



June 27, 2003

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OFFICE OF SAFETY  
INVESTIGATION

Mr. Kenneth N. Weinstein  
Associate Administrator for Safety Assurance  
National Highway Traffic Safety Administration  
400 Seventh Street, S.W., Room 5321  
Washington, D.C. 20590

03V-238 ① of ③

Dear Mr. Weinstein:

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 2002-2003 model year Oldsmobile Aurora, Pontiac Bonneville SSEi and Cadillac DeVille and Seville model vehicles.

573.6(c)(1): Oldsmobile, Pontiac, and Cadillac 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 2002-2003 model year Cadillac DeVille and Seville vehicles equipped with a V8 (4.8L) engine (LD8/L37), Oldsmobile Aurora vehicles equipped with a V8 (4.0L) engine (L47), and Pontiac Bonneville SSEi vehicles equipped with a supercharged V8 (3.8L) engine (L67). The fuel tank pressure sensors in these vehicles are unusually susceptible to malfunctions. If the sensor malfunctions, excessive vacuum can be applied during self-diagnostic testing. Fuel system components can be damaged and fuel can leak from the vehicle when it is refueled. Possible symptoms of this condition are illumination of the Service Engine Soon light, poor driveability, increased noise from the fuel tank area, and inaccurate fuel gauge readings. If there is an ignition source present, a fire could result.

573.6(c)(6): A newly designed fuel tank pressure sensor (FTP) was implemented into production in February 2002. The new design includes a Complementary Metal Oxide Semiconductor (CMOS) amplifier and Butterworth Low Pass Filter (BLPF) sensor element, which replaced a sensor with bipolar amplifier and Spatial Low Pass Filter (SLPF) sensor element.

GM Engineering initiated an investigation in March 2002 on receipt of the first report of a damaged fuel tank in a vehicle with this new sensor. In April 2002, four samples of nonfunctional sensors were obtained by GM's supplier for engineering analysis.

Although investigation was unable to reproduce an FTP malfunction in a vehicle environment, laboratory investigation showed that electrical overstress (EOS) outside the amplifier's specification can be induced through the FTP ground wire, which is common with the ground wire for the fuel sending unit. The EOS, which is most likely due to electrostatic discharge and/or feedback through the common ground, can damage the amplifier's integrated circuit and cause the FTP to malfunction.

In September 2002 GM Engineering received the first report of a fuel leak. Analysis of field data and returned parts continued. In October 2002, Product Investigations became involved in the investigation and the FPE Director was informed.

**Product Investigations**

Mail Code: 480-106-304 • 30500 Mound Road • Warren, MI 48090-9055  
Phone: (586) 868-9029 • Fax: (586) 947-2318  
2106-03039 573.doc



In January 2003 through May 2003, additional analyses of warranty and other field data to determine the extent and frequency of fuel leakage were performed, the relationship of engine fuel flow rates was studied, and warranty data was analyzed to try to identify trends.

It was found that there were 14 documented incidents of fuel leakage attributed to damaged CMOS amplifiers in these vehicles. None involved fires, accidents, or injuries.

Design analysis shows these vehicles have a unique electrical wiring and fuel system design. Also, these vehicles have higher-output engines with higher fuel flow rates and/or pressures than vehicles with base V6 engines. It is suspected that the tendency for fuel shear to create electrostatic discharge in the FTP increases with flow rate and/or pressure, which makes these vehicles with high-output engines most likely to exhibit the condition. Other vehicles not equipped with the high-output engines have substantially lower rates of FTP replacement.

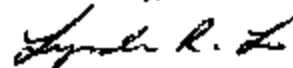
On June 20, 2003 the issue was presented to the Senior Management Committee. The GMNA Field Action Decision Committee decided on June 25, 2003 to conduct a safety recall.

573.6(c)(8): Dealers will replace the fuel tank pressure sensor. This information will be included in the service procedure of the dealer bulletin that GM will provide when available.

Pursuant to 577.11(e), GM does not believe notification about reimbursement is required for this recall. Involved vehicles are covered by the new vehicle warranty.

573.6(c)(9): General Motors will provide copies of the dealer bulletin and owner letters along with mailing information when available. GM plans to release this recall during the fourth quarter when parts become available.

Sincerely,



Lyndon R. Lie  
Director  
Product Investigations

573.8(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>
Cadillac	KD,E,F	2002	31,302	02/01/02	06/27/02	DeVille	100%
Cadillac	KH	2002	333	02/01/02	06/27/02	Funeral Coach	100%
Cadillac	KJ	2002	251	02/01/02	06/27/02	Limousine	100%
Cadillac	KS,Y	2002	9,583	02/01/02	06/27/02	Seville	100%
Cadillac	KD,E,F	2003	42,878	04/11/02	12/20/02	DeVille	100%
Cadillac	KH	2003	430	04/11/02	12/20/02	Funeral Coach	100%
Cadillac	KJ	2003	368	04/11/02	12/20/02	Limousine	100%
Cadillac	KS,Y	2003	10,071	04/11/02	12/20/02	Seville	100%
Oldsmobile	G	2002	782	02/05/02	06/21/02	Aurora V8	100%
Oldsmobile	G	2003	2,015	03/26/02	12/20/02	Aurora V8	100%
Pontiac	HZ	2002	2,043	02/04/02	06/21/02	Bonneville SSEi	100%
Pontiac	HZ	2003	2,156	03/26/02	12/20/02	Bonneville SSEi	100%
Grand Total:			102,212				