

Date: Fri, 12 Jul 2002 11:25:23 -0700  
Subject: Yellow Alert: Refueling Vehicles Safely

**Title: Yellow Alert: Refueling Vehicles Safely**

Date: July 11, 2002  
Identifier: 2002-RL-HNF-0040

**Lessons Learned Statement:** Static electricity sparks near gasoline pump nozzles can ignite vapors, causing serious fires. The person pumping the gas should avoid reentering the vehicle while refueling. If reentering is absolutely necessary, the person must touch a metal part of the vehicle well away from the fuel fill spout before touching the hose nozzle.

**Discussion of Activities:** See a graphic depiction of what can happen if someone ignores this warning at:

<http://www.hanford.gov/lessons/sitell/1102/burnout.jpg>

**Analysis:** Between January and April 2000 the Petroleum Equipment Institute researched 81 cases of fires caused by "static electricity" at gas pumps, similar to the one that caused the damage shown above. Many more cases of fires have been reported since then but were not analyzed in that study. Results of that research show that:

- \* Twenty reports described fires before the refueling process began, when the fueler touched the gas cap or the area close to it after leaving the vehicle.

- \* Twenty nine fires occurred when vehicles of various makes and models were reentered and the nozzle was touched during refueling. Some resulted in extensive damage to the vehicle, to the station, and to the customer, including one fatality.

- \* Fifteen fires did not involve either of these two situations. In all but one of these 15 cases the fueler was not the source of the electrical discharge and the source of ignition cannot easily be determined.

- \* PEI received insufficient information on seventeen fires reported by NHTSA to confidently categorize them.

- \* Ninety four per cent of the people involved in fires where footwear was identified had on rubber-soled shoes.

An Urban Legend is circulating around the Internet that distorts some of the numbers above, implies that women account for the preponderance of events, and includes a caution about cell phones. While there is some truth to that story, it is not entirely factual and should not be circulated. See the full text in the Urban Legend Reference Page for more details.

**Recommended Actions:**

- \* Avoid getting back into your vehicle while filling it with gasoline. If you absolutely must get

into your vehicle while the gas is pumping, make sure that when you get out you close the door and TOUCH METAL before pulling the nozzle out.

Estimated Savings/Cost Avoidance: Up to \$30,000 for a vehicle fire and hundreds of thousands of dollars to treat severe burns.

Priority Descriptor: YELLOW/Caution

Work / Function: Business and Support Services; Driving; Fire Protection; Transportation

Hanford Functional Categories: N/A

Hazard: Fire

ISM Core Function: Analyze hazards; Develop/Implement Controls

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Authorized Derivative Classifier: Not required

Reviewing Official: John Bickford

Keywords: fire, refueling, static discharge, gasoline

References: "Stop Static" report by PEI (<http://www.pei.org/static/index.htm>)

"Static Quo" on Urban Legends Reference Pages Web site

(<http://www.snopes.com/autos/hazards/static.htm>)

**FOLLOW-UP ACTIONS:** Information in this report is accurate to the best of our knowledge. As a means of measuring the effectiveness of this report, please contact the originator of significant actions taken as a result of this report or of any technical inaccuracies you find. Your feedback is appreciated.