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### Dos and Don'ts at the Gas Pump

Did you know that static electricity can ignite vapors when you refuel a car? It's a scary thought but possible. The following information is courtesy of Purdue University Cooperative Extension Service and the Petroleum Equipment Institute.

Static electricity is an electric charge caused by an imbalance of electrons on the surface of a material. It is most commonly caused by the contact and separation of materials. An example of this is a person walking across a carpeted floor. Static electricity is generated as their shoe soles contact and separate from the carpet. The amount of static electricity generated will increase in proportion to the size of the sole surface, lower humidity and increased speed of movement.

With our higher humidity here in Indian River County, it's not as much of a problem as where it is dryer and colder, but is still possible when we have cool weather and the air is dryer than usual.

Gasoline is a flammable liquid and should be stored at room temperature, away from potential heat sources such as the sun, hot water heater or furnace, and other ignition sources. Gasoline vapors are heavier than air and can travel along the floor to ignition sources. The vapors are highly flammable. Therefore, gasoline for lawn mowers, etc., should be stored more than 50 feet away from appliance pilot lights or igniters.

If gasoline is spilled in a garage it should be absorbed with kitty litter, an absorbent clay material available at auto parts stores, paper, or rags. NEVER dispose of spilled gasoline, used motor oil, or cleaning materials on the ground or in your garbage, drains, toilets, or sewers. This could cause a fire, or the gasoline could seep into streams, lakes, or groundwater.

How can fuel vapors become ignited when you put gas in your car? When you pull into a gas station to refuel your vehicle, you open, then shut the car door, open the fuel pipe cover on the vehicle, touch the nozzle on the gas pump, and perhaps touch the pump to use your credit card - all before you insert the nozzle into the fill pipe. Any static charge that was picked up in the car (as you slid on the upholstery) has been dissipated several times.

A new static charge could be picked up if you got back into the car after the refueling has started. The synthetic materials of the car seats and clothing add to the possibility of picking up a static charge. If you don't touch metal before returning to the nozzle and fuel pipe, that static charge can be transferred upon touching the nozzle, thus creating the potential for a flash fire.

This is more likely to happen to women than men. Some of the reasons that people get back into their cars while the tank is filling include to put the credit card back into a purse, checking on the children, using a cell phone, to get money out of a purse, to write a check, to write down the odometer reading or to put on lipstick. Some service stations have removed the device that keeps the gas running as a safety precaution.

Here are tips for avoiding problems with static electricity and fuel vapors:

1. Always turn off your engine while refueling.
2. Stay near the vehicle fueling point during the process.
3. Never smoke, light matches, or use lighters while refueling.
4. Cellular phones and other electronic devices may have the potential to emit electrical charges, and should therefore be left in the vehicle during fueling. (There have been no reported fires due to cell phone use - so far).
5. Do not get back into your vehicle during refueling - even when using the nozzle's automatic hold-open latch. If you must re-enter your vehicle, discharge static electricity buildup when you get out by touching the outside metal portion of your vehicle, away from the filling point, before attempting to remove the nozzle.
6. To avoid gasoline spills, do not overfill or top off your tank. The fuel dispenser will shut off automatically when the tank is full.
7. Use only the hold-open latch provided on the gasoline nozzle. Never jam or force the hold-open latch open by using some other object, such as the gas cap.
8. 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 or flatbed truck, or on the floor of a trailer. The bed of the truck and the bed liner act as insulators, as does the carpeting in the car or in its trunk, which may allow static electricity to build up in the car while it is being filled. That static electricity could create a spark between the container and the fuel nozzle.
9. If a flash fire occurs during refueling, you should leave the nozzle in the vehicle fill pipe and back away from the vehicle. Notify the station attendant at once so that all dispensing devices and pumps can be shut off with emergency controls. If the facility is unattended, use the emergency intercom to summon help and the emergency shutdown button to shut off the pump.

We take fueling our cars for granted, but should use caution.