Update

FUELS EDITION

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Message from the Director

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

IN THIS ISSUE

Another heating season has concluded and there has been a lot of activity in the fuels industry. For example, as a follow-up to the propane incident last summer, the government commissioned an expert propane panel to examine ways to enhance propane safety in Ontario.

The panel delivered its recommendations in early November – noting the safety system was robust, serving Ontarians wells but with room for improvement – and Ontario filed amended propane regulations in early December to enact the majority of these recommendations in stages over the next three years. TSSA fully supported the recommendations.

Currently, TSSA is engaged in industry consultation as to how these regulatory improvements can best be implemented, and we are in the process of developing preliminary guidelines. These are currently under review with industry and may be changed; however, the guideline will be finalized and mailed to all impacted stakeholders in early autumn.

Additionally, in this edition of *Update*, you will find articles providing clarification on the registration of fuel oil underground tanks, an update on fuel oil generator issues, manufacturers' certified instructions, boiler and fireplace incidents, the Fuels Safety Programs' fee review process, and secondary containment liners.

The article regarding secondary containment liners has potential long term impacts as it pertains to certifiers not willing to list products to an accepted standard. TSSA is beginning to see certification companies terminating certification services for certain product types. This is also having an adverse impact on the auto-propane sector where Canadian accredited certifiers will no longer certify components used in vehicle conversions. This leaves the industry without approved equipment for these installations. This may be due to several reasons; however, the inability of products to gain certification or approval impacts our current regulatory system.

continued on **page 8**

DIRECT VENTED GAS FIREPLACES AND STANDING PILOTS

By Marvin Evans, Fuel Safety Engineer, Fuels Safety Program

A common practice by the home owner is to shut off the standing pilot during the summer months and relight it in the fall. In addition to saving a little energy, it saves heat being radiated from the standing pilot through the glass door into the house.

Since the late 1980s, the certification requirements for direct vented gas fireplaces required a relief mechanism. The relief mechanism is designed to provide relief in the case of a delayed ignition, preventing debris including broken glass from expelling into the living space. One cause of a delayed ignition is the accumulation of un-burnt gas, via a leaking gas valve.

These relief panels do prevent debris from entering the living space under a large number of scenarios. There can be unforeseen circumstances for which the relief mechanism is not designed to contain debris, including broken glass from entering the living space, and potentially injuring someone. TSSA has recently investigated several incidents of this nature.

Though gas valves are subjected to rigorous cycle testing, they are still a mechanical device. All mechanical devices are prone to failure at some time.

If the owner or operator of the fireplace decides to shut off the standing pilot during the summer months, it is strongly advised they have the fireplace inspected by a certificate holder before relighting the pilot. This inspection needs to ensure the gas valve and the pilot assembly is not leaking.

In the event of a leaking gas valve, if the standing pilot is operating, any un-burnt gas will most likely be consumed. In the event of a leaking gas valve, if the standing pilot is not operating, any un-burnt gas inside the fireplace could result in a delayed ignition causing broken glass to enter the living space causing personal injury during an attempt to relight the pilot.

If you require further clarification or have questions, please contact your fuel supplier or TSSA toll-free at **1-877-682-8772.**

RESIDENTIAL NATURAL DRAFT GAS BOILERS

By Raphael Sumabat, Engineer Specialist, Fuels Safety Program

TSSA, over the last several heating seasons, has issued a director's order which requires a gas technician to inspect a natural draft gas boiler for safe operation and perform a mandatory carbon monoxide check in the boiler's flue when entering a dwelling. This order has caused maintenance to be done on boilers when service technicians are in people's homes. Until this heating season, this order appears to have worked effectively.

Last season, Ontario had a number of incidents including a fatality with this type of equipment. TSSA will re-examine this order and look at additional means to increase the safe use of this equipment. Working with industry on this issue, TSSA will additionally seek a target of increased controls prior to the next heating season.

CSA International Product Alert: Fire on Ice Brand Gas Fireplace Installation Kits - APB-02-09

Canadian Standards Association (CSA) International is alerting the public regarding Fire on Ice brand gas fireplace installation kits. The kits are marketed as a decorative and heating appliance that can be inserted in a standard wood-burning fireplace, fire pit or fire table. The kits consist of a burner unit and parts that are intended to be covered by coloured, tempered glass. The gas appliance and related documentation bears counterfeit (unauthorized) registered CSA trade-marks on the unit and packaging.

The affected products were manufactured and distributed by Fire on Ice, Inc., California and sold throughout Canada and the United States online at **www.fireonice.com**, as well as at distributors listed therein. The product is not certified by CSA International, and is not eligible to bear the CSA International certification mark.

The gas fireplace installation kits have not been tested or evaluated by CSA International. The safety or performance characteristics for these products are unknown to CSA International and consumers are advised to contact their point of purchase or local gas regulatory authority for guidance.

MANUFACTURER MAINTENANCE AND INSTALLATION INSTRUCTIONS

By Sandra Cooke, Engineering Manager, Fuels Safety Program

In Ontario, there is a legal requirement that no one can sell, lease, rent or install an appliance, equipment or thing unless it is approved or will be approved prior to being put into use, and approval means that it bears the label of an accredited certification agency or a label authorized by the director.

One of the key factors sometimes overlooked in the field is the product's associated maintenance and installation instructions. When products are tested for certification, these instructions are a key element to the product's approval, safe installation and use. Whether it is fusing plastic venting parts together properly (do the parts need to be primed, is the cement certified and the right one for the plastic type/application, how the cement should be applied to ensure proper fusing, etc.) or the installation of a gas furnace (what is the gas manifold pressure, what type of venting is required, what are the clearances from combustibles or for servicing, etc.), it is critically important to follow the installation instructions.

Before gas is supplied to any premise, the distributor is required to perform an inspection to confirm compliance. Equipment will not be activated if the installation is incorrect. TSSA has seen instances where new condominiums have had to restructure because service clearances are incorrect or the technician is called back when manifold pressures are set incorrectly. TSSA's Fuel Safety Program asks that you carefully read and apply the certified installation instructions to facilitate your job and ensure proper operation of equipment.

Many incidents are caused by the lack of maintenance or no maintenance at all. TSSA understands that you, as contractors and technicians, cannot impose maintenance on homeowners, as it is up to them to call for such work; however, when installing appliances, it is important for you to go through the maintenance requirements with the homeowner and, at the same time, promote your services.

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FUEL GENERATORS

By Raphael Sumabat, Engineer Specialist, Fuels Safety Program

Many businesses and high rise residential buildings depend on diesel to fuel back-up generators and fire pumps. These fuel systems are commonly designed with a main storage tank, supplying fuel to a "day" tank, which in turn supplies fuel to the generator. If these systems fail, safety, the environment and commercial interests can be jeopardized.

Case One

This day tank, which supplied the generator at the top floor of a multi-story building, imploded when the high level sensor failed to stop the supply pumps from the storage tank in the first floor and the tank overfilled. Although the size of the overflow pipe was more than one pipe size larger from the supply pipe, it was not sufficient to prevent the tank collapse.

Atmospheric tanks are defined by Underwriters Laboratories of Canada (ULC) as tanks that are not intended to be exposed to pressures in excess of 7kPa and a vacuum of 300 kPa at the top of the tank.

To address this issue, TSSA allows for the installation of day tanks with vents to the outdoors, provided a fully redundant system is installed to prevent the fuel supply from overfilling the tank. The redundant system is required to have two completely separate means of level control and two completely separate means of stopping the fuel supply. This type of system must be submitted to TSSA for approval through a variance application.

Case Two

In most installations, the fuel return line from the generator returns to the day tank from which it is fed; however, some installations have been designed to return fuel from the generator directly to the main storage tank rather than the day tank. This practice has caused a number of spill incidents.

When the main storage tank is full of fuel, and the generator is called to operate, the returning fuel from the generator fills the storage tank, which may already be at maximum capacity and cause an overfill. The overflowing fuel will escape through the vent opening.

The current CSA-B139ON-06 *Ontario Fuel Oil Code* prohibits the practice of connecting the return line of the generator with the overflow line from the day tank to avoid this type of incident. It is anticipated that the next edition of the national CSA-B139 will require the fuel from the generator to be returned from the same tank to which it is supplied.

Case Three

Diesel generators exhaust gases at temperatures of approximately 500C (932F). If the exhaust vent travels through roofs that have combustible materials, fires may result if appropriate clearances are not met and if improper insulating materials are used.

Clearances from combustibles are specified under Table 4 of CSA-B139ON-06, and require a minimum clearance of 915 mm (36") between the exhaust vent and combustible materials. This clearance may be reduced using acceptable materials specified in Table 7 of CSA-B139ON-06 or using a certified vent system with allowances for reduced clearance.

FEE REVIEW PROCESS FOR FUELS SAFETY PROGRAM

During each of the Fall/Winter 2008 meetings of the Fuels Industry Advisory Councils, TSSA engaged members in a greater discussion regarding the current fee review based on TSSA's Fee Setting Principles – to provide timely, value-added service at a fair price, offering an objective, expert application of its delegated authority that promotes a level playing field and continuous improvement.

TSSA has made a commitment over the past number of years to enhance value for money for all its customers. This means a combination of improving services while at the same time reducing costs by achieving organizational efficiencies. Despite making significant investments in the safety system, TSSA has only increased fees once for the majority of its services since 1997 in its three major programs. As per TSSA's commitment through its delegated administrative authority contract, TSSA is able to conduct a few review every three years, whereas TSSA has not conducted a fee review in the Fuels Safety Program in the past five years (as of this August), and has not subsequently increased its fees since 2004. Further more, the aggregate increase in TSSA fees overall has been approximately 12% since TSSA became operational in 1997 while during the same period of time the Consumer Price Index (CPI) rose by some 27%.

TSSA absorbed much of the CPI pressure without raising fees by increasing organizational efficiency and drawing on financial reserves. More specifically, the organization generated some $2.2 million in positive, sustainable savings in the 18 months ending last fiscal year and, while such efforts continue, further substantial cost reductions will be difficult to achieve.

During the same period of time, the organization also invested in safety infrastructure including a new information system, data integrity, risk-informed decision-making and user behaviour modification. In addition, TSSA increased operational staff in all program areas to address regulatory requirements. In fact, inspection staff across the organization has been increased by 67% since TSSA's inception to enable the organization to better meet safety and customer needs.

At present, TSSA is also experiencing additional corporate expenses due to increased reporting and regulatory requirements, with a significant increase in government oversight fees starting May 1, 2009.

Recognizing the current economic circumstances, TSSA is even more committed to seeking all organizational efficiencies and cost reduction opportunities to keep fee increases to a minimum; however, since TSSA is required to maintain its financial viability it had to perform fee reviews for each major program, even in the current economic conditions.

TSSA Fee Review Principles

TSSA and the Ontario government have agreed upon fee review principles that should:

- recover all direct and indirect service delivery costs associated with the delegated authority mandate;
- generate a net revenue margin of 5%;
- reflect three-year cost trends;
- eliminate cross-subsidization between safety programs through a reasonable transition period;
- reasonably reflect sector and service activity, such as engineering and inspection, within each program; and
- ensure that, in addition to their direct and indirect costs, licensing, registration and certification fees recover safety infrastructure costs such as standards and codes work, investigations, prosecutions, regulatory enhancements, and re-investments in public safety.

In addition, the following fee design principles are utilized:

- all beneficiaries of TSSA's public safety services should participate in their cost recovery;
- uniform application regardless of geographic location;
- fees may be packaged to meet the customers' needs;
- premium fees for premium service;
- incentives/disincentives for high/low levels of compliance; and
- accepted billing and collection business practices are followed.

Finally, the fee review process is to be transparent and consultative with the industry advisory councils before any fee changes are implemented. **For further information, please see TSSA's Fee Review Information package, provided as an insert in this edition of the *Fuels Update* newsletter.**

For updates and further information, check out TSSA's website

www.tssa.org

ANALYSIS OF THE PROPANE RE-AUDIT

TSSA's Fuels Safety Program recently completed and published its phase two results and analysis of the propane re-audit plan. Auditing all propane filling facilities, regardless of operational status, TSSA calculated three primary factors: last audit date, past-incident assessments (if any), and non-compliance history. This also led to further verification of data in the field – a critical strategic initiative.

With the majority of operating sites found with low-risk infractions and/or minor levels of non-compliance, the low-risks were given timelines for corrective action and all immediate hazards were shut down until the hazard was corrected.

After thorough analysis of both phase one and two, the team reached the following conclusions:

- the re-audit results are generally consistent with TSSA's cyclical audit process;
- the vast majority of non-compliances are low risk items, generally routine maintenance;
- at sites without valid licences, safety performance levels were generally consistent with properly licensed sites; and
- immediate hazards were site-specific, suggesting no trend.

While there was no trend to suggest low risk infractions have a greater potential to incur higher risk violations, TSSA remains committed to addressing such findings as continual non-compliance has the potential to breed a less-than-acceptable safety culture.

Going forward, TSSA's Fuels Safety Program will further engage industry to seek a more consistent interpretation of issues – such as licensing, signage, managing ignition sources, storage and others. TSSA will also provide interpretation of code-based objectives to ensure a common and consistent understanding.

Continuing to monitor low risks, TSSA will use progressive enforcement action, such as frequent spot inspections, revocation of authorization and prosecution, if issues of non-compliance continue at specific sites.

And finally, in the spirit of continuous improvement, TSSA will analyze its re-audit data to determine better risk-informed decisions and work with all stakeholders to implement the new propane regulations.

In this manner, the organization will further improve compliance, address emergent safety issues and pursue regulatory improvement.

SECONDARY CONTAINMENT LINERS

By Sandra Cooke, Engineering Manager, Fuels Safety Program

TSSA has been advised that Underwriters Laboratories of Canada (ULC) will be withdrawing listings for the ***ORD-C58.9 Secondary Containment Liners for Underground and Aboveground Flammable and Combustible Liquids*** as of February 28, 2009. The ORD will be withdrawn sometime after that.

ULC will be initiating a process to write a proper standard for the liners; however, **they do not intend to certify the liners in the future**. As a result, there will be approximately a two-year gap when there will be no certification document (as it will take that time to develop a standard), and once the standard is complete, there still may not be any certified product on the market.

In view of the above, **after February 28, 2009, TSSA will require applicants to**:

- **submit a variance application for the use of unapproved equipment**;
- **provide a letter from a P. Eng. stating that the liner meets the requirements of ORD-C58.9 or the new standard**, once it has been developed; and
- provide the manufacturer's specifications for the material and installation instructions.

TSSA is also working with manufacturers to develop a limited authorization for use of their product in Ontario.

CLARIFICATION ON REGISTRATION PROCEDURES FOR UNDERGROUND FUEL OIL STORAGE TANKS

By Raphael Sumabat, Engineer Specialist, Fuels Safety Program

As of May 1, 2002, underground fuel oil storage tanks are required to be registered with TSSA under Ontario Regulation 213/01 (Fuel Oil Regulation).

7. (4) No person shall supply fuel oil to an underground tank unless the underground tank is registered.

As a condition of registration, new installations, replacement or modification of existing installations require TSSA engineering design review, inspection of installations prior to backfilling, and inspection after completion.

The submittal of the application to register an underground fuel oil tank shall include drawings of the installation, from the main tank to the appliance and/or day tank, and a list of components (manufacturer, model and specifications) to be installed. While there is no cost for the registration, engineering and inspection fees will be billed accordingly.

To verify compliance, TSSA requires the following information be provided as part of its review:

- name and TSSA registration number of contractor responsible for the installation;
- name and TSSA certificate number of petroleum mechanic responsible for the installation (please note that an oil burner technician is required to connect the piping to the appliance and to install the appliance);
- copies of drawings describing the tank and piping installation, and the transition from the underground piping to the indoor piping;
- copies of tank deflection measurements for fibreglass tanks;
- confirmation that a cathodic protection system is installed and operational for any metal components; and
- confirmation that all sumps have been leak tested.

TSSA will also require the following to be completed as part of the inspection process:

- pressure tests of the double wall piping and the interstitial space (as per manufacturer's instructions and the code);
- testing of the entire leak detection system; and
- installation/operation of the overfill protection valve/system.

Please note that an existing underground fuel oil storage tank will not be registered if it does not comply with the following removal or upgrade timeframe/deadline under the Ontario Fuel Oil Code:

Age of Underground Tank System	
(Years from date of original installation as of Oct 1, 2001	Deadline for Removal or Upgrade
25 or more (or if unknown)	October 1, 2006
20 to 24	October 1, 2007
10 to 19	October 1, 2008
0 to 9	October 1, 2009

Upgrading, when applicable, includes installation of cathodic protection, leak detection, overfill protection and spill containment. The underground tank may additionally be subject to a precision leak test prior to upgrading.

FUEL SUPPLIER OBLIGATIONS AND AUDITS

The fall edition of TSSA's *Fuels Update* had an article which outlined the fuel supplier audits that TSSA conducts each year to ensure compliance of fuel suppliers who supply fuel to premises with heating equipment. There are regulatory requirements to conduct comprehensive inspections on all heating equipment prior to supplying fuel, initially and every 10 years thereafter. Those regulatory requirements apply to all fuel-types (fuel oil, propane, natural gas, etc.). This article will discuss audits on fuel suppliers who supply fuel to equipment other than heating equipment.

The regulations require that fuel suppliers cannot supply fuel to propane and petroleum tanks unless they are compliant. The regulations also require that if the site, where the tank is situated, is required by regulation to be licensed, the supplier cannot supply fuel to the site unless it is licensed. Further for propane sites, the supplier cannot supply propane unless the site operator can provide the annual inspection report indicating the site meets compliance.

As a reminder, if you are supplying fuel to a tank, be sure to understand your obligations under the regulations prior to dispensing.

Message from the Director

continued from **page 1**

As the Director of the Fuels Safety Program, I encourage industry and impacted stakeholders to bring forward issues forward that need resolution.

Throughout Canada and in Ontario, fuels regulations require that appliances, equipment, and components be approved, and this approval is typically certification by a Canadian accredited agency. In situations where certification is not available, regulators such as TSSA may provide alternative means for authorizing the safe use of products/equipment within their jurisdiction. If this continues to happen, both the regulators and the community being regulated will need to develop a formal process for authorizing the safe use of products that cannot gain approval or continue their product certifications in the traditional manner. In five to 10 years, there may be alternative methods to authorize products for safe use.

In closing, as the Director of the Fuels Safety Program, I encourage industry and impacted stakeholders to bring forward issues that need resolution. We continue to have industry forums such as the one looking at how best to implement the new regulatory requirements in propane. Only with your support, can we continue to best ensure safe use and handling of fuels in Ontario.

TSSA'S APPEAL PROCESS

By Marilyn Matwey, Hearings Coordinator

TSSA's goal is to enhance public safety. Toward that end, TSSA conducts safety inspections, issues safety orders and invoices the customer for the inspection time; however, there may be instances where the customer does not agree with the orders issued or with the fees charged. To better serve customers, TSSA has a formal appeal process in place to address these issues.

The information and forms required to file an appeal can be found on TSSA's website at **www.tssa.org/corporate**. Appeals can be made of inspectors' orders/seals (Form A-1) or of the requirement to pay fees (Form F-1). The Rules of Practice detailing the appeal process and Information Bulletins for each type of appeal are also available on the website. Please note that an appeal of an inspector's order or seal does not suspend the order during the appeal process.

It is also very important to note that moving to a formal appeal without first going through the informal process (as outlined on TSSA's website) is not the most effective way to deal with the issue. It is a much more lengthy process, and almost all issues can be handled very quickly through the informal process. In essence, this involves first discussing the concerns with the inspector or, if that is not successful, contacting the Regional Supervisor to discuss the concerns.

In situations where you go through the informal process and still feel aggrieved by the decision, in order to initiate the formal process an original signed copy of the appeal is to be submitted to the Hearings Coordinator who will initiate it. The Director appointed under the *Technical Standards and Safety Act, 2000* will be responsible for making the final decision on an appeal.

For any further information on the appeal process, please email the Hearings Coordinator at **hearingscoordinator@tssa.org**.

TSSA Update
FUELS EDITION

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

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