GENERAL MOTORS NORTH AMERICA
Structure & Safety Integration

April 14, 2005

Mr. Ronald Medford
Senior Associate Administrator, Vehicle Safety
National Highway Traffic Safety Administration
400 Seventh Street, S.W., Room 5321
Washington, D.C. 20590

05V-155
(3 Pages)

Dear Mr. Medford:

The following information is submitted pursuant to the requirements of 49 CFR 573.6 as it applies to a determination by General Motors of a safety defect involving certain 2000-01 model year 1500 series Chevrolet Suburban and GMC Yukon XL vehicles.

573.6(c)(1): Chevrolet and GMC Divisions of General Motors Corporation.

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 relates to motor vehicle safety, exists in certain 2000-01 1500 series Chevrolet Suburban, and GMC Yukon XL vehicles. Some of these vehicles were built with fuel module reservoir assemblies (MRAs) that contain fuel pump wires and/or connectors that may overheat under certain operating conditions. Fuel pump wires that overheat may become exposed and result in one or more conditions; 1.) If the ignition circuit wire is exposed and shorts to ground, the fuel pump fuse will blow, disabling the fuel pump and causing an engine stall or no-start condition. 2.) If sufficient heat is conducted to the pass-through connector, a hole in the connector may result, which may cause a Service Engine Soon light to be illuminated during the emission system diagnostics routine. Fuel vapor (and in some limited cases liquid fuel) may leak out of the fuel tank through the hole in the connector body. 3.) If the ignition circuit or ground wire is exposed and shorts to the fuel level sender card wires, inaccurate fuel level readings may result.

573.6(c)(6): On May 13, 2004, GM received an Information Request from NHTSA to initiate an investigation of overheated fuel pump wires on the subject vehicles. GM responded to NHTSA on June 18, 2004 that additional testing and analysis were required to understand the condition.

From June 2004 through November 2004 GM and the component supplier obtained approximately 144 field return parts from the GM Warranty Parts Center, salvage yards, and employee vehicles. Twenty-six parts exhibiting the condition were used in the subsequent root cause analysis, which involved physical inspections, testing, and analysis. Microscopic Analysis and Dry Circuit Resistance testing revealed that the condition was due to high resistance at a fuel pump wiring pass-through connector located inside the tank at the top of the MRA.

Additional testing to quantify the electrical and mechanical environment for the MRA and confirm the physics of the failure was conducted with the supplier from August 2004 through September 2004. Fretting corrosion due to vibration inside the tank was identified as the cause for high resistance within the connector. Fretting corrosion in the fuel pump connector results from microscopic movement between the terminal surfaces caused by component vibration. Material that is worn away in this process oxidizes, leading to increased resistance between mating surfaces. Increased resistance leads to additional heat generation at the connector as current passes through it. When sufficient heat is conducted through the wire, melting of the wiring insulation and pass-through connector may result.

GM received an Upgrade Resume from NHTSA on September 9, 2004, followed by an Information Request on December 17, 2004. GM responded to the Information Request on March 4, 2005

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Between October 2004 and March 2005, GM completed further testing and analysis to characterize differences between vehicle models, tank configurations, fuel pump wire routing, and design improvements to the MRA. This work led to the design confirmation of a new pass-through connector incorporating a larger terminal set for the fuel pump wiring.

A Dealer Service Bulletin was released to dealers on January 5, 2005 to inform them of an improved service procedure for inspecting fuel pump connections and requesting that when an MRA is serviced, a new chassis wiring harness be installed.

The issue was presented to the FPE Director on February 17, 2005. The issue was presented to the GMNA Senior Management Committee (SMC) and on April 7, 2005 the Field Action Decision Committee decided to conduct a safety recall.

573.6(c)(8): Dealers are to remove the fuel tank, remove the MRA from the tank, and install a new service kit. The service kit includes a new pass-through connector, wiring harness for the fuel pump and fuel sender card, and fuel sender card. The new pass-through connector incorporates larger terminals on the fuel pump circuit wiring that are not susceptible to the vibration environment. Dealers will also be required to remove the existing connector on the body harness and splice on a new connector that fits the new pass-through 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 14, 2005.

573.6(c)(9): A preliminary owner letter will be mailed in May 2005 to inform owners of this condition. GM anticipates having parts available in November 2005 and will send a draft dealer bulletin and owner letter when available.

Sincerely,

Gay P. Kent
Director
Product Investigations

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Attachments

573.6(c)(2),(3),(4)

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

MAKE	MODEL SERIES	MODEL YEAR	NUMBER INVOLVED	INCLUSIVE MANUFACTURING DATES (FROM)	(TO)	DESCRIPTIVE INFO. TO PROPERLY IDENT. VEH.	EST. NO. W/CONDITION
Chevrolet	C/K	2000	77,409	08/1999	07/2000	Suburban	*Unknown
Chevrolet	C/K	2001	145,576	03/2000	07/2001	Suburban	"
GMC	C/K	2000	28,973	08/1999	07/2000	Yukon XL	"
GMC	C/K	2001	64,550	03/2000	07/2001	Yukon XL	"
		GM Total:	316,508				

* All affected vehicles will be corrected.

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