



# Update

FUELS UPDATE EDITION

Issue 2  
2012 - Winter



## Message from the Director

By John Marshall, BA, CIGC, Director of Fuels Safety Program

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**Taking a look at our data over the past fiscal year, it is encouraging to know that there continues to be a downward trend in fuel-related incident occurrences; however, it is concerning that a large majority of these (90.4%) continue to occur at the utilization (usage) stage – and this trend has continued to rise.**

Further examination of this data reveals that approximately one quarter of these incidents are attributed to carbon monoxide (CO) releases in private dwellings. To address these incidents and particularly the lack of maintenance in residences, TSSA has taken a number of actions over the past year, including: launching a pilot program to audit fuel suppliers with a view of gaining better insights into the lack of maintenance; and issuing a Director's Order for natural draft boilers. While we are continuing to monitor the impact of this order, the preliminary analysis is indicating positive results. Inspections occurring as a result of the order have averted several potential health impacts to equipment users.

Despite these efforts, the buck does not and cannot stop here. We have recognized for many years that public awareness continues to be an issue – and a big one at that. As such, public education remains a key mitigation strategy.

Over the years, TSSA has made significant investments in public education delivering important safety messages to Ontarians to assist them in reducing CO risks in their home. While progress has been achieved, we recognize the magnitude of the challenge and have been actively researching, designing, testing and delivering innovative public education programs and campaigns to further enhance our ability to reduce CO-related incidents. The goal of these efforts is to address the long-standing, dominant root cause of CO incidents – 'user behaviour'. While the public has a key role in protecting their own safety, research studies have made

it abundantly clear that people believe that the probability of a CO-related incident occurring in their home is unlikely. Herein lies the problem – a lack of awareness by the owner/user that they may experience a CO incident in their home. Following from this is a lack of awareness and understanding that they do in fact have a responsibility to ensure proper maintenance of their fuel-fired equipment and this is critical in terms of preventing a CO-related incident in their home. As such, we have intensified our work to better understand how we can effectively engage homeowners and tenants to first and foremost modify their perception of the probability that a CO incident may occur in their home and that by taking action they can indeed reduce this risk.

**We have recognized for many years that public awareness continues to be an issue – and a big one at that.**

While we are continuing to expand/refine existing initiatives we recognize that changing the predominant public perception regarding CO is a big challenge. As this safety issue is clearly a shared responsibility, TSSA recognizes that we cannot do it alone. While we all have our own individual roles, in the end fuel safety is a shared responsibility – TSSA from a regulatory capacity, industry from an operational perspective and the public from a personal stance.

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## WHAT'S NEW IN FUELS SAFETY?

By Zenon J. Fraczowski, PEng., Engineering Manager, Fuels Safety Program

Over the last few months, we've been very busy in the Fuels Safety program tackling a number of important regulatory activities. The efforts of which have resulted in: completing the review of our Code Adoption Documents (CADs) relating to natural gas, propane, field approvals and pipelines to adopt the 2010 national codes; reviewing our Environment Management Protocol (EMP) to make it compatible with the latest Ministry of the Environment's regulations; and developing a brand new code for landfill, digester and bio gas facilities. The resultant documents were recently published and posted on TSSA's website, [www.tssa.org](http://www.tssa.org), starting with the new Pipelines CAD in September 2012, followed by an October 1, 2012 publication of a number of revised TSSA codes, code adoption documents and the Environmental Management Protocol that will be effective on December 1, 2012.

The last of these "regulatory" changes – the requirement for all new oil tanks installed in Ontario to be double bottom, double wall or be provided with secondary containment – is currently being finalized and is expected to become effective January 1, 2013. In keeping with our current practice, these new requirements will be posted on our website and communicated to the relevant stakeholders some 60 days before they become effective.

The most obvious change in the recent updates is the adoption of the 2010 series of B149 codes with Ontario amendments. By adopting these national standards, we make Ontario requirements compatible with the rest of Canada, thus making our industry competitive nationwide. The Ontario-specific amendments to the national code were developed in cooperation with representatives from the various industry advisory councils and the technical committees known as Risk Reduction Groups (RRGs). Through the collective efforts of all, requirements are set in place that reflect Ontario needs and values. In fact, thanks to these contributions, the Landfill, Digester and Bio Gas Code will serve as the model code for the rest of Canada and, most likely, North America.

Other important changes to highlight include the following.

In the broadest of terms, the changes that will affect the natural gas industry include: mandatory inspection of natural draft boilers less than 300,000 BTUH (this is now part of the code as opposed to being required by an annual Director's Order); clarification when manual shut-off valve is not required to be easily accessible; and the restriction associated with connecting a small appliance into a large chimney, sometimes referred to as the "seven times rule".

On the propane side, the changes include: new requirements for operation, maintenance and personnel training, new requirements for underground storage tanks; clarification of requirements for tank-to-tank transfer; and elimination of tank truck parking and use for storage in congested areas.

When it comes to field approvals, the new code: modifies the valve train requirements substantially by adopting input ratings that are compatible with those adopted by the National Fire Protection Association (NFPA) to harmonize the requirements for appliances built in Canada and the USA; and updates requirements for linkageless fuel/air ratio controllers as well as those for programmable logic controllers when used as primary safeguard devices.

The CADs for liquid fuels and fuel oil were amended to adopt the revised Environmental Management Protocol. For more information on this, please refer to Stephen Hoyle's article on page 4 of this newsletter.

And last but definitely not least, the new Code for Landfill, Digester and Bio Gas fills an important gap by providing specific requirements relating to appliance approvals, material selection, installation of specific features and operation of plants.

Clearly, there are simply too many technical aspects of the recently published CADs to discuss them here individually. So, in an effort to further assist everyone in better understanding and applying these new CADs and Codes and associated requirements TSSA will, aside from making this information available to stakeholders, also be organizing industry workshops throughout the province and attending industry conferences and association meetings. In the interim or alternatively, you can also contact our fuels safety technical services desk at (416) 734-2726 should you wish to discuss specific issues.

If you're looking to order a copy of the new codes and/or CADs, visit the Canadian Standards Association's (CSA) special webpage, [www.csa.ca/tssa](http://www.csa.ca/tssa).

For more details on all these important changes or other fuels-related safety information, please visit the fuels safety section on our website, [www.tssa.org](http://www.tssa.org).



# NEW CODE REQUIREMENTS UNDER CSA-B1390N-06

By Raphael Sumabat, P.Eng., Engineer Specialist, Fuels Safety Program

Unpredictable fuel oil tank failures have resulted in thousands of dollars of property damage and environmental contamination. Many failures occur at the bottom of the tank from internal corrosion and occur without warning.



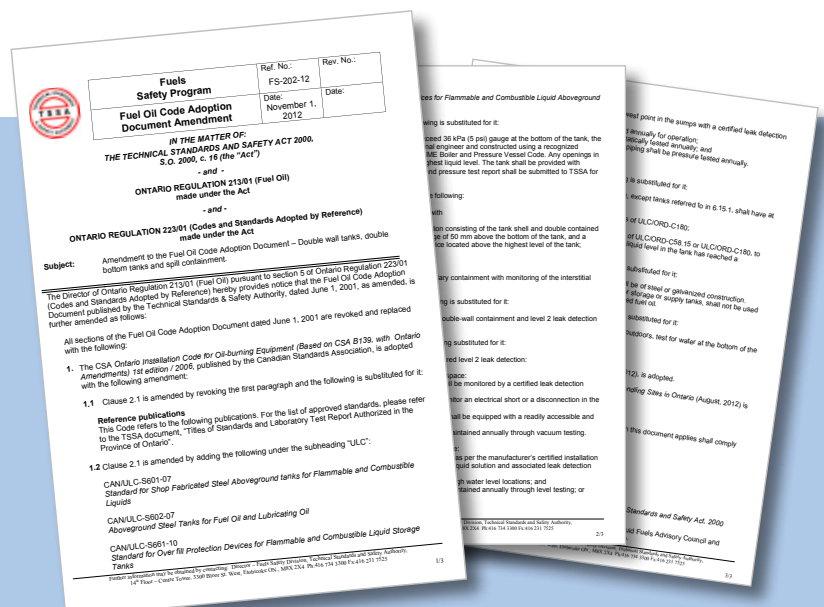
In an effort to address this and to prevent and detect tank bottom failures, steel tank manufacturers have developed a new design for tanks. The new design(s) call for a double bottom so that a leak from internal corrosion at the bottom of the tank can be prevented from escaping by the second bottom, and include a means to discover if the tank has leaked at the bottom. Installers should be aware that there are different types of double bottom tank designs that have received certification to the ULC-S602 standard, Aboveground Steel Tanks for Fuel Oil and Lubricating Oil.

As of January 1, 2013, TSSA will require that all new tanks, both indoors and outdoors, be installed with a double bottom, double wall or secondary containment. TSSA approved design requires a double bottom that must have protection around both ends of the tank and the leak detection between the double bottom must be visible above the highest level of the tank. Double bottom tanks whose ends are not fully protected are not considered approved and these installations will be required to be installed with additional secondary containment.

Contractors and installers are required to ensure that TSSA approved double bottom tanks are installed.



For more information on these new requirements, please refer to the Fuel Oil Code Adoption Document Amendment FS 202-12 – Double wall tanks, double bottom tanks and spill containment – on the Fuels Safety section of TSSA’s website, [www.tssa.org](http://www.tssa.org).



# REVISED ENVIRONMENTAL MANAGEMENT PROTOCOL

By Stephen Hoyle, Environmental Coordinator, Fuels Safety Program

The safe storage and handling of gasoline, fuel oil and associated products in Ontario is governed by the: *Technical Standards and Safety Act, 2000*; Ontario Regulation (O.Reg.) 217/01 Liquid Fuels Handling; the Liquid Fuels Handling Code; O. Reg. 213/01 Fuel Oil; and the Fuel Oil Code. Due to the nature of fuel handling operations, when the escape of product into the environment or a building occurs, action must be taken to mitigate and cleanup the damage caused by the release.

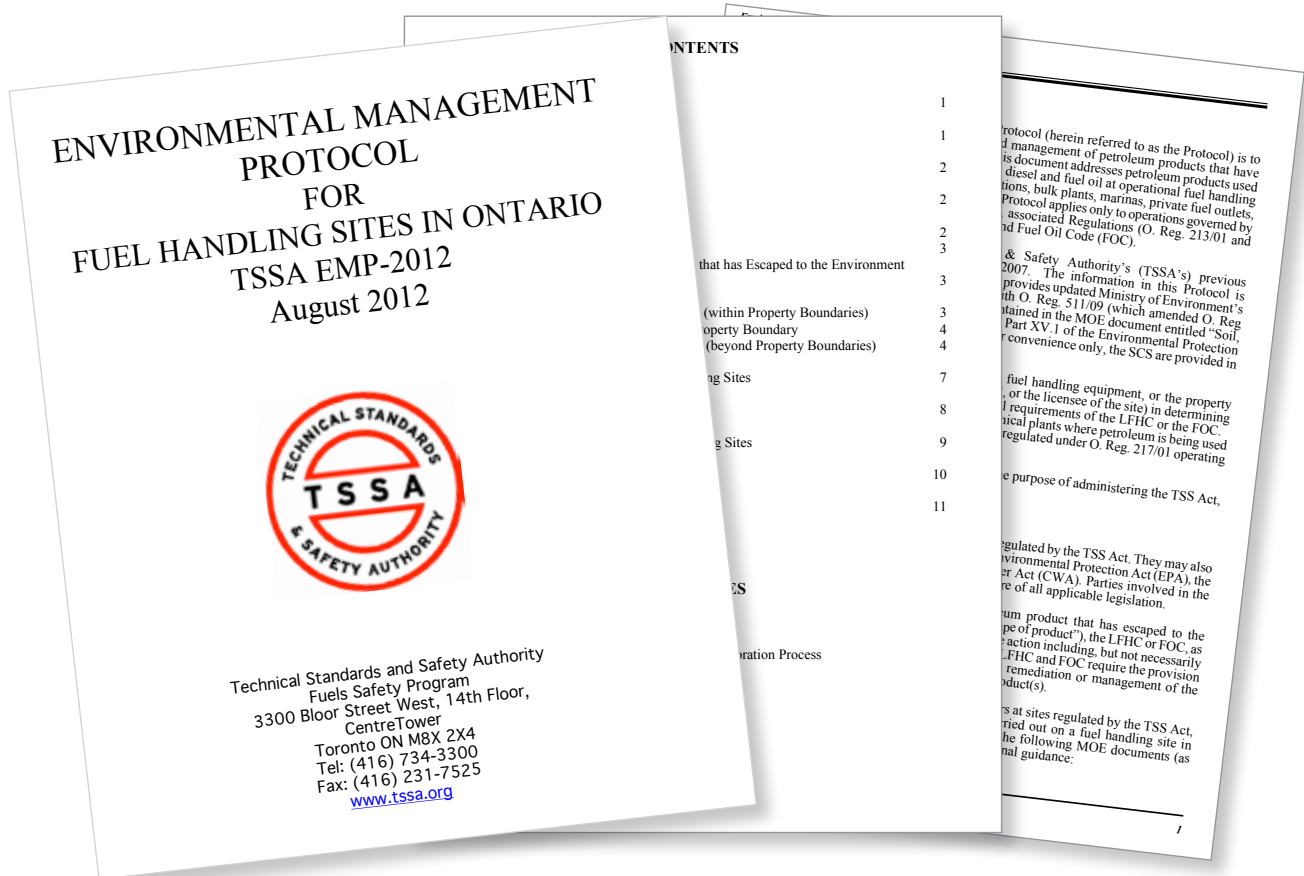
This is where the Environmental Management Protocol (EMP) for Fuel Handling Sites in Ontario comes into play. The EMP exists to address these matters and to provide guidance to a proponent (the owner of the fuel-handling equipment, or the property owner on which the fuel-handling equipment is installed, or the licensee of the site) in determining whether the site is in compliance with the environmental requirements of the Liquid Fuels Handling Code or the Fuel Oil Code.

Recently, the EMP was updated to ensure that such occurrences are properly mitigated in a safe and timely manner. This 2012 edition of the EMP replaces the Technical Standards and Safety Authority's (TSSA's) previous protocol dated May 2007. The information in this edition is consistent with that contained in the previous iteration.

The main revision is the incorporation of the Ministry of the Environment's (MOE) updated Site Condition Standards consistent with O. Reg. 511/09, (which amended O. Reg. 153/04 Records of Site Condition) and the values contained in the MOE document entitled "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act" (effective July 1, 2011).

The EMP 2012 is adopted by the Liquid Fuels Handling Code and the Fuel Oil Code, making it a legal requirement for its directives to be followed. The application of the updated EMP (2012) is intended to ensure continued protection of human and environmental health and safety during fuel handling operations.

To view this protocol along with the relevant regulation and the *Technical Standards and Safety Act, 2000* visit the fuels safety section of TSSA's website, [www.tssa.org](http://www.tssa.org).





# RESPONDING TO A GAS LEAK CALL

By Joe Adams, Inspector, Niagara Region, Fuels Safety Program

During a local HRAI chapter meeting I attended last year, some interesting and telling discussions were had regarding gas leak awareness. And, while some time has passed since that meeting, the information exchanged was invaluable, timeless and as relevant now as it was at that time, and definitely worth sharing.

I had asked the attendees to confirm, by show of hands, just how many technicians in the room had ever responded to a gas leak call at a customer's home, business or industry. The answer was unanimous – every tech in the room put up their hand. My follow-up to this, however, had a very sobering effect – and an intended one at that. 'How do you know you left the customer in a safe condition?' Examples of responses I received from the various technicians ranged from conducting a dial test and soaping all the fittings, to using an electronic leak detector and sweeping all the appliances, to pressure testing the gas lines.

No doubt, these are all means to determine whether there is a gas leak at an appliance or in a piping system. The problem though lies in the fact that the gas leak may not be in either the appliances or piping. It could be anywhere and everywhere.

This was something I quickly learned during my past life as a gas distributor technician – natural gas may travel great distances underground before leaking into a building, especially during cold or wet weather – and you never know where it may turn up.

Such was the case during a recent incident investigation I had conducted into a gas leak at a private dwelling. Despite the efforts of two Gas Technicians doing their part (by checking the piping and soap testing for

leaks) to detect the source of the gas leak, the odour persisted. At the advice of a friend, the homeowner proceeded to call the gas company, who ultimately detected gas at the front door of the home, and, with the use of an electronic leak detector, discovered 30% in the lower explosive range. In an effort to determine the source, the gas distributor technician walked the property and noticed that sewer construction had recently taken place in the area. A check of the sewers immediately revealed a 100% high range gas leak reading. A construction crew from the utility determined that a construction company had pulled a service connection – 100 feet from the house!

Appreciating that Gas Technicians – G1s, G2s – are experts at what they do and know the fuel-fired appliances and piping side of things; Gas Distributor Technicians, on the other hand, are the experts on gas distribution systems and have procedures for investigating gas leaks and 'making safe'. So, if you, as the Gas Technician, are the first responder to a gas escape inside a building and have any doubts about the source of the odour, it is recommended that the customer call the gas company and report the leak to rule out any external sources such as leaking distribution gas lines.

That said, one important thing to keep in mind is that natural gas travelling in the ground may lose its odour because of the scrubbing effect the soil may have on the odorant, so don't rely on your senses!

At the end of the day, we all play a critical role when it comes to fuel safety so let's continue to discharge our individual responsibilities while collectively working toward the same goal – safety, for all involved.



## EXHAUST SYSTEMS FOR BACK-UP GENERATORS

By Raphael Sumabat, P.Eng., Engineer Specialist, Fuels Safety Program

When it comes to back-up generators, particular attention must be paid to meeting clearances from combustibles as fires can occur. Such was the case in June of this year. More than 40 firefighters were called to put out a fire at a Toronto area hospital that had resulted from a generator exhaust igniting nearby combustible materials.

When dealing with back-up generators, here are some important things to know. Diesel generators fall under Ontario Regulation 213/01, Fuel Oil, CSA Code B139ON-06, Ontario Installation Code for Oil Burning Equipment. The exhaust systems are required to be either certified by a Standards Council of Canada recognized certification laboratory, such as ULC or CSA, or designed and field constructed to meet the National Fire Protection Association's (NFPA) 211, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances.

The exhaust system is required to be a certified vent system specifically certified for generator exhaust or a vent system that has been engineered to meet the requirements of the Ontario Building Code, which references NFPA 211. Certified vent systems must be installed in accordance with the manufacturer's certified installation instructions.

For uncertified vent systems, NFPA 211 provides requirements that address the construction, support system, materials, thimbles, and clearances depending on the exhaust gas temperatures. As generator exhausts operate under positive pressure, they must be gas-tight. Welded joints without proper testing and inspection do not provide assurance of a gas-tight connection. Where exhaust temperatures exceed 1,000 °F, schedule 40 steel piping will not meet NFPA 211 requirements.

Exhaust system terminals must also meet clearances from building openings including windows, doors and ventilation openings.

TSSA reviews a number of variance and consultation applications for generator systems. Where TSSA is involved in a generator installation, it will require a letter from a professional engineer confirming that the uncertified exhaust system meets the requirements of NFPA 211. TSSA will also require confirmation and verification that the clearances from combustibles have been met.



## REVISED FEE SCHEDULES – EFFECTIVE: MAY 1, 2013

By Suba Ariyaretnam, Manager, General Accounting and Financial Reporting

TSSA recently completed a review of its fees in accordance with its Fee Setting Principles. This included extensive consultation with industry through its industry advisory councils and fee review subcommittees. TSSA charges fees on a cost-recovery basis and is committed to providing value for money across all its safety programs.

In keeping with our commitment to openness and transparency, a six-month advance notification was issued to stakeholders informing the fee changes that will be coming into effect for the majority of customers as of May 1, 2013. Changes to the fees are an effort to equitably reflect true cost of public safety services.

Dedicated to enhancing public safety in Ontario, TSSA's revised fee schedules focus primarily on:

- Enhancing and/or introducing new incentives and deterrents to increase compliance;
- Simplifying existing fee structures to reduce complexity and administrative burden; and
- Improving clarity of fees to increase predictability and understanding of value for fees among customers.

Highlights of the revised fee structure for fuel-related services are as follows:

- Fuels Safety Programs' customers will experience less than 2.4% annualized average increases over the next three years.
- The majority of fees, including hourly rates, remain unchanged.
- The separate travel surcharge will be eliminated from invoicing.
- A minimum fee structure, inclusive of travel, will be introduced.
- Reduction in Propane Level 1 Risk and Safety Management Plan (RSMP) application/renewal fees.

For more information and to view the revised fee schedules, visit TSSA's website: [www.tssa.org/corporate/feeschedules2013.asp](http://www.tssa.org/corporate/feeschedules2013.asp).

If you have questions or need further clarification, contact us at: [customerservices@tssa.org](mailto:customerservices@tssa.org), or 1-877-682-8772.

# ONTARIO TRAINED GAS TECHNICIANS RETURNING FROM ALBERTA

By **Mark Westen**, M.S.T, B.A., Training and Certification Advisor, Fuels Safety Program

It has been brought to TSSA's attention that Ontario certified Gas Technicians are returning from the province of Alberta, with Alberta Equivalency Documents, expecting recertification in Ontario using the process of the Federal Agreement on Internal Trade. The Alberta Equivalency Document is not a trade certificate. It is a document that recognizes an equivalent level of certification from another jurisdiction. The Equivalency Document relies on the validity of the underlying certificate from the home jurisdiction.

What this means for Ontario Gas Technicians is that their Alberta Equivalency Document is only valid as long as their TSSA certificate is valid.

Therefore, if you are a TSSA certified Gas Technician working in Alberta, using an Alberta issued Equivalency Document you must keep your TSSA certificate up-to-date to work in Alberta. You must also keep your TSSA certificate up-to-date if you wish to return to work in Ontario. The Agreement on Internal Trade does not recognize an Equivalency Document for interprovincial transfer.

All TSSA certified Gas Technicians working in Alberta or planning to work in Alberta must be aware of this and they must remember to renew their TSSA certificates as required on or before the expiry date on the certificate.

## LABOUR MOBILITY

By **Neil McPherson**, Technical Specialist, Fuels Safety Program

The *Ontario Labour Mobility Act, 2009*, allows workers certified in any Canadian province or territory to be employed in Ontario without additional training or testing. This applies to over 80 regulatory authorities and 300 occupations. TSSA has participated in this venture and created templates to refer to when workers with fuels certificates enter Ontario seeking TSSA fuels certification.

All provinces and territories have agreed to eliminate barriers that prevent certified workers from choosing where to live and work. The original expectations still apply, that an individual must hold the appropriate certificate issued by the Province in order to conduct that activity there.

Conversely, a TSSA certified technician seeking similar certification in another Province is required to contact the administrative authority in that Province and follow the necessary application procedure in order to be issued the applicable certificate.

This streamlined application service is benefiting workers and employers alike.

For those interested in more information on this subject, please refer to the following link on our website for details. [www.tssa.org/regulated/fuels/training/fuelsTraining10.asp](http://www.tssa.org/regulated/fuels/training/fuelsTraining10.asp)

## LEGAL CORNER: PROSECUTION HIGHLIGHTS

- In March 2012, a construction company from Mississauga, Ontario, pled guilty to damaging pipelines at two separate locations, contrary to provincial requirements in the *Technical Standards and Safety Act, 2000*. The Ontario Court of Justice in Brampton fined the defendant (Dom Meridan Construction Ltd.) two fines of \$10,000 each (for pipelines damage in Brampton and Innisfil), for a fine of \$20,000, plus the 25% Victim Surcharge.
- In June 2012, a gas technician from Kitchener, Ontario, pled guilty to servicing and performing a pressure test on a natural gas furnace without holding the appropriate certification, contrary to provincial requirements under the *Technical Standards and Safety Act, 2000*. The Ontario Court of Justice in Kitchener fined the defendant (Mr. Perry Olheiser) \$3,000, plus the 25% Victim Surcharge.
- In June 2012, a gas technician from Lindsay, Ontario, was found guilty of installing, converting and supplying a gas appliance without holding the appropriate certification and registration, contrary to provincial requirements under the *Technical Standards and Safety Act, 2000*. The Ontario Court of Justice in Lindsay fined the defendant (Mr. Jeff McIntyre) \$18,000, plus the 25% Victim Surcharge.
- In October 2012, a construction company from Thornbury, Ontario, pled guilty to not obtaining a locate and damaging a pipeline at a residential property in the Town of the Blue Mountains. The Ontario Court of Justice in Collingwood fined the defendant (George Mackey Construction Limited) \$5,000 per charge, for a fine of \$10,000, plus the 25% Victim Surcharge.

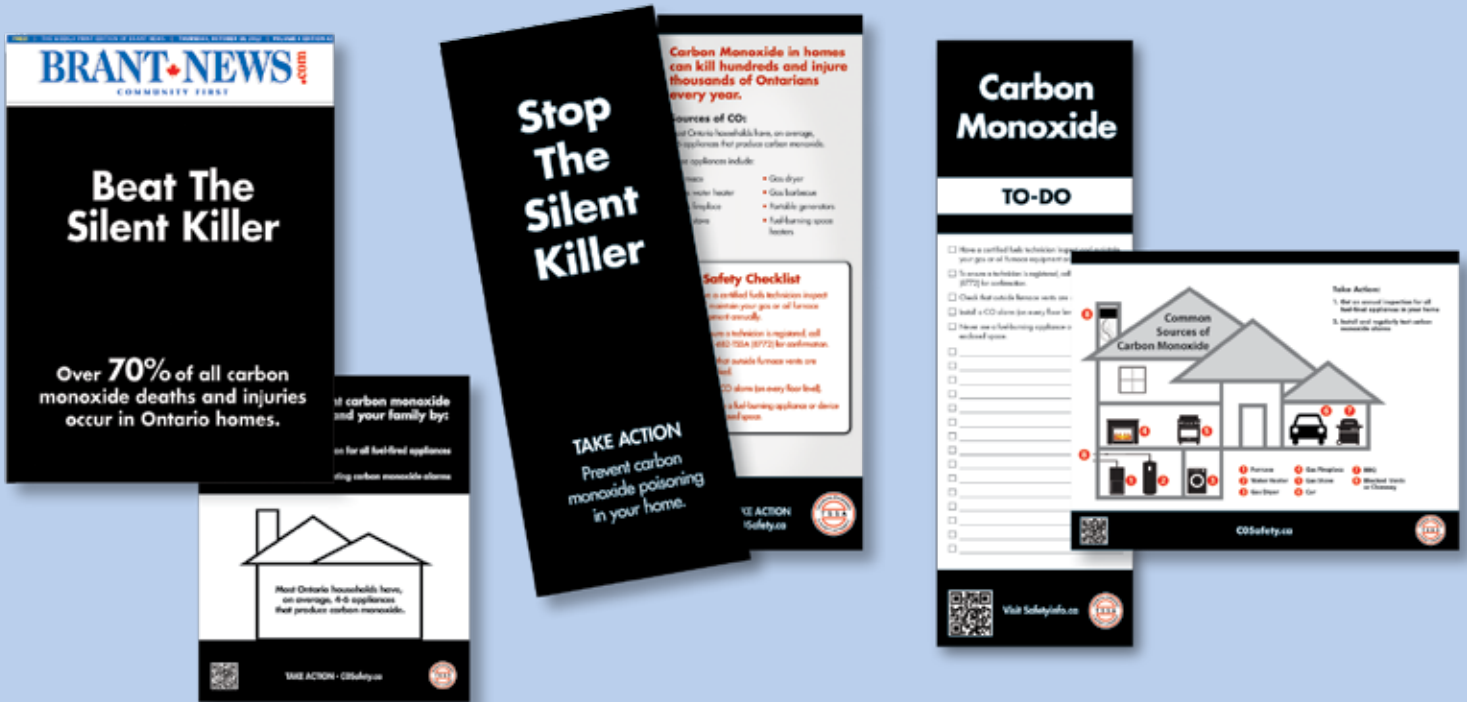


# MESSAGE FROM THE DIRECTOR

(continued from the front cover)

So, in an effort to further mitigate this risk, we are exploring potential avenues to further leverage our public awareness strategies. For example, we are looking at engaging our valued industry safety partners to explore other effective ways to deliver important safety campaigns. We look forward to exploring opportunities to work with many players in the fuels industry such as fuel contractors, certificate holders, equipment/appliance manufacturers and others to develop and deliver effective public safety campaigns that will assist in reducing the health impacts associated with CO.

At the end of the day, fuels safety is a shared responsibility – and while TSSA will remain vigilant in meeting its safety mandate, it is equally important that everyone in the safety system strive to meet their respective responsibilities. This includes fuel suppliers, fuel contractors, manufacturers and the public who own and operate fuel-burning appliances. Achieving enhanced safety outcomes will depend on all of our efforts and as such TSSA remains committed to working with everyone who shares in this responsibility. Together, we can build on the strong safety record in Ontario and further improve fuel safety for all Ontarians.



Materials from a recent TSSA CO Safety Campaign



FUELS UPDATE EDITION

We welcome your comments and story ideas for future editions of this newsletter. Please contact:

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