

<p>Policy Number –63</p> <p>Effective Date: 11/22/11      Resolution No. 474-11</p> <p>Title: Fueling and Safe Fuel Handling Policy</p>	<p>Last Update: July 12, 2010</p>
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**POLICY STATEMENT**

The use of liquid fuel and liquefied petroleum gas (LPG) including gasoline, diesel and propane, is a common part of many jobs conducted by Cayuga County employees. Because the use of these fuels is so common in the workplace, it is easy for individuals to forget or to underestimate the hazards associated with their use.

Cayuga County has a sincere concern for the welfare and safety of all County employees and the public they serve, with the goal of eliminating suffering and the cost of avoidable personal injury and illness. The County is dedicated to assuring that every job is conducted safely, and that operational expediency, including the use of short cuts, does not compromise the safety and well being of employees and the public.

This Policy is applicable to all County employees that handle liquid or LPG fuels during the course of their job. This includes employees that use fuel-powered equipment (lawn mowers, generators, propane-powered forklifts/tow motors) and employees that operate County-owned or personal vehicles that are used for County business.

This policy shall be maintained by each department to which the policy applies in a location that is accessible to all department employees.

**TRAINING**

PESH requires that employees be trained in the safe operation of tools and equipment. For liquid fuel and LPG powered equipment the hazards and safety protocols associated with the use of this equipment is an important component of the required training. Different tools, equipment, and vehicles have safety guidelines and procedures that are specific to those items. Each employee that uses liquid fuel or LPG powered equipment, tools or vehicles is responsible for reading and understanding the Operator’s Manual and any safety Information provided by the manufacturers prior to using the equipment, tool or vehicle.

This policy provides information on hazards associated with liquid and LPG fuels, and proper handling and storage (non-bulk) of these fuels. This Policy, coupled with instruction on proper/safe tool/equipment/vehicle usage is the basis of PESH required training.

For those departments that dispense fuel from bulk storage dispensers, the Department Head will be responsible for assuring that persons that dispense fuel know where and how to turn of the pumps at the emergency shutoff. This information shall be

communicated through training and/or appropriate signage at the pump.

## **RESPONSIBILITIES AND AUTHORITY**

The following identifies some of the responsibilities for various parties affected by this policy.

### **County Management (County Legislature, Compliance Officer, County Administrator and/or their Appointed Risk Management Committee)**

- Ensuring that Federal, State and Local laws, regulations, codes and ordinances are followed.
- Developing policies, accident prevention methods, procedures and programs.
- Conducting periodic safety inspections of all work locations.
- Assuring that accidents and hazardous conditions are investigated and corrective actions are implemented.

### **Department Heads**

Department Heads are responsible for:

- Identifying the specific jobs or individuals to whom this policy applies
- Identifying all liquid fuel or LPG powered tools, equipment and vehicles within your department.
- Assuring that Operator's manuals and manufacturer's safety information is available for all tools, equipment and vehicles identified in the department.
- Ensuring that safety procedures presented in this and other County policies, as well as in Manufacturer's Operator's and Safety Manuals are implemented and enforced.
- Obtaining proper fuel storage containers including OSHA/PESH approved fuel cans and storage cabinets.
- Observing safety conditions of the department on a regular basis
- Assure appropriate training for supervisors and employees.

### **Supervisors**

Due to their constant contact with employees, supervisors must take a primary role in the prevention of accidents and the safety of employees under their supervision. Supervisor's responsibilities include:

- Providing adequate training and instructions to employees using liquid fuel or

LPG powered tools, equipment or vehicles.

- Providing continuing safety instructions with regard to fuel handling and safety.
- Observing and evaluating the use of liquid fuel or LPG powered tools, equipment and vehicles by employees and correcting any unsafe conditions or practices and reporting or correcting any found.
- Assuring that gasoline, diesel fuel and propane are properly and safely stored in OSHA/PESH - approved containers and that fuel containers are stored in OSHA/PESH approved storage cabinets.
- Promptly investigating all accidents and completing required reports.
- Encouraging employees to report all unsafe conditions and practices.
- Checking and ensuring that tools, equipment, and protective devices are in place, properly and safely maintained and used
- Being familiar with and enforcing all safety procedures and practices applicable to their work.

## **Employees**

Employee responsibilities include:

- Reading, understanding and following the procedures and practices outlined in this policy.
- Reading, understanding and complying with owner's manuals and manufacturer-provided safety information before using a liquid fuel/LPG powered tool, piece of equipment or vehicle.
- Immediately reporting all work related accidents, fuel spills, fires, and injuries to their supervisors.
- Reporting all unsafe conditions and practices to their supervisors and/or Department Head and/or County Administrator.
- Attending appropriate training as recommended by their supervisors.

## **LIQUID FUELS AND LPG/PROPANE**

**Gasoline** – a volatile flammable mixture of hydrocarbons (hexane and heptane and octane etc.) derived from petroleum; used mainly as a fuel in internal-combustion engines

### ***Hazards Associated with Gasoline:***

Gasoline is an extremely flammable, clear to amber or red liquid that may cause fire or explosion. Gasoline vapors can travel considerable distances to an ignition point and flash back to the container or fuel tank. Gasoline vapors are heavier than air and can accumulate in low areas. At high concentrations, gasoline vapors can displace breathable oxygen and cause suffocation.

Gasoline is a mixture of many petroleum hydrocarbons including benzene; a known human carcinogen. Gasoline is harmful or fatal if swallowed and can enter the lungs, usually through vomiting, and cause lung damage/aspiration. Gasoline may be harmful if inhaled or absorbed through the skin. Mist or vapors may irritate eyes, mucous membranes and respiratory tract. Liquid contact may cause eye and skin irritation.

Overexposure to gasoline may depress the central nervous system and damage other target organs/systems of the body including; blood, kidneys, lungs, reproductive system, liver, mucous membranes, heart, peripheral nervous system, cardiovascular system, upper respiratory tract, skin, auditory system, bone marrow, central nervous system, eye, lens or cornea.

Gasoline is considered an environmental contaminant due to its potential toxicity to freshwater and saltwater ecosystems.

**Diesel Fuel** - A fuel derived from petroleum but heavier than gasoline. Used to power diesel engines which burn this fuel using the heat produced when air is compressed rather than by spark ignition.

***Hazards Associated with Diesel Fuel:***

Diesel fuel is a combustible, clear to amber (may be dyed red) liquid whose vapor may cause flash fire. Diesel fuel is generally a mixture of predominantly middle-distillate petroleum compounds, some of which are considered possible human carcinogens.

Diesel is harmful or fatal if swallowed, and can enter the lungs and cause lung damage. Diesel may be harmful if inhaled or absorbed through the skin. Mist or vapors may irritate the respiratory tract. Liquid contact may cause eye and skin irritation.

Overexposure to diesel fuel may depress/damage the central nervous system and cause damage to other target organs/systems of the body including: kidneys, liver, upper respiratory tract, skin, and eyes.

Combustion products include carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and oxides of sulfur and/or nitrogen. Diesel engine exhaust can cause upper respiratory tract irritation and reversible pulmonary effects. Exposure to diesel exhaust particulates, a complex mixture of combustion products of diesel fuel, is reasonably anticipated to be a human carcinogen.

Diesel spills may cause a slipping hazard.

Diesel fuel is considered an environmental contaminant, due to the potential toxicity of middle-distillate petroleum hydrocarbons to freshwater and saltwater ecosystems.

**LPG/Propane** – A gas that is typically compressed into a liquid for transport and storage. It is derived from other petroleum products and is commonly used as a fuel for engines, oxy-gas torches, barbecues, and portable stoves.

### ***Hazards Associated with Propane:***

Propane is an extremely flammable liquefied petroleum gas under pressure. Propane gas can travel considerable distances to an ignition point and flash back to the container or fuel tank. Propane gas is heavier than air and can accumulate in low areas, and at high concentrations, can displace breathable oxygen and cause suffocation. Ethyl mercaptan is commonly added as an odorant to commercially available propane for leak detection purposes; however the odor (rotten egg) may not give adequate warning of potentially hazardous concentrations.

Propane is considered a non-toxic gas with slight anesthetic properties, which at higher concentrations may cause dizziness. Ingestion of liquid or depressurizing propane or its contact with eyes or skin will cause severe freeze burns/tissue damage similar to frostbite.

In most applications where there is inadequate venting to the outside air, incomplete combustion will produce carbon monoxide (a toxic gas) and potentially develop concentrations that can create a serious health hazard

Propane is stored in pressurized cylinders or tanks and therefore the physical hazards associated with high pressure systems is a significant hazard associated with propane fuel use. LPG/propane containers that are subjected to fire of sufficient duration and intensity can undergo an extremely hazardous, boiling liquid expanding vapor explosion (BLEVE).

## **FUEL HANDLING AND STORAGE**

### ***Gasoline/Diesel***

Gasoline and gas/oil mixtures are flammable liquids and diesel fuel is a combustible liquid. 29 CFR 1926.152(a)(1) states "Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids". Plastic gasoline containers are for **HOME USE ONLY** and are not to be used.

- Gasoline is to be used as a motor fuel **only**. Gasoline is not to be used as a cleaning or degreasing solvent.
- **Never** siphon gasoline diesel or other fuel by mouth.
- Gasoline and gas/oil mixtures (for two-stroke engines) must be stored in OSHA/PEOSH - approved metal safety cans that are equipped with self-closing, spring loaded caps with anti-flashback devices. OSHA/PEOSH - approved cans will have the "FM" (Factory Mutual) or "UL" (Underwriters Laboratories) mark. The capacity of the safety cannot exceed 5 gallons.
- Store gasoline products in red storage cans and diesel products in yellow cans. Consider storing two-cycle oil/gasoline mixtures in 2½-gallon containers and straight fuel in 5-gallon containers.
- No more than 25 gallons of gasoline and gas/oil mixtures (flammable liquids) can be stored in safety cans outside of an OSHA/PEOSH - approved storage cabinet

(as described in 29 CFR 1926.152(b)(2)).

- No more than 60 gallons of diesel fuel (combustible liquids) can be stored outside of an approved storage cabinet.

In the event of a leak exceeding a tablespoon of fuel, contact the department head. If gasoline leaks from a fuel container or vehicle is observed inside a building **EXTREME CAUTION IS WARRANTED**. If the leak is small (i.e., result of overfilling or minor drippage from fuel line) and strong fumes are not present, apply absorbent material (speedy dry or cat litter) to the spilled material, open manually operated doorways and windows to vent the area, and assure that potential ignition sources are eliminated. **DO NOT START** equipment in attempts to move until the source of the leak is repaired, the spill is cleaned up, and the potential for fire/explosion has been removed.

If strong fumes/vapors are present, have all persons evacuate the building/area and contact 911 so that the spill can be properly cleaned up by emergency responders, and the fire/explosion hazard can be eliminated. **DO NOT ATTEMPT TO START** vehicles or equipment in the area.

### ***LPG/Propane***

- During storage and equipment use, **always** position the cylinder/tank so that the liquid propane does not come in contact with the relief valve.
- When installing a full cylinder on a piece of equipment (i.e., tow motor). Make sure that the locking pin engages into the cylinder ensuring that the pressure relieve valve is in the 12-o'clock position.
- Make sure the valve is closed tightly when the cylinder is not being used.
- Store the cylinder outside, in an upright position, in an area where it can be secured and is protected from being struck.
- Handle cylinders gently. Do not drop, dent or damage.
- Always protect the valve from any damage.
- Avoid contact with liquid propane, as it can cause severe freeze burns/frostbite.
- Wear protective gloves while making or breaking connections.
- Exchange removable cylinders outdoors or in well-ventilated areas, away from sources of ignition.
- Close the cylinder valve before breaking connections.

### **REFUELING SAFETY**

In most cases, County employees who use fuel powered tools, equipment and vehicles likely will be required to refuel the equipment they are using. This will usually entail one of the following scenarios:

- Fueling a vehicle or piece of equipment at a pump/dispenser (i.e., gasoline filling station, gasoline/diesel dispenser at highway or motorpool facility tank, or similar).
- Fueling a tool, piece of equipment or vehicle with a portable gasoline/diesel container.

- Changing Propane Cylinders on propane-operated equipment (tow motors, skid steers, etc.)

The following presents procedures and guidelines for safe and proper refueling of tools, equipment and vehicles.

### ***Refueling at the Pump***

- **Never** smoke while refueling a vehicle.
- **Always** turn off your vehicle engine while refueling.
- Stay near the vehicle fueling point during the process.
- Cell phones and other electronic devices may have the potential to emit electrical charges, and should therefore be left in the vehicle during fueling.
- Do not get back into the vehicle during refueling – even when using the nozzle’s automatic hold-open latch. If you must re-enter the vehicle, discharge static electricity buildup when you get out by touching the outside metal portion of the vehicle, away from the filling point, before attempting to remove the nozzle.
- To avoid fuel spills, do not overfill or top off the tank. The fuel dispenser will shut off automatically when the tank is full.
- Use only the hold-open latch provide in the gasoline nozzle. **Never** jam or force open the hold-open latch open by using some other object, such as the gas cap.
- When dispensing gasoline into a portable gasoline can, use only an approved container. Always place the container on the ground and keep the pump nozzle in contact with the container when refueling to avoid a static electricity ignition of fuel vapors. Containers should never be filled inside a vehicle, in the trunk, on the bed of a pickup truck, a flat bed or on the floor of a trailer. The bed of the truck and the bed liner act as insulators, as does the carpeting or floor mats in a car or in a vehicles trunk, which may allow static electricity to build up in the can while it is being filled. That static electricity could create a spark between the container and the fuel nozzle.
- If a flash fire occurs during refueling, leave the nozzle in the vehicle fill pipe and back away from the vehicle, turn off pumps at the emergency controls. Notify the facility superintendent at once so emergency response personnel can be notified.

### **Refueling Gasoline/Diesel Powered Equipment Using Portable Fuel Containers**

- Be sure to completely read the safety information contained in the operator’s manual. Cayuga County employees are not permitted to operate fuel operated tools, equipment or vehicles without having first read the owner’s manual and manufacturer’s safety information.
- **Never** smoke while refueling.
- **Never** remove the gas cap or add fuel with the engine running.
- Whenever possible, refuel gasoline/diesel powered tools and equipment at outside locations to allow for maximum ventilation, and to prevent the accumulation of vapors inside buildings.

- Store gasoline products in red storage cans and diesel products in yellow cans. Consider storing two-cycle oil/gasoline mixtures in 2½-gallon containers and straight fuel in 5-gallon containers.
- Avoid refueling gas/diesel powered equipment while engines are hot. Allow engines to cool down prior to refueling to avoid a possible auto-ignition fire hazard.
- Do not store equipment or fuel storage cans where there is an open flame, spark, or pilot light such as near a water heater or other appliances
- Use care so as to not overfill the fuel tank. Replace gas cap and tighten securely.
- Clean up fuel spills immediately and do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.

### **Changing Propane Cylinders**

Be sure to completely read the safety information contained in the operator's manual. Cayuga County employees are not permitted to operate fuel operated tools, equipment or vehicles without training that includes reading the tool/equipment or vehicle's owner's manual and manufacturer's safety information. Employees must be properly trained in the safe operation of any equipment before they are permitted to use or refuel that equipment.

Employees changing propane cylinders will wear appropriate personal protective equipment (PPE) including safety glasses and loose-fitting insulated gloves such as leather (dry) or neoprene. The following presents general guidelines to be followed during propane cylinder changeout. Equipment-specific procedures provided by the manufacturer, shall override these general guidelines.

- Wear safety glasses and insulated, loose fitting gloves such as leather (dry) or insulated neoprene.
- Close the valve on the cylinder that is currently installed on the equipment/vehicle.
- Run the engine until it stops. This ensures that the connection hose is empty.
- Shut off the engine. Be sure that the emergency brake is engaged.
- Open the connecting nut. **Do not** use metal tools.
- Disconnect the hose.
- Disconnect the holding straps.
- Remove the empty cylinder from the equipment using proper lifting techniques.
- Replace with a full cylinder in the proper position using proper lifting techniques.
- Connect the holding straps.
- Make sure the propane hose is not cut or chafed and the gasket and O-ring are properly installed in the male quick-connect fitting. Connect and tighten the male and female quick connect fittings. Tighten the connecting nut (wiggle hose).
- Slowly, fully open the valve on the cylinder and check for leaks. Use solution of soap and water. Smell--listen--look.

- Make sure the propane hose or cylinder does not extend beyond the forklift's sides or rear.
- Make sure the propane cylinder is properly secured against movement or displacement.
- Start engine and resume operation.
- Start the engine and resume operation.
- **Do not** use metal tools when changing a cylinder.
- **Do not** use excessive force when opening or closing valve.
- **Do not** let the cylinder get too hot.
- **Do not** drag, drop, roll or slide cylinder or allow it to bang against other objects.
- **Never** use open flame to check for leaks. Use soapy water or a leak detector.

**CAYUGA COUNTY**

**FUELING AND SAFE FUEL HANDLING POLICY**

I certify that I have read, understand, and agree to the terms set forth in this policy. I further understand that if I have questions regarding the information provided in this policy, I can request such information from my supervisor, or Department Head.

Employee Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Printed Employee Name: \_\_\_\_\_

Witness: \_\_\_\_\_