U.S. Department of Transportation
**National Highway Traffic Safety Administration**

# ODI RESUME

Investigation: PE07-033
Date Opened: 06/28/2007 Date Closed: 11/01/2007
Principal Investigator: Steve McHenry
Subject: Fuel Pump Failure

Manufacturer: General Motors Corporation
Products: 2003 Chevrolet Cavalier
Population: 218,392

Problem Description: Fuel pump failure may result in engine stall with no restart.

**FAILURE REPORT SUMMARY**

| | ODI | Manufacturer | Total |
|---|---|---|---|
| Complaints: | 54 | 159 | 198 |
| Crashes/Fires: | 0 | 0 | 0 |
| Injury Incidents: | 0 | 0 | 0 |
| # Injuries: | 0 | 0 | 0 |
| Fatality Incidents: | 0 | 0 | 0 |
| # Fatalities: | 0 | 0 | 0 |
| Other*: | 0 | 1,506 | 1,506 |

*Description of Other: Warranty claims

Action: This Preliminary Evaluation has been upgraded to an Engineering Analysis (EA07-015).

Engineer: *Stephen McHenry* Date: *11/01/2007*
Div. Chief: *Jeffrey L. Quandt* 11/2/07 Date: *11/01/2007*
Office Dir.: *Kathleen C. DeMeter* Date: *11/01/2007*

Summary: An Engineering Analysis has been opened to further investigate the scope, frequency and potential safety-related consequences of the alleged defect. General Motors (GM) has identified an issue with accelerated motor brush wear in the fuel pump assembly of model year (MY) 2001 through 2003 Chevrolet vehicles that can cause the pump to stop operating. GM indicated that peroxide or sulfur, which are both present in varying amounts in gasoline, can react with the copper commutator of the pump motor and corrode/roughen the surface. A rough commutator surface increases the rate of brush wear. The increased electrical resistance caused by degradation of the brush-commutator interface inhibits current flow through the motor windings. According to GM, the condition will usually result in a no-start condition because of the high current required during start-up. When the alleged defect does cause a stall while driving incident, the vehicle typically cannot be restarted. GM's analysis of warranty claims showed that no start/hard start was the most common condition and the frequency of claims associated with stall while driving incidents was too low to warrant field action.

This investigation has been upgraded to an Engineering Analysis (EA07-015) to further assess the complaint and warranty claim data and the analyses provided by GM.