



April 26, 2010

Mr. Daniel C. Smith
Associate Administrator for Enforcement
National Highway Traffic Safety Administration
Recall Management Division (NVS-215)
1200 New Jersey Avenue, SE – Room W45-306
Washington, DC 20590

Dear Mr. Smith:

The following information is submitted pursuant to the requirements of 49 CFR 573.6 as it applies to a determination by General Motors to conduct a safety related recall of certain 2005-2006 model year Chevrolet Corvette vehicles.

573.6(c)(1): Chevrolet Brand of General Motors LLC

573.6(c)(2)(3)(4): This information is shown on the attached sheet.

573.6(c)(5): General Motors has decided that a defect, which may relate to motor vehicle safety, exists in certain 2005-2006 model year Chevrolet Corvette vehicles equipped with tilt and telescoping steering column (RPO N37). These vehicles may have an intermittent or open condition in a connector in the Steering Wheel Position Sensor (SWPS) circuit located in the steering column. If this intermittent or open condition occurs, the "SERVICE ACTIVE HANDLING SYSTEM" message is displayed, and a short-duration brake apply may occur if the signals for steering wheel rotation or ground are corrupted. Based upon an evaluation conducted at the Milford Proving Grounds, GM measured brake apply durations of 0.6 to 1.6 seconds. GM assessed the brake application as observable, but controllable. Vehicle heading is maintained by minor corrections in steering. Depending on whether the condition in the SWPS connector is intermittent or open, the ESC is either disabled until the connector is repaired, or until the next ignition cycle. If the system is disabled, the "SERVICE ACTIVE HANDLING SYSTEM" message remains active until the vehicle is repaired.

573.6(c)(6): In September, 2005, a Red-X study was initiated by the ESC system supplier based on 2005 Corvette SWPS warranty part returns associated with customer complaints of the "SERVICE ACTIVE HANDLING SYSTEM" message displayed in the driver information center (DIC). This condition resulted in setting a diagnostic trouble code (DTC). Analysis of the returned SWPSs indicated that more than 85% had no trouble found. At that time General Motors was aware of the warranty claims related to the "SERVICE ACTIVE HANDLING SYSTEM" message, but did not have any information to indicate that this condition could result in a brake application of one or more wheels.



The Red X study concluded that fretting corrosion on the connector was the root cause and that the telescoping steering column was a contributor to the issue. The supplier investigated potential solutions. It was determined that stabilizing the connection of the SWPS would address the condition.

In response to the Red-X study an immediate containment fix of tape and a wire strap was implemented at the assembly plant on January 20, 2006, and service bulletin 06-02-35-002 was approved and issued in January 2006. In order to clarify connector numbers the bulletin was supplemented to 06-02-35-002A in August 2006.

The supplier developed a design to add a terminal position assurance (TPA) clip for the SWPS connector in place of the tape and wire strap corrective action. This TPA was released to production in April of 2007. Service bulletin 06-02-35-002B was issued to release the TPA in service in October of 2007.

All of these actions were to respond to customer complaints of "SERVICE ACTIVE HANDLING SYSTEM" messages displayed in the DIC. GM Engineering was not aware of reports of inappropriate or unexpected brake application.

On September 17, 2008, the NHTSA opened PE08-056 involving allegations of inappropriate brake application of one or more wheels induced by an ESC system malfunction in 2005-2006 Corvettes. GM conducted a demonstration drive on October 10, 2008 in an effort to replicate the alleged condition. GM responded to PE08-056 on November 21, 2008. GM's risk assessment indicated that the subject condition did not present an unreasonable risk to motor vehicle safety for the following reasons: 1) Low rate of occurrence; 2) The rare set of conditions that would need to be present; 3) The driver's ability to maintain directional control of the vehicle if the alleged condition were occur; 4) No reports of injuries.

On January 20, 2010, the NHTSA conducted a demonstration of the ESC system that added a 1 K ohm resistor in the 5 V reference in a right turn at 60 mph and a 2.6 K ohm resistor in the ground during straight-line driving. When General Motors employees drove the vehicle with those inputs, they found that only a minor steering input was needed to maintain control of the vehicle. Subsequently, in a January 27, 2010 meeting, GM and the NHTSA reviewed reports and warranty claims that may or may not relate to this condition. As part of that review there was a discussion of the approximately 2000 claims that the NHTSA had previously indicated may relate to this condition. General Motors stated its belief that only a small fraction of those cases actually had a brake application that may have been perceptible. In March 2010, GM completed a survey of some of those customers and reviewed those results with the NHTSA on April 1, 2010. GM believes those results support the conclusion that only a small fraction of those claims involved a brake application. However, in order to resolve the open investigation, General Motors has decided to conduct a safety recall.

The issue was presented to the Field Performance Evaluation Review Committee and on April 22, 2010, the Executive Field Action Decision Committee decided to conduct a safety recall.

573.6(c)(8): Dealers will inspect and, if necessary, install a terminal position assurance clip to the connector.

Pursuant to 577.11(e), GM will provide reimbursement to owners for repairs completed on or before ten days after the owner mailing is completed, according to the plan submitted on January 22, 2009.

573.6(c)(10): GM provided the dealer bulletin and owner letter under separate cover. The dealer bulletin was sent on April 23, 2010 and GM will start mailing owner letters by April 30, 2010 with an expected completion date at the end of May 2010.

Sincerely,

A handwritten signature in black ink, appearing to read "G. P. Kent", written in a cursive style.

Gay P. Kent,
Director, Product Investigations
and Safety Regulations

N100118
Attachment

573.6(c)(2).(3).(4)

VEHICLES POTENTIALLY AFFECTED BY MAKE, MODEL, AND MODEL YEAR
PLUS INCLUSIVE DATES OF MANUFACTURE

<u>MAKE</u>	<u>MODEL SERIES</u>	<u>MODEL YEAR</u>	<u>NUMBER INVOLVED</u>	<u>INCLUSIVE MANUFACTURING DATES (FROM) (TO)</u>		<u>DESCRIPTIVE INFO. TO PROPERLY IDENT. VEH.</u>	<u>EST. NO. W/CONDITION</u>
Chevrolet	Y	2005	29,271	03/2004	09/2005	Corvette	*
Chevrolet	Y	2006	10,757	03/2005	01/2006	Corvette	"
GM Total:			40,028				

* All involved vehicles will be corrected as necessary.

573.6(c)(2)(iv): The Steering Wheel Position Sensor was supplied by Delphi.

Delphi Automotive
3900 Holland Rd.
Saginaw, MI 48601

Telephone: 313-665-7377

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