

29 Apr 09

Thomas Z. Cooper, Chief  
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Office of Defects Investigation  
National Highway Traffic Safety Administration  
1200 New Jersey Ave., S. E., Room W46-409  
Washington, D.C. 20590

N090066

NVS-212am  
PE09-016

Dear Mr. Cooper:

This letter is General Motors' (GM) response to your information request (IR), received on 16 Mar 09, regarding allegations of door latch failure in MY 2008 Saturn VUE vehicles manufactured by General Motors Corporation (GM). The alleged defect as defined by the NHTSA is that the exterior door handle sticks in the unlatched position, including any failure or malfunction of the exterior door handle, the door latch, or other components that could prevent a door from properly latching closed on the subject vehicles.

Your questions 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; and
  - 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 2000, 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 below:

MAKE/ MODEL	2008 MY
2008 Saturn VUE	108,540

TABLE 1 VEHICLE PRODUCTION

The production information requested in 1a-1g is provided on the ATT\_1\_GM disk; folder labeled "Q\_01". Refer to the Microsoft Access 2000 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;

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- c. Reports involving a crash, 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 vehicle, property damage claims, consumer complaints, or field reports;
- d. Property damage claims; and
- 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 each of subparts "a" through "f," include the following scenarios: unexpected door opening, door handle or latch failure, door latch or handle inoperability or malfunction, door handle sticking or squeaking, or excessive effort required to operate the door handle.

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 allegations of the door not latching and/or coming open. 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 CRASH	NUMBER WITH INJURIES/ FATALITIES
Owner Reports	28	2	0	0	0
Field Reports	36	1	0	0	0
Not-In-Suit Claims	0	0	0	0	0
Subrogation Claims	0	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	0	0
Product Liability Lawsuits	0	0	0	0	0
Total Reports (Including Duplicates)	64	3	0	0	0
Total Vehicles with Reports (Unique VIN)	56	2	0	0	0

TABLE 2-1: REPORT CLASSIFICATION - ALLEGATIONS OF DOOR NOT LATCHING AND/OR COMING OPEN

Table 2-2 summarizes other claims of door handle malfunction.

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES			
		CORRESPONDING TO NHTSA REPORTS	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/FATALITIES
Owner Reports	14	0	0	0	0
Field Reports	22	0	0	0	0
Not-In-Suit Claims	0	0	0	0	0
Subrogation Claims	0	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	0	0
Product Liability Lawsuits	0	0	0	0	0
Total Reports (Including Duplicates)	36	0	0	0	0
Total Vehicles with Reports (Unique VIN)	34	0	0	0	0

TABLE 2-2: REPORT CLASSIFICATION - ALLEGATIONS OF OTHER DOOR HANDLE MALFUNCTIONS

The sources of the requested information and the last date the searches were conducted are tabulated in Table 2-3 below.

SOURCE SYSTEM	LAST DATE GATHERED
Customer Assistance Center	23 Mar 09
Technical Assistance Center	20 Mar 09
Field Information Network Database (FIND)	20 Mar 09
Field Product Report Database (FPRD)	20 Mar 09
Company Vehicle Evaluation Program (CVEP)	17 Mar 09
Captured Test Fleet (CTF)	17 Mar 09
Early Quality Feedback (EQF)	17 Mar 09
Legal / Employee Self Insured Services (ESIS)/Product Liability Claims/ Lawsuits	19 Mar 09

TABLE 2-3: 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 property damage is alleged;

- k. Number of alleged injuries, if any; and
- l. Number of alleged fatalities, if any.

**Provide this information in Microsoft Access 2000, 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 2000 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 and 2-2 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.

To date, GM's investigation of the alleged defect has not included an assessment of the cause(s) of each incident responsive to Request No. 2. Some incident reports may not contain sufficient reliable information to accurately assess cause.

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 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. Concern stated by customer; and
- k. Comment, if any, by dealer/technician relating to claim and/or repair.

**Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA."**

The regular warranty, goodwill warranty, and MIC service contract claims with allegations of the exterior side door not latching and/or coming open while driving on the subject vehicles are summarized in Table 5-1. The regular warranty, goodwill warranty, and MIC service contract claims with other allegations of door malfunction on the subject vehicles are summarized in Table 5-2. There were no MIC or UWC service contract claims. A summary of the warranty claims, including the information requested in 5(a-k), is provided on the ATT\_1\_GM disk; folder labeled "Q\_05". Refer to the Microsoft Access 2000 file labeled "Q\_05\_WARRANTY DATA". A list of the labor codes, customer complaint codes, and trouble codes used to collect the warranty data is provided in response to item No. 6.

MAKE/ MODEL	Type	2008 MY
2008 Saturn VUE	Regular	156

TABLE 5-1: REGULAR WARRANTY AND MIC SERVICE CONTRACT CLAIMS WITH ALLEGATION OF DOOR NOT LATCHING AND/OR COMING OPEN

MAKE/ MODEL	Type	2008 MY
2008 Saturn VUE	Regular	1,721

TABLE 5-2: REGULAR WARRANTY AND MIC SERVICE CONTRACT CLAIMS WITH OTHER ALLEGATIONS OF DOOR HANDLE MALFUNCTION

SOURCE SYSTEM	LAST DATE GATHERED
GART - regular warranty	24 Mar 09
MIC - service contract claims	18 Mar 09
UWC - service contract claims	19 Mar 09

TABLE 5-3: DATES PULLED

GM searched the GM Global Analysis and Reporting Tool (GART-regular warranty), the Motors Insurance Corporation (MIC- service contract claims), and the Universal Warranty Corporation (UWC- 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 5K (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 2000 file labeled "Q\_05\_WARRANTY DATA".

- Describe in detail the search criteria used by GM to identify the claims identified in response to Request No. 6, 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.

Due to the high percentage of comments in the verbatim field (97.60 %) for the warranty claims, GM used these verbatims to sort the warranty data. Using these warranty claim verbatims, GM was able to identify claims of the exterior door handle sticking, the door not latching, or the door opening while the vehicle is moving, broken handle, and other.

The GM Global Analysis and Reporting Tool (GART-regular warranty) regular warranty database and the Motors Insurance Corp (MIC) service contract claims database were searched using the labor codes, listed in Table 6-1, that may be related to the alleged defect. All of the verbatim comments for these related claims were read. The GM Global Analysis and Reporting Tool (GART-regular warranty) regular warranty database and the Motors Insurance Corp (MIC) service contract claims database were searched using other labor codes, listed in Table 6-2, that may be related to the alleged defect. The verbatim comments for these claims were searched using the key words "flew," "came," "open," "driving," "drov," "motion," "turn," "shut," "fly," "travel," "handle," "hande," "latch," and "lock." Verbatims associated with claims containing these key words were then read.

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

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:
B4120	FRONT SIDE DOOR OUTSIDE HANDLE REPLACEMENT - RIGHT SIDE
B4121	FRONT SIDE DOOR OUTSIDE HANDLE REPLACEMENT - LEFT SIDE
B4125	HOUSING AND/OR PIVOT, FRONT DOOR OUTSIDE HANDLE - RIGHT -
B4126	HOUSING AND/OR PIVOT, FRONT DOOR OUTSIDE HANDLE - LEFT - R
B4181	CYLINDER, FRONT DOOR LOCK - LEFT - R&R OR REPLACE
B4260	FRONT SIDE DOOR LOCK REPLACEMENT - RIGHT SIDE
B4261	FRONT SIDE DOOR LOCK REPLACEMENT - LEFT SIDE
B4310	LATCH ASSEMBLY, FRONT DOOR - RIGHT - REPLACE
B4311	LATCH ASSEMBLY, FRONT DOOR - LEFT - REPLACE
B4379	STRIKER, FRONT/REAR/SWING-OUT OR SLIDING DOORS - ADJUST OR
B4520	REAR SIDE DOOR OUTSIDE HANDLE REPLACEMENT - RIGHT SIDE
B4521	REAR SIDE DOOR OUTSIDE HANDLE REPLACEMENT - LEFT SIDE
B4525	PIVOT AND/OR HOUSING, REAR DOOR OUTSIDE HANDLE - RIGHT - R
B4526	PIVOT AND/OR HOUSING, REAR DOOR OUTSIDE HANDLE - LEFT - RE
B4640	STRIKER, REAR DOOR LOCK - RIGHT - REPLACE
B4641	STRIKER, REAR DOOR LOCK - LEFT - REPLACE
B4660	REAR SIDE DOOR LOCK REPLACEMENT - RIGHT SIDE
B4661	REAR SIDE DOOR LOCK REPLACEMENT - LEFT SIDE
S0850	FRONT SIDE DOOR REPLACEMENT
S0851	DOOR ASSEMBLY, FRONT - LEFT - REPLACE
S0950	REAR SIDE DOOR REPLACEMENT
S0951	DOOR ASSEMBLY, REAR - LEFT - REPLACE

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

LABOR CODE	DESCRIPTION:
B4000	FRONT SIDE DOOR ADJUSTMENT - RIGHT SIDE
B4001	FRONT SIDE DOOR ADJUSTMENT - LEFT SIDE
B4010	FRONT SIDE DOOR UPPER HINGE AND LOWER HINGE REPLACEMENT
B4070	FRONT SIDE DOOR CHECK REPLACEMENT
B4071	FRONT SIDE DOOR CHECK LINK REPLACEMENT - LEFT SIDE
B4072	FRONT SIDE DOOR CHECK LINK REPLACEMENT
B4400	REAR SIDE DOOR UP/DOWN ADJUSTMENT - RIGHT SIDE
B4401	REAR SIDE DOOR UP/DOWN ADJUSTMENT - LEFT SIDE
B4410	REAR SIDE DOOR UPPER HINGE AND LOWER HINGE REPLACEMENT
B4471	REAR SIDE DOOR CHECK LINK REPLACEMENT - LEFT SIDE
B4472	REAR SIDE DOOR CHECK LINK REPLACEMENT
B7810	APPLIQUE, FRONT DOOR - RIGHT - R&R OR REPLACE
B7811	APPLIQUE, FRONT DOOR - LEFT - R&R OR REPLACE
B7990	APPLIQUE, REAR DOOR - RIGHT - R&R OR REPLACE
B7991	APPLIQUE, REAR DOOR - LEFT - R&R OR REPLACE
C0100	GLASS, FRONT DOOR - RIGHT - ALIGN
C0101	GLASS, FRONT DOOR - LEFT - ALIGN
C0114	FRONT SIDE DOOR WINDOW REPLACEMENT - RIGHT SIDE
C0115	FRONT SIDE DOOR WINDOW REPLACEMENT - LEFT SIDE
C0130	FRONT SIDE DOOR WINDOW OUTER SEALING STRIP REPLACEMENT - R
C0131	FRONT SIDE DOOR WINDOW OUTER SEALING STRIP REPLACEMENT - L
C0140	CHANNEL AND/OR RETAINER, FRONT DOOR WINDOW RUN (FRONT) - R
C0141	CHANNEL AND/OR RETAINER, FRONT DOOR WINDOW RUN (FRONT) - L
C0182	FRONT SIDE DOOR WINDOW REGULATOR REPLACEMENT - RIGHT SIDE
C0183	FRONT SIDE DOOR WINDOW REGULATOR REPLACEMENT - LEFT SIDE
C0222	CHANNEL, FRONT DOOR WINDOW GLASS (LOWER FRONT) - RIGHT
C0223	CHANNEL, FRONT DOOR WINDOW GLASS (LOWER FRONT) - LEFT
C0300	REAR SIDE DOOR WINDOW ADJUSTMENT
C0301	GLASS, REAR DOOR - LEFT - ALIGN
C0314	REAR SIDE DOOR WINDOW REPLACEMENT - RIGHT SIDE
C0315	REAR SIDE DOOR WINDOW REPLACEMENT - LEFT SIDE
C0330	STRIP, REAR DOOR WINDOW OUTER SEALING - RIGHT - R&R
C0331	STRIP, REAR DOOR WINDOW OUTER SEALING - LEFT - R&R
C0354	CHANNEL AND/OR RETAINER, REAR DOOR WINDOW RUN (FRONT) - RIGHT
C0355	CHANNEL AND/OR RETAINER, REAR DOOR WINDOW RUN (FRONT) - LEFT
C0382	REAR SIDE DOOR WINDOW REGULATOR REPLACEMENT - RIGHT SIDE
C0383	REAR SIDE DOOR WINDOW REGULATOR REPLACEMENT - LEFT SIDE
C0450	GLASS, SIDE STATIONARY (RIGHT OR LEFT) - RESEAL
C1060	FRONT SIDE DOOR WEATHERSTRIP REPLACEMENT - RIGHT SIDE
C1061	FRONT SIDE DOOR WEATHERSTRIP REPLACEMENT - LEFT SIDE
C1080	WEATHERSTRIP - FRONT DOOR OPENING - RIGHT - ALIGN OR REPLACE
C1081	WEATHERSTRIP - FRONT DOOR OPENING - LEFT - ALIGN OR REPLACE
C1095	FRONT SIDE DOOR AUXILIARY WEATHERSTRIP REPLACEMENT - RIGHT
C1096	FRONT SIDE DOOR AUXILIARY WEATHERSTRIP REPLACEMENT - LEFT
C1130	WEATHERSTRIP - REAR DOOR OPENING - RIGHT - ALIGN OR REPLACE
C1131	WEATHERSTRIP - REAR DOOR OPENING - LEFT - ALIGN OR REPLACE
N3314	FRONT SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT - RIGHT
N3315	FRONT SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT - LEFT
N3324	REAR SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT - RIGHT
N3325	REAR SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT - LEFT

TABLE 6-2 LABOR CODES WITH ASSOCIATED CLAIMS

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.

There are no Technical Service Bulletins (TSBs) that may relate to the subject condition.

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 that have been conducted, are being conducted, are planned, or are being planned by or for GM regarding the subject condition on the subject vehicles as of 15 Apr 09. Documents and additional supporting information are included in the Attachments as noted in the table.

<p><b>Action 8-1:</b> Design, Development, and Validation of the door latch system <b>Start Date:</b> 10 Aug 98 <b>End Date:</b> 28 Nov 08 <b>Engineering Group:</b> GM Engineering <b>Attachments:</b> ATT_2_GM_Conf disk; folder labeled "Q_08 GM Validation" <b>Description:</b> GM's engineering documents <b>Summary:</b> The door handle and latch system for the subject vehicles passed all validation tests.</p>
<p><b>Action 8-2:</b> Design, Development, and Validation of the door latch system <b>Start Date:</b> 19 May 08 <b>End Date:</b> 31 Mar 09 <b>Engineering Group:</b> GM Engineering <b>Attachments:</b> ATT_2_GM_Conf disk; folder labeled "Q_08 Continuous Improvement" <b>Description:</b> GM's continuous improvement of the door latch system on the subject vehicles. <b>Summary:</b> The door latch system for the subject vehicles passed all validation tests.</p>
<p><b>Action 8-3:</b> Engineering changes <b>Start Date:</b> 30 Mar 07 <b>End Date:</b> 22 Aug 08 <b>Engineering Group:</b> GM Engineering <b>Attachment:</b> ATT_2_GM_Conf disk; folder labeled "Q_08 GM Engineering changes" <b>Description:</b> GM's engineering changes of the door handle and latch system on the subject vehicles. <b>Summary:</b> GM released information and engineering changes after start of production.</p>
<p><b>Action 8-4:</b> GM Investigation <b>Start Date:</b> 16 Aug 08 <b>End Date:</b> Continuing <b>Engineering Group:</b> GM Engineering <b>Attachment:</b> ATT_2_GM_Conf disk; folder labeled "Q_08 GM Investigation" <b>Description:</b> GM's internal investigation of the door handle and latch system and its operation. Additional Red-X project activity will continue. Warranty analysis is continuing. <b>Summary:</b> GM is continuing its investigation of the alleged defect.</p>



<p><b>Action 8-5: GM Investigation – Door handle survey</b> <b>Start Date:</b> 20 Apr 09 <b>End Date:</b> Continuing <b>Engineering Group:</b> GM Engineering <b>Attachment:</b> No documents <b>Description:</b> GM is conducting a survey to assess door handle sticking. <b>Summary:</b> GM is continuing the survey and analysis of results.</p>
<p><b>Action 8-5: MGI Coutier Documents</b> <b>Start Date:</b> 09 Aug 07 <b>End Date:</b> 25 Aug 08 <b>Engineering Group:</b> MGI Coutier <b>Attachment:</b> Documents are written in Spanish. GM has requested an English translation of these documents and will forward as soon as the translated documents are available. <b>Description:</b> Test reports and presentations. <b>Summary:</b> Test reports and presentations related to the development of the door handle.</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, or installation of the subject component(s)/assembly or components 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 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 side door latching system in the ATT\_2\_GM\_Conf disk; folder labeled "Q\_09".

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

- a. Any kits that have been released, or developed, by GM for use in service repairs to the subject or related components/assemblies which relate, or may relate, to the alleged defect in the subject vehicle;
- b. Engineering drawings of the front and rear exterior side door handles, door latch system(s), and their components.

One sample of each different exterior side door handle used for the subject vehicles (whether the differences are due to design, materials, supplier or production).

Enclosure 10 contains a sample of the latest service part for the exterior door handle. This is representative of parts that GM has used in service. Some of the design versions installed in the subject vehicles are no longer produced for production or service. Refer to question 9 for a list of design versions of the subject component. Enclosure 10 also contains a field returned handle.

**11. Describe the operational functioning of the subject component and its interaction with the systems and operations potentially affected by the alleged defect as described on page 2.**

The inner and outer side closure handles actuate the door-latch mechanism through a direct linkage. As the outer door handle is actuated the rear portion of the handle slides out almost perpendicularly from of the door while the forward portion of the handle pivots in the forward, or pivot portion of the door handle housing (Refer to ATT\_1\_GM disk; folder labeled "Q\_11". Refer to the Microsoft PowerPoint file labeled "Q\_11\_HANDLE\_DESCRIPTION"). The pivot end of the handle is held in position by the housing and the pivot end tab. Outward force on the handle generates a downward force on the connecting rod. In an unlatching operation, this force overcomes the force of the detent lever spring, forces the detent lever down and out of the detent in the forkbolt, and allows the forkbolt to rotate, unlatching the latch. When the actuation force on the outer door handle is removed, potential force in the door handle spring retracts the handle to its rest position and the detent lever spring forces the detent lever into the detent in the forkbolt as the forkbolt rotates to a latched position. As long as the door handle is in the actuated, un-retracted position, the detent lever will remain disengaged from the forkbolt and the door will not latch.

When the pivot-end tab interferes with a shorter-than-specified handle the handle can stick in the un-retracted position, preventing the detent lever from latching. In some cases, the cover may also interfere with a shorter-than-specified handle, also preventing the handle from latching.

**12. 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 cut-off date for sales, if applicable):**

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

For each component part number, 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 component, whether installed in production or in service, and state the applicable dates of production or service usage

An electronic summary table of the requested service part information for the subject components is provided on the ATT\_1\_GM disk; folder labeled "Q\_12". Refer to the Microsoft Excel files labeled "Q\_12\_Part Sales". GM does not offer any kits for use in service repairs specifically related to the alleged defect.

These sales numbers represent sales to dealers in the US and 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.

This table contains 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.

**13. Furnish GM's assessment of the alleged defect in the subject vehicle, 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 the 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.**

General Motors is continuing its investigation of the alleged defect. GM has no reports of crashes, injuries or fatalities as a result of the alleged defect. The suspected failure mechanism and the associated failure modes are described in the following summary:

When actuated in an outward and rearward direction some outside door handles may stick and remain in the un-retracted position. This condition is due to an interaction between a warped and shorter-than-specified door handle and certain handle housings. The condition does not occur on all subject vehicles and has been observed primarily on vehicles with painted door handles and MGI Coutier handle housings. The vehicle front door handle assemblies account for 86% of the warranty claims and GM reports that indicate the outside door handle would stick and 89% of those that indicate the door would not latch. All warranty and GM report verbatims with claims of the door coming open while the vehicle is moving were associated with the vehicle's front door handle assemblies.

Variation in the handle length has been traced to paint-oven processing at the handle supplier. During the paint process door handles are clipped to paint racks. In the paint racks the handles are held firmly at each end which results in a force at the handle ends directed toward the center of the handle. As handles are passed through ovens to cure the paint, the handles may warp so that they reduce in length. The pivot end of a handle that is reduced in length may catch on the pivot end tab of the MGI Coutier housing when pulled in an outward and rearward direction, so that the handle does not retract. Since only the painted, and not the chrome handles pass through the ovens in the painting process, vehicles equipped with chrome handles have a much lower incident rate than vehicles equipped with painted handles. Ninety-six percent of the subject vehicle warranty claims and GM report verbatims that allege the outside door handle would stick, were associated with vehicles equipped with painted handles. Ninety-nine percent of the warranty claims and GM report verbatims of the door not latching were associated with vehicles equipped with painted handles. All warranty claims and GM report verbatims with allegations of the door coming open while the vehicle is moving were associated with vehicles equipped with painted handles.

At the start of production the door handle housings were supplied by U-Chang Precision. On 5 Oct 07 U-Chang Precision housings were no longer used in VUE production and MGI Coutier began to supply the door handle housings. A comparison of door handle housings has shown dimensional differences between the pivot ends of U-Chang Precision and MGI Coutier supplied door handle housings. These differences allow more freedom of movement in the pivot end of the door handle in the MGI Coutier housing. This freedom of movement can allow the pivot end of a shorter handle to catch on the pivot end tab of the MGI Coutier housing. Warranty analysis for painted handles has shown a rise in customer claims of the door handle remaining in the un-retracted position that corresponds to the introduction of the MGI Coutier door handle housing.

On 4 Jun 08 a production change was made to move the housing through-hole to improve door handle assembly of the front passenger door housing to the cover insert. Warranty analysis has shown an increase in customer claims of the passenger front door handle remaining in the un-retracted position that corresponds with this change to the passenger front door handle housing. A similar increase in warranty did not occur on the driver's door. GM continues to investigate the reasons why this change has resulted in an increased warranty rate for the passenger front door handles.

Some door handles that stick in the un-retracted position will retract to the intended rest position when the door is shut with a typical closing action. The outer door handle will return to a normal position with a tap of the handle. If the outside door handle were to remain in an un-retracted position, the door could not be fully latched until the door handle is tapped into the intended rest position. In these cases, the door will bounce back to a partially-open position when closed in a normal fashion and would open a few inches when it is pulled closed because the rubber door seal exerts outward pressure against the door.

Dealership technicians have successfully corrected the condition by lubricating the handle pivot area to reduce friction, replacing the handles with new painted or chrome handles, and/or replacing the housing. Since handles painted in service are not subjected to the same painting process as production handles, warpage has not been observed on service handles. Effective 20 Feb 09, door handle housings available in service for painted handles have the tab at the pivot end of the housing extended 2.5 mm so that the pivot end of the handle no longer catches on the pivot end tab of the housing.

One of the two Vehicle Owner Questionnaire (VOQ) comments stated that the door opened while the vehicle was moving and the other stated that the outside door handle stuck. The vehicles associated with the VOQ reports did not have warranty claims for any of the subject components. Both of the vehicles were built in Jul 08, they both were equipped with painted handles, and both VOQs were for the front passenger door.

When a stuck handle condition is observed it can be immediately corrected by the occupant(s) of the vehicle. Additionally, the vehicle's Instrument Cluster warning light, Driver Information Center (when equipped), warning chime, and interior lighting system provide immediate and continuous warning to the occupants if the door is not latched. There has been no indication of injury in the reports identified in response to this inquiry. General Motors is continuing its investigation of the alleged defect.

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General Motors requested assistance and documents from suppliers in responding to item 8 and this response includes those documents received from suppliers.