

RECEIVED
NVS-215

Handwritten:
7/28/05

March 4, 2006

2005 MAR 10 A 8 5b

OFFICE OF
DEFECTS INVESTIGATION

Kathleen C. DeMeter, Director
Office of Defects Investigation
NHTSA Enforcement
Room #5326
400 Seventh Street, S.W.
Washington, D.C. 20590

GM-657A

NVS-213cla
EA04-028

Dear Ms. DeMeter:

This letter is General Motors' (GM) response to your information request (IR), dated December 17, 2004, regarding allegations of overheating of modular reservoir assembly (MRA) wiring, resulting in fuel leakage or engine stall, in model year (MY) 2000 through 2001 Chevrolet Suburban and GMC Yukon XL sport utility vehicles manufactured by GM.

GM is providing, as requested, information for both a subject vehicle population (MY 2000-01 Suburban and Yukon XL) and a peer vehicle population (MY 1999-2002 Tahos, Suburban, Yukon, and Yukon XL).

Your questions and our corresponding replies are as follows:

1. State, by model, fuel tank, and model year, the number of subject and peer 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. Fuel tank;
 - e. Model Year;
 - f. Date of manufacture;
 - g. Date warranty coverage commenced; and
 - h. 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." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

There are several engine options offered on the subject and peer vehicles, including those that run on gasoline, diesel fuel, and E85. GM indicated in its response to PE04-042 that the subject condition exists only MRAs used in gasoline applications. Accordingly, the summary tables below include only those vehicles manufactured for gasoline applications. A summary of the number of subject and peer vehicles produced for sale or lease in the United States by model and model year is provided in Table 1A and 1B, respectively.

VEHICLE PRODUCTION: SUBJECT VEHICLES

MAKE / MODEL	2000 MY	2001 MY	TOTAL
Chevrolet Suburban	85,387	162,776	248,163
GMC Yukon XL	31,577	70,068	101,645
Total Production	116,964	232,844	349,808

TABLE 1A

VEHICLE PRODUCTION: PEER VEHICLES

MAKE / MODEL	1999 MY	2000 MY	2001 MY	2002 MY	TOTAL
Chevrolet Tahoe	221,328	99,187	194,332	48,676	563,523
GMC Yukon	90,551	44,176	70,850	35,376	240,953
Chevrolet Suburban	225,384	Data Provided in Table 1A		27,288	252,672
GMC Yukon XL ⁽¹⁾	74,898			28,100	103,788
Total Production	611,949	149,363	265,182	140,440	1,160,934

TABLE 1B

(1) 1999 long wheelbase GMC utility marketed as a Suburban, not a Yukon XL.

The specific production information requested in 1a-1h is provided in Attachment 1 GM; folder labeled "Response for Q1" (refer to the Microsoft Access 2000 file). The GM database that contains Vehicle Identification Number (VIN) information does not include information on the state where an individual vehicle was sold. GM is providing the state where the vehicle was shipped in response to request 1h. For some of the subject vehicles, the GM warranty system does not contain a warranty start date or state where the vehicle was shipped and therefore these fields are blank.

For the fuel tank information requested in 1d, GM is providing a reference chart that contains the platform series, model and fuel tank capacity for every vehicle produced; refer to the Excel file in Attachment 1 CD GM; folder labeled "Response to Q1." This information summarizes the different fuel tank assembly configurations released for these vehicles and can be used to determine the specific fuel tank assembly used for every vehicle in the production file.

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 and peer 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. Reports involving a fire, 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;
 - e. Property damage claims; and
 - f. Third-party arbitration proceedings where GM is or was a party to the arbitration; and

g. Lawsuits, both pending and closed, in which GM is or was a defendant or codefendant.

For subparts "a" through "e," 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 "g," 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 f and g, 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 2A and 2B below summarize records that may relate to the subject condition for both the subject and peer vehicles, respectively. GM is providing all of the responsive reports that GM is aware of, which includes those reports within the scope of this information request previously provided in response to PE04-042.

REPORT BREAKDOWN: SUBJECT VEHICLES

TYPE OF REPORT	COUNT (INCLUDING DUPLICATES)	GM REPORTS	GM REPORTS CORRESPONDING TO NHTSA REPORTS	LOCATION OF REPORTS (ATTACHMENT)	NUMBER OF PROPERTY DAMAGE REPORTS	NUMBER OF CRASH INCIDENT REPORTS	NUMBER OF REPORTED INJURIES/FATALITIES	FEES
Owner Reports	68	64	4	2A-A	0	0	0	0
Field Reports and Technical Assistance System Reports	488	487	1	2A-B	0	0	0	0
Not-In-Suit Claims	0	0	0	N/A	0	0	0	0
Subrogation Claims	0	0	0	N/A	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	N/A	0	0	0	0
Product Liability Lawsuits	0	0	0	N/A	0	0	0	0
Total (Including Duplicates)	556	551	5	N/A	0	0	0	0
Total (Excluding Duplicates)	556	551	5	N/A	0	0	0	0

TABLE 2A
 (N/A) Not Applicable

REPORT BREAKDOWN: PEER VEHICLES

TYPE OF REPORT	COUNT (INCLUDING DUPLICATES)	GM REPORTS	GM REPORTS CORRESPONDING TO NHTSA REPORTS	LOCATION OF REPORTS (ATTACHMENT)	NUMBER OF PROPERTY DAMAGE REPORTS	NUMBER OF CRASH INCIDENT REPORTS	NUMBER OF REPORTED INJURIES*	Fires ⁽¹⁾
Owner Reports	52	52	0	2B-A	0	0	0	0
Field Reports and Technical Assistance System Reports	250	250	0	2B-B	0	0	0	2
Not-in-Suit Claims	0	0	0	2B-C	0	0	0	0
Subrogation Claims	1	1	0	2B-D	0	0	1	1
Third Party Arbitration Proceedings	0	0	0	N/A	0	0	0	0
Product Liability Lawsuits	0	0	0	N/A	0	0	0	0
Total (Including Duplicates)	303	303	0	N/A	0	0	1	3
Total (Excluding Duplicates)	303	303	0	N/A	0	0	1	3

TABLE 2B
 (N/A) Not Applicable

- (*) Only minor injury was sustained in this report. There are no reports of fatality.
- (1) Based on available documentation, none of the reported fires have been conclusively linked to overheated wiring in the MRA.

The summaries provided here should not be compared directly with the summary provided in response to PE04-042 for several reasons. The scope of the subject and peer vehicles differs from the scope of the Preliminary Evaluation. GM has conducted a broader keyword search in response to this information request than it did for PE04-042. Additional information is now available for some complaint records related to NHTSA Request numbers 2, 3, and 4. GM has utilized the additional information available for the affected records to identify those that are responsive to this inquiry. In preparing this response, GM has also re-assessed the affected records provided in the GM response to PE04-042 and the records that were considered non-responsive at that time.

To date, GM's investigation of the alleged defect has not included an assessment of the cause(s) of each incident responsive to Request No. 2. Some incident reports may not contain sufficient reliable information to accurately assess cause. 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 sources of the requested information and the last date the searches were conducted are tabulated in Table 2C below.

DATA SOURCES

SOURCE SYSTEM	LAST DATE GATHERED
Corporate Central File	1/13/05
Customer Assistance Center (CAC)	2/3/05
Technical Assistance Center (TAC)	1/27/05
Field Information Network Database (FIND)	6/13/05
Problem Resolution Tracking System (PRTS)	8/2004
Company Vehicle Evaluation Program (CVEP)	5/2004
Captured Test Fleet (CTF)	5/2004
Early Quality Feedback (EQF)	5/2004
Field Product Report Database (FPRD)	1/13/05
Legal / Employee Self Insured Services (ESIS)	1/18/05
Lawpack	1/3/05

TABLE 2C

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:
- GM's file number or other identifier used;
 - The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
 - Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
 - Vehicle's VIN;
 - Vehicle's make, model and model year;
 - Vehicle's mileage at time of incident;
 - Incident date;
 - Report or claim date;
 - Whether fuel leakage is alleged;
 - Whether engine stall is alleged;
 - Whether a crash is alleged;
 - Whether a fire is alleged;
 - Whether property damage is alleged;
 - Number of alleged injuries, if any; and
 - Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

The requested information for 3 a-o is provided in Attachment 1 CD GM; folder labeled "Response for Q3" (refer to the Microsoft Access 2000 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 2A are embedded in the file provided in response to question 3. Copies of the requested documents may be obtained by selecting them from within the file provided in Attachment 1 CD GM; folder labeled "Response for Q3."

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 and [peer] 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." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

The regular and extended warranty claims for the subject vehicles that may be responsive to this request are provided in Attachment 1 CD GM, folder labeled "Response to Q5" (refer to the Microsoft Access file). Not all of the warranty claims included on the CD relate to the alleged defect. GM has conducted an analysis of the field warranty return data provided by Delphi Automotive to determine the number of claims that are believed to involve overheated wiring and/or connectors. This analysis is described in more detail in GM's response to Question 8. Tables 5A and 5B below characterize the number of claims that GM believes may relate to the alleged condition.

The number of regular warranty claims reported below was obtained by applying the estimated warranty rates at 36 months in service (MIS) for the condition of overheated connectors and/or wiring to the respective vehicle population. To obtain the number of extended warranty claims reported below, an estimate of the percentage of MRA replacement claims due to the subject condition was applied to the total number of extended warranty claims. GM does not have information on the total number of vehicles with extended warranty coverage. For this reason, an estimate of the number of extended warranty claims cannot be obtained from overall incident per thousand vehicle (IPTV) rates.

Not all MRAs with overheated wiring will result in a stall or fuel leak. In some cases, MRA wiring may not overheat to an extent necessary to affect its performance. An analysis of 77 field returns for the subject vehicles has shown that approximately 13% of the MRAs with overheated wiring were replaced for reasons unrelated to the condition. For this reason, GM believes the actual number of claims reported below may be overstated.

**WARRANTY CLAIMS ESTIMATE: SUBJECT VEHICLES
 (CHEVROLET SUBURBAN AND GMC YUKON XL)**

	2000 MY	2001 MY	TOTAL
Regular Warranty	850	987	1,817
Extended Warranty	643	442	1,085
			2,902

TABLE 5A

WARRANTY CLAIMS ESTIMATE: PEER VEHICLES

	1999 MY	2000 MY	2001 MY	2002 MY	TOTAL
Regular Warranty					
Suburban / Yukon XL	219	N/A	N/A	0	219
Tahoe / Yukon	755	56	37	9	857
Extended Warranty					
Suburban / Yukon XL	5,517	N/A	N/A	0	5,517
Tahoe / Yukon	5,429	516	305	34	6,284
					12,877

TABLE 5B

(N/A) Not Applicable – these are subject vehicles

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 January 16, 2005.

The information requested in 5b is not being provided, as GM's warranty database does not contain the vehicle owner's name or telephone number. Relative to 5i and 5j, 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. 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 records 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 GM regular warranty data was collected by searching GM CARD for the labor codes and trouble codes that may relate to the subject condition. A list of the labor codes used in this search is provided below in Table 6A. The corresponding trouble codes for each of these labor codes is identified in Attachment 1 CD GM; folder labeled "Response for Q6" (refer to the Microsoft Excel file).

LABOR CODES USED FOR REGULAR WARRANTY CLAIMS SEARCH

LABOR CODE	DESCRIPTION
L1197	SENSOR, FUEL LEVEL (TANK UNIT - ALL)
L1200	SENDER/PUMP, FUEL TANK UNIT - REPLACE
L1224	SENDER/PUMP - RGT - TNK UNIT - REPLACE
L1225	SENDER/PUMP - LFT TNK UNIT - REPLACE
L1228	SENDER/PUMP - RR TNK UNIT - REPLACE
N6286	WIRE/CONN, FUEL PUMP - REPAIR
J6467	PUMP, AUX FUEL TANK TRANSFER - REPLACE
J5590	PUMP, IN TANK FUEL - REPLACE

TABLE 6A

The MIC and UWC extended warranty data was collected using a search of the labor codes listed in Tables 6B and 6C. The MIC and UWC extended warranty databases do not contain trouble codes. No additional filtering of the extended warranty data was performed, due to the lack of part number information.

LABOR CODES USED FOR MIC EXTENDED WARRANTY CLAIMS SEARCH

LABOR CODE	DESCRIPTION
L1195	SEAL, FUEL SENDER/PUMP ASSEMBLY (TANK UNIT) - REPLACE ALL
L1200	SENDER ASSEMBLY, FUEL (TANK UNIT) - REPLACE
L1225	SENDER ASSEMBLY - LEFT TANK UNIT - REPLACE
L1228	SENDER ASSEMBLY - REAR TANK UNIT - REPLACE
J5430	PUMP AND/OR GASKET, ENGINE FUEL - REPLACE
J5590	PUMP, IN TANK FUEL - REPLACE

TABLE 6B

LABOR CODES USED FOR UJWC EXTENDED WARRANTY CLAIMS SEARCH

LABOR CODE	DESCRIPTION
10000	Fuel Delivery - Fuel Pump
10020	Fuel Delivery - Fuel Tank Send Unit
10098	Fuel Delivery - Misc BmprToBmpr
12098	Enhanced Electrical Misc Bmpr2Bmpr

TABLE 6C

Again, the warranty data provided has limited analytical value in analyzing the field performance of a motor vehicle component, like the gasoline modular reservoir assembly (MRA) that contains the subject wiring and connectors. The labor operation codes listed above may be applicable to the alleged defect, but are also related to other issues affecting the MRA. For example, an MRA may be replaced for unrelated issues affecting fuel level sensing and/or fuel pump operation. In addition, claims for diesel and E85 MRA replacements, which do not exhibit the alleged condition, have been included in the warranty file.

All models and model years of the subject vehicles, with the exception of Cadillac, are covered by a bumper-to-bumper new vehicle warranty for three years or 36,000 miles, whichever occurs first. Cadillac models are covered by a four-year, 50,000-mile plan. In addition, many different extended warranty options are available through GM dealerships. They are offered at different prices and for varying lengths of time, based on the customer's preference, up to 7 years from the date of purchase or up to a total of 100,000 vehicle miles. The General Motor's 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.

GM published service bulletin 04-08-04-088 in December 2004 advising GM service technicians to replace the body wiring harness connector to the fuel pump any time the MRA is replaced on MY 2000 through 2001 C/K utility vehicles. An analysis of field return parts has revealed that damage to the fuel pump connector terminals on the body wiring harness can result while performing a continuity check on the MRA wiring. Deformation of the connector terminals can result when the connectors are probed with a tool other than the specified test probe, J J35816-2A. This damage may result in increased resistance in the connection and overheating of the above cover wiring.

GM Engineering has written engineering work order (EWO) number 444834 that releases a new MRA assembly and service kit that includes a 280F MRA pass-thru connector that has been developed to correct the overheated wiring condition. Once these parts are available, they will be used to service the following models and model year vehicles: (1) MY2000-01 Suburban and Yukon XL, (2) MY 2000-03 Tahoe, Yukon, and Escalade, and (3) MY 2000 through 2003 Sierra and Silverado. GM also plans to release service parts that incorporate the new 280F pass-thru connector for other MY 1998 and newer C/K pick-up and utility vehicles. Service bulletins are planned to communicate the availability of these kits and will be released prior to the availability of the service parts.

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 and/or peer vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, GM. For each such action, provide the following information:
- Action title or identifier;
 - The actual or planned start date;
 - The actual or expected end date;
 - Brief summary of the subject and objective of the action;
 - Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
 - A brief summary of the findings and/or conclusions resulting from the action.

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

This response includes actions that relate to the MRA. Many of the "actions" were performed by the supplier, Delphi Automotive, and this response is based in part on information and documents supplied by Delphi. Table 9 below summarizes the actions performed by GM and Delphi Automotive as requested in 8a-e. Documents and additional supporting information are provided in the attachments as noted in the table. Information provided by Delphi Automotive is contained in Attachment 2 CD Delphi, in the folders labeled by index title.

Index Title: 8.1.1	Cover Page to DB
Action Title:	Introduction
Start Date:	2/1/05
End Date:	2/15/05
Subject and Objective:	Warranty return reports and parts - Background information on source of data
Responsibility:	Delphi
Conclusion:	See 8.1.2.
Index Title: 8.1.2	Analysis of (7) June04 WPC
Action Title:	Evaluation
Start Date:	Jun-04
End Date:	7/1/04
Subject and Objective:	Warranty return parts evaluated and summarized for the alleged defects
Responsibility:	Delphi
Conclusion:	4 Subject and 3 Peer parts analyzed.
Index Title: 8.1.3	Summary
Action Title:	Parts Analysis
Start Date:	2/1/05
End Date:	2/15/05
Subject and Objective:	Warranty return reports - Summary
Responsibility:	Delphi
Conclusion:	Summarizes number of reports analyzed and findings.
Index Title: 8.1.4	Database Subject and Peer Reports
Action Title:	Evaluation
Start Date:	10/1/04
End Date:	2/8/05
Subject and Objective:	Warranty return reports evaluated and summarized for the alleged defects.
Responsibility:	Delphi
Conclusion:	See 8.1.2
Index Title: 8.2.0	O Ring Leakage Report
Action Title:	Eng Analysis
Start Date:	12/1/04
End Date:	1/15/05
Subject and Objective:	Leakage Measurements. Explanation of leakage in dried out parts
Responsibility:	Delphi
Conclusion:	Dried out parts may leak, but when re-exposed to fuel they do not leak. Therefore parts would not have leaked in the vehicle.

Index Title: 8.3.1	Microscopic Analysis (TR128884)
Action Title:	Parts Analysis
Start Date:	12/22/04
End Date:	1/5/05
Subject and Objective:	Analysis of parts recovered from salvage yards. Root cause investigation.
Responsibility:	Delphi
Conclusion:	Some evidence of fretting below cover on all parts.
Index Title: 8.3.2	Dry Circuit Resistance
Action Title:	Parts Analysis
Start Date:	10/28/04
End Date:	10/28/04
Subject and Objective:	Analysis of parts recovered from salvage yards. Root cause investigation
Responsibility:	Delphi
Conclusion:	All resistance values low and stable
Index Title: 8.3.3	Photos
Action Title:	Parts Analysis
Start Date:	10/28/04
End Date:	Jan-05
Subject and Objective:	Analysis of parts recovered from salvage yards. Root cause investigation
Responsibility:	Delphi
Conclusion:	One of ten shows evidence of overheating in above cover connector
Index Title: 8.4.1	Cover Page
Action Title:	Introduction
Start Date:	1/5/05
End Date:	2/5/05
Subject and Objective:	Field return parts - Background
Responsibility:	Delphi
Conclusion:	See 8.4.2
Index Title: 8.4.2	Summary
Action Title:	Parts Analysis
Start Date:	2/5/05
End Date:	2/5/05
Subject and Objective:	Field return parts - Summary
Responsibility:	Delphi
Conclusion:	See 8.4.8
Index Title: 8.4.3	Database
Action Title:	Parts Analysis
Start Date:	Jun-05
End Date:	Ongoing
Subject and Objective:	Field parts evaluated and summarized for the alleged defect
Responsibility:	Delphi
Conclusion:	Data collection
Index Title: 8.4.5.1	Above Cover summary & explanation
Action Title:	Parts Analysis
Start Date:	09/23/2004
End Date:	01/26/2005
Subject and Objective:	Field parts with chassis connector attached evaluated. Determine root cause of above cover connector overheating.
Responsibility:	Delphi
Conclusion:	Above cover connector overheating caused by female terminal damage.
Index Title: 8.4.5.2	TR 128041
Action Title:	Parts Analysis
Start Date:	09/23/04
End Date:	09/24/04
Subject and Objective:	Cause of Thermal damage
Responsibility:	Delphi
Conclusion:	Damage due to probing of female terminal on wiring harness
Index Title: 8.4.5.3	TR 128042
Action Title:	Parts Analysis
Start Date:	09/23/04
End Date:	09/24/04
Subject and Objective:	Cause of Thermal damage
Responsibility:	Delphi
Conclusion:	Damage due to probing of female terminal on wiring harness

Index Title: 8.4.5.4	Bulletin from GM
Action Title:	Dealer Alert
Start Date:	Dec-04
End Date:	1/5/05
Subject and Objective:	Dealer service procedure. Improved service procedure.
Responsibility:	General Motors
Conclusion:	Chassis harness connection should be changed when the MRA is serviced
Index Title: 8.5	Peckard (Static Current TR128580)
Action Title:	Testing
Start Date:	08/19/2004
End Date:	10/14/2004
Subject and Objective:	Verify current carrying capacity of Beck MP150 terminals
Responsibility:	Delphi
Conclusion:	Application currents do not exceed capacity of the terminals.
Index Title: 8.6.1	Original GMT 800 & 830
Action Title:	Testing
Start Date:	09/14/2004
End Date:	01/18/2005
Subject and Objective:	Vehicle vibration measurement. Comparison between vehicles
Responsibility:	Delphi
Conclusion:	Yukon XL has higher vibrational energy than pick-up and component specification
Index Title: 8.6.2	2000-2001 GMT 820/830
Action Title:	Testing
Start Date:	10/11/2004
End Date:	01/20/2005
Subject and Objective:	Vehicle vibration measurement. Comparison between vehicles
Responsibility:	Delphi
Conclusion:	Frequency and amplitude vary between Suburban and Tahoe.
Index Title: 8.6.3	Peer Vehicle & GVW vs. Curb Wt.
Action Title:	Testing
Start Date:	12/14/2004
End Date:	01/20/2005
Subject and Objective:	Vehicle vibration measurement. Comparison between various temperatures and vehicle weights.
Responsibility:	Delphi
Conclusion:	Vibration amplitudes are lower at colder temperatures and higher at curb weight than at GVW
Index Title: 8.6.4	Vibration on 1999 GMT 430
Action Title:	Testing
Start Date:	01/04/2005
End Date:	01/18/2005
Subject and Objective:	Comparison of existing design to proposed enhancements in vibration testing
Responsibility:	Delphi
Conclusion:	Power Spectral Density lower than GMT 630 but still above specification
Index Title: 8.7	DOE 1
Action Title:	Testing
Start Date:	Oct-04
End Date:	01/03/2005
Subject and Objective:	Identify the stress factors required to reproduce conditions exhibited by field returns
Responsibility:	Delphi
Conclusion:	Mechanical shock is the only stress factor that is statistically significant.
Index Title: 8.8	DOE 2
Action Title:	Testing
Start Date:	Nov-04
End Date:	03/31/2005
Subject and Objective:	Testing with random vibration described by a PSD rather than mechanical shock. Refine the stress factors required to reproduce conditions exhibited by field returns.
Responsibility:	Delphi
Conclusion:	In process. Progress report in 8.14.18
Index Title: 8.9	Overheated Sample
Action Title:	Eng Analysis
Start Date:	10/04/2003
End Date:	02/05/2005
Subject and Objective:	Evaluation of melted MRA and fuel tank. Determine if cause was alleged defect.
Responsibility:	Delphi
Conclusion:	Incident not related to alleged defect.

Index Title: 8.10 Action Title: Start Date: End Date: Subject and Objective: Responsibility: Conclusion:	Packard 1280F, 280D (TR129830) Testing 11/23/2004 01/05/2005 Comparison of existing design to proposed designs in vibration testing Delphi Proposed design demonstrates improved durability performance
Index Title: 8.11 Action Title: Start Date: End Date: Subject and Objective: Responsibility: Conclusion:	Packard 280F (TR129856) Testing 12/20/2004 01/05/2005 Comparison of existing design to proposed enhancements in vibration testing Delphi Proposed design demonstrates improved durability performance
Index Title: 8.12 Action Title: Start Date: End Date: Subject and Objective: Responsibility: Conclusion:	FEA Wire Simulation Nov-04 01/05/2005 Simulation of dynamic behavior of wire. Evaluation of force transmitted from pump connector to pass through connector. Delphi 3G swept sine input produces a maximum force of 5.7 grams at pass through connection.
Index Title: 8.13 Action Title: Start Date: End Date: Subject and Objective: Responsibility: Conclusion:	FEA Fuel Tanks Simulation Oct-04 01/05/2005 Simulation of dynamic behavior of various fuel tanks. Understanding of various frequency mode shapes. Delphi Tank shape can amplify the vibration that reaches the MRA
Index Title: 8.14.1 Action Title: Start Date: End Date: Subject and Objective: Responsibility: Conclusion:	8/25/2004 Update 08/25/2004 08/25/2004 Status of root cause analysis, info sharing Delphi Reports accepted
Index Title: 8.14.2 Action Title: Start Date: End Date: Subject and Objective: Responsibility: Conclusion:	8/28/04 Update 08/02/2004 08/02/2004 Status of root cause analysis, info sharing Delphi Reports accepted
Index Title: 8.14.3 Action Title: Start Date: End Date: Subject and Objective: Responsibility: Conclusion:	8/8/2004 Update 8/8/2004 8/8/2004 Status of root cause analysis, info sharing Delphi Reports accepted
Index Title: 8.14.4 Action Title: Start Date: End Date: Subject and Objective: Responsibility: Conclusion:	08/22/2004 Update 08/22/2004 08/22/2004 Status of root cause analysis, info sharing Delphi Reports accepted
Index Title: 8.14.5 Action Title: Start Date: End Date: Subject and Objective: Responsibility: Conclusion:	10/06/2004 Update 10/06/2004 10/06/2004 Status of root cause analysis, info sharing Delphi Reports accepted

Index Title: 8.14.6	10/13/2004
Action Title:	Update
Start Date:	10/13/2004
End Date:	10/13/2004
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.7	10/20/2004
Action Title:	Update
Start Date:	10/20/2004
End Date:	10/20/2004
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.8	10/27/2004
Action Title:	Update
Start Date:	10/27/2004
End Date:	10/27/2004
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.9	11/3/2004
Action Title:	Update
Start Date:	11/3/2004
End Date:	11/3/2004
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.10	11/17/2004
Action Title:	Update
Start Date:	11/17/2004
End Date:	11/17/2004
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.11	11/22/2004
Action Title:	Update
Start Date:	11/22/2004
End Date:	11/22/2004
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.12	12/01/2004
Action Title:	Update
Start Date:	12/01/2004
End Date:	12/01/2004
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.13	12/08/2004
Action Title:	Update
Start Date:	12/08/2004
End Date:	12/08/2004
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.14	12/08/2004
Action Title:	Update
Start Date:	12/08/2004
End Date:	12/08/2004
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted

Index Title: 8.14.16	12/15/2005
Action Title:	Update
Start Date:	12/15/2005
End Date:	12/15/2005
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.16	01/06/2006
Action Title:	Update
Start Date:	01/06/2006
End Date:	01/06/2006
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.17	1/12/2005
Action Title:	Update
Start Date:	1/12/2005
End Date:	1/12/2005
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.18	01/12/2006
Action Title:	Update
Start Date:	01/12/2006
End Date:	01/12/2006
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.19	1/19/2005
Action Title:	Update
Start Date:	1/19/2005
End Date:	1/19/2005
Subject and Objective:	Status of root cause analysis, info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.20	1/28/2006
Action Title:	Update
Start Date:	1/28/2006
End Date:	1/28/2006
Subject and Objective:	Status of root cause analysis. info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.21	02/06/06
Action Title:	Update
Start Date:	02/06/06
End Date:	02/05/06
Subject and Objective:	Status of root cause analysis. info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.22	02/09/2006
Action Title:	Update
Start Date:	02/09/2006
End Date:	02/08/2006
Subject and Objective:	Status of root cause analysis. info sharing
Responsibility:	Delphi
Conclusion:	Reports accepted
Index Title: 8.14.23	02/09/2006 Wire Dress Contracts
Action Title:	Update
Start Date:	02/09/2006
End Date:	02/09/2006
Subject and Objective:	Status of root cause analysis. info sharing
Responsibility:	Delphi

Action:	Develop Frequency Information
Start Date:	February 9, 2005
End Date:	Ongoing
Engineering Group:	GM and Delphi Automotive
Attachment:	Attachment 3 CD GM Confidential, folder labeled "Request for Q8." (Microsoft Excel File)
Description:	Develop frequency information for overheated wiring using reliability prediction models
Summary of Action:	GM and Delphi have developed preliminary frequency estimates based on Weibull analysis.
Action:	Assemble Fuel Leak Assessment Information for MY 2000-02 Subject and Peer Vehicles
Start Date:	January 14, 2005
End Date:	March 3, 2005
Engineering Group:	GM Product Investigations
Attachment:	Attachment 3 CD GM Confidential, folder labeled "Request for Q8." (Microsoft Word File)
Description:	Assemble relevant risk assessment information for MY 2000-02 subject and peer vehicles
Summary of Action:	Risk assessment information documented for MY 2000-02 subject and peer vehicles.

In addition to the actions summarized above, GM is planning the following additional actions to support its investigation:

- Reliability projections for the alleged defect over the next 24 months
- Additional analysis of field return data for the peer vehicles (GMT420/430)
- Vibration testing (GMT420/430)
- Vibrational sensitivity study (GMT820/830)
- Final production validation for the 280F pass-thru connector service parts

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.

For GM's response to PE04-042, Delphi Automotive provided a list of modifications and changes that was available for the below cover connector and wiring on parts which were used in the manufacture of the subject vehicles. In light of the root cause investigation that has followed since, Delphi Automotive has examined further modifications and changes that have been made on other components within the production MRAs, including the fuel pump, MRA top cover, fuel level sensor, and electrical connectors. Detailed information regarding these changes is provided in Attachment 2 CD Delphi, folder labeled "Question 9" (refer to Adobe Acrobat files).

Only changes released under EWO number JH351 relate to the electrical connector and wiring involved in the alleged defect. This EWO changed the length of the wires for the ceramic fuel card and fuel pump and was released to optimize the wire lengths for ease of assembly and to reduce stress on the wires. There is no indication that these changes had any effect on the fretting corrosion that leads to overheating of the electrical connector and fuel pump wiring.

GM and Delphi have developed a modified pass-thru connector (280F design) that integrates a 2.8mm terminal for the fuel pump wiring and has been shown to withstand the vibrational environment that leads to fretting corrosion and overheating. GM issued a Letter of Intent to Delphi Automotive on February 10, 2005 to begin tooling for the new connector. On March 3, 2005, GM Engineering wrote EWO number 444634 to release service parts incorporating the new pass-thru connector for certain model and model year vehicles. Plans to produce and fully validate this component are underway. Production parts off low-volume tooling will be available in early June 2005 and are slated for production validation, which will be fully completed by the end of August 2005. Production of service parts off production tools capable of 700,000 units will begin in early July 2005. These parts will be released for service in the field once production validation is completed. Details regarding the rollout of the 280F service kits and MRAs are provided in GM's response to Question 7.

10. Provide the following information relating to the subject fuel pump module(s):
- Identify the material composition of each polymer used in the pump module (including the electrical connector and the pump wiring insulation) by common name, trade name, ASTM abbreviation, and supplier name;
 - State the softening, melting, and ignition temperatures of each polymer identified in item "a;"
 - State the gauge and nominal and maximum currents of each wire in the pump module;
 - Describe the conditions that would cause the internal fuel pump wire insulation to melt in the subject components; and
 - Describe the electrical and thermal fault protection used in the fuel pump module circuit.

GM has provided the information requested in 10c-e in response to PE04-042. Material information associated with 10 a-b was also provided in response to PE04-042 for the pass-thru connector and fuel pump wiring. Additional material information associated with 10 a-c for other components within the MRA is provided in Attachment 2 CD Delphi, folder labeled "Question 10" (refer to Adobe Acrobat file).

11. Provide the following information regarding the fuel tank assemblies used in the subject vehicles:
- Diagrams showing the position of each tank on the vehicle chassis;
 - State the fuel and vapor volumes of each tank when filled using the SAE reference fill procedure;
 - Diagrams of the side and rear views of the tank shell/profile that show: (1) the fuel pump module and associated wiring and electrical connector; (2) the SAE reference fill level in the tank; and (3) all fuel tubes/valves;
 - In the side view diagram, provide the following heights referenced to either the lowest point of the tank or to the parking surface for a vehicle resting on a flat level surface: (1) SAE reference fill level; (2) fuel pump module electrical connector; and (3) all tube/valve openings;

- e. State the volume of fuel that is above the height of the fuel pump module electrical connector in a tank filled to the SAE reference fill level when the vehicle is parked on a flat level surface; and
- f. State the maximum volume of fuel that can be above the height of the fuel pump module electrical connector in a tank filled to the SAE reference fill level when the vehicle is parked on inclined surfaces (longitudinal and lateral slopes).

GM has provided information related to 11 a-f in response to PE04-042 for the subject vehicles. Not all of the requested information was available to GM at that time. Regarding 11f, GM has completed a fuel gradeline study for subject vehicles that quantifies the maximum volume of fuel that can be above the height of the MRA pass-thru connector at various vehicle orientations - level ground and 30% nose down, nose up, left, and right. A chart summarizing this information, along with pictorial views, is provided in Attachment 1 CD GM, folder labeled "Response for Q11" (refer to Microsoft Excel and Powerpoint files).

12. State the number of subject components 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:
 - a. Subject component; and
 - b. Substantially similar components; and
 - c. 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.

A summary table of the requested service part information for the subject component is provided in Attachment 1 CD GM; folder labeled "Response to Q12."

13. Furnish GM's assessment of the alleged defect in the subject vehicles, including:
 - a. The factors contributing to overheating of fuel pump wiring in the subject vehicle population;
 - b. The extent to which each factor is present (using quantifiable data, where available) in each of the following populations: (1) MY 2000-01 C/K-Utility vehicles (long wheelbase); (2) MY 2000-01 C/K-Utility vehicles (short wheelbase); (3) MY 2000-01 C/K-Pickup vehicles; (4) MY 2002 and later C/K-Utility vehicles (long wheelbase); and (5) MY 1999 and earlier C/K-Utility (long wheelbase);
 - c. The frequencies of fuel leakage and engine stall incidents GM believes have resulted from the alleged defect in the vehicle groups identified in 13.b in and GM's estimate of the number of such failures that will occur for each group in the next 24-months;
 - 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.

GM has determined that the overheating of the fuel pump wiring and connector in the subject vehicle population is caused by elevated resistance/arcing at the MRA undercover (B)-cavity terminal of the four-way 150 Melt-Pak connector. Elevated resistance at the connector is the result of fretting corrosion caused by the specific vibrational environment present on the subject

and peer vehicles. The vibrational environment experienced by a specific MRA is unique to each vehicle and tank assembly. GM has determined through vehicle instrumentation and data collection, that the vibrational environment inside the tank assemblies for the Chevrolet Suburban and GMC Yukon XL family of long-wheelbase utilities subjects the MRA to higher energy levels than the short wheelbase utility vehicles. In addition, the energy levels experienced by the MRA in a long wheelbase utility application are greater than the level at which the MRAs were tested and validated. These higher energy levels result in a greater frequency and level of fretting corrosion on the MRAs in the long wheelbase utilities. This analysis is provided in Attachment 1 CD GM as described in GM's response to Question 8.

GM has performed an analysis of the warranty for MRA replace and the data obtained through the analysis of field return parts as described in GM's response to question 8. A summary of the frequency of occurrence of the subject condition is provided below in Table 13A. Per a conversation with Jeff Quandt on January 5, 2005, the frequency information requested in 13 (b) (3) is not being provided for pick-up models. The pick-up models are not within the scope of this inquiry.

FREQUENCY OF OCCURRENCE: OVERHEATED WIRING

Model Year and Model	Warranty Frequency (IPTV @ 36 MIS)
MY 2000-01 C/K Suburban and Yukon XL	61.9
MY 2000-01 C/K Tahoe and Yukon	5.8
MY 2002 C/K Suburban and Yukon XL	0 ⁽¹⁾
MY 1999 C/K Suburban and Yukon XL	13.4
MY 1999 C/K Tahoe and Yukon	45.0

TABLE 13A

(1) The fuel tank assembly changed for MY 2002.

As indicated in this response to Question 5, not all MRAs with overheated wiring will result in a stall or fuel leak. In some cases, MRA wiring may not overheat to an extent necessary to affect its performance. An analysis of field return parts has indicated approximately 68% of MRAs with overheated wiring will result in a no-start condition. In addition, approximately 13% of all MRAs with overheated wiring have not progressed to an extent necessary to affect their performance. Tables 13B and 13C provide an estimate of the frequency of fuel leaks and vehicle stalls that may result from an overheated wiring condition.

FREQUENCY OF OCCURRENCE: FUEL LEAKS

Model Year and Model	Warranty Frequency (IPTV @ 36 MIS)
MY 2000-01 C/K Suburban and Yukon XL	7.4
MY 2000-01 C/K Tahoe and Yukon	N/A ⁽²⁾
MY 2002 C/K Suburban and Yukon XL	0 ⁽¹⁾
MY 1999 C/K Suburban and Yukon XL	N/A ⁽²⁾
MY 1999 C/K Tahoe and Yukon	N/A ⁽²⁾

TABLE 13B

- (1) The fuel tank assembly changed for MY 2002.
- (2) Not available. No field returns for these models have exhibited a leak due to overheated wiring.

FREQUENCY OF OCCURRENCE: VEHICLE STALLS

Model Year and Model	Warranty Frequency (IPTV @ 36 MIS)
MY 2000-01 C/K Suburban and Yukon XL	10.6
MY 2000-01 C/K Tahoe and Yukon	1.0
MY 2002 C/K Suburban and Yukon XL	0 ⁽¹⁾
MY 1999 C/K Suburban and Yukon XL	2.3
MY 1999 C/K Tahoe and Yukon	7.6

TABLE 13C

- (1) The fuel tank assembly changed for MY 2002.

GM is currently unable to provide reliable estimates of the number of fuel leaks and vehicle stalls that may result in the next 24 months from overheated MRA wiring.

There are no diagnostics that warn the vehicle operator that resistance arcing and/or elevated temperatures exist at the MRA. However, when sufficient heat is generated at the pass-through connector to produce a hole of approximately 0.056 inches or greater, the on-board emissions diagnostic system will detect the hole and set a Service Engine Soon warning light. It is also possible, and has been observed, that a fuel pump wire with the subject condition can short out against adjacent wiring for the fuel level sensor, causing noticeable erratic or inaccurate gage readings. Finally, it is possible that intermittent grounding of the B+ (power) wire for the fuel pump will cause fluctuations in the pump speed and corresponding noise that may be discernible by some customers.

NHTSA has provided a total of seventy (70) Vehicle Owner's Questionnaires with this request. A summary of GM's analysis of these complaints is provided in Attachment 1 CD GM, folder labeled "Response for Q13" (refer to Microsoft Excel file).

As indicated in response to Question 8, GM is continuing the investigation to complete its assessment of the effect of the subject condition on the risk to motor vehicle safety.

* * *

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, 1994, 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,

A handwritten signature in black ink, appearing to read "Gay P. Kent". The signature is fluid and cursive, with a horizontal line underneath the name.

Gay P. Kent
Director
Product Investigations

Attachments



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

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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

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

GM-657A
Wayne Kaufman
Original w/CD
Received 1-3-05

NVS-213cla
EA04-026

Dear Ms. Kent:

As you know, the Office of Defects Investigation (ODI) of the National Highway Traffic Safety Administration (NHTSA) has upgraded its investigation of alleged overheating of Modular Reservoir Assembly (MRA) wiring resulting in fuel leakage or engine stall in model year (MY) 2000 through 2001 Chevrolet Suburban and GMC Yukon XL sport utility vehicles manufactured by General Motors Corporation. This letter requests additional information to assist us in our investigation.

This office has received a total of 40 reports alleging fuel leakage or engine stall due to MRA failure. Twenty-one of the complaints allege that fuel leaked from the vehicle, of which 16 claimed that MRA wiring overheated causing the plastic electrical connector to melt, resulting in leakage from the top of the fuel tank assembly. Fifteen complaints allege that fuel pump wiring failure caused an engine stall incident and 4 complaints allege that MRA wiring failure caused the vehicle to become inoperative. A copy of each of the reports is enclosed for your information.

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

- **Subject vehicles:** all MY 2000 and 2001 Chevrolet Suburban and GMC Yukon XL sport utility vehicles manufactured for sale or lease in the United States.
- **Peer vehicles:** all MY 1999 through 2002 Chevrolet Tahoe and GMC Yukon and MY 1999 and 2002 Chevrolet Suburban and GMC Yukon XL sport utility vehicles manufactured for sale or lease in the United States.
- **Subject component:** the fuel pump module also referred to as the "Modular Reservoir Assembly (MRA)" and all other components or parts used in or associated with the MRA.

- **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, 1994, 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:** the alleged defect shall include all reports and claims involving one or more of the following symptoms or conditions: (1) overheated MRA (fuel pump) wiring; (2) fuel leakage from the top of the fuel tank assembly; or (3) engine driveability concerns related to the fuel pump assembly.

- **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.

- i. State, by model, fuel tank, and model year, the number of subject and peer 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. Fuel tank;
 - e. Model Year;
 - f. Date of manufacture;
 - g. Date warranty coverage commenced; and
 - h. 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." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

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 and peer 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. Reports involving a fire, 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;
 - e. Property damage claims; and
 - f. Third-party arbitration proceedings where GM is or was a party to the arbitration; and
 - g. Lawsuits, both pending and closed, in which GM is or was a defendant or codefendant.

For subparts "a" through "e," 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 "g," 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 f and g, 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 fuel leakage is alleged;
- j. Whether engine stall is alleged;
- k. Whether a crash is alleged;
- l. Whether a fire is alleged;
- m. Whether property damage is alleged;
- n. Number of alleged injuries, if any; and
- o. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

- 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 and 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." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

- 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 and/or peer 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. Provide the following information relating to the subject fuel pump module(s):
 - a. Identify the material composition of each polymer used in the pump module (including the electrical connector and the pump wiring insulation) by common name, trade name, ASTM abbreviation, and supplier name;
 - b. State the softening, melting, and ignition temperatures of each polymer identified in item "a;"
 - c. State the gauge and nominal and maximum currents of each wire in the pump module;
 - d. Describe the conditions that would cause the internal fuel pump wire insulation to melt in the subject components; and
 - e. Describe the electrical and thermal fault protection used in the fuel pump module circuit.
11. Provide the following information regarding the fuel tank assemblies used in the subject vehicles:
 - a. Diagrams showing the position of each tank on the vehicle chassis;
 - b. State the fuel and vapor volumes of each tank when filled using the SAE reference fill procedure;
 - c. Diagrams of the side and rear views of the tank shell/profile that show: (1) the fuel pump module and associated wiring and electrical connector; (2) the SAE reference fill level in the tank; and (3) all fuel tubes/valves;
 - d. In the side view diagram, provide the following heights referenced to either the lowest point of the tank or to the parking surface for a vehicle resting on a flat level surface: (1) SAE reference fill level; (2) fuel pump module electrical connector; and (3) all tube/valve openings;
 - e. State the volume of fuel that is above the height of the fuel pump module electrical connector in a tank filled to the SAE reference fill level when the vehicle is parked on a flat level surface; and
 - f. State the maximum volume of fuel that can be above the height of the fuel pump module electrical connector in a tank filled to the SAE reference fill level when the vehicle is parked on inclined surfaces (longitudinal and lateral slopes).
12. State the number of subject components 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:
 - a. Subject component; and
 - b. Substantially similar components; and
 - c. 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.

13. Furnish GM's assessment of the alleged defect in the subject vehicles, including:
 - a. The factors contributing to overheating of fuel pump wiring in the subject vehicle population;
 - b. The extent to which each factor is present (using quantifiable data, where available) in each of the following populations: (1) MY 2000-01 C/K-Utility vehicles (long wheelbase); (2) MY 2000-01 C/K-Utility vehicles (short wheelbase); (3) MY 2000-01 C/K-Pickup vehicles; (4) MY 2002 and later C/K-Utility vehicles (long wheelbase); and (5) MY 1999 and earlier C/K-Utility (long wheelbase);
 - c. The frequencies of fuel leakage and engine stall incidents GM believes have resulted from the alleged defect in the vehicle groups identified in 13.b in and GM's estimate of the number of such failures that will occur for each group in the next 24-months;
 - 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 \$15 million for a related series of violations, for failing or refusing to perform an act required under 49 U.S.C. § 30166. This includes failing to respond to ODI information requests.

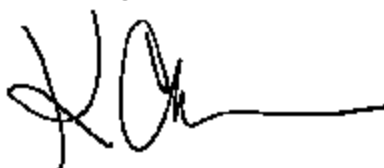
If GM cannot respond to any specific request or subpart(s) thereof, please state the reason why it is unable to do so. If on the basis of attorney-client, attorney work product, or other privilege, GM does not submit one or more requested documents or items of information in response to this information 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 February 11, 2005. Please refer to EA04-026 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 Mr. Jeffrey Quandt at (202) 366-5207 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 (68 Fed. Reg. 44209 et seq; July 28, 2003), 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 Chris Lash of my staff at (202) 366-2370.

Sincerely,



Kathleen C. DeMeter, Director
Office of Defects Investigation
Enforcement

Enclosure 1, One CD ROM titled Data Collection Disc containing three files
Enclosure 2, containing VOQ complaints,

**GM657A
EA04-026**

ATTACHMENT "1"

**GM657A
EA04-026**

ATTACHMENT "2"

**GM657A
EA04-026**

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

ATTACHMENT "3"

**GM657A
EA04-026**

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

ATTACHMENT "4"