GENERAL MOTORS NORTH AMERICA
Structure & Safety Integration

March 23, 2005

Thomas Z. Cooper, Chief
Vehicle Integrity Division
Office of Defects Investigation
NHTSA Safety Assurance
Room #5328
400 Seventh Street, S.W.
Washington, D.C. 20590

GM-675

NVS-212mbs
PE05-006

Dear Mr. Cooper:

This letter is General Motors' (GM) response to your information request (IR), dated February 11, 2005, regarding allegations of failure of the turn signal lights to operate properly and/or the improper activation of hazard lights during turn signal operation for MY 2004 GMC Envoy 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." Note: For electronic data response, if no data is available please insert NA (or other value) in the data field.

The number of subject vehicles GM has manufactured for sale or lease in the United States is shown in Table 1. The production information requested in 1a-1g is also provided on the CD labeled Attachment 1; refer to the Microsoft Access 2000 file in the folder labeled "Response to Q1- PRODUCTION DATA."

MAKE	Model	2004 MY
GMC	2WD 4-Door Envoy	29,834
GMC	2WD 4-Door Envoy XL	13,278
GMC	2WD 4-Door Envoy XUV	6,167
GMC	4WD 4-Door Envoy	53,015
GMC	4WD 4-Door Envoy XL	26,648
GMC	4WD 4-Door Envoy XUV	16,935
Total	All	145,877

TABLE 1 VEHICLE PRODUCTION SUMMARY

This data was collected from the GM Claims Analysis Retrieval Database (CARD) on February 22, 2005.

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
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 "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.

Table 2-1 below summarizes records for the subject vehicles that could relate to the subject condition.

Type of Report	Count (Including Duplicates)	GM Reports	GM Reports Corresponding to NHTSA Reports	Location of Reports (Attachment)	Number with Property Damage	Number with Crash	Number with Injuries/ Fatalities
Owner Reports	37	37	0	Folder labeled "Response to Q3" in field label 2A	0	0	0
Field Reports & Technical Assistance System Reports	66	66	0	Folder labeled "Response to Q3" in field label 2B	0	0	0
Not-In-Suit Claims	0	0	0	N/A	0	0	0
Subrogation Claims	0	0	0	N/A	0	0	0
Third Party Arbitration Proceedings	0	0	0	N/A	0	0	0
Product Liability Lawsuits	0	0	0	N/A	0	0	0
Total (Including Duplicates)	103	103	0	N/A	0	0	0
Total (Excluding Duplicates)	102	102	0	N/A	0	0	0

Table 2-1: Report Breakdown

N/A Not Applicable

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

SOURCE SYSTEM	LAST DATE GATHERED
Corporate Central File	3/9/2005
Customer Assistance Center	2/22/2005
Technical Assistance Center	3/4/2005
Early Quality Feedback (EQF)	3/7/2005
Field Information Network Database (FIND)	2/17/2005
Field Product Report Database (FPRD)	2/17/2005
Company Vehicle Evaluation Program (CVEP)	3/7/2005
Captured Test Fleet (CTF)	3/7/2005
Legal / Employee Self Insured Services (ESIS)	2/18/2005

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;
l. Number of alleged fatalities, if any; and
m. Summary description, items "c" through "l," if available.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." Note: For electronic data response, if no data is available please insert NA (or other value) in the data field.

An electronic summary of the 102 reports included in response to question 2 is provided on the CD identified as Attachment 1 CD; refer to the Microsoft Access 2000 file in the folder labeled "Response to Q3 – REQUEST NUMBER TWO DATA." GM has organized this summary by GM file number within each attachment.

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 102 reports identified in response to question 2 are provided on the Attachment 1 CD; refer to the folder labeled "Response to Q3 - REQUEST NUMBER TWO DATA." GM has organized the reports 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." Note: For electronic data response, if no data is available please insert NA (or other value) in the data field.

For the subject vehicles, the regular warranty claims and extended warranty claims are summarized by model and model year in Tables 5-1 and 5-2. A summary of these warranty claims is provided on the Attachment 1 CD; refer to the folder labeled "Response to Q5."

MAKE	Model	2004 MY
GMC	2WD 4-Door Envoy	972
GMC	2WD 4-Door Envoy XL	422
GMC	2WD 4-Door Envoy XUV	60
GMC	4WD 4-Door Envoy	2,166
GMC	4WD 4-Door Envoy XL	1,074
GMC	4WD 4-Door Envoy XUV	178
Total	All	4,892

TABLE 5-1: REGULAR WARRANTY CLAIMS

MAKE	Model	2004 MY
GMC	2WD 4-Door Envoy	1
GMC	2WD 4-Door Envoy XL	0
GMC	2WD 4-Door Envoy XUV	0
GMC	4WD 4-Door Envoy	2
GMC	4WD 4-Door Envoy XL	0
GMC	4WD 4-Door Envoy XUV	0
Total	All	3

TABLE 5-2: EXTENDED WARRANTY CLAIMS

GM searched the GM North America Claim Adjustment 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 March 21, 2005.

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" 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 MIC extended warranty system does not contain the following information: repairing dealer code, vehicle owner information, trouble code, trouble code description, part number, part description or verbatim text. 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 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 for the labor operation codes listed in Table 6-1 and trouble codes listed in Table 6-2.

Labor Code	Description
N1750	Flasher, Hazard warning – Replace
N1755	Flasher, Hazard/turn signal – Replace
N1760	Flasher, Hazard warning – Replace

Table 6-1: Labor Codes Used in CARD & MIC Search

Trouble Code	Trouble Description
6C	Component - Inoperative
6D	Component - Intermittent
6G	Component - Shorted

Table 6-2: Regular Warranty Trouble Codes

The MIC extended warranty data was also collected by searching for the labor codes listed in Table 6-1. The UWC extended warranty data was collected with no claims on all of the labor codes.

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. The General Motors warranty system does not contain information on the number of vehicles that have extended warranty coverage.

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.

Copies of one technical service bulletin and one information service bulletin for the turn signal / flasher module on the subject vehicles are provided on the CD identified as Attachment 1; refer to the folder labeled "Response to Q7":

Technical service bulletin (04-08-45-010) was issued for various interior electrical concerns: IP gauges/lighting inoperative, HVAC controls inoperative, blower motor inoperative, radio inoperative, and flasher inoperative. The bulletin applied to certain 2004-2005 Buick Rainier, 2002-2005 Chevrolet Trail Blazer and Trail-Blazer EXT, 2002-2005 GMC Envoy and Envoy XL, 2004-005 GMC Envoy XUV, and 2002-2003 Oldsmobile Bravada model vehicles. The service bulletin was based on customer comments regarding intermittent operation of various electrical components in the interior of the vehicle. The cause of these conditions may be a loose or ineffective connection at ground splice pack G201, located on the right side of the front console area.

Information service bulletin (03-08-42-014) was issued to provide notice of the new turn signal flasher module availability for certain 2004 Buick Rainier, 2003-2004 Chevrolet Trail Blazer and Trail-Blazer EXT, 2003 Chevrolet SSR – built prior to VIN breakpoint 3B101657, 2003-2004 GMC Envoy and Envoy XL, 2004 GMC Envoy XUV, and 2003-2004 Oldsmobile Bravada model vehicles built after April 2003.

GM has not identified any draft communications that it is planning to issue within the next 120 days.

The preceding information was collected from GM Service Operations. The information was last gathered on March 7, 2005.

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.

Action 8.1: Complete testing of the flasher module per Component Technical Specifications **Start Date:** 1/6/1999 **End Date:** 11/30/1999, PPAP submission: 3/30/2000 **Engineering Group:** GM Engineering and Trico Products **Objective:** The component testing was performed to validate the flasher for the intended application in the vehicle. **Summary of Action:** All component tests were validated.
Action 8.2: Problem Resolution Tracking System (PRTS N113390) - Flasher Hazard Turn Signal Lights Malfunction **Start Date:** 8/29/2002 **End Date:** 4/26/2004 **Engineering Group:** GM Engineering and Trico Products **Objective:** Investigate via Problem Resolution Tracking System N113390 the contact sticking issue on routing relays. **Summary of Action:** Routing relays in the flasher module become latched in the closed position during turn signal operation. The latching at the contacts is the result of material transfer from the positive to the negative contacts forming pockets. The corrective action for this PRTS was to eliminate the AM band noise suppressing circuitry (AMBNSC) and replaces it with a capacitor. Durability testing of this design passed. Implementation of design began: Moraine: 5/1/2003, Oklahoma City: 4/28/03
Action 8.3: Flasher module thermal incident analysis **Start Date:** August, 2003 **End Date:** Ongoing investigation **Engineering Group:** GM Engineering and Trico Products **Objective:** GM was made aware of three vehicles that experienced a flasher module inoperative when the 4-way hazard switch was activated. The inoperative mode was overheating of a component (capacitor – 2 units and transistor – 1 unit) on the flasher circuit board. The point of damage in the circuit board caused deformation and damage to the module case. **Summary of Action:** The GM and Trico Products engineering study could not replicate the inoperative condition described. Although this investigation is ongoing, there is no evidence correlating these particular inoperative to the latched relay failures.
Action 8.4: Problem Resolution Tracking System (PRTS N146522) Turn signal working or works intermittently **Start Date:** 10/1/2003 **End Date:** 11/17/2004 **Engineering Group:** GM Engineering and Trico Products **Objective:** Investigate via Problem Resolution Tracking System N146522 the subject condition. **Summary of Action:** Warranty data suggested that the original design with the AM band noise suppressing circuitry (AMBNSC) protected the module. The AMBNSC had an unintended characteristic of absorbing excessive and unanticipated voltage spikes caused by other vehicle electrical components that shared the same ground point. The original design with the AMBNSC was reinstated.
Action 8.5: Problem Resolution Tracking System (PRTS N158075) J.D. Power Turn signal sticks and doesn't flash **Start Date:** January 21, 2004 **End Date:** April 14, 2004 **Engineering Group:** GM Engineering **Objective:** Based on J.D. Power & Associate customer feedback PRTS was open to analyze turn signal issue for vehicles built without AM band noise suppressing circuitry (AMBNSC). **Summary of Action:** Problem definition tree was established to eliminate the source of turn signals sticking and not flashing.

Action 8.6: Vehicle electrical system interactions with flasher module **Start Date:** February 2004 **End Date:** April 2004 **Engineering Group:** Trico Products **Objective:** Trico conducted several experiments to evaluate flasher module modes in the vehicle environment, including an experiment of the vehicle lamp socket subjected to typical road vibration and the resulting impact on the flasher modules. **Summary of Action:** Analysis demonstrated clear correlation between loose bulbs within tail lamp assemblies and flasher module latching failures. High voltage spikes of the tail lamps could exacerbate the relay contact wear out. Turn / hazzard bulbs that become loose and vibrate could accelerate high voltage spike conditions and cause higher potential for latch-on failures on the flashing relay. Lab simulation testing proves that the AMBNSC protects the flasher module's relay contacts from these and other adverse vehicle electrical system loads. It has also been found that high resistance grounds or the shared application of grounds with high current components will increase the detrimental effects on the contacts of the routing and flashing relays.
Action 8.7: Engineering Work Order 385769 flasher change **Start Date:** 6/23/2004 **End Date:** Moraine: 1/21/2005, Oklahoma City: 2/1/05 **Engineering Group:** GM Engineering and Trico Products **Objective:** Minimize latching of the routing relays. **Summary of Action:** Change the material of the routing relay contacts from silver nickel to silver tin oxide that is more durable and more resistant to material transfer, particularly in high voltage spike conditions. In addition, the routing relays were sealed to minimize contamination. Validation testing passed.
Action 8.8: AM band noise suppressing circuitry (AMBNSC) overheat investigation **Start Date:** February 15, 2005 **End Date:** Ongoing **Engineering Group:** GM Engineering and Trico Products **Objective:** Investigate three inoperative flasher module vehicles in Moraine assembly plant. **Summary of Action:** Quantity. 1 – PN12450284 – original part, silver nickel contacts, non sealed relays Quantity. 2 - PN 15231201 – new parts, silver tin oxide contacts, sealed relays All three flashers became inoperative when the AM band noise suppressing circuitry (AMBNSC) overheated. Photos are included in the report. The flashers were delivered to Trico Products for further analysis. There is no evidence supporting any correlation between these three units and the latching incidents experienced by the subject vehicles.
Action 8.9: Field Performance Entry document and presentation **Start Date:** March 24, 2005 **End Date:** Ongoing **Engineering Group:** GM Engineering **Objective:** Document facts for presentation and discussion during Field Performance Evaluation procedure. **Summary of Action:** Ongoing investigation.

The information was last gathered on March 22, 2005.

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 folder labeled "Responsive to Q9" on the Attachment 1 CD contains a chart describing the changes and modifications on the flasher module in the subject vehicles, and components that relate or could relate to the alleged defect.

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 March 9, 2005.

10 Produce one of each of the following:

a. Exemplar samples of each design version of the turn signal flasher module;
b. Field return samples of the turn signal flasher module exhibiting the subject failure mode; and
c. Any kits that have been released, or developed, by GM for use in service repairs to the subject component/assembly which relate, or may relate, to the alleged defect in the subject vehicles.

a. GM is providing one sample of each design version as follows:
PN 12450284 (original design with AM band noise suppressing circuitry)
PN 15101912 (No AM band noise suppressing circuitry design)
PN 15231201 (Final Design with AM band noise suppressing circuitry. Silver tin oxide sealed routing relays)

b. GM is providing one sample of each of the following field-returned parts with warranty claims:
PN 12450284: latching routing relay (2004 Envoy)
PN 15101912: latching routing relay (2004 Envoy)

c. No kits have been released or developed for the alleged defect.

The information was last gathered on March 2, 2005.

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

a. Turn signal flasher module; 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 Attachment 1 CD; refer to the folder labeled "Response to Q11." GM does not offer any kits that have been released or developed for use in service repairs specifically related to the subject condition. The data was last gathered on February 17, 2005.

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. From this data, it is not possible 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.

12 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.

Typically, there are two types of electrical grounds on vehicles: 'electronic' and 'electrical'. The two are distinguished based on the amount of current and the types of loads. The flasher module and other circuit signal grounds are typically considered 'electronic' verses high electrical current loads like motors are typically considered 'electrical'. For the subject vehicles, the flasher module is grounded as a high current device and is placed on an electrical ground.

The AM band noise suppressing circuitry (AMBNSC) designed into the flasher module absorbs voltage spikes and electrical noise generated by motors and/or loose tail lamp bulbs as well as other noises in the electrical systems. As described in response to question 8, when the AMBNSC was removed from the flasher module, the voltage spikes and electrical noise can cause the relay contacts to transfer excessive material in a non-uniform pattern and may result in a mechanical latch between the relay contacts.

During normal operation, the relay contacts transfer material from the positive to the negative contact surface over long periods of time. Silver nickel contact material is an excellent conductor, but is not particularly resistant to material transfer under voltage spike conditions. However, the silver nickel contact material passed all laboratory validation testing required for the flasher module.

Accelerated material transfer on the routing and/or flashing relay contacts can cause a temporary mechanical latching between the mating contacts. The relay latching conditions can change to an unlatch condition with additional activation of the turn/hazard signals or vehicle vibrations during operation.

When relay contacts latch, the following failure modes may occur:

Failure mode 1 (routing relay latch): When the driver activates a directional turn signal, the hazard lamps flash and the Instrument Panel telltale for the hazard lamps flashes.

Failure mode 2 (flashing relay latch): When the driver activates either a direction turn signal or the hazard lamp, the corresponding lights (including instrument Panel telltale) will turn on and stay on, but will not flash.

All 5 VOQs appear to relate to the alleged defect. Two of the VOQ vehicles were built with a flasher module without the AMBNSC and two were built with AMBNSC. The fifth VOQ build date is unknown since Vehicle Identification Number was not provided to GM. However, based on the description of the incident, GM believes the vehicle was built without AMBNSC.

GM is not aware of a single crash or injury that caused by the alleged defect. This is understandable given how the alleged defect manifests itself. In either condition caused by the alleged defect (hazard flashers on or turn signal lamps illuminated continuously), both the driver (as required by applicable FMVSS) and surrounding motorists are given an indication alerting them to the need for heightened attention. Although the precise intentions of the driver of a subject vehicle to turn or change lanes cannot be signaled, this visual feedback, combined with vehicle slowing and brake lamp illumination that might accompany such maneuvers, should minimize the risk of a crash attributable to the condition.

In every case, completion of the turning maneuver or manual deactivation of the turn signal will terminate the condition, and in some cases the signal will work properly on the next actuation. Accordingly, most drivers will be able to detect this intermittent condition and some will have it repaired with no further incident.

GM is continuing its investigation.

* * *

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 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 January 1, 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,

Gary P. Kent
Director
Product Investigations

Attachments

Original Received 2-17-05

U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

FEB 11 2005

GM-675

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Gay P. Kent, Director
Product Investigations
General Motors Corporation
Mail Code 480-111-E18
30200 Mound Road
Warren, MI 48090-9010

NVS-212mbs
PE05-006

Dear Ms. Kent:

This letter is to inform you that the Office of Defects Investigation (ODI) of the National Highway Traffic Safety Administration (NHTSA) has opened a Preliminary Evaluation (PE05-006) to investigate allegations of turn signal failure in MY 2004 GMC Envoy manufactured by General Motors Corporation.

This office has received 5 VOQs reports of turn signal light failure. The reports state that the turn signals fail to operate or inadvertently activate the hazard lights. Identification of each of these reports is provided at the end of this letter and an electronic copy of these reports has been sent to your office.

Unless otherwise stated in the text, the following definitions apply to these information requests:

- **Subject vehicles:** all MY 2004 GMC Envoy vehicles manufactured for sale or lease in the United States.
- **Subject component:** the turn signal flasher module, turn signal control switch, associated wiring, circuits and connectors.
- **GM:** General Motors Corporation, all of its past and present officers and employees, whether assigned to its principal offices or any of its field or other locations, including 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 January 1, 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.

- **Alleged defect:** Failure of the turn signal lights to operate properly and/or the improper activation of hazard lights during turn signal operation.

- **Document:** "Document(s)" is used in the broadest sense of the word and shall mean all original written, printed, typed, recorded, or graphic matter whatsoever, however produced or reproduced, of every kind, nature, and description, and all non-identical copies of both sides thereof, including, but not limited to, papers, letters, memoranda, correspondence, communications, electronic mail (e-mail) messages (existing in hard copy and/or in electronic storage), faxes, mailgrams, telegrams, cables, telex messages, notes, annotations, working papers, drafts, minutes, records, audio and video recordings, data, databases, other information bases, summaries, charts, tables, graphics, other visual displays, photographs, statements, interviews, opinions, reports, newspaper articles, studies, analyses, evaluations, interpretations, contracts, agreements, jottings, agendas, bulletins, notices, announcements, instructions, blueprints, drawings, as-builts, changes, manuals, publications, work schedules, journals, statistical data, desk, portable and computer calendars, appointment books, diaries, travel reports, lists, tabulations, computer printouts, data processing program libraries, data processing inputs and outputs, microfilms, microfiches, statements for services, resolutions, financial statements, governmental records, business records, personnel records, work orders, pleadings, discovery in any form, affidavits, motions, responses to discovery, all transcripts, administrative filings and all mechanical, magnetic, photographic and electronic records or recordings of any kind, including any storage media associated with computers, including, but not limited to, information on hard drives, floppy disks, backup tapes, and zip drives, electronic communications, including but not limited to, the Internet and shall include any drafts or revisions pertaining to any of the foregoing, all other things similar to any of the foregoing, however denominated by GM, any other data compilations from which information can be obtained, translated if necessary, into a usable form and any other documents. For purposes of this request, any document which contains any note, comment, addition, deletion, insertion, annotation, or otherwise comprises a non-identical copy of another document shall be treated as a separate document subject to production. In all cases where original and any non-identical copies are not available, "document(s)"also means any identical copies of the original and all non-identical copies thereof. Any document, record, graph, chart, film or photograph originally produced in color must be provided in color. Furnish all documents whether verified by GM or not. If a document is not in the English language, provide both the original document and an English translation of the document.

- **Other Terms:** To the extent that they are used in these information requests, the terms "claim," "consumer complaint," "dealer field report," "field report," "fire," "fleet," "good will," "make," "model," "model year," "notice," "property damage," "property damage claim," "rollover," "type," "warranty," "warranty adjustment," and "warranty claim," whether used in singular or in plural form, have the same meaning as found in 49 CFR 579.4.

In order for my staff to evaluate the alleged defect, certain information is required. Pursuant to 49 U.S.C. § 30166, please provide numbered responses to the following information requests. Insofar as GM has previously provided a document to ODI, GM may produce it again or identify the document, the document submission to ODI in which it was included and the precise location in that submission where the document is located. When documents are produced, the documents shall be produced in an identified, organized manner that corresponds with the organization of this information request letter (including all individual requests and subparts). When documents are produced and the documents would not, standing alone, be self-explanatory, the production of documents shall be supplemented and accompanied by explanation.

Please repeat the applicable request verbatim above each response. After GM's response to each request, identify the source of the information and indicate the last date the information was gathered.

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." Note: For electronic data response, if no data is available please insert NA (or other value) in the data field.

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
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 "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.

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;
   l. Number of alleged fatalities, if any; and
   m. Summary description, items "c" through "f," if available.

   Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." Note: For electronic data response, if no data is available please insert NA (or other value) in the data field.

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.

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." Note: For electronic data response, if no data is available please insert NA (or other value) in the data field.

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.

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.

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.

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.

10. Produce one of each of the following:
   a. Exemplar samples of each design version of the turn signal flasher module;
   b. Field return samples of the turn signal flasher module exhibiting the subject failure mode; and
   c. Any kits that have been released, or developed, by GM for use in service repairs to the subject component/assembly which relate, or may relate, to the alleged defect in the subject vehicles.

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 cut-off date for sales, if applicable)*:
   a. Turn signal flasher module; 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.

12. 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.

This letter is being sent to GM pursuant to 49 U.S.C. § 30166, which authorizes NHTSA to conduct any investigation that may be necessary to enforce Chapter 301 of Title 49 and to request reports and the production of things. It constitutes a new request for information. GM's failure to respond promptly and fully to this letter could subject GM to civil penalties pursuant to 49 U.S.C. § 30165 or lead to an action for injunctive relief pursuant to 49 U.S.C. § 30163. (Other remedies and sanctions are available as well.) Please note that maximum civil penalties under 49 U.S.C. § 30165 have increased as a result of the recent enactment of the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act, Public Law No. 106-414 (signed November 1, 2000). Section 5(a) of the TREAD Act, codified at 49 U.S.C. § 30165(b), provides for civil penalties of up to $5,000 per day, with a maximum of $16,050,000 for a related series of violations, for failing or refusing to perform an act required under 49 U.S.C. § 30166. *See* 49 CFR 578.6 (as amended by 69 Fed. Reg. 57864 (Sept. 28, 2004). This includes failing to respond to ODI information requests.

If GM cannot respond to any specific request or subpart(s) thereof, please state the reason why it is unable to do so. If on the basis of attorney-client, attorney work product, or other privilege, GM does not submit one or more requested documents or items of information in response to this information request, GM must provide a privilege log identifying each document or item withheld, and stating the date, subject or title, the name and position of the person(s) from, and the person(s) to whom it was sent, and the name and position of any other recipient (to include all carbon copies or blind carbon copies), the nature of that information or material, and the basis for the claim of privilege and why that privilege applies.

GM's response to this letter, in duplicate, together with a copy of any confidentiality request, must be submitted to this office by March 28, 2005. Please refer to PE05-006 in GM's response to this letter. If GM finds that it is unable to provide all of the information requested within the time allotted, GM must request an extension from me at (202) 366-5218 no later than five business days before the response due date. If GM is unable to provide all of the information requested by the original deadline, it must submit a partial response by the original deadline with whatever information GM then has available, even if an extension has been granted.

If GM claims that any of the information or documents provided in response to this information request constitute confidential commercial material within the meaning of 5 U.S.C. § 552(b)(4), or are protected from disclosure pursuant to 18 U.S.C. § 1905, GM must submit supporting information together with the materials that are the subject of the confidentiality request, in accordance with 49 CFR Part 512, as amended (69 Fed. Reg. 21409 et seq; April 21, 2004), to the Office of Chief Counsel (NCC-113), National Highway Traffic Safety Administration, Room 5219, 400 Seventh Street, S.W., Washington, D.C. 20590. GM is required to submit two copies of the documents containing allegedly confidential information (except only one copy of blueprints) and one copy of the documents from which information claimed to be confidential has been deleted.

If you have any technical questions concerning this matter, please call Mark Swanson of my staff at (202) 366-7020.

Sincerely,

Thomas Z. Cooper, Chief
Vehicle Integrity Division
Office of Defects Investigation

Enclosures:
6 Vehicle Owner Questionnaires: 10062808, 10065798, 10100501, 10103029, 10104326, 10108009

GM675
PE05-006

ATTACHMENT "1"

GM675
PE05-006

ATTACHMENT "2"

CONFIDENTIAL GM MATERIAL HAS BEEN REMOVED FROM THIS ATTACHMENT AND SUPPLIED TO THE OFFICE OF THE CHIEF COUNSEL

GM675
PE05-006

ATTACHMENT "4"

CONFIDENTIAL MATERIAL HAS BEEN REMOVED FROM THIS ATTACHMENT AND SUPPLIED TO THE OFFICE OF THE CHIEF COUNSEL