



2013  
FUELS UPDATE  
ISSUE 1



TSSA.ORG

# Update

## Message from the Director



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

By analyzing data collected through TSSA activities and industry feedback, we are better able to deliver our safety mandate and address important matters of compliance and regulatory requirements. As importantly, it also allows me, as Statutory Director, to make informed decisions related to improving operational efficiencies and effectiveness.

### IN THIS ISSUE

- 2 INTEGRAL FUEL TANKS FOR OUTDOOR GENERATORS
- 4 AN INVESTIGATIVE PERSPECTIVE
- 5 IS 'THAT' APPROVED?
- 6 IMPORTANCE OF TAKING NOTES AND DOCUMENTATION
- 8 EVALUATING SITE CONDITION STANDARDS WHEN ENVIRONMENTAL REPORTS ARE SUBMITTED
- 9 MOBILE FOOD SERVICE EQUIPMENT (MFSE) APPROVALS
- 10 CORPORATE WEBSITE ENHANCEMENT

Sharing this information with industry allows us to collectively enhance safety outcomes in the province. With that in mind, and in an effort to keep our industry up-to-date on matters of relevance, here is a snapshot of what we're seeing and what's happening in the fuels sector.

As a safety regulator, it is critical that we ensure compliance with the regulatory requirements, and it's something that none of us can take for granted. When it comes to fuels storage and dispensing installations, TSSA's primary source of compliance information is derived from the results of periodic inspections of some 5,500 licensed

facilities in Ontario. Compliance levels for other fuels lifecycle stages, such as transmission/ transportation or utilization, are quantified primarily through ad hoc or reactive inspections.

The compliance rate with fuel storage and dispensing facilities is currently at 49% and demonstrates no observable trend over the last five years; however, the rate of major non-compliances is showing an increasing trend, accounting for 17% of all non-compliances found.

In the past fiscal year, we issued 33,500 inspection orders. These orders, which require owners/ operators to address discovered non-compliances within an

# Integral Fuel Tanks for Outdoor Generators

By: Gwen Thong-Kielo, EIT, Fuels Safety Program

Since the massive and widespread blackout of 2003 which impacted Ontario and various parts of the United States, the demand for backup power has been increasing exponentially.

That said, when it comes to equipment such as emergency generators, it's important to keep installation requirements in mind. This is particularly the case for owners and operators of commercial and industrial buildings who, due to limited indoor space and for the purpose of convenience and space saving, resort to installing generator sets outdoors that are being fuelled through an integral tank located below the engine.

Recently, TSSA engineers have identified that since these tanks are located directly below engines and outdoors, the fuel stored within the tank may exceed 38°C under various conditions such as long engine run time, and exposure to hot ambient temperature outdoors (summer). While the Fuel Oil Code and the recent Fuel Oil Code Adoption Document (November 2012) address the installation of these integral

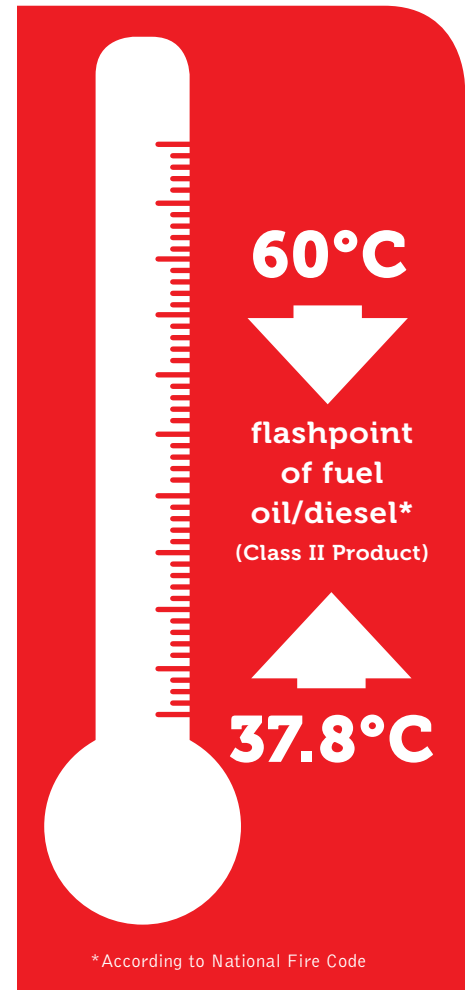


sub-base tanks, the Fuel Oil Code only deals with the safety of fuels stored and operated at or below 38°C. To address the safety concern of fuel stored at temperatures greater than 38°C, TSSA has turned to the National Fire Code (NFC) of Canada 2010 for guidance. Under the NFC, fuel oil/diesel is a Class II product (liquids having a flashpoint at or above 37.8°C and below 60 °C). However, when a Class II product is being processed, stored, handled or used at a temperature at or above its flashpoint, the NFC requires that the fuel be treated as a Class I product.

For these outdoor installations, the NFC requires the tank to be:

- Certified to a recognized Canadian tank standard.
- Equipped with an overfill protection device (ULC-S661 “Overfill Protection Devices for Flammable and Combustible Liquid Storage Tanks”).
- Located at a minimum distance of 3 metres to a building on the same property (for tanks up to a maximum of 250,000 litres).
- Located at a minimum distance of 3 metres to a property line (for tanks up to a maximum of 250,000 litres).
- Located at a minimum of 1 metre from an adjacent tank (neither of which has a capacity of more than 250,000 litres).

Where TSSA is involved in an outdoor integral generator tank installation, confirmation that the installation meets the NFC will be required.



The Fuel Oil Code and Fuel Oil Code Adoption documents limit the fuel storage for integral tanks to 2,500 litres as well as requiring that fill and vent pipes for them be piped suitably to the outdoors, as these generator tank packages are often supplied with an external enclosure.

# An Investigative Perspective

By: Stuart Seaton, Investigator, Fuels Safety Program

TSSA has one overall mandate, ensuring public safety for Ontario. Doing so comes in many faces, and one important face is that of enforcement. Receiving an Order from an Inspector is a form of enforcement, the first on a sliding scale of progressive enforcement. When an Inspector faces a situation that no Order will fix, or if Orders are continually ignored, the option of forcing compliance through prosecution is available. Although we hope a voluntary resolution would be the first choice, it doesn't always work out that way. Just like drivers who continually ignore the rules of the road, there are people who will ignore the laws that govern our fuels industry, thus the need for enforcement. This enforcement is carried out in the field through TSSA Inspectors and Investigators.

When it comes to types of cases investigated, there doesn't seem to be 'one' repetitive issue that appears in greater numbers than another. An Investigator/Inspector may be looking at someone who has altered a qualification certificate, or a corporate identity that continually fails to comply with an Ontario regulation. The next case may be completely different, each as individual as a fingerprint.

The Investigator's role is to study the situation, gather all the required evidence, interview witnesses and put their statements into an evidence format, fully answering the five W's (who, what, where, when and why) and the elusive 'how'. Once that is done, the facts of the case are assembled into a Crown brief and given to a Prosecutor. The Prosecutor then draws up all the charges and associated court documents. All the documents then go back to the Investigator, who looks after all the legal requirements of swearing of information, summonses, preparation of witnesses and finally giving testimony during trial.

Generally speaking, TSSA Investigators and Legal Counsel have been successful in legal proceedings. TSSA Investigators study the circumstances surrounding the case, and develop the facts of the case. TSSA's ability to put a case before the Courts, and register a conviction, also speaks to the recent fines imposed upon a guilty party, and they are not for the faint of heart. *The Technical Standards and Safety Act* states the maximum fines imposed. If found guilty of an offense, a corporate identity faces fines up to \$1,000,000 per count. An individual can face fines up to \$50,000 and the possibility of one year of incarceration. Although maximum fines have not yet been imposed, the fines issued upon conviction are still very substantial. A recent case for altering a pocket certificate by a person was set at \$18,000 plus a 25% victim surcharge – no small amount.

Levelling the playing field and ensuring fair competition through regulatory compliance is one way TSSA keeps Ontario safe.



**“Levelling the playing field and ensuring fair competition through regulatory compliance is one-way TSSA keeps Ontario safe.”**

# Is 'THAT' Approved?

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

**“Is THAT (appliance, burner, valve, vent, hose, etc.) approved?” is probably one of the most common questions an inspector will ask at any installation – and, unfortunately, it also seems to be the one installers have difficulty in answering.**

So, here's what you need to know in determining if something is approved.

In Ontario, there are only a limited number of companies that can test and certify fuel handling and utilization related equipment. These include CSA (Canadian Standards Association), ULC (Underwriters Laboratories of Canada), UL (Underwriters Laboratories, Inc.), ITS (Intertek Testing Services), WH (Warnock Hersey) and OMNI (Omni Test Laboratory). For a complete listing and full description of the types of equipment the certification organization can test and certify, visit the Standards Council of Canada's (SCC's) website, [www.scc.ca](http://www.scc.ca). If the equipment is missing the certification mark, it will be considered unapproved. The label must remain on the equipment throughout the life of the equipment. Care must be taken by service, maintenance or operators to make sure that the certification label is not painted over, cut-off, scraped off, or removed. SCC's rules dictate that manufacturers are not allowed to put certification labels in the field - so this is not something that you can request the manufacturer to replace. Once the label is missing,

the equipment must be replaced with approved equipment. Only in very unique cases will TSSA consider a variance to allow equipment that is missing a label to continue to be operated.

The label must show that it is certified for use in Canada. Some certification organizations certify to both American and Canadian standards. If the label does not indicate that it has been certified to the Canadian standard - sometimes denoted by a small "c" adjacent to the certification label - it will be considered unapproved. Once again, SCC's website provides a list of acceptable Canadian labels.

Ideally, the certification label should be installed in a readily accessible location. It should be visible and found without needing magnifying glasses or other tools. Unfortunately, this is not always the case. For example, one valve manufacturer installed the Canadian certification label at the underside of the handle, which is very difficult to see if the valve is open and in-line with the piping. Sometimes, the configuration of the equipment makes it difficult to find the label; for example, if the component is in near proximity to a wall or other equipment and the label is facing the wall or

equipment. If the label is not visible, it will be considered missing and the equipment declared unapproved until the label can be confirmed.

It is important to confirm that the standard to which the equipment is certified is appropriate for its intended use. For example, a water heater cannot be used as a boiler and vice versa. The standard is sometimes shown on the label of the equipment and most often it is in the certified installation instructions. The scope of many standards can also be found on the internet so that installers can verify that the equipment being installed is correct for its application.

Once the standard is verified, make sure that the equipment is being installed within the parameters to which it is certified. For example, is the valve certified for diesel use or gasoline? Is the furnace certified for propane or natural gas? At what temperatures and pressures can the equipment operate? Will it be subjected to excessive temperatures or pressures? Is it approved for outdoor use? This information is normally available through the manufacturer's certified installation instructions or by contacting the certification agency directly.

# Importance of Taking Notes and Documentation

By: David LeVasseur, CFEI, Inspector, Central Ontario, Fuels Safety Program

As a Fuel Safety Inspector I find myself educating technicians and contractors about the importance of taking notes and keeping records on installations and service calls that they and their employees have completed. However, given that there is no specific code or regulation clause that mandates that records must be kept about the work that has been completed, it can be challenging to convince a contractor of the merits of keeping installation and service records – but yet there are many.

Consider this real life scenario. You're driving in your van just like any other day and you hear on the local news that there's been a devastating explosion (e.g. photo next page) at a home in your service area. You seem to recognize the address, but off the top of your head you just can't seem to recall if that's where you installed a furnace, water heater or fireplace. You then start to wonder how long it's been since you were last there - six months or perhaps a year...? So, you decide to drive by the address to see if it jogs your memory. As you pull onto the street, you see a police cruiser parked at the entrance to the driveway. Then, you see a Fire Marshal's truck and a vehicle marked with the TSSA logo parked in the driveway.... and, where the house once stood, you see a field of scattered debris. Immediate thoughts that come to mind... was anyone injured, or worse killed?

You then make your way to your office to see if you can find an invoice that matches this address. Within a few days you receive a telephone call from the local TSSA inspector asking you to produce all records including pictures regarding the installation or service of any gas-fired appliances at this address.

If this happened and you discovered it was in fact an address that you serviced, would you be able to answer all the detailed questions about the installation or service that you performed for your customer? For example, the gas pressure entering the home, the manifold gas pressures, temperature rise of the furnace, the model and serial number of all of the gaseous fueled appliances, the date(s) that you or your employees were on site, the type and size of gas piping/tubing that you installed, the vent type and sizing, or any infraction notices that you may have issued.

Remember, you will be the first one scrutinized if it is believed that your actions were the source of the problem. Wouldn't it be nice at a time like this to just have the peace of mind that you or your employees' installation was proper, safe, complete and fully documented?

Section 4.3.1 of the CSA B149.1-10 installation code states:

**4.3.1 Before leaving installations, installers shall ensure that the appliance, accessory, component, equipment, or piping and tubing they installed complies with the Code requirements, and the person initially activating the appliance shall ensure that the appliance is in safe working order.**



The notes that you make after an installation or service call freeze that moment in time. These notes should be largely based on your own knowledge and the start-up and servicing requirements found in the manufacturer's certified instructions. The more detailed your notes are, the easier it will be for you to recall your actions. On the other hand, if you had not taken the few minutes to record those important details, you have to rely on your memory to recall your actions from the time that you worked on the appliances in question. You may also, at a later date, have to supply this information to an insurance company or in a court of law. It's at this moment you may wish you had "frozen" that moment in time on paper.

As a contractor with or without employees and/or using sub-contractors you must consider the requirements of section 41 of the Technical Standards and Safety Act.

**41. Every contractor and employer shall take all reasonable precautions to ensure that they and their agents and employees comply with this Act, the regulations or a Minister's order. 2000, c. 16, s. 41.**

There are many arguments as to what constitutes "reasonable actions". We'll leave that for another day; however, I think that we can all agree that having a complete record of an installation or service call is not totally unreasonable.

If you ask any contractor or technician that has been asked to produce these records, they will certainly agree. Requiring a start-up record or service checklist for each job can provide the contractor with a peace of mind knowing that the job has been completed safely and documented accordingly.

If service records and start-up installation records are a tool that you are utilizing already, keep it up, review them from time to time to ensure they are complete and up-to-date. If this invaluable tool is not currently in your tool box, I would strongly suggest you consider adding it. Documentation promotes safe handling and utilization of fuels in Ontario and may one day prove to be the best decision you ever made.

# Evaluating Site Condition Standards when Environmental Reports are Submitted

By: Tara Smith and Tiffany Wong, Environmental Specialists, Fuels Safety Program

The safe storage and handling of gasoline, diesel, 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.

In the event of a petroleum spill, leak or discovery, the Environmental Management Protocol (EMP) outlines TSSA reporting, assessment and management requirements needed to determine whether the site is in compliance with the Liquid Fuels Handling Code or Fuel Oil Code. The EMP incorporates the Ontario Ministry of the Environment's updated Site Condition Standards (SCS) as described in O. Reg. 153/04

(Records of Site Conditions – Part XV.1 of the Environmental Protection Act) amended as of July 1, 2011. It is a legal requirement for the EMP directives to be followed.

Upon review of environmental report submissions, TSSA has become aware of inconsistencies in one key area – the determination of the applicable site condition standard. Site condition standard classification considerations must include: whether groundwater is potable or non-potable; land use; soil texture; depth of overburden; soil pH; site sensitivity; and, whether a full depth or stratified remediation will be carried out.

If submissions are made to TSSA without evaluating each of the criteria listed above, the site condition

standard selection is considered incomplete. As such, a rationale must be provided in the environmental assessment report to address each consideration. This must include laboratory documentation/analysis to support the SCS selection when evaluating pH and grain size.

Environmental site assessment work must be conducted by or under the supervision of a "Qualified Person" (QP). A QP is defined in Section 5(1),(2) of O. Reg. 153/04, as amended. Submissions of technical content to TSSA must be signed by a QP.

For more information on the EMP and relevant regulations, please visit the Fuels Safety section of TSSA's website, [www.tssa.org](http://www.tssa.org).

## Site condition standard classification considerations must include:

- whether groundwater is potable or non-potable
- land use
- soil texture
- depth of overburden
- soil pH
- site sensitivity
- whether a full depth or stratified remediation will be carried out.

# Mobile Food Service Equipment (MFSE) Approvals

By: Marvin Evans, CET, Fuels Safety Program

We see them on the streets as coffee trucks, chip wagons, hot dog and hamburger carts but from a regulatory perspective these are known as 'mobile food service equipment' (MFSE).

It has recently come to the attention of TSSA that there continues to be a lack of understanding of the approval and inspection requirements for MFSE. As such, this article is intended to provide clarification on these requirements.

'MFSE' is mobile equipment, whether or not permanently stationed or parked, typically housing propane (or other hydrocarbon) fuelled cooking equipment and, if applicable, associated fuel storage. To be considered a permanent building, it must be located on a permanent foundation (no jacks or wheels attached to the vehicle) and it must be connected to at least one service such as water, hydro, sewer or natural gas.

In accordance with Section 12 (1) of Ontario Regulation 211/01 (Propane Storage and Handling), all equipment including MFSE needs to be approved before it can be sold, rented, bought,

installed, or used. This would also prohibit delivery of MFSE produced in Ontario to the end user until the approval has been completed.

## Approvals

TSSA Director's Safety Order FS-056-06 requires all new produced MFSE to be approved. Equipment in use prior to February 13, 2006 does not need to be approved; however, both new and existing equipment are subject to an annual inspection by a licensed gas fitter.

There are two forms of approvals available in Ontario; certification by an agency accredited by the Standards Council of Canada; and field approval from TSSA.

### Certification by an Agency Accredited by the Standards Council of Canada

The MFSE must bear the appropriate certification mark from agencies such as but not limited to CSA, ULC, or UL.

### Field Approval from TSSA

This program is meant to capture products unique in nature and limited in production where certification is not feasible. This program addresses the

fuel-burning aspect which includes: the storage of the gas; the transmission of the gas to the appliances; and the burning at the appliance.

All electrical equipment operating above 30 VAC must be approved by an agency accredited to do so. Additional information regarding the electrical approval and who is authorized to perform this work can be found on the Electrical Safety Authority's website, [www.esasafe.com](http://www.esasafe.com).

## Inspections

All newly manufactured MFSE put into service and existing MFSE shall be inspected annually by a certified gas technician and all identified deficiencies shall be corrected.

Following the annual inspection, the certified gas technician shall provide the owner/operator with a completed copy of the inspection certificate and an information fact sheet.

## Other

MFSE owners/operators should also check with their local municipality to determine if there are additional compliance requirements from a municipal perspective.

To obtain a copy of TSSA Director's Safety Order FS-056-06 (Mobile Food Service Equipment) or TSSA's Field Approval Application Form, visit the Fuels Safety section of TSSA website, [www.tssa.org](http://www.tssa.org).

If you require further clarification or have questions, please contact TSSA at 1-877-682-8772.



# Corporate Website Enhancement

Check out our new look at [www.tssa.org](http://www.tssa.org):



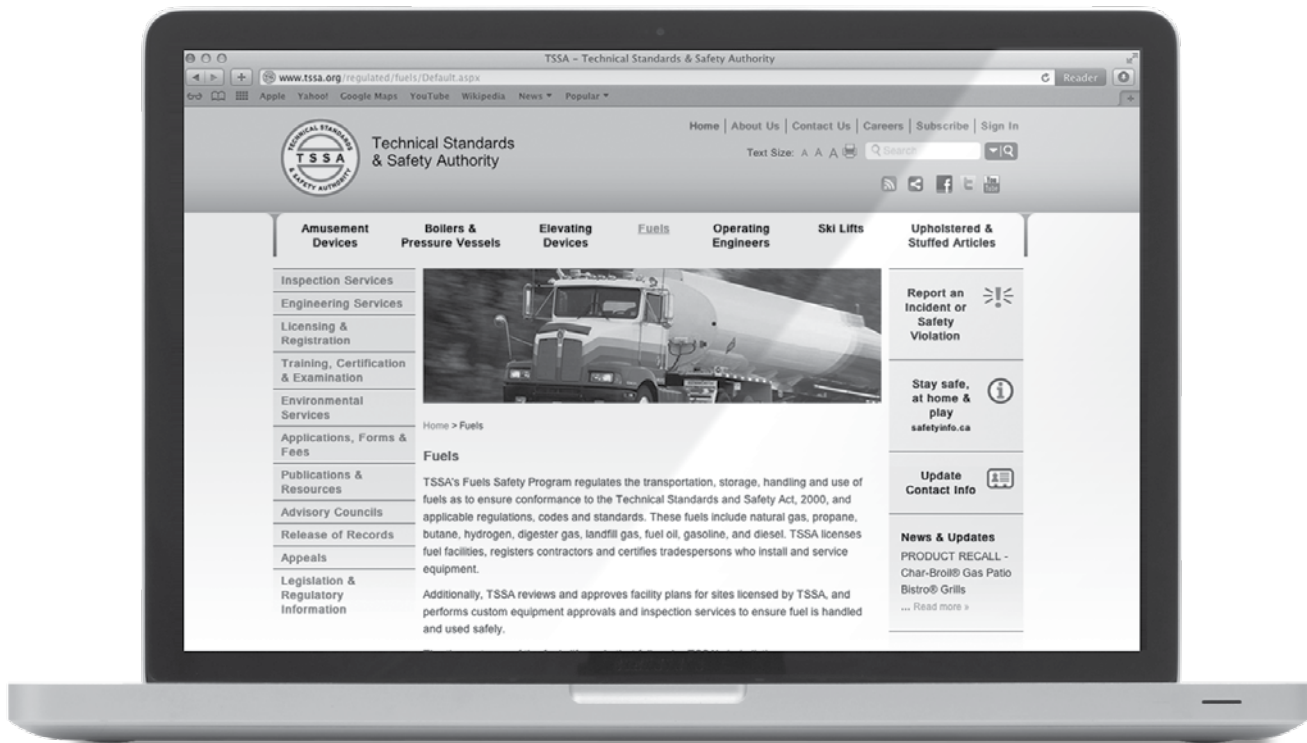
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## User-Friendly, Intuitive and Simplified

We heard your feedback over time and recognized it was time to make some improvements to our corporate website, [tssa.org](http://tssa.org). So, on July 9, 2013, TSSA launched a more simplified, user-friendly and intuitive corporate website, [tssa.org](http://tssa.org). These improvements were implemented to address user expectations, which have been reinforced over the years through feedback received in customer surveys as well as internal feedback.

# Message from the Director (cont)

appropriate timeframe, are the main means to increasing compliance. To ensure greater compliance with safety regulations, we conduct pre-registration inspections for contractors to help new registrants understand the regulatory requirements, their role in safety, and the importance of having proper equipment to do their work.

Of late, we have been hearing customers' desires for increased communications and education particularly as it relates to compliance updates, new regulatory requirements and published compliance data. Recognizing that this information, including identifying top non-compliances, would help to keep contractors in the 'know', TSSA is

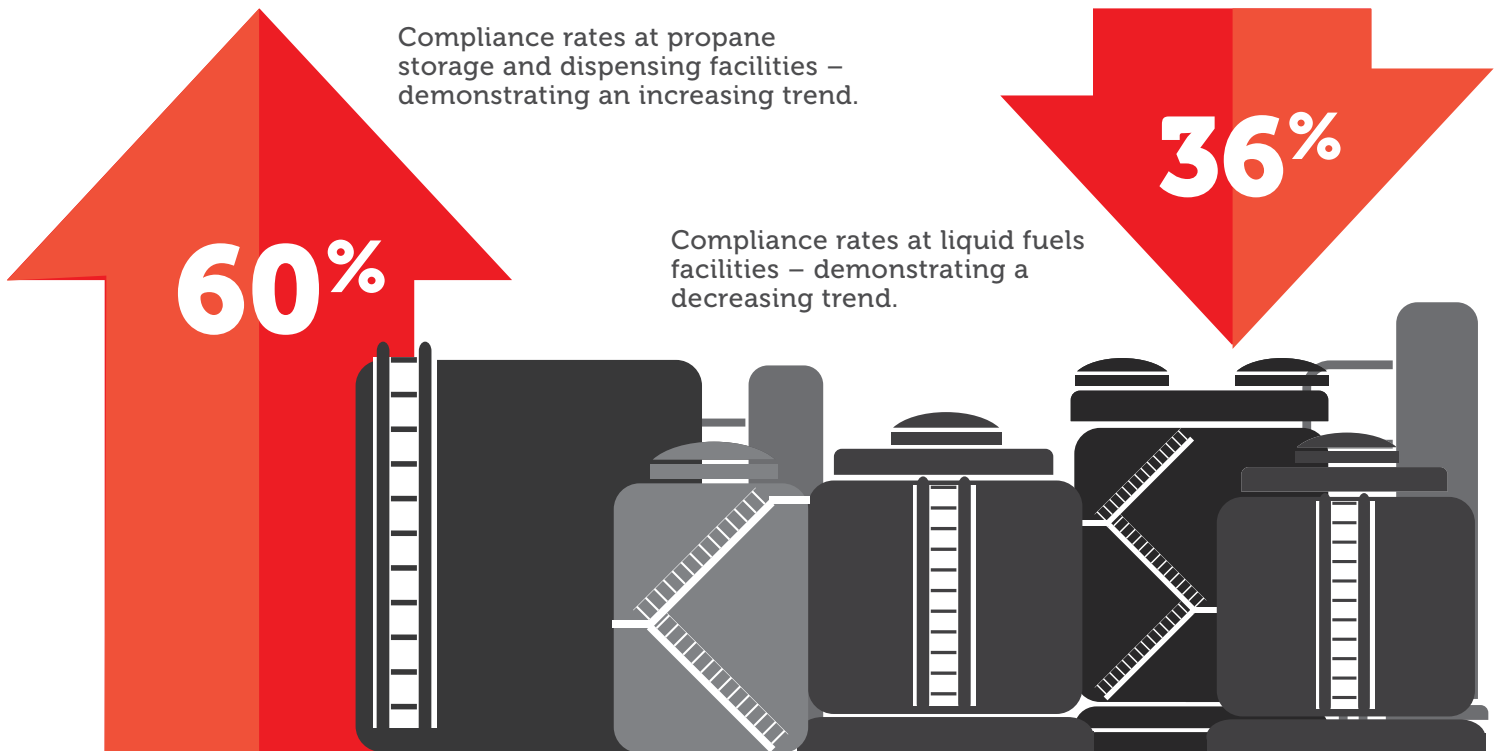
considering potential options on how best to disseminate this information and ultimately keep industry abreast of developments in their specific fuel industry.

Already underway is the development of standard inspections orders. Once implemented, this will help TSSA identify top non-compliances and the associated risks. In addition, this approach will improve consistency by helping to inform and standardize the compliance time for individual clauses.

Another important initiative that will have benefits both internally and externally is our Field Support Services (FSS). The primary focus of this project is to put systems, people and processes in place to ensure TSSA

meets its regulatory commitments through effective and efficient workload management and strong data governance. By automating tasks such as inspection schedules, billing and other administrative jobs, FSS will increase the time available for inspectors to deliver on core safety responsibilities and activities such as inspections and customer education.

These are but a few of the latest things in the fuels sector. For more details, take a look at our Annual Public Safety Performance Report posted at [www.tssa.org](http://www.tssa.org). As always, I appreciate the ongoing efforts from all parties in our mutual pursuit of safe operation and maintenance of fuel-burning equipment and surroundings.





We all share a desire to make Ontario safer. We all play a part in the safety system. Together, through informed decisions, greater awareness, and a keen sense of responsibility, we will continue to pursue positive safety outcomes in the province of Ontario.

For more information visit us at [www.tssa.org](http://www.tssa.org) or:



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## Update

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

**TSSA UPDATE (Fuels Edition)**

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