April 21, 2008

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

N080092

NVS-212am RQ08-001

Dear Mr. Cooper:

This letter is General Motors (GM) response to your information request (IR), dated March 7, 2008, regarding allegations of inoperative brake and hazard lamps due to the hazard or multifunction switch. The subject vehicles are MY2000-2002 GMT330 Chevrolet Blazer and TrailBlazer, Oldsmobile Bravada, GMC Jimmy vehicles manufactured for sale or lease in the United States.

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."

The number of subject vehicles for sale or lease in the United States is shown in Table 1.

| MAKE/ MODEL                    | 2000 MY | 2001 MY | 2002 MY | TOTAL   |
|--------------------------------|---------|---------|---------|---------|
| Chevrolet Blazer & TrailBlazer | 249,509 | 163,752 | 103,341 | 516,602 |
| Oldsmobile Bravada             | 33,184  | 10,935  | N/A     | 44,119  |
| GMC Jimmy                      | 87,854  | 46,905  | N/A     | 134,758 |

TABLE 1 VEHICLE PRODUCTION SUMMARY
N/A NOT APPLICABLE

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

This data was collected from the GM Claims Analysis Retrieval Database (CARD) on March 14, 2008.

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, including those from fleet operators;
- b. Field reports, including dealer field reports;
- 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
- 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 "c" 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 "d," 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 "e" and "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.

Tables 2-1A and 2-1B below summarize the records for the subject vehicles that were in the recall scope (vehicles built between September 17, 1999 – August 28, 2001) without and with the repair completion at the time of the report. GM determined that 89 percent of the records in Tables 2-1A, 2-1B, and 2-2 were reported after the public recall announcement in April 2002.

|   |               | Subcategories                  |                                      |                                 |                                   |  |
|---|---------------|--------------------------------|--------------------------------------|---------------------------------|-----------------------------------|--|
| Type of Report                              | GM<br>REPORTS | CORRESPONDING TO NHTSA REPORTS | Number<br>With<br>Property<br>Damage | <b>N</b> UMBER<br>WITH<br>CRASH | NUMBER WITH INJURIES/ FATALITIES* |  |
| Owner Reports                               | 162           | 3                              | 1                                    | 3                               | 1                                 |  |
| Field Reports                               | 4             | 1                              | 0                                    | 0                               | 0                                 |  |
| Not-In-Suit Claims                          | 0             | 0                              | 0                                    | 2                               | 1                                 |  |
| 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)        | 168           | 4                              | . 1                                  | 5                               | 2                                 |  |
| Total Vehicles with Reports<br>(Unique VIN) | 168           | 4                              | 1                                    | 5                               | 2                                 |  |

TABLE 2-1A: REPORT CLASSIFICATION: REPORTS IN RECALL SCOPE WITHOUT REPAIR COMPLETION
\* GM HAS NO FATALITY REPORTS

|  |               | SUBCATEGORIES                  |                                      |                                 |                                   |  |
|--|---------------|--------------------------------|--------------------------------------|---------------------------------|-----------------------------------|--|
| TYPE OF REPORT                           | GM<br>REPORTS | CORRESPONDING TO NHTSA REPORTS | Number<br>WITH<br>PROPERTY<br>DAMAGE | <b>N</b> UMBER<br>WITH<br>CRASH | NUMBER WITH INJURIES/ FATALITIES* |  |
| Owner Reports                            | 414           | 4                              | 4                                    | 7                               | 2                                 |  |
| Field Reports                            | 27            | 0                              | 0                                    | 0                               | 0                                 |  |
| Not-In-Suit Claims                       | 3             | 0                              | 2                                    | 3                               | 3                                 |  |
| Subrogation Claims                       | 1             | 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)     | 445           | 4                              | 6                                    | 10                              | 5                                 |  |
| Total Vehicles with Reports (Unique VIN) | 443           | 4                              | 6                                    | 9                               | 4                                 |  |

TABLE 2-1B: REPORT CLASSIFICATION: REPORTS IN RECALL SCOPE WITH REPAIR COMPLETION

\* GM HAS NO FATALITY REPORTS

Table 2-2 below summarizes the records for the subject vehicles that were not in the recall scope.

|  |               | Subcategories                           |                                      |                                 |                                   |  |
|--|---------------|---|--------------------------------------|---------------------------------|-----------------------------------|--|
| Type of Report                           | GM<br>REPORTS | Corresponding<br>to<br>NHTSA<br>Reports | Number<br>With<br>Property<br>Damage | <b>N</b> UMBER<br>WITH<br>CRASH | NUMBER WITH INJURIES/ FATALITIES* |  |
| Owner Reports                            | 48            | 3                                       | 0                                    | 0                               | 0                                 |  |
| Field Reports                            | 1             | 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)     | 49            | 3                                       | 0                                    | 0                               | 0                                 |  |
| Total Vehicles with Reports (Unique VIN) | 49            | 3                                       | 0                                    | 0                               | 0                                 |  |

Table 2-2: Report Classification: Reports of Subject Vehicles Not In Recall Scope \* GM has no fatality reports

To date, GM's investigation of the subject condition has not included an assessment of the cause(s) of each incident responsive to Request No. 2. Certain incident reports may not contain sufficient reliable information to accurately assess cause. Assessments of other incidents (from lawsuits and claims) may be attorney work product and/or privileged. Therefore, information and documents provided in this response, if any, consist only of non-attorney work product and/or non-privileged material for incidents that have been investigated and assessed.

The data sources searched are shown in Table 2-2.

| Source System                                 | LAST DATE GATHERED |
|---|--------------------|
| Customer Assistance Center                    | 3/31/2008          |
| Technical Assistance Center                   | 3/25/2008          |
| Early Quality Feedback (EQF)                  | 3/10/2008          |
| Field Information Network Database (FIND)     | 3/10/2008          |
| Field Product Report Database (FPRD)          | 3/13/2008          |
| Company Vehicle Evaluation Program (CVEP)     | 3/10/2008          |
| Captured Test Fleet (CTF)                     | 3/10/2008          |
| Legal / Employee Self Insured Services (ESIS) | 3/26/2008          |

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 property damage is alleged;
  - k. Number of alleged injuries, if any; and
  - I. Number of alleged fatalities, if any.

Categorize each complaint in the following manner:

- a. In recall scope, not repaired
- b. In recall scope, repaired
- c. Not in recall scope

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA."

GM is providing the requested information for 3a-e in ATT\_1\_GM Disc, folder labeled: "Q\_03;" refer to Microsoft Access file named "Request Number Two Data." The information requested for 3f-l is also provided, where available, in the same file. The recall scope repair status for the following questions 3a-c is included in the same file.

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 Disc; folder labeled: "Q\_03;" refer to the Microsoft Access file named "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 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."

For the subject vehicles, the regular warranty claims and extended warranty claims are summarized by model and model year in Tables 5-1A, 5-1B, 5-2A, 5-2B, 5-3A and 5-3B. A summary of these warranty claims is provided in ATT\_1\_GM Disc; folder labeled: "Q\_05;" refer to the Microsoft Access file.

| MAKE/ MODEL                       | 2000 MY | 2001 MY | 2002 MY | TOTAL   |
|-----------------------------------|---------|---------|---------|---------|
| Chevrolet Blazer &<br>TrailBlazer | 199,412 | 182,121 | 1,075   | 382,608 |
| Oldsmobile Bravada                | 30,082  | 13,298  | N/A     | 43,380  |
| GMC Jimmy                         | 73,176  | 55,645  | N/A     | 128,821 |

TABLE 5-1A: REGULAR WARRANTY CLAIMS: VEHICLES IN RECALL SCOPE N/A NOT APPLICABLE

| Make/ Model                       | 2000 MY | 2001 MY | 2002 MY | TOTAL |
|-----------------------------------|---------|---------|---------|-------|
| Chevrolet Blazer &<br>TrailBlazer | 632     | 0       | 1,108   | 1,740 |
| Oldsmobile Bravada                | 65      | 0       | N/A     | 65    |
| GMC Jimmy                         | 228     | 0       | N/A     | 228   |

TABLE 5-1B: REGULAR WARRANTY CLAIMS: VEHICLES NOT IN RECALL SCOPE

N/A NOT APPLICABLE

| MAKE/ MODEL                       | 2000 MY | 2001 MY | 2002 MY | Total |
|-----------------------------------|---------|---------|---------|-------|
| Chevrolet Blazer &<br>TrailBlazer | 1,254   | 609     | 139     | 2,002 |
| Oldsmobile Bravada                | 202     | 130     | N/A     | 332   |
| GMC Jimmy                         | 477     | 200     | N/A     | 677   |

TABLE 5-2A: MIC EXTENDED WARRANTY CLAIMS: VEHICLES IN RECALL SCOPE

### N/A NOT APPLICABLE

| MAKE/ MODEL                       | 2000 MY | 2001 MY | 2002 MY | TOTAL |
|-----------------------------------|---------|---------|---------|-------|
| Chevrolet Blazer &<br>TrailBlazer | 129     | 2       | 202     | 333   |
| Oldsmobile Bravada                | 15      | 0       | N/A     | 15    |
| GMC Jimmy                         | 35      | 0       | N/A     | 35    |

TABLE 5-2B: MIC EXTENDED WARRANTY CLAIMS: VEHICLES NOT IN RECALL SCOPE N/A NOT APPLICABLE

| MAKE/ MODEL                       | 2000 MY | 2001 MY | 2002 MY | Total |
|-----------------------------------|---------|---------|---------|-------|
| Chevrolet Blazer &<br>TrailBlazer | 1       | 4       | 6       | 11    |
| Oldsmobile Bravada                | 0       | 0       | N/A     | 0     |
| GMC Jimmy                         | 0       | 0       | N/A     | 0     |

TABLE 5-3A: UWC EXTENDED WARRANTY CLAIMS: VEHICLES IN RECALL SCOPE N/A NOT APPLICABLE

| MAKE/ MODEL                       | 2000 MY | 2001 MY | 2002 MY | TOTAL |
|-----------------------------------|---------|---------|---------|-------|
| Chevrolet Blazer &<br>TrailBlazer | 0       | 0       | 0       | 0     |
| Oldsmobile Bravada                | 0       | 0       | N/A     | 0     |
| GMC Jimmy                         | 0       | 0       | N/A     | 0     |

TABLE 5-3B: UWC EXTENDED WARRANTY CLAIMS: VEHICLES NOT IN RECALL SCOPE N/A NOT APPLICABLE

GM searched the GM North America Claim Analysis Retrieval Database (CARD-regular warranty), the Motors Insurance Corporation (MIC-extended warranty), and the Universal Warranty Corporation (UWC-extended warranty) databases to collect the warranty data for this response. The warranty data was last gathered on April 2, 2008.

GM's warranty database does not contain the vehicle owner's name or telephone number. Some of the replacement part numbers; part descriptions and customer concern code descriptions are not included in the GM warranty database. GM is providing a field labeled "Verbatim Text". 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 MIC extended warranty system does not contain the vehicle owner information. The UWC extended warranty system does not use the GM labor code or labor code description and it does not contain the repairing dealer code, trouble code or trouble code description.

The General Motor's warranty system does not contain information on the number of vehicles that have extended warranty coverage. The number of extended warranty coverage contracts on the subject vehicles that have been sold by MIC and UWC for the subject vehicles regardless of status (in-force, expired, cancelled) are contained in Tables 5-4 and 5-5, respectively.

| MAKE/ MODEL                       | 2000 MY | 2001 MY | 2002 MY | TOTAL   |
|-----------------------------------|---------|---------|---------|---------|
| Chevrolet Blazer &<br>TrailBlazer | 89,573  | 59,569  | 34,301  | 183,443 |
| Oldsmobile Bravada                | 12,021  | 10,728  | N/A     | 22,749  |
| GMC Jimmy                         | 32,119  | 17,907  | N/A     | 50,026  |

Table 5-4: MIC Extended Warranty Coverage Contracts Sold Before March 24, 2008

N/A NOT APPLICABLE

| Make/ Model                       | 2000 MY | 2001 MY | 2002 MY | TOTAL |
|-----------------------------------|---------|---------|---------|-------|
| Chevrolet Blazer &<br>TrailBlazer | 1,871   | 1,458   | 762     | 4,091 |
| Oldsmobile Bravada                | 366     | 130     | N/A     | 496   |
| GMC Jimmy                         | 828     | 441     | N/A     | 1,269 |

Table 5-5: UWC Extended Warranty Coverage Contracts Sold Before March 18, 2008

N/A Not Applicable

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.

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 regular warranty data was collected from the GM CARD database by searching the labor codes, customer complaint codes, trouble codes, loss codes, part numbers, verbatim where available, dealership calls, and/or cost information that may be related to the subject condition.

The labor operation codes are listed in Table 6-1, trouble codes are listed in Table 6-2 and customer complaint codes are listed in Table 6-3.

| LABOR CODE | DESCRIPTION                                     |  |  |
|------------|---|--|--|
| N1750      | Flasher, Hazard warning – Replace               |  |  |
| N1755      | Flasher, Hazard/turn signal – Replace           |  |  |
| N2355      | Switch, Multifunction - Replace                 |  |  |
| N2530      | Switch, Turn signal & hazard warning - Replace  |  |  |
| N2540      | Switch, hazard warning - Replace                |  |  |
| Z1241      | Product Liability/Investigation REP PR          |  |  |
| Z1242      | PAR – Repairs/Reimbursement                     |  |  |
| Z1243      | INSPECTION-PRODUCT ALLEGATION RESOLUTION        |  |  |
| V0841      | Inspection Only – No Further Action Required    |  |  |
| V0842      | Inspect & Replace Hazard Warning Flasher Switch |  |  |
| V0843      | Inspect & replace Multifunction Switch          |  |  |
| V0844      | Customer Reimbursement                          |  |  |

TABLE 6-1: LABOR CODES USED IN REGULAR WARRANTY: REGULAR LABOR CODES

| TROUBLE CODE | TROUBLE DESCRIPTION    |  |
|--------------|------------------------|--|
| 1D           | Broken                 |  |
| 1E           | Burned                 |  |
| 3F           | Not Connected          |  |
| 6C           | Component-Inoperative  |  |
| 6D           | Component-Intermittent |  |
| 6F           | Component-Open         |  |
| 6G           | Component-Shorted      |  |
| 7D           | Wire-Shorted to ground |  |
| 7L           | Wire-Cut/Broken/Open   |  |

TABLE 6-2: TROUBLE CODES USED IN REGULAR AND MIC SEARCH

| CUSTOMER CODE | CUSTOMER CODE DESCRIPTION                 |  |  |
|---------------|---|--|--|
| OA            | Operation: Binds                          |  |  |
| OJ            | Operation: Inoperative (harsh)            |  |  |
| OK            | Operation: Insuff Heat/Cool (Inoperative) |  |  |
| OL            | Operation: Inoperative (Insuff heat/Cool) |  |  |
| 08            | Operation: Won't turn off                 |  |  |
| WB            | Warning Lights: Brake Light               |  |  |
| VB            | Visual: Broken                            |  |  |

TABLE 6-3: CUSTOMER COMPLAINT CODES USED IN REGULAR AND MIC SEARCH

The MIC extended warranty data was also collected by searching for the first five labor codes listed in Table 6-1 and all of trouble and customer complaint codes in Tables 6-2 and 6-3. The UWC extended warranty data was collected by searching for the labor codes in Table 6-4.

| Labor Code | Description        |
|------------|--------------------|
| 0780       | Turn Signal Switch |
| 1298R      | Hazard Switch      |

TABLE 6-4: LABOR CODES USED IN UWC SEARCH

The subject vehicles are covered by a bumper-to-bumper new vehicle 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 customers' preference, up to 7 years from the date of purchase or up to a total of 100,000 vehicle miles.

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.

GM has issued the following service bulletins that may relate to the subject condition in the subject vehicles.

#01073: Product Safety - Stop Lamps/Hazard Lamps Inoperative - (April, 2002)

#01073A: Product Safety - Stop Lamps/Hazard Lamps Inoperative - (July, 2002)

These documents are provided in ATT\_1\_GM Disc; folder labeled: "Q\_10."

General Motors is not planning to issue in the next 120 days, any service, warranty or other technical documents or communications to its dealers, regional offices, zone offices or other entities regarding the subject condition in the subject vehicles.

The preceding information was collected from GM Service Operations. The data collection was completed on March 20, 2008.

- 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:
  - a. Action title or identifier;
  - b. The actual or planned start date;
  - c. The actual or expected end date;
  - d. Brief summary of the subject and objective of the action;
  - e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
  - f. 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 below is a summary of actions performed by GM regarding the alleged defect on the subject vehicles.

Copies of GM non-confidential documents related to each action are provided in ATT\_1\_GM Disc; folder labeled: "Q 08."

Copies of GM confidential documents related to the actions can be found in ATT\_2\_GM\_CONF Disc; folder labeled: "Q\_08." General Motors requests that this information, which has been stamped "GM Confidential" be afforded confidential treatment by NHTSA.

Copies of Delphi confidential documents related to the actions can be found in ATT\_3\_SPLR\_CONF Disc; folder labeled: "Q\_08." Delphi Automotive provided the following information at GM's request. Delphi is submitting documents related to the action, and request confidential treatment for these documents.

Action 8A: Hazard switch thermal validation tests with Syn-tech grease and copper contact and

MVSS 108 Test

Start Date: March 10, 1997 End Date: April 2, 2001

Engineering Group: GM and Delphi Engineering

Objective: Validate hazard switch through durability test with and without thermal cycles and

MVSS108 test.

Summary of Action: Validated the Syn-tech grease application and copper contact on the

hazard switch and met MVSS108.

Action 8B: Problem Resolution Tracking System (PRTS)

Start Date: February 19, 1999 End Date: July 25, 2002

Engineering Group: GM Engineering

Objective: Document the engineering test and development issues and the resolution of the

engineering or manufacturing issues.

Summary of Action: See attached documents.

Action 8C: GM internal investigations

**Start Date:** March 7, 2008 **End Date:** On-going **Engineering Group:** GM

Objective: Review the recall information and its status.

**Summary of Action:** Upon further investigation, GM has now discovered that certain number of vehicles were erroneously excluded from recall 01073 and not repaired to date. From the original recall population, less than one percent of customers returned to the dealer for a similar repair. During this investigation, GM determined a low number (0.67 percent @ 3 years) of customer reports and warranty claims were for vehicles outside the original recall population.

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, 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.

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.

The ATT\_3\_SPLR\_CONF Disc; folder labeled: "Q\_09" contains a summary chart describing the changes and modifications on the multifunction switch in the subject vehicles, and components that relate or could relate to the alleged defect. Delphi Automotive provided this information at GM's request.

General Motors is not aware of any modifications or changes that may be incorporated into vehicle production within the next 120 days. The data was last gathered on April 18, 2008.

- 10. 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 component is provided on the ATT\_1\_GM Disc; folder labeled: "Q\_10" including service kits.

These sales numbers represent sales to dealers in the US and Canada including the part sales for the recall. 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. The General

Motors Service Parts System does not contain a title of a contact person for each component and is therefore unable to provide this information.

### 11. 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.

The bottom contact material of the hazard switch was changed from copper to brass in September 1999, as a visual (color) manufacturing error proofing measure. The grease in the hazard switch was changed on August 30, 2000 to commonize lubricants within the multifunction switch assembly.

The brass contactor generates more resistance during electrical load than a copper contactor due to the difference in electrical conductivity. The common lubricant was less effective in lubricating the hazard switch contacts. Increased electrical resistance in the hazard switch may cause the brass contactor to stick in a position that does not allow one or more of the three dimples to contact the mating grid within the hazard-switch contactor carrier. (Reference the photo in ATT\_1\_GM Disc; folder labeled: "Q\_11"). The result is an open circuit condition in the stop lamp or hazard lamp circuit.

If the vehicle brakes are applied in a vehicle with the subject condition, the brake lamps would not illuminate, but the Center High Mount Stop Lamp (CHMSL) lamp would illuminate. No warnings would be shown for the brake lamp outage. If the hazard switch failed during switch activation, the hazard lamps and the vehicle brake lamps would not illuminate. However, all turn signal lamps would function properly and all other interior and exterior lamps would function properly.

On November 30, 2001, GM notified NHTSA that a determination had been made that a defect that relates to motor vehicle safety existed in certain subject vehicles. This determination was made following a thorough investigation. The basis for the determination included consideration of increase number of warranty claims, customer complaints and field reports. GM, with assistance from Delphi, discovered during the investigation that several design and process changes had been implemented on the hazard switch during production of the subject vehicles. These changes described above caused an increase in electrical resistance within the switch which contributed to the hazard and/or rear brake lamps being inoperative.

Upon further investigation, GM has now discovered that a certain number of vehicles were erroneously excluded from recall 01073 and not repaired to date. GM is providing a list of these VINs in ATT\_1\_GM Disc; folder labeled: "Q 11."

From the original recall population, less than one percent of customers returned to the dealer after the original repair date for a similar repair. Of these subsequent repairs, 92% included multifunction switch replacement. The subject multifunction switch performs numerous

operations such as turn signal, cruise control, windshield wiper and washer, high beam or low beam, and hazard. If any of these functions are intermittent or inoperative, the entire multifunction switch needs replacement. GM cannot determine with certainty which repeat repairs are related to the subject condition or some other condition where the switch needed replacement.

During this investigation, GM determined a low number (0.67 percent @ 3 years) of customer reports and warranty claims were for vehicles outside the original recall population. GM's dealer Policy and Procedure practice allows GM dealers to repair vehicles free of charge that exhibit similar conditions as the recall condition. These vehicles were built with a copper contactor hazard switch which precluded them from the recall population.

Out of the 44 VOQs GM received from NHTSA, 41 had completed VINs. GM has concluded that these incident reports may be related to the subject condition. GM has not examined the components that are the subject of the VOQs; therefore, GM has not identified the specific contributory factors related to each of the alleged failures.

\* \* \*

General Motors requested assistance and documents from suppliers in responding to items 8, 9, 10 and 11 and this response includes those documents received from suppliers.

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 General Motors Corporation (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 their 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 1996, 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."

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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

Gay P. Kent Director

**Product Investigations** 

Attachments

### **GM CONFIDENTIALITY LETTER**

GM CONFIDENTIALITY LETTER
HAS BEEN REMOVED FROM THIS
ATTACHMENT AND SUPPLIED TO
THE OFFICE OF THE CHIEF COUNSEL

# SUPPLIER CONFIDENTIAL LETTER

SUPPLIER CONFIDENTIAL LETTER
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## **ATTACHMENT "1"**

**GM NON-CONFIDENTIAL MATERIAL** 

### **ATTACHMENT "2"**

# **GM CONFIDENTIAL MATERIAL**

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# ATTACHMENT "3" DELPHI CORPORATION CONFIDENTIAL MATERIAL

DELPHI CORPORATION
CONFIDENTIAL MATERIAL
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