



April 20, 2012

Mr. Scott Yon  
Vehicle Integrity Division  
Office of Defects Investigation  
National Highway Traffic Safety Administration  
1200 New Jersey Ave, SE, Room W48-314  
Washington, DC 20590

N110323

NVS-212eer  
PE12-003

Dear Mr. Yon:

This letter is General Motors' (GM) response to your Preliminary Evaluation (PE), received on February 14, 2012, regarding allegations of fires and/or thermal events in driver doors in model year (MY) 2006-2007 Chevrolet Trailblazer vehicles manufactured by General Motors LLC for sale or lease in the United States.

Your requests and our corresponding replies are as follows:

1. **State, by model and model year, the number of subject vehicles GM has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by GM, state the following:**
  - a. **Vehicle identification number (VIN);**
  - b. **Make;**
  - c. **Model;**
  - d. **Model Year;**
  - e. **Date of manufacture;**
  - f. **Date warranty coverage commenced;**
  - g. **The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).**

**Provide the table in Microsoft Access 2007, or a compatible format, entitled "PRODUCTION DATA."**

General Motors is providing the number of subject vehicles produced for sale or lease in the United States by make, model and model year in Table 1-1 below:

MAKE	MODEL	2006MY	2007MY	TOTAL
Chevrolet	Trailblazer	205,567	136,219	341,786

TABLE 1-1 SUBJECT VEHICLES



The production information requested in 1a-1g is provided on the ATT\_1\_GM disk; folder labeled "Q\_01". Refer to the Microsoft Access 2007 file labeled "Q\_01\_PRODUCTION DATA".

2. **State the number of each of the following, received by GM, or of which GM is otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:**
  - a. **Consumer complaints;**
  - b. **Field reports, including dealer field reports;**
  - c. **Reports involving an injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject component, property damage claims, consumer complaints, or field reports;**
  - d. **Property damage claims;**
  - e. **Third-party arbitration proceedings where GM is or was a party to the arbitration; and**
  - f. **Lawsuits, both pending and closed, in which GM is or was a defendant or codefendant.**

For subparts "a" through "d" state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "f," provide a summary description of the alleged problem and causal and contributing factors and GM's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "c" through "f" identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Table 2-1 below summarizes records that may relate to the alleged defect in the subject vehicles. GM has organized the records by the GM file number within each attachment. Refer to access database "Q\_03\_REQUEST NUMBER TWO DATA" for categories prescribed by the NHTSA.

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES			
		CORRESPONDING TO NHTSA REPORTS	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH INJURIES	NUMBER WITH FATALITIES
Owner Reports	70	0	0	0	0
Field Reports	77	0	0	0	0
Not-In-Suit Claims	29	0	0	0	0
Subrogation Claims	8	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	0	0
Product Liability Lawsuits	1	0	0	0	0
Total Reports (Including Duplicates)	185	0	0	0	0
Total Vehicles with Reports (Unique VIN)	167	0	0	0	0

TABLE 2-1: REPORT CLASSIFICATION –  
 REPORTS THAT MAY RELATE TO THE ALLEGED DEFECT IN THE SUBJECT VEHICLES

The sources of the requested information and the last date the searches were conducted are in Table 2-2 below.

SOURCE SYSTEM	LAST DATE GATHERED
Customer Assistance Center	2/20/12
Technical Assistance Center	2/24/12
Field Information Network Database (FIND)	2/28/12
Field Product Report Database (FPRD)	2/22/12
Company Vehicle Evaluation Program (CVEP)	2/21/12
Captured Test Fleet (CTF)	2/21/12
Early Quality Feedback (EQF)	2/21/12
Legal/Employee Self Insured Services (ESIS)/Product Liability Claims/Lawsuits	2/14/12

TABLE 2-2: DATA SOURCES

3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:
  - a. GM's file number or other identifier used;
  - b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
  - c. Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
  - d. Vehicle's VIN;
  - e. Vehicle's make, model and model year;
  - f. Vehicle's mileage at time of incident;
  - g. Incident date;
  - h. Report or claim date;
  - i. Whether a crash is alleged;
  - j. Whether a fire is alleged;
  - k. Whether property damage is alleged;

- l. Whether the vehicle was in motion at the time of the incident;**
- m. Whether the ignition switch was in the off state at the time of the incident;**
- n. Whether the vehicle was occupied at the time of the incident;**
- o. Number of alleged injuries, if any; and**
- p. Number of alleged fatalities, if any.**

**Provide this information in Microsoft Access 2007, or a compatible format, entitled "REQUEST NUMBER TWO DATA."**

The requested information is provided on the ATT\_1\_GM disk; folder labeled "Q\_03". Refer to the Microsoft Access 2007 file labeled "Q\_03\_REQUEST NUMBER TWO DATA".

- 4. Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method GM used for organizing the documents.**

Copies of the records summarized in Table 2-1 are embedded in the file provided in ATT\_1\_GM disk; folder labeled "Q\_03". Refer to the Microsoft Access file labeled "Q\_03\_REQUEST NUMBER TWO DATA". GM has organized the records by the GM file number within each attachment.

- 5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by GM to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.**

**Separately, for each such claim, state the following information:**

- a. GM's claim number;**
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;**
- c. VIN;**
- d. Repair or replacement date;**
- e. Vehicle mileage at time of repair;**
- f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;**
- g. Labor operation number;**
- h. Problem code;**
- i. Replacement part number(s) and description(s);**
- j. Whether the claim occurred subsequent to a recall repair;**
- k. Concern stated by customer;**

**I. Comment, if any, by dealer/technician relating to claim and/or repair or replacement.**

**Provide this information in Microsoft Access 2007, or a compatible format, entitled "WARRANTY DATA."**

For the subject vehicles, the regular warranty and goodwill warranty claims that may relate to the alleged defect are summarized by MY in Table 5-1. MIC extended service contract claims are summarized by MY in Table 5-2. The UWC extended service contract claims are summarized by MY in Table 5-3. A summary of all warranty claims, including the issues and the information requested in 5(a-l), is provided on the ATT\_1\_GM disk; folder labeled "Q\_05": refer to the Microsoft Access 2007 file labeled "Q\_05\_WARRANTY DATA". A list of the labor codes used to collect the warranty data is provided in response to Request No. 6.

MAKE	MODEL	2006MY	2007MY	TOTAL
Chevrolet	Trailblazer	237	327	564

TABLE 5-1 REGULAR WARRANTY CLAIMS THAT MAY RELATE TO THE ALLEGED DEFECT IN THE SUBJECT VEHICLES

MAKE	MODEL	2006MY	2007MY	TOTAL
Chevrolet	Trailblazer	58	73	131

TABLE 5-2 MIC EXTENDED SERVICE CONTRACT CLAIMS THAT MAY RELATE TO THE ALLEGED DEFECT IN THE SUBJECT VEHICLES

MAKE	MODEL	2006MY	2007MY	TOTAL
Chevrolet	Trailblazer	2	1	3

TABLE 5-3 UWC EXTENDED SERVICE CONTRACT CLAIMS THAT MAY RELATE TO THE ALLEGED DEFECT IN THE SUBJECT VEHICLES

SOURCE SYSTEM	LAST DATE GATHERED
GART - regular warranty	2/16/12
MIC - extended service contract claims	1/31/12
UWC - extended service contract claims	2/16/12

TABLE 5-4: DATES PULLED

GM searched the GM Global Analysis and Reporting Tool (GART-regular warranty), the Motors Insurance Corporation (MIC-extended service contract claims) and the Universal Warranty Corporation (UWC-extended service contract claims) databases to collect the warranty data for this response.

GM's warranty database does not contain the following information: vehicle owner's name, telephone number or customer concern statement. GM is providing a field labeled "Verbatim Text" in response to Request No. 5l (dealer/technician comment). The verbatim text is an optional field in the GM warranty system for the dealer to enter any additional comments that may be applicable to the warranty claim. The verbatim text field is not required to be completed for every warranty claim.

The warranty data provided has limited analytical value in analyzing the field performance of a motor vehicle component. The warranty records do not contain sufficient information to establish the condition of the part at the time of the warranty correction; and service personnel may not consistently use the appropriate labor and trouble codes. Warranty numbers represent claims by our dealers for reimbursement for parts and labor costs incurred in performing warranty service for our customers.

A summary of warranty claims that may relate to the subject condition is provided on the ATT\_1\_GM disk; folder labeled "Q\_05": refer to the Microsoft Access 2007 file labeled "Q\_05\_WARRANTY DATA".

- 6. Describe in detail the search criteria used by GM to identify the claims identified in response to Request No. 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used. Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to the alleged defect in the subject vehicles. State, by make and model year, the terms of the new vehicle warranty coverage offered by GM on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty coverage option(s) that GM offered for the subject vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.**

The GM Global Analysis and Reporting Tool (GART-regular warranty) regular warranty database and the Motors Insurance Corp (MIC) extended service contract claims database were searched using the labor codes, listed in Table 6-1, that may be related to the alleged defect of driver door fires. Verbatims, Labor Codes, Customer Complaint Codes and Cause/Trouble Codes (Tables 6-1 through 6-3) were reviewed for each complaint to determine if it related to the alleged defect. All responsive claims are contained in ATT\_1\_GM disk; folder labeled "Q\_5".

Universal Warranty Corporation (UWC) does not use labor codes or trouble codes.

The subject vehicles are covered by a bumper-to-bumper new vehicle limited warranty for three years or 36,000 miles, whichever occurs first. Many different extended warranty options are available through GM dealerships. They are offered at different prices and for varying lengths of time, based on customer's preference, up to 7 years from the date of purchase or up to a total of 100,000 vehicle miles.

Some of the VINs have multiple entries for various labor codes. The warranty claims reflect the number of labor operations used by dealers, which is higher than the number of actual visits to dealers for repairs.

LABOR CODE	DESCRIPTION:
C0183	Front Side Door Window Regulator Replacement – Left Side
N2117	Switch – Switch Module, Front Door – Left – Replace
N2165	Switch – Quarter Window – Left – Replace
N3315	Front Side Door Window Regulator Motor Replacement – Left Side
N3328	Motor – Quarter Window – Left – Replace
N6634	Window System Wiring and/or Connector Repair or Replacement

TABLE 6-1 LABOR CODES USED IN WARRANTY AND MIC SEARCH

CUSTOMER COMPLAINT CODE	DESCRIPTION:
OI	FUMES
OP	ODOR
PK	OVERHEATING
V3	SMOKE/STEAM
VA	BLISTERED

TABLE 6-2 CUSTOMER COMPLAINT CODES USED IN WARRANTY AND MIC SEARCH

CAUSE/TROUBLE CODE CODE	DESCRIPTION:
1E	BURNED
7G	WIRE-BURNED-EXTERNAL HEAT
7H	WIRE-BURNED-INTERNAL HEAT

TABLE 6-3 CAUSE/TROUBLE CODES USED IN WARRANTY AND MIC SEARCH

The number of extended service contracts on the subject vehicles that have been sold by MIC as of January 31, 2012, and UWC as of February 16, 2012, regardless of status (in-force, expired, cancelled) is contained in Tables 6-4 and 6-5.

MAKE	MODEL	2006MY	2007MY	TOTAL
Chevrolet	Trailblazer	29,643	22,645	52,288

TABLE 6-4 SUBJECT VEHICLES - MIC EXTENDED SERVICE COVERAGE CONTRACTS SOLD (REGARDLESS OF STATUS; IN-FORCE, EXPIRED, CANCELLED)

MAKE	MODEL	2006MY	2007MY	TOTAL
Chevrolet	Trailblazer	2,981	1,463	4,444

TABLE 6-5 SUBJECT VEHICLES - UWC EXTENDED SERVICE COVERAGE CONTRACTS SOLD (REGARDLESS OF STATUS; IN-FORCE, EXPIRED, CANCELLED)

7. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that GM has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that GM is planning to issue within the next 120 days.

As of February 17, 2012, there were no documents that GM has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities that relate to, or may relate to, the alleged defect in the subject vehicles. **PIE0212: Engineering Information – Driver Door Power Window, Door Lock, Heated Seat Switches Inoperative** was released to Service on March 5, 2012. This bulletin was issued to gather parts from the field for analysis. A copy of this document may be found on ATT\_1\_GM\_disk; folder labeled "Q\_08\_G".

8. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, GM. For each such action, provide the following information:
- Action title or identifier;
  - The actual or planned start date;
  - The actual or expected end date;
  - Brief summary of the subject and objective of the action;
  - Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
  - A brief summary of the findings and/or conclusions resulting from the action.

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

The information listed in Table 8-1 below is a summary of actions performed by GM regarding the subject condition on the MY 2006-2007 subject vehicles as of March 5, 2012. Documents and additional supporting information are included in the Attachments as noted in the table.

<p><b>Action 8-A:</b> Redesigned driver power window switch for 2006 <b>Start Date:</b> 2005 <b>End Date:</b> 2005 <b>Engineering Group:</b> GM <b>Attachments:</b> ATT_1_GM_disk; folder labeled "Q_08_A" ATT_2_GM_Conf disk; folder labeled "Q_08_A_Conf" <b>Description:</b> Updated Component Technical Specifications <b>Summary of Action:</b> Meets all GM validation requirements</p>
<p><b>Action 8-B:</b> Engineering analysis of shorted Driver Power Window System (DPWS) from warranty returns <b>Start Date:</b> October 2006 <b>End Date:</b> 11/15/2006 <b>Engineering Group:</b> GM and Solectron Invtionics (Supplier) <b>Attachments:</b> ATT_2_GM_Conf disk; folder labeled "Q_08_B_Conf" <b>Description:</b> Engineering assessment of warranty return parts for root cause and continuous improvement changes related to driver power window switch of short circuits. <b>Summary of Action:</b> No thermal incidents found beyond driver power window switch PCB (Printed Circuit Board). Three continuous improvement changes described.</p>



<p><b>Action 8-C: Engineering investigation of claims related to shorted driver power window switch</b>  <b>Start Date:</b> 11/8/2007  <b>End Date:</b> 2/6/2008  <b>Engineering Group:</b> GM  <b>Attachments:</b> ATT_2_GM_Conf disk; folder labeled "Q_08_C_Conf"  <b>Description:</b> Engineering analysis of data on driver power window switch short circuits.  <b>Summary of Action:</b> Summary report indicating an overall low rate of incidents and no confirmed fires. Investigation was closed without action.</p>
<p><b>Action 8-D: TREAD Data Analysis (CAC, TAC, Field Reports, Warranty and VOQ)</b>  <b>Start Date:</b> 3/28/11  <b>End Date:</b> 5/23/11  <b>Engineering Group:</b> GM (TREAD Data Engineer)  <b>Attachments:</b> ATT_1_GM_disk; folder labeled "Q_08_D"            ATT_2_GM_Conf disk; folder labeled "Q_08_D_Conf"  <b>Description:</b> Analyze CAC, TAC, Field Reports and Owner Reports along with warranty claims and VOQs that may relate to the alleged condition to understand the incident rate and effect of the condition.  <b>Summary of Action:</b> Summary reviewed with GM.</p>
<p><b>Action 8-E: Conduct Internal Investigation</b>  <b>Start Date:</b> 5/26/11  <b>End Date:</b> Ongoing  <b>Engineering Group:</b> GM  <b>Attachments:</b> ATT_1_GM_disk; folder labeled "Q_08_E"            ATT_2_GM_Conf disk; folder labeled "Q_08_E_Conf"  <b>Description:</b> Based upon action 8-D, an Internal Investigation was opened to determine if the issue needed to be brought through the Field Performance Evaluation (FPE) process. Updated searches conducted for CAC, TAC, Field Reports and Owner Reports along with warranty claims and VOQs that may relate to the alleged condition to understand incident rate and effect of condition and whether vehicle was occupied at time.  <b>Summary of Action:</b> Summary of reports completed that could relate to the alleged condition. Presentations made to Internal Investigations and FPE directors.</p>
<p><b>Action 8-F: Analysis of driver power window switch assemblies from employee vehicles</b>  <b>Start Date:</b> Dec 2011  <b>End Date:</b> 2/10/2012  <b>Engineering Group:</b> GM  <b>Attachments:</b> ATT_1_GM_disk; folder labeled "Q_08_F"            ATT_2_GM_Conf disk; folder labeled "Q_08_F_Conf"  <b>Description:</b> Removed original equipment driver power window switch from six employee vehicles and exposed them to fluid with dye to assess potential path of fluid on printed circuit board.  <b>Summary of Action:</b> For the testing conducted only one driver power window switch had fluid contact the printed circuit board. It was found that the rubber switch pad membrane for this module had a tear through which fluid could pass.</p>
<p><b>Action 8-G: Warranty return analysis</b>  <b>Start Date:</b> 3/2/12  <b>End Date:</b> Ongoing  <b>Engineering Group:</b> GM  <b>Attachments:</b> ATT_2_GM_Conf disk; folder labeled "Q_08_G_Conf"  <b>Description:</b> Request for 25 parts with thermal damage from dealers to determine fluid path to PCB and if switch pad membrane tears and or quality is a factor.  <b>Summary of Action:</b> TBD (incomplete)</p>

TABLE 8-1 SUMMARY OF ACTIONS THAT HAVE BEEN CONDUCTED

- 9. Describe all modifications or changes made by, or on behalf of, GM in the design, material composition, manufacture, quality control, supply, warnings or instructions for the use of the subject component(s) that may impinge on or affect the subject components, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles.**

**For each such modification or change, provide the following information:**

- a. The date or approximate date on which the modification or change was incorporated into vehicle production;**
- b. A detailed description of the modification or change;**
- c. The reason(s) for the modification or change;**
- d. The part numbers (service and engineering) of the original component;**
- e. The part number (service and engineering) of the modified component;**
- f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;**
- g. When the modified component was made available as a service component; and**
- h. Whether the modified component can be interchanged with earlier production components;**
- i. The supplier of each modified component;**
- j. The models and model years of vehicles affected by the modification.**

**Also, provide the above information for any modification or change that GM is aware of which may be incorporated into vehicle production within the next 120 days.**

GM is providing a summary table of the changes and associated Engineering Work Orders (EWOs) that occurred to the subject vehicle's driver door power window switch in the ATT\_2\_GM\_Conf disk; folder labeled "Q\_09."

The Chevrolet Trailblazer is no longer being manufactured so there are no production changes planned for the next 120 days.

- 10. Produce or provide one of each of the following:**

- a. One unused sample of each version of the driver's master power window switch and connector harness supplied with the subject vehicles or supplied to GM dealers as replacement switches/harnesses for the subject vehicles;**
  - b. Engineering drawings, including material specifications and wiring diagrams, of all subject components used on the subject vehicles.**
- a. Enclosure 10 contains a new sample of the driver's door power window switch (part number 25867000) and the driver's door wiring harness (part number 15913485). Many of the design versions installed in the subject vehicles are no longer available.

- b. Drawings of the Left Front Door Wiring Assembly Charts will be provided as soon as they are available for submission from our supplier Delphi.

**11. State the number of each of the following that GM has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used, and month/year of sale (including the cutoff date for sales, if applicable):**

- a. Subject components; and
- b. Any kits that have been released, or developed, by GM for use in service repairs or replacements to the subject components.

**For each subject component design, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number). Also identify by make, model and model year, any other vehicles of which GM is aware that contain the identical subject components, whether installed in production or in service, and state the applicable dates of production or service usage.**

Electronic summary tables of the requested service part information for the subject components are provided on the ATT\_1\_GM disk; folder labeled "Q\_11"; refer to the Adobe file labeled "Q\_11\_A".

These sales numbers represent sales to dealers in the United States & Canada. This data has limited analytical value in analyzing the field performance of a motor vehicle component because the records do not contain sufficient information to establish the reason for the part sale. It is not possible from this data to determine the number of these parts that have been installed in the subject vehicles or the number remaining in dealer or replacement part supplier inventory.

These tables contain service part numbers, part description, part usage information including the GM vehicles that contain the identical component, part sales figures by month and calendar year, and the supplier's name and address, contact name and phone number.

No kits have been released or developed by GM for use in service repairs or replacements to the subject components.

**12. Furnish GM's assessment of the alleged defect in the subject vehicles, including:**

- a. The causal or contributory factor(s);
- b. The failure mechanism(s);
- c. The failure mode(s);
- d. The risk to motor vehicle safety that it poses;

- e. **What warnings, if any, the operator and other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and**
- f. **The reports included with this inquiry.**

The driver power window switch described in this document is an assembly consisting of: the power window switches, the power door lock switch, the heated seat switches (optional content), and supporting electronic circuitry. The module also processes the mirror switches and memory seat switches if applicable.

**a. The causal or contributory factor(s);**

Fluid with contaminants contacts the driver's power window system (DPWS) printed circuit board (PCB) by potentially wicking through the upper/lower housing interface. The proximity of the driver power window switch power and ground traces on top of the PCB are additional contributing factors.

**b. The failure mechanism(s);**

If excessive fluid enters the driver power window switch, it has the potential to contact the PCB. The area where short circuits have been observed is between the edge of the PCB and supporting base wall. The presence of fluid with contamination may trigger an electrical/chemical reaction between B+ and ground, which may cause leakage current and over time will result in a faulty circuit condition.

A review of twelve 2006 MY Trailblazer driver power window switch warranty returns conducted in October 2006 determined the modules were malfunctioning due to corroded B+ and ground traces on the PCB. Of the 12 units, 6 showed evidence of excessive current draw resulting in open circuit traces. At the time of that review there was no indication that a thermal event would extend beyond the PCB.

**c. The failure mode(s);**

The power windows, door locks, window lockout and optional heated seat switches may begin to function erratically and then become inoperative. In most cases, the customer will not know a short circuit has occurred. In rare circumstances, the short circuit may result in an overheating of the PCB and surrounding plastic. In these cases, an odor may be observed. If the short does not open the fuse, the driver power window switch plastic could continue to heat and smoke may be produced. In exceptionally rare circumstances, heating could continue until the plastic ignites.

**d. The risk to motor vehicle safety that it poses;**

While GM continues to investigate the issue, the following conclusions have been made so far:

1. The predominate failure mode GM has seen in the warranty claims for the driver power window switch is that the component becomes inoperative. When GM's analysis of warranty claims was further limited to claims that included some

description that fell within the 49 CFR 579.4 definition of "fire", the predominate failure modes are odor, smoke and melting.

2. Using the number of TREAD records and VOQs where the customer stated a "fire" occurred, the risk of a fire in the subject vehicles is 1.6 incidents per 100,000 vehicles per year of exposure. Using the broader NHTSA definition of the word "fire" found in 49 CFR 579.4, which includes, e.g., smoke, melt, etc., the rate is 8.8 incidents per 100,000 vehicles per year of exposure. GM is not able to confirm that a fire or flame was present in all cases. In one case the customer stated there was a fire but that vehicle had a warranty claim where only the driver power window switch was replaced. GM believes a fire did not occur in that case.
3. There are no confirmed reports of a thermal incident related to the driver power window switch that extended beyond the vehicle interior.

**e. What warnings, if any, the operator and other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and**

The customer may first observe issues with switch functions which could be an indication of a short circuit. Many customers reported that they noticed an odor, even where there was no external evidence of thermal damage. For the cases of a thermal incident that heats the plastic surrounding the module, the customer may notice an odor or smoke that would alert them to a malfunction.

**f. The reports included with this inquiry.**

The 12 reports included in this inquiry appear to be consistent with a short circuit on the driver power window switch PCB. Review of the VOQs indicates that at least 8 (67%) of the vehicles were occupied at the time of the incident. In the other 4 incidents, the vehicles were not reported to be occupied. Five of the 12 reports use the word "fire" in the description of the incident. However, in 3 of the 5 reports it is unclear if the owner actually witnessed a fire or just assumed there was a fire because of the odor and/or smoke observed.

\* \* \*

GM claims that certain information, in documents that are part of lawsuit and claims files maintained by the GM Legal Staff, is attorney work product and/or privileged. That information includes notes, memos, reports, photographs, and evaluations by attorneys (and by consultants, claims analysts, investigators, and engineers working at the request of attorneys). GM is producing responsive documents from claims files that are neither attorney work product nor privileged, and withholding those that are attorney work product and/or privileged.

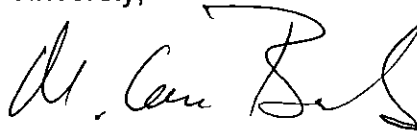
This response is based on searches of GM locations where documents determined to be responsive to your request would ordinarily be found. As a result, the scope of this search did not include, nor could it reasonably include, "all of its divisions, subsidiaries (whether or not incorporated) and affiliated enterprises and all of their headquarters, regional, zone and other offices and their employees, and all agents, contractors, consultants, attorneys and law firms and other persons engaged directly or indirectly (e.g., employee of a consultant) by or under the control of GM (including all business units and persons previously referred to), who are or, in or after 2000, were involved in any way with any of the following related to the alleged defect in the subject vehicles:

- a. Design, engineering, analysis, modification or production (e.g. quality control);
- b. Testing, assessment or evaluation;
- c. Consideration, or recognition of potential or actual defects, reporting, record-keeping and information management, (e.g., complaints, field reports, warranty information, part sales), analysis, claims, or lawsuits; or
- d. Communication to, from or intended for zone representatives, fleets, dealers, or other field locations, including but not limited to people who have the capacity to obtain information from dealers."

This response was compiled and prepared by this office upon review of the documents produced by various GM locations, and does not include documents generated or received at those GM locations subsequent to their searches.

Please contact me if you require further information about this response or the nature or scope of our searches.

Sincerely,



M. Carmen Benavides, Director  
Product Investigations and Safety Regulations

Attachments