Article by: 9 July 2002
Fort Sill Fire Prevention Branch.

Static Electricity and Fires at the Gas Pumps

There have been fires at the gasoline fuel pumps during refueling caused directly by a phenomena called static electricity. (Static Electricity is defined as "an accumulation of electric discharge on an insulated body and is also electric discharge resulting from the accumulation of electric charge on an insulated body." Mr. Bob Renkes of the Petroleum Institute is working on a campaign to try and increase awareness of fires as a result of "static" at gas pumps. His company has researched 150 cases of these fires with results that were very surprising.

Statistics show; Out of the 150 cases, almost all of them involved women. Almost all of the incidents involved the person getting back in their vehicle while the nozzle was still pumping gasoline, when finished and they went back to pull the nozzle out the fire started as a result of the static. Most had rubber-soled shoes on. Most men never get back in their vehicles until completely finished. This is why they are seldom involved in these type of fires.

Cellular telephones are also very dangerous when used in an area where fuel is being dispensed. A static field surrounds the cell phone and user. This can set up a catastrophic event during the times you are refueling. Bottom line, do not use your cell phone anytime you are refueling your vehicle. If you must use that cellular phone, then do not refuel your vehicle.

There were 29 fires where the vehicle was reentered and the nozzle was touched during refueling from a variety of makes and models. This sometimes resulted in extensive damage to the vehicle, to the station, and to the customer. There were also 17 fires that occurred before, during or immediately after the gas cap was removed and before fueling began.

Here are some tips for safe refueling:

- Stay near your vehicles fueling point when using a self-service gas station.
- Do not go back into your vehicle when refueling, regardless of whether you use the nozzles hold open latch.
- If you must reenter your vehicle while refueling, discharge the static electricity by touching a metal part of the outside of your car away from the filling point before touching and removing the gas nozzle.
- Always turn your engine off before refueling.
- Never smoke, light matches or use a lighter while refueling.
- Never use your cellular telephone during the refueling of your vehicle.

Any questions pertaining to this can be answered by calling the Fire Prevention Branch at telephone 442-5911.

The Petroleum Equipment Institute is working on a campaign to try and make people aware of fires as a result of "static" (that is, static electricity) at gas pumps. They have researched 150 cases of these fires. The results were very surprising:
1) Out of 150 cases, almost all of them were women.

2) Almost all cases involved the person getting back in their vehicle while the nozzle was still pumping gas. When finished, they went back to pull the nozzle out. The fire started then as a result of static discharge.

3) Most men never get back in their vehicle until completely finished. This is why they are seldom involved in these types of fires.

4) Most had on rubber-soled shoes.

5) Don't ever use cell phones when pumping gas. (The RF energy from a cell phone (a radio transmitter) can cause sparking on bare metal, much like aluminum foil in a microwave oven.)

6) It is the vapors that come out of the gas that cause the fire, when connected with static discharges.

7) In 29 fires, the vehicle had been reentered and the nozzle was touched during refueling. This occurred in a variety of makes and models, some resulting in extensive damage to the vehicle, to the station, and to the customer.

8) Seventeen fires occurred before, during or immediately after the gas cap was removed and before fueling began.

NEVER get back into your vehicle while filling it with gas. If you absolutely **HAVE** to get in your vehicle while the gas is pumping, make sure you get out, close the door **TOUCHING THE METAL**, before you touch the nozzle. This way the static from your body will be discharged before you ever remove the nozzle.

As mentioned earlier, The Petroleum Equipment Institute, along with several other companies now, are trying to make the public aware of this danger. You can find out more information by clicking on http://www.pei.org/static/index.htm.

I ask you to please send this information to ALL your family and friends, especially those who have kids in the car with them while pumping gas. If this were to happen to them, they may not be able to get the children out in time. Think about it!

Source: **sill-www.army.mil**/des/**FuelandStaticElectricity**.doc