PROCEDURE FOR THE STORAGE AND HANDLING OF FUEL ON CONSTRUCTION SITES

Civil Engineering Sector

Labour-Management

Health and Safety Committee

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PURPOSE

The purpose of this document is to ensure vehicles, equipment, and vessels are fuelled safely on construction sites, to ensure fuel is stored safely on construction sites, and to protect the environment from spills and the hazards associated with spills.

REFERENCES

The information in this document is based on and in compliance with the *Technical Standards and Safety Act, 2000* and the Technical Standards and Safety Authority's (TSSA) *Liquid Fuels Handling Code, 2007.*

Main sections covering construction activities

Section 6.1.7 of the *Liquid Fuels Handling Code, 2007*: Dispensing requirements—Mobile Fuelling

Section 6.1.7.1 of the *Liquid Fuels Handling Code, 2007*: Dispensing shall not take place within

a) a building;
b) 30 m of a stream, river, lake, canal or natural watercourse;
c) 3 m of a property line;
d) 4.5 m of any opening in a building; or
e) 3 m from any source of ignition.

Section 6.1.7.2 of the *Liquid Fuels Handling Code, 2007*: The requirements of 6.1.7.1 items (b) to (e) may be modified where the mobile refueller has an approved procedure to prevent a loss or escape of product from

a) creating a hazard to public health or safety
b) contaminating any fresh water source or waterway
c) interfering with the rights of any person, or
d) entering into a sewer system or underground stream or drainage system.

DEFINITIONS

Constructor, as defined in the *Occupational Health and Safety Act*:

A person who undertakes a project for an owner and includes an owner who undertakes all or part of a project by himself if by more than one employer.

Employer, as defined in the *Occupational Health and Safety Act*:

A person who employs one or more workers or contracts for the services of one or more workers and includes a contractor or subcontractor who performs work or supplies services and a contractor or subcontractor who undertakes with an owner, constructor, contractor or subcontractor to perform work or supply services.

Supervisor, as defined in the *Occupational Health and Safety Act*:

Person in charge of a workplace or authority over a worker.

Mobile fuelling, as defined in the *Liquid Fuels Handling Code, 2007*:

The dispensing of fuel from a highway tank or mobile refuelling tank to a motor vehicle (including but not limited to forest and construction equipment, motorized snow vehicles, and other off-road vehicles), but not to a boat or the bulk storage tank on a highway tank.

Mobile refuelling tanks, as defined in the *Liquid Fuels Handling Code, 2007*:

Tanks that have been built in accordance with an approved standard and that may be mounted onto a truck, trailer, or skid for transporting product.

Highway tank, as defined in the *Liquid Fuels Handling Code, 2007*:

A tank that is attached to or forms a part of a truck or trailer and is loaded or unloaded without being removed from the vehicle.

Procedure:

Procedure for *The Storage and Handling of Fuel on Construction Sites*. All other terms as defined in the *Liquid Fuels Handling Code, 2007*.

RESPONSIBILITIES

It is the primary responsibility of the Supervisor(s) to ensure that all fuel handling, dispensing, and storage is done in a safe and proper manner in accordance with this procedure.

ENVIRONMENTAL PROTECTION PROCEDURES

The accidental release of fuel during handling or dispensing may adversely affect the environment. The following protection procedures are intended to prevent a loss or escape of product and, in the event of a spill, to minimize the impact of the spill on the environment.

DELIVERING AND DISPENSING FUEL

Delivering fuel to the site

- Delivery of fuel to the site will be by approved highway tanks or mobile refuelling tanks.

- Delivery may be into on-site mobile refuelling tanks or directly into the equipment.

- Transferring fuel from the supplying highway tank to an on-site highway tank will only be allowed if the on-site highway tank meets the requirements of the B620 standard and the refilling of the on-site highway tank is done in accordance with section 5.6.2 of *the Liquid Fuels Handling Code, 2007*, which governs the loading and unloading of highway tanks and requires the use of a down spout to the bottom of the compartment for open dome loading, as well as bonding of the highway tank.

- Highway tanks shall be operated by a competent person.

Dispensing fuel

- All dispensing or transferring of fuel will be attended for the duration of the operation. The attendant must be aware of proper fuel handling procedures to minimize the risk of a spill and shall continuously scan the area adjacent to the fuelling operation for possible leaks or spills.

- The transferring and dispensing of fuel will be done with pumping equipment, an approved hose, and top-fill nozzle.

- When fuelling under the conditions of Section 6.1.7.1 (a), (b), (c), (d), or (e) of the *Liquid Fuels Handling Code, 2007* (see Reference section in this document), absorbent pads are to be placed around the fuel inlet prior to dispensing.

- Ensure that a site-appropriate spill containment kit is readily available.

- When unreeling the fuel transfer hose and nozzle, the nozzle must be in the upright position. The nozzle shall be kept clear of the ground when returned to the reel or storage position.

- Verify that there is a proper connection between the fuel fill hose and the fill pipe of the highway tank, mobile refuelling tank, or the equipment being filled. Verify that the fill valve is open.

- The transfer of fuel must be stopped prior to overflowing, leaving room for expansion. Mobile refuelling tanks and fuel tanks on vehicles and equipment are not to be overfilled.

- The operation of moving equipment in the immediate area of a fuelling operation shall be suspended.

- Welding and/or burning operations within 3 metres must be stopped while fuelling is in progress.

- Maintain regular inspections of fuel systems and their components. Check for leakage, deterioration, or damage, in accordance with the Construction Regulation.

Additional dispensing requirements for marine operations

Section 6.1.5 of the *Liquid Fuels Handling Code, 2007*: Dispensing operations—Marinas

6.1.5.1—At a marina, product shall not be dispensed to fuel a watercraft while

a) its engine is running;
b) any source of ignition is present within 3 m of the dispensing nozzle where it enters the tank to be refueled; and
c) there is a source of ignition on board the watercraft being refueled.

6.1.5.2—Portable containers shall not be filled while located on a watercraft.

Caution:	This section is intended for the mobile fuelling of equipment *on* a watercraft not for the mobile fuelling *of* a watercraft. The *Liquid Fuels Handling Code, 2007* prohibits the mobile fuelling of all watercraft.

- Secure barge or marine vessel on which the equipment to be fuelled is mounted to the work platform or wharf with proper marine lines.

- Prior to transferring fuel to a mobile refuelling tank on a barge or to barge-mounted equipment, establish direct communication between the highway tank operator or mobile fuelling attendant and the marine operator. This shall be maintained until fuelling is complete.

- Where it is necessary to transfer a mobile fuelling tank from the wharf or work platform to a barge, or from one barge to another, the tank shall be engineered for lifting and equipped with proper lifting points and lifting tackle. The transfer shall be done with hoisting equipment in accordance with normal safety procedures.

- During marine fuelling operations, the attendant shall be particularly vigilant in scanning the water area adjacent to the fuelling operation for possible leaks or spills.

Spills

Preventative measures are the best means of avoiding an accidental release of petroleum products. However, in the event of an accidental release, the following will occur:

- The Constructor will have appropriate spill response equipment available for all phases of the project area. See Appendix A for a list of such equipment.

- Cleanup action will follow the spill contingency plan. See Appendix B for a sample spill contingency plan.

- All spills or suspected spills of petroleum products, on land or into the water, regardless of size, will be reported immediately to the Supervisor. The Supervisor will report the spill immediately to the Project Manager, or his delegate, who shall ensure notification of the appropriate authorities.

Posting of Procedure

This procedure shall be posted or available on site and a copy shall be incorporated in the company safety policies and procedures. All records of employee training must be kept.

PROCEDURE FOR STORING FUEL ON CONSTRUCTION SITES

- Where the circumstances require, fuel may be stored in an approved mobile refuelling tank.

- Mobile fuelling tanks must be stored in an area where it cannot be hit by vehicles or other equipment. The fuel storage area also must be located away from drainage channels.

- Where a mobile refuelling tank is in use and there is a danger of spillage contaminating a stream, waterway, or sewer, the refuelling tank shall be at a location that complies with the diking requirements of Section 3.3.1 of the *Liquid Fuels Handling Code, 2007*, unless double wall tanks are used. Refer to Appendix C for diking requirements.

- All highway tanks and mobile refuelling tanks are to be properly labelled in accordance with the Transportation of Dangerous Goods Regulation.

- Fire extinguishers shall be located near the fuel storage areas and be of a suitable type and size to permit the evacuation of workers during a fire. (4A, 40BC minimum rating).

- Any worker who may be required to use a fire extinguisher shall be trained in its use.

- Smoking will not be permitted in the area of the fuel storage facility and "No Smoking" signs will be posted. Smoking will not be permitted during any fuelling operation. "No Smoking" signs are to be maintained in good condition.

- Waste oils, lubricants, greasy and oily rags, or other materials subject to spontaneous combustion will be retained in a labelled container used for that purpose exclusively and will be properly disposed of at frequent intervals.

- Appropriate emergency spill equipment will be available in the fuel storage area. See Appendix A for a list of such equipment.

- No "hot work" shall take place within 3 metres of a storage zone.

Posting of Procedure

In cases where fuel is being stored on site, this procedure shall be posted or available on site and a copy shall be incorporated in the company safety policies and procedures. All records of employee training must be kept.

APPENDIX A—SPILL RESPONSE EQUIPMENT TO BE AVAILABLE ON SITE:

For sites where fuel is stored and dispensed, the following supplies shall be kept available to respond to and contain a diesel fuel spill.

A commercially available kit recommended for a 40 gal. spill typically contains:

1. 3" dia. x 48" oil socks. Quantity: 10
2. 3" dia. x 10' oil socks. Quantity: 3
3. 17" x 19" oil pads. Quantity: 40
4. 18" x 18" x 2" pillows. Quantity: 8
5. Disposable material containment bags. Quantity: 10
6. Latex gloves. Quantity: 2 pair
7. Granular absorbent. Quantity: 4 gal.
8. Polyethylene salvage drum container. Quantity: 1 with 55 gal. capacity

For sites where fuel is dispensed only (i.e., no storage facility), the following supplies shall be kept available to respond to and contain a diesel fuel spill.

A commercially available kit recommended for a 10 gal. spill typically contains:

1. 3" dia. x 48" oil socks. Quantity: 4
2. 17" x 19" oil pads. Quantity: 25
3. Disposable material containment bags. Quantity: 2
4. Latex gloves. Quantity: 1 pair
5. Granular absorbent. Quantity: 1 gal.
6. PVC bag container. Quantity: 1

If the site is within 30m of a waterway, the kit shall include absorbent boom supplies.

APPENDIX B—SPILL CONTINGENCY PLAN

All spills or suspected spills of petroleum products, on land or into the water, regardless of size, will be reported immediately to the Supervisor. The Supervisor will report the spill immediately to the Project Manager, or his delegate, who shall ensure notification to the **Spill Action Centre of the Ministry of the Environment at 1-800-268-6060**, unless the spill is classed as non-reportable, according to the criteria below.

Non-Reportable Spills

Class VIII Spill: the spill of gasoline or an associated product of not more than 100 litres in areas restricted to the public, or not more than 25 litres in areas with public access, at a location defined as a bulk plant, marina, private outlet, or retail outlet need not be reported to the Ministry or to the municipality if the following conditions are met.

The four conditions that must be met for the reporting exemption to apply are:

1. the spill of gasoline or an associated product does not enter and is not likely to enter directly or indirectly water or a watercourse, as defined by the *Ontario Water Resources Act*;
2. the spill does not cause adverse effects other than those that are readily remediated through cleanup and restoration of paved, graveled, or sodded surfaces;
3. arrangements for remediation are made immediately; and
4. records of the spill are maintained.

Other Spills

Any spill exceeding 100 litres or which does not meet the conditions for exemption from reporting requirements must be reported to the Supervisor, Project Manager, and the authorities. The report shall include details of the type of material spilled, the source of the spill, and whether the spill has reached the environment (e.g. drains, sumps, or waterways).

The supervisor on site or other designated person shall take charge of spill containment and cleanup. Workers shall be assigned to assist with control and remedial measures to:

- stop the leak
- block off any drains or access to drainage
- if spill has entered or is in danger of entering a waterway, boom-off area to contain spill
- assess the level of the spill and report as necessary
- assess the method of cleanup
- in an environmentally sensitive area, get advice from the Ministry of the Environment for clean-up measures
- proceed with recovery of spilled fuel and clean-up
- arrange appropriate disposal of fuel recovered and debris (in landfill site)

- if a government authority sends a representative to monitor the clean-up and ensure that it is done adequately, cooperate fully with the representative
- maintain a record of the spill and cleanup.

Details of records are to be prepared and kept for two years and must include:

1. Date
2. Time
3. Location
4. Duration of the release
5. Identity and quantity of the pollutant
6. Circumstances of the spill
7. Containment and clean-up methods used
8. Disposal and re-use method used
9. Specifics of any adverse effect observed.

APPENDIX C—DIKING REQUIREMENTS FOR SECONDARY CONTAINMENT

Where a mobile refueling tank is in use and there is a danger of spillage contaminating a stream, waterway or sewer, the following secondary containment requirements apply:

- Double-walled tanks under 80,000 are considered to be equivalent to diking requirements, requiring no further secondary containment measures.

- The floor and walls of every dike shall be constructed to be compatible with the liquid being stored, shall be leak tight, and shall be made of a material with a maximum permeability of $1x10^{-6}$ centimetres per second for a minimum period of 72 hours and to withstand the full hydrostatic head of the product.

- For field-erected tanks where the dike floor and walls conform to the requirements in the above point up to the perimeter of the tanks, monitored double bottoms shall be used.

- The walls of the diked area shall be designed and constructed so that they do not exceed an average height of 1.8 metres above ground level within the enclosed dike.

- The distance between the dike wall and an above-ground storage tank shell shall be not less than 1.5 metres.

- Where a dike is provided with valves which allow the removal of accumulated surface water or product, they shall be closed and locked when not engaged in a supervised draining operation. The valve positions shall be clearly marked whether opened or closed.

- An opening in the dike bottom or sidewalls for drainage purposes is not permitted.

- Dikes shall be regularly inspected and maintained.