparative analysis.	Dara Vorkapic (USA)	Ongoing
	Director's Response		EDAD will establish a performance target to increase the take up rate of Declaration of Compliance.	Roger Neate (ED)	April 2016
			Fuels Safety will present key safety priority initiatives with milestones for the upcoming year.	John Marshall (FS)	Ongoing
			The BPVOE Safety program will present safety related performance targets in comparison with the National Board's "Violations Tracking" KPI.	Mike Adams (BPVOE)	Ongoing



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2015-30	Enhancements and Future State Director's Response	(Pg. 9) Directors have an excellent understanding of their delegated sector: trends, areas of concern, value for (regulatory) money, jurisdictional overlaps and missing aspects. The ASPR provides an excellent venue for Statutory Directors to opine on 'state of their sector' in a broad Provincial and even global context (while maintaining their primary focus on matters that directly impact the safety of Ontarians).	The TSSA appreciates this comment. The Directors will continue to report on any trends, areas of concern or emerging issues.	Statutory Directors	Ongoing