GENERAL MOTORS NORTH AMERICA
Structure & Safety Integration

June 8, 2005

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

GM-678

NVS-312car
PE05-017

Dear Mr. Quandt:

This letter is General Motors (GM) response to your information request (IR), dated April 11, 2005, regarding allegations of ignition discharge module (IDM) failures in certain model year (MY) 1999 through 2002 Saab 9-3 and 9-5 vehicles manufactured with four-cylinder engines.

In your information request, the subject vehicles were defined as all MY 1999-2005 Saab 9-3 and 9-5 vehicles manufactured for sale or lease in the United States. For those model years, Saab offered three families of engines for the 9-3 and 9-5 models as shown in the table below.

Engine Family	Vehicle Application	Model Years Offered
Family III Gen 3 2.0L L4 DOHC Turbo	Saab 9-3	1999
Family III Gen 4 2.0L / 2.3L L4 DOHC Turbo	Saab 9-3 and 9-5	1999 – 2005
L850 2.0 L L4 DOHC Turbo	Saab 9-3	2003 – 2005
54° V6 DOHC Turbo	Saab 9-5	1999 - 2003

The complaints of engine stalling due to an ignition discharge module (IDM) failure received by NHTSA and included in this information request are for the 2.0L / 2.3L Family III engine only. Per GM's discussion with Cheryl Rose on May 17, 2005, the scope of this response will be limited to Saab 9-3 and 9-5 vehicles produced for MY 1999 through 2003 with a 2.0L or 2.3L Family III engine or a 54° V6 DOHC Turbo engine.

The 2.0L L850 engine, which was new for MY2003, is not included in this response, because the IDM module that is the subject of the information request is not used on the L850 engine. The Family III four cylinder engines use a single IDM to provide spark to all four cylinders, while the V6 uses two IDM modules, each of which provides spark to one bank of the engine. When an IDM fails on a vehicle equipped with a V6 engine, the typical result is reduced engine power, not engine stalling.

Your information request also states that, if a responsive document is not in the English language, both the original document and an English translation of the document should be provided. Many of the documents requested in questions 8, 9, and 10 were originally produced in Swedish by Saab Automobile AB. GM has not had an opportunity to translate each of the Swedish documents as requested in order to determine whether they contain proprietary information. However, GM is

providing a summary of the documents that are responsive to each question, along with any related documents that have predominantly English content.

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. **Engine Type;**
   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 which provides further details regarding this submission.

   GM is providing a summary of the number of subject vehicles produced for sale or lease in the United States by model and model year in Table 1 below:

PRODUCTION DATA

MODEL	MY 1999	MY 2000	MY 2001	MY 2002	MY 2003	TOTAL
9-3	22,223	17,757	20,767	17,954	7,666	86,367
9-5	24,018	16,836	22,798	15,231	15,103	93,986
TOTAL PRODUCTION	46,241	34,593	43,565	33,185	22,769	180,353

TABLE 1

The specific production information requested in 1(a-h), except 1(e) is provided in Attachment 1 GM, folder labeled "Response for Q1;" refer to the Microsoft Access 2000 file. GM is providing a cross-reference table that relates VIN position eight to an engine description and model years offered in response to item 1(e) in Attachment 1 CD GM, folder labeled "Response for Q1;" refer to Microsoft Excel file named "EngineTypeVINCrossReference.xls." 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.

2. **State, by model and model year, the number of each of the following, received by GM, or of which GM are otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:**
   a. **Total consumer complaints, including those from fleet operators;**

b. Consumer complaints, including those from fleet operators, where a vehicle stall was reported;
c. Total field reports, including dealer field reports;
d. Field reports, including dealer field reports, where a vehicle stall was reported;
e. 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;
f. Reports involving a fire, including, but not limited to those involving smoke, 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;
g. Property damage claims;
h. Third-party arbitration proceedings where GM is or was a party to the arbitration; and
i. Lawsuits, both pending and closed, in which GM is or was a defendant or codefendant.

For subparts "a" through "g," 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 "e" through "i," 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 "h" and "i", 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 2B on the following page summarizes records that may relate to the alleged defect for the subject vehicles.

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

DATA SOURCES

SOURCE SYSTEM	LAST DATE GATHERED
Customer Assistance Center (CAC)	05/23/2005
Technical Assistance Center (TAC)	05/05/2005
Field Information Network Database (FIND)	05/05/2005
Problem Resolution Tracking System (PRTS)	05/02/2005
Company Vehicle Evaluation Program (CVEP)	05/02/2005
Captured Test Fleet (CTF)	05/02/2005
Early Quality Feedback (EQF)	05/02/2005
Field Product Report Database (FPRD)	05/05/2005
Legal / Employee Self Insured Services (ESIS) / Product Liability Claims and Lawsuits	05/10/2005
Product Improvement Request (PIR)	06/12/2005

TABLE 2A

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	NUMBER OF REPORTED STALLS	FIRES[1]
Owner Reports	332	327	5	2A/B	1	3	0	258	30
Field Reports and Technical Assistance System Reports	104	104	0	2C/D	0	0	0	12	2
Not-In-Suit Claims	1	1	0	2E	1	1	0	1	0
Subrogation Claims	2	2	0	2G	1	0	0	1	2
Third Party Arbitration Proceedings	0	0	0	N/A	0	0	0	0	0
Product Liability Lawsuits	0	0	0	N/A	0	0	0	0	0
Total (Including Duplicates)	439	434	6	N/A	3	4	0	272	34
Total (Excluding Duplicates)	427	422	5	N/A	3	4	0	255	29

TABLE 2B

(N/A) Not Applicable

(1) This column contains the number of reports that clearly allege a "fire" or where there is corroborating evidence of a flame. An IDM failure is sometimes accompanied by the odor and smoke generated by overheated electrical components within the IDM. GM has received and is providing an additional 51 reports (excluding dups) which meet the more general definition of fire set forth in 49 CFR 579.4, which states fire is defined as "combustion or burning of any material in a vehicle as evidence by, but not limited to, flame, smoke, sparks, or smoldering."

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.

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. Engine type;
g. Vehicle's mileage at time of incident;
h. Vehicle's speed at time of incident;
i. Incident date;
j. Report or claim date;
k. Whether any warning lights were luminated at the time the alleged defect occurred (identify light);
l. Whether the vehicle stalled as a result of the alleged defect;
m. Whether the driver was able to restart the vehicle, if the vehicle stalled;
n. Whether the vehicle was towed into the dealership;
o. If the engine control system was reported to limit the vehicle speed as a result of the alleged defect, indicate the speed to which the vehicle was limited;
p. Whether a crash is alleged;
q. Whether a fire is alleged;
r. Whether property damage is alleged;
s. Number of alleged injuries, if any;
t. Number of alleged fatalities, if any; and
u. A summary of the incident.

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 which provides further details regarding this submission.

The requested information for 3(a-u), except 3(f, h, k and o) is provided in Attachment 1 CD GM; folder labeled "Response for Q3;" refer to the Microsoft Access 2000 file. Regarding 3(f), GM has provided a cross-reference table in response to question 1(e) that can be used to obtain engine type. GM is not providing the detailed information requested in 3(h, k and o) for each of the reports, as there is insufficient information in the reports to accurately ascertain the information requested for each claim.

4. Produce copies of all documents, including all document attachments, 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.

Verbatim text of the records summarized in Table 2B are included in the file provided in response to question 3. Additional documents related to these records are in the process of being retrieved and will be provided as soon as they are available.

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. Whether any warning lights were luminated at the time the alleged defect occurred (indicate name of light);
g. Whether the vehicle stalled as a result of the alleged defect;
h. Whether the driver was able to restart the vehicle, if the vehicle stalled;
i. Whether the vehicle was towed into the dealership;
j. Whether the engine control system was reported to limit the vehicle speed as a result of the alleged defect, if the vehicle did not stall;
k. The speed to which the vehicle was limited as a result of the engine control system;
l. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
m. Labor operation number;
n. Problem code;
o. IDM Check Code;
p. Failure Status;
q. Replacement part number(s) and description(s);
r. Concern stated by customer; and
s. 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 which provides further details regarding this submission.

The regular warranty claims that may relate to the failure of the IDM are provided in Attachment 1 CD GM, folder labeled "Response for Q5;" refer to the Microsoft Access file. Table 5 below summarizes the total number of regular warranty claims processed on the subject vehicles through April 19, 2005. Saab Cars USA, Inc. does not offer an extended warranty for the subject vehicles.

WARRANTY DATA

MODEL	MY 1999	MY 2000	MY 2001	MY 2002	MY 2003	TOTAL
9-3	2,216	6,538	7,820	3,011	149	19,736
9-5	5,501	6,312	8,946	1,761	556	23,076
TOTAL WARRANTY	7,719	12,850	16,766	4,772	705	42,812

TABLE 5

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 either the condition of the part at the time of the warranty correction or the circumstances under which the alleged problem occurred; 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.

The information requested in 5b is not being provided, as Saab's warranty database does not contain the vehicle owner's name or telephone number. GM is also not providing the detailed information requested in 5(f, h, i, j, k, n, o and p) for each of the warranty claims, as there is insufficient information in the verbatim text field to accurately ascertain the information requested for each claim. GM is providing an analysis of item 5(g) in response to question 9 and a summary of the percentages in response to question 14.

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 for the subject vehicles was collected by searching the Saab Cars USA, Inc. warranty system for labor code 34041, Ignition Discharge Module Replace. No additional filtering of the warranty data was performed.

For all models and model years of the subject vehicles, Saab's new car warranty features "bumper to bumper" coverage for 4 years or 50,000 miles, whichever comes first. The IDM is covered under the standard "bumper to bumper" coverage. Saab Cars USA, Inc. does not offer an extended warranty for vehicles manufactured for sale or lease in the United States.

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.**

Saab Cars USA, Inc. published technical service bulletins (TSBs) 248-2427 and 248-2428 in January and May 2004 requesting service technicians follow a new diagnostic procedure where a problem with the IDM is suspected. The procedure requires the service technician obtain an "IDM Check Code" and "Failure Status" information after replacing an IDM to ensure the correct repair has been performed on the vehicle. In some cases where the vehicle has been driven repeatedly without an opportunity for the engine to warm up, carbon deposits on the spark plugs may generate specific type P diagnostic trouble codes of the same type as an internal fault in the IDM. In these cases, the procedure recommends the spark plugs be replaced to remedy the problem.

GM is providing copies of the bulletins and related information in Attachment 1 CD GM, folder labeled "Response for Q7;" refer to Microsoft Word and Adobe Acrobat files. GM does not plan to issue any further technical service bulletins related to the IDM within the next 120 days.

8. **State whether GM has had any written or oral communications with any ignition discharge module manufacturer(s) regarding the alleged defect in the subject vehicles.**

If so, provide copies of all such communications that were in writing, identifying the date of the communication, the name and position title of GM employee sending or receiving the communication, and the name, company, division, and position title of the IDM manufacturer employee receiving or sending the communication. For any oral communication, state the date on which it was conducted, identify all participants by name, position title, and employing company and division or other entity, and provide a transcript of the communication. If no transcript was made, state the substance of the communication in full and any actions taken as a result of the communication and by whom those actions were taken.

Between 1999 and 2004, Powertrain Engineering within Saab Automobile AB, now called GM Powertrain - Europe (GMPT-E), conducted numerous meetings with SEM AB, the manufacturer of the IDM, in order to improve the quality and functionality of the IDM. A summary of these meetings, including the date the meeting was conducted, the documents that were reviewed, and a summary of the discussion is provided in Attachment 1 CD GM, folder labeled "Response for Q8;" refer to Microsoft Excel file named "Communication summary, issue 8.xls." GM is also providing copies of the documents that were reviewed in these meetings, along with a list of action items used to track the work in these meetings in Attachment 1 CD GM, folder labeled "Response for Q8;" refer to the Microsoft Excel file named "Actionlist Saab-SEM Tk April 1, 2004.xls", Microsoft Word and Adobe Acrobat files.

As a result of the meetings between GMPT-E and the manufacturer of the IDM, several modifications were agreed upon to improve the quality and reliability of the IDM. GM is providing a list of these changes in response to Question 10.

As agreed to in a prior conversation with NHTSA, GM has searched for written communications between GMPT-E and the IDM manufacturer. GM is in the process of gathering responsive e-mails between GMPT-E and the IDM manufacturer. These communications may require translation.

9. **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.

   GM is providing a summary of the component, subsystem and vehicle-level tests that relate to the analysis, development, and validation of each version of the IDM used in the subject vehicles in Attachment 1 CD GM, folder labeled "Response for Q9;" refer to Microsoft Excel file named "Test result summary.xls."

From March 1999 through April 2003, SEM AB, the supplier of the IDM, and GMPT-E worked together to identify and eliminate several quality problems with the IDM used in the model years 1999 through 2003. These actions are summarized in Attachment 3 CD SEM AB Confidential, folder labeled "Response for Q9;" refer to Adobe Acrobat file named "1_Analysis of alleged defect.pdf." A worksheet containing the English translation for Swedish terms used in Appendices 2 and 4 to the above document is provided in Attachment 3 CD SEM AB Confidential, folder labeled "Response for Q9;" refer to Excel file named "Apendices2_4EnglishTranslation.xls."

Table 9 below summarizes the additional actions performed by GM North America and GMPT-E Powertrain Engineering in preparation for this response. Documents and related information are provided in the attachments as noted in the table.

SUMMARY OF ACTIONS RELATED TO THE SUBJECT CONDITION

Action: Analysis of the potential for an IDM related vehicle fire – 4-Cyl. **Start Date:** April 26, 2005 **End Date:** June 6, 2005 **Engineering Group:** GMPT-NA **Attachments:** Attachment 1 CD GM, folder labeled "Response for Q9;" sub-folder "Fire Analysis" **Description:** Evaluation of the field return parts, physics of failure, material properties and underhood packaging **Summary of Action:** Thermal events are limited to the IDM and are self-extinguishing
Action: Analysis of the potential for an IDM related vehicle fire – V8 **Start Date:** April 26, 2005 **End Date:** June 6, 2005 **Engineering Group:** GMPT-NA **Attachments:** Attachment 1 CD GM, folder labeled "Response for Q9;" sub-folder "Fire Analysis" **Description:** Extension of 4-cylinder fire analysis to include interaction with catalytic converter **Summary of Action:** Underhood thermal events same as 4-cyl. Catalytic converter may overheat.
Action: Warranty Parts Return Review **Start Date:** May 11, 2005 **End Date:** May 26, 2005 **Engineering Group:** GMPT-NA, GM Product Investigations **Attachments:** Attachment 1 CD, folder labeled "Response for Q9;" file named "79581WPCReview05262005.xls" **Description:** Evaluation of the field return parts **Summary of Action:** Inspected 85 warranty return parts for customer complaint and evidence of thermal damage
Action: Analysis of the engine stalling rate due to a failure of the IDM **Start Date:** April 13, 2005 **End Date:** June 7, 2005 **Engineering Group:** GMPT-E **Attachment:** Attachment 1 CD GM, folder labeled "Response for Q9;" file named **Description:** Analysis of warranty claim verbatims used to develop overall engine stalling rates **Summary of Action:** Approximately 10-30% of 4-cyl and 2-9% of V8 warranty claims
Action: Simulation of an IDM failure on 54° V8 and evaluation of the resulting performance and driveability **Start Date:** May 17, 2005 **End Date:** June 8, 2005 **Engineering Group:** GMPT-NA **Attachment:** Attachment 1 CD GM, folder labeled "Response for Q9;" file named "V8IDMDrivingEval.doc" **Description:** Driving evaluation of Saab 9-5 V8 with one bank of injectors disabled **Summary of Action:** IDM failure results in reduced engine power and ample warning of engine malfunction, not an immediate engine stall while driving
Action: Prepare Field Information Reports (FIRs) for California Air Resources Board (CARB) **Start Date:** April 16, 2001 **End Date:** October 11, 2004 **Engineering Group:** Saab Automobile AB **Attachment:** Attachment 1 CD GM, folder labeled "Response for Q9;" refer to Microsoft Word Documents **Description:** Copy of FIRs submitted to CARB regarding IDM warranty replacements **Summary of Action:** Analyze warranty for IDM replace and prepare reports

TABLE 9

10. 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 and the engine management system, 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.

Based on information obtained through the actions identified in response to question 9, SEM AB made a number of manufacturing and product-related changes to improve the overall performance and reliability of the IDM. These modifications were grouped into "Quality Packages" and were implemented at specific intervals between November 2000 and July 2002. Additional improvements are planned for production beginning in August 2005 with the implementation of Quality Package 4.5 (QP4.5). Table 10 provides a summary of the information requested in 10(a, d, e and h) for each of the quality packages. Detailed information regarding questions 10(b and c) are provided in Attachment 3 CD SEM AB Confidential, folder labeled "Response for Q9;" refer to Adobe Acrobat file named "1_Analysis of alleged defect.pdf."

SUMMARY OF IDM MODIFICATIONS

Quality Package	Production Start Date	P/N Change (Y/N)	Old Version (P/N)	New Version (P/N)	Interchangeable (Y/N)
QP1	11/20/2000	N	9197559	9197559	Y
QP2	6/18/2001	N	9197559	9197559	Y
QP3	7/2/2002	N	9197559	9197559	Y
QP4	7/2/2002	Engine management software update only, no IDM hardware change			Y
QP4.5	8/15/2005*	Y	9197559	55559955	Y

TABLE 10

*Planned start of production

Service parts incorporating the modifications associated with each of the quality packages were made available at the same time the changes were implemented into vehicle production. Existing Saab dealer stock of the previous version of the IDM were exhausted in service prior to the use of the new service part.

11. Produce each of the following:

a. One exemplar sample of each design version of the subject component;
b. Field return samples of the subject component 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.

GM is providing the following samples in response to 10(a-b):

EXEMPLAR SAMPLES

SERIAL NO.	PART NUMBER	PRODUCTION WK	TYPE / DESCRIPTION
A720862	9178955	0517	TK3.2, Operational
D332841	9197559	0224	TK3.4, Operational
E249205	9197559	0515	TK3.6, Operational
C079689	9187436	0150	TK4.4, Operational
F014370	9187436	0518	TK4.6, Operational
A691963	9178955	0414	TK3.2, Inoperative
D219000	9197559	0128	TK3.4, Inoperative
E048064	9197559	0250	TK3.6, Inoperative
C060681	9187436	0050	TK4.4, Inoperative

TABLE 10

The samples identified as inoperative were all returned for a no-spark condition. As of May 11, 2005 the IDM manufacturer is aware of no version TK4.6 parts that have been returned for a no-spark condition.

GMPT-E has not released or developed any kits for use in service repairs for the IDM used in the subject vehicles.

12. Provide the following information related to subject component in the subject vehicles:

a. The location, by model, model year, and engine type, of the IDM in the subject vehicles;
b. By model, model year, engine type, and engine management system (Trionic 5, Trionic 7, Trionic 8, etc.), the types of direct ignition cassettes used for each subject vehicle;
c. A description of each type of cassette listed in Request No. 12.b (Note: The description should include sufficient information to explain the differences among the cassettes);
d. Schematics of the IDM circuit, including all revisions due to modifications or changes made to the subject component or any system influencing the subject component;
e. A description of how the subject component operates within each of the subject vehicles;
f. What prompted GM to add a check for the type P diagnostic trouble codes (P-DTCs) in its May 2004, Technical Service Bulletin (TSB) No. 248-2428 Edition 3; and

g. A description of all the P-DTC's referenced in TSB No. 248-2428 Edition 3.

The IDM modules for all models, model years, and engine types of the subject vehicles is located above the cylinder head. Underhood pictures illustrating the location of the IDM and its electrical connector on a 4-cylinder engine and a schematic depicting the IDM location on the V6 engine are provided in Attachment 1 CD GM, folder labeled "Response for Q12;" subfolder "IDMLocationPics."

Regarding questions 12(b, c, and e), GM is providing an ignition system comparison and functional description of the different IDM modules in Attachment 3 CD SEM AB Confidential, folder labeled "Response for Q12;" refer to Microsoft Word files named "Saab_Ignition_System_Comparison.doc" and "Func description TK 0500429_02.doc."

Schematics of the IDM circuitry for all versions of the IDM used in the subject vehicles are provided in Attachment 3 CD SEM AB Confidential, folder labeled "Response for Q12;" refer to Adobe Acrobat files.

Saab Cars USA, Inc. released TSB 248-2427 and TSB 248-2428, which added a check for certain P diagnostic trouble codes (P-DTCs), to ensure the proper remedy in situations where carbon deposits on the spark plugs may be misdiagnosed as a problem with the IDM. GM has provided additional detail concerning these bulletins in response to question 7.

The P-DTCs referenced in the bulletins relate to camshaft position sensing, engine misfire detection, IDM power sensing, and catalyst damaging exhaust detection diagnostics. Table 12G below provides a description for each of the P-DTCs referenced in the bulletins.

TSB DTC DESCRIPTIONS

P-DTC	DESCRIPTION
P0340	camshaft position sensor malfunction
P1312	combustion detection, cyls 1 &2 open circuit or short to B+
P1313	combustion detection bank one, open circuit, short to B+
P1324	combustion detection bank two, open circuit, short to B+
P1334	combustion detection, cyls 3 & 4 open circuit or short to B+
P0171	Short term fuel trim MAX value, air fuel too lean
P0172	Short term fuel trim MIN value, air fuel tool rich
P0336	crankshaft position sensor circuit, performance problem

P-DTC	DESCRIPTION
P0337	Crankshaft position sensor, no input
P1171	Short term fuel trim MAX value, air fuel tool lean
P1172	Short term fuel trim MIN value, air fuel tool rich
P1181	Long term fuel trim MAX value, air fuel too lean
P1182	Long term fuel trim MIN value, air fuel too rich
P1310	Ignition Discharge Module, Not powered bank one
P1320	Ignition Discharge Module, Not powered bank two
P1480	Immobilizer active

TABLE 12G

13. State the number of each of the following that GM has sold that may be used in the subject vehicles by component name, part number (both service and

engineering/production), model and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales, if applicable):

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

For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number) and the percent of United States sales that GM has for that part number. Also identify by make, model and model year, any other vehicles of which GM is aware that contain, or have contained, the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

A summary of the requested service part information for the subject component is provided in Attachment 1 CD GM, folder labeled "Response for Q13;" refer to the Microsoft Excel file. The data was last gathered on June 4, 2005. The table contains service part numbers, part description, part usage information, part sales figures calendar year and the supplier's name and address, contact name and phone number.

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

14. 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;
f. The reports included with this inquiry;
g. The 3-year IDM failure warranty rate;
h. The 5 and 10-year projected IDM failure rates;
i. The percent of IDM failures that will result in a stalling incident; and
j. The percent of stalling incidents that will result in a no restart condition.

The Family III series 4-cylinder engines and the 54° V6 engines used in MY1999-2003 Saab 9-3 and 9-5 vehicles have a capacitive discharge (CD) ignition system in which the IDM provides the necessary spark for correct engine operation. In the 4-cylinder applications, a single IDM provides spark to all four cylinders. In the V6 application, two IDMs, one for each bank of the engine, are used to provide the necessary spark to the engine.

In a CD ignition system, the primary ignition energy is stored on a capacitor until it is time to fire the spark plug. When called for, the energy that is stored on the capacitor is discharged through the ignition coil primary winding. The coil generates the high voltage needed to ionize the spark plug gap. When an IDM fails to function properly, the result may be a no-start condition, poor engine driveability, or engine stall.

Data obtained from the "burn-in" procedure followed for every manufactured IDM unit and the testing of field return parts has revealed several issues related to the quality and reliability of the IDM, however the primary failure mechanism involves overheating and burnout of the isolated gated bipolar transistor (IGBT). Approximately 60% to 90% of the inoperative field return parts analyzed for the model years 1999 through 2001 have exhibited an overheated IGBT. The IGBT is critical to the charging and discharging of the ignition charge capacitor, consequently the result of an inoperative IGBT is a no-spark condition.

Overheating of the IGBT occurs most often at engine start-up, because the electrical demand on the IGBT and the corresponding heat generated at the IGBT is highest. More specifically, the voltage available to the IGBT is lowest on engine start-up, necessitating higher currents, and the IDM is providing multiple spark events to the engine, as opposed to a single spark, for each combustion cycle.

The IGBT may also fail while the engine is running, resulting in an engine stall without warning on four-cylinder engine.

When an IDM fails on a V6, the engine will continue to operate at reduced power. In addition, the OBD II diagnostics will detect an engine misfire in the three cylinders affected by the inoperative IDM and will begin continuously flashing the malfunction indicator light (MIL). Subsequent to the failure of an IDM, performance of the engine will gradually diminish as the catalytic converter is overwhelmed by the increased quantity of un-burnt hydrocarbons (raw fuel) from the cylinders with the disabled IDM and will remain continuously illuminated. Depending on how long the vehicle is driven in this condition, the engine may stall as the catalytic converter becomes plugged.

Tables 14G provides the 3-year screened IDM warranty replacement rate by engine family and vehicle model for model years 1999 through 2003.

36 MIS Screened Warranty Rates (IPTV) – IDM Replacement

	MY 1999	MY 2000	MY2001	MY 2002	MY 2003
Saab 9-3 / 9-5 54° V6 DOHC Turbo	53	79	145	71	95
Saab 9-3 Family III 4-Cyl DOHC Turbo	20	102	177	98	12
Saab 9-5 Family III 4-Cyl DOHC Turbo	74	140	209	73	11

Table 14G

Weibull analyses of the warranty data for IDM replacements were used to predict the cumulative frequency of IDM replacements through five and ten years exposure. A summary of the 5 and 10-year predictions is provided in tables 14H1 and 14H2 below.

5-Year Screened Warranty Projections (IPTV) – IDM Replacement

	MY 1999	MY 2000	MY 2001	MY 2002	MY 2003
Saab 9-3 / 9-5 54° V6 DOHC Turbo	100	175	350	175	125
Saab 9-3 / 9-5 Family III 4-Cyl Turbo	300	390	440	250	10

Table 14H1

10-YEAR SCREENED WARRANTY PROJECTIONS (IPTV) – IDM REPLACMENT

	MY 1999	MY 2000	MY 2001	MY 2002	MY 2003
Saab 9-3 / 9-5 54° V6 DOHC Turbo	225	400	700	425	175
Saab 9-3 / 9-5 Family III 4-Cyl Turbo	760	760	640	630	15

TABLE 14i2

Table 14i1 below provides an estimate of the percentage of failed IDMs that result in engine stalling. The analysis that provided these rates is identified in GM's response to question 9. These percentages may be applied to the 36 MIS, 5-year, and 10 year warranty estimates to determine the corresponding rates for engine stalling.

PERCENT SCREENED WARRANTY – ENGINE STALLING

	MY 1999	MY 2000	MY 2001	MY 2002	MY 2003
Saab 9-3 / 9-5 54° V6 DOHC Turbo	1.9%	3.8%	9.0%	4.2%	2.1%
Saab 9-3 Family III 4-Cyl DOHC Turbo	10.0%	14.7%	22.0%	26.6%	33.3%
Saab 9-5 Family III 4-Cyl DOHC Turbo	9.5%	20.7%	22.5%	27.4%	18.2%

TABLE 14i1

Table 14i2 provides an estimate of screened warranty rates for engine stalling events due to the alleged defect.

36 MIS SCREENED WARRANTY RATES (IPTV) – ENGINE STALLING

	MY 1999	MY 2000	MY 2001	MY 2002	MY 2003
Saab 9-3 / 9-5 54° V6 DOHC Turbo	1	3	13	5	2
Saab 9-3 Family III 4-Cyl DOHC Turbo	2	15	39	28	4
Saab 9-5 Family III 4-Cyl DOHC Turbo	7	29	47	20	2

TABLE 14i2

NHTSA has provided a total of 35 Vehicle Owner's Questionnaires with this request. All of the complaints are for vehicles manufactured with a Family III Gen 4, 4-cylinder engine. Thirty-one (31) of the VOQs allege an IDM failure. Four (4) complained of a burning smell, smoke, or flame. GM conducted a search of the warranty histories for the twenty-two (22) VINs identified in the VOQs. Twenty (20) of the twenty-two (22) VOQs with VINs that alleged an IDM problem had an IDM replaced under regular warranty. Two (2) of the VOQs with VINs that did not allege an IDM failure also had an IDM replaced under regular warranty. A summary of the available IDM warranty information is provided in Attachment 1 CD GM, folder labeled "Response for Q14;" refer to Microsoft Excel file named "Question14VOQSummaryInfo.doc."

GM is continuing its evaluation of the risk associated with IDM failures on the subject vehicles.

* * *

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 1995, 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,

Gay P. Kent
Director
Product Investigations

Attachments

GM-678

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

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

APR 11 2005

(Civil Case
20/CD Received
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SENT
ON
4-11-05

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

NVS-312car
PE05-017

Ms. Gay P. Kent, Director
Product Investigations, Structure and Safety Integration
General Motors Corporation
Mail Code 480-106-304
30500 Mound Road
Warren, MI 48090-9055

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 (PE05-017) to investigate allegations of ignition discharge module (IDM) failure in model year (MY) 2000-2002 Saab 9-3 and MY 1999-2002 Saab 9-5 vehicles with 4-cylinder engines manufactured by General Motors Corporation, and to request certain information.

This office has received 35 Vehicle Owner Questionnaire (VOQ) reports of ignition discharge module (IDM) failure in MY 2000-2002 Saab 9-3 and MY 1999-2002 Saab 9-5 vehicles with 4-cylinder engines. Twelve (12) complaints were received on MY 2000-2002 Saab 9-3 vehicles and 23 on MY 1999-2002 Saab 9-5 vehicles. All complainants reported that the engine shut down suddenly without warning and most reported that the vehicle would not restart. In three (3) incidents, the complainants reported smoke and/or flames resulted from the IDM failure. The majority of the incidents reportedly occurred between 40 to 75 mph. ODI has also received a letter from an automotive safety research company regarding some preliminary research conducted on IDM failure in MY 2000-2004 Saab 9-3 and MY 1999-2004 Saab 9-5 vehicles with 4-cylinder engines. A copy of this letter and each of the reports is enclosed for your information in Enclosure 1, Data Collection Disc and a list of the 35 VOQ numbers is provided at the end of this letter.

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

- **Subject vehicles**: all MY 1999-2005 Saab 9-3 and 9-5 vehicles manufactured for sale or lease in the United States.
- **Subject component**: all ignition discharge modules manufactured on the subject vehicles.

- **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 1995, 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:** ignition discharge module (IDM) failure.

- **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. Engine Type;
   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 which provides further details regarding this submission.

2. State, by model and model year, the number of each of the following, received by GM, or of which GM are otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:
   a. Total consumer complaints, including those from fleet operators;
   b. Consumer complaints, including those from fleet operators, where a vehicle stall was reported;
   c. Total field reports, including dealer field reports;
   d. Field reports, including dealer field reports, where a vehicle stall was reported;
   e. 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;
   f. Reports involving a fire, including, but not limited to those involving smoke, 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;
   g. Property damage claims;
   h. Third-party arbitration proceedings where GM is or was a party to the arbitration; and
   i. Lawsuits, both pending and closed, in which GM is or was a defendant or codefendant.

   For subparts "a" through "g," 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 "e" through "i," 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 "h" and "i", 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. Engine type;
   g. Vehicle's mileage at time of incident;
   h. Vehicle's speed at time of incident;
   i. Incident date;
   j. Report or claim date;

k. Whether any warning lights were luminated at the time the alleged defect occurred (identify light);
l. Whether the vehicle stalled as a result of the alleged defect;
m. Whether the driver was able to restart the vehicle, if the vehicle stalled;
n. Whether the vehicle was towed into the dealership;
o. If the engine control system was reported to limit the vehicle speed as a result of the alleged defect, indicate the speed to which the vehicle was limited;
p. Whether a crash is alleged;
q. Whether a fire is alleged;
r. Whether property damage is alleged;
s. Number of alleged injuries, if any;
t. Number of alleged fatalities, if any; and
u. A summary of the incident.

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 which provides further details regarding this submission.

4. Produce copies of all documents, including all document attachments, 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. Whether any warning lights were luminated at the time the alleged defect occurred (indicate name of light);
g. Whether the vehicle stalled as a result of the alleged defect;
h. Whether the driver was able to restart the vehicle, if the vehicle stalled;
i. Whether the vehicle was towed into the dealership;
j. Whether the engine control system was reported to limit the vehicle speed as a result of the alleged defect, if the vehicle did not stall;
k. The speed to which the vehicle was limited as a result of the engine control system;
l. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
m. Labor operation number;

n. Problem code;
o. IDM Check Code;
p. Failure Status;
q. Replacement part number(s) and description(s);
r. Concern stated by customer; and
s. 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 which 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. State whether GM has had any written or oral communications with any ignition discharge module manufacturer(s) regarding the alleged defect in the subject vehicles. If so, provide copies of all such communications that were in writing, identifying the date of the communication, the name and position title of GM employee sending or receiving the communication, and the name, company, division, and position title of the IDM manufacturer employee receiving or sending the communication. For any oral communication, state the date on which it was conducted, identify all participants by name, position title, and employing company and division or other entity, and provide a transcript of the communication. If no transcript was made, state the substance of the communication in full and any actions taken as a result of the communication and by whom those actions were taken.

9. 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.

10. 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 and the engine management system, 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.

11. Produce each of the following:
    a. One exemplar sample of each design version of the subject component;
    b. Field return samples of the subject component 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.

12. Provide the following information related to subject component in the subject vehicles:
    a. The location, by model, model year, and engine type, of the IDM in the subject vehicles;
    b. By model, model year, engine type, and engine management system (Trionic 5, Trionic 7, Trionic 8, etc.), the types of direct ignition cassettes used for each subject vehicle;
    c. A description of each type of cassette listed in Request No. 12.b (Note: The description should include sufficient information to explain the differences among the cassettes);

d. Schematics of the IDM circuit, including all revisions due to modifications or changes made to the subject component or any system influencing the subject component;
e. A description of how the subject component operates within each of the subject vehicles;
f. What prompted GM to add a check for the type P diagnostic trouble codes (P-DTCs) in its May 2004, Technical Service Bulletin (TSB) No. 248-2428 Edition 3; and
g. A description of all the P-DTC's referenced in TSB No. 248-2428 Edition 3.

13. State the number of each of the following that GM has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales, if applicable):
    a. Subject component; and
    b. Any kits that have been released, or developed, by GM for use in service repairs to the subject component/assembly.

    For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number) and the percent of United States sales that GM has for that part number. Also identify by make, model and model year, any other vehicles of which GM is aware that contain, or have contained, the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

14. 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;
    f. The reports included with this inquiry;
    g. The 3-year IDM failure warranty rate;
    h. The 5 and 10-year projected IDM failure rates;
    i. The percent of IDM failures that will result in a stalling incident; and
    j. The percent of stalling incidents that will result in a no restart condition.

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 **May 25, 2005**. Please refer to PE05-017 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) 366-5207 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 Cheryl Rose of my staff at (202) 366-1869.

Sincerely,

Jeffrey L. Quandt, Chief
Vehicle Control Division
Office of Defects Investigation

Enclosure 1, one CD ROM titled Data Collection Disc containing three complaint-related files ("VOQ_REPORTS", "REPOSITORY_DOCUMENTS", and "AUTOMOTIVE_SAFETY_RESEARCH_LETTER") and three database files ("PRODUCTION DATA", "REQUEST NUMBER TWO DATA", and "WARRANTY DATA").

VOQ Numbers: 10011398, 10025942, 10028525, 10033090, 10036842, 10036863, 10043261, 10047492, 10052747, 10052795, 10052798, 10075126, 10080732, 10081720, 10086627, 10089074, 10090611, 10093423, 10095839, 10096715, 10098445, 10100756, 10102395, 10105667, 10106409, 10106474, 10110537, 10111062, 10114451, 10114491, 10116082, 10116370, 563124, 8018909, 8019772

GM678
PE05-017

ATTACHMENT "1"

GM678
PE05-017

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

ATTACHMENT "2"

GM CONFIDENTIAL

GM678
PE05-017

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

ATTACHMENT "3"

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