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OFFICE OF DEFECTS INVESTIGATION  
NHTSA

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

GM-881

NVS-212pco  
PE05-052

Dear Mr. Cooper:

This letter is General Motors' (GM) response to your information request (IR), dated October 3, 2005, regarding allegations of sunroof glass fracture in certain model year (MY) 2004-2005 Cadillac SRX vehicles, manufactured by GM for sale or lease in the United States.

Two sunroof options, Ultraview and Ultraview Plus were available on the subject vehicles. Both the Ultraview and Ultraview Plus sunroof modules consist of a moveable glass roof panel over the first two rows of seats and two smaller stationary glass roof panels that are located at the middle and rear of the vehicle. Both the Ultraview and Ultraview Plus sunroof modules come with power sunshades. The stationary rear glass panel that is located over the third row seat is visible from the interior only on the Ultraview Plus sunroof option.

The Vehicle Owner's Questionnaire (VOQ) reports included in this inquiry allege sunroof glass failures on the moveable glass roof panel. Except where otherwise noted in this response, GM is providing information that relates to the moveable glass roof panel.

Your questions and our corresponding replies are as follows:

1. State, by model and model year, the number of subject vehicles GM has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by GM, state the following:
  - a. Vehicle Identification number (VIN);
  - b. Make;
  - c. Model;
  - d. Model Year;
  - e. Date of manufacture (in yyyy-mm-yy date format);
  - f. Date warranty coverage commenced (in yyyy-mm-dd date format); and
  - g. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

Provide the table in Microsoft Access 2000, or a compatible format, entitled "PRODUCTION DATA."

GM is providing the production information requested in 1 (a-g) in Attachment 1 CD GM, folder labeled "Response for Q1;" refer to the Microsoft Access file named "Production Data." The information provided in response to 1(g) is the delivery state.

Table 1 below provides a summary, by model year, of the number of subject vehicles manufactured for sale or lease in the United States with either the Ultraview or Ultraview Plus sunroof option.

PRODUCTION DATA - CADILLAC SRX

SUNROOF OPTION	MY 2004	MY 2005	TOTAL
Ultraview (C3B)	408	1,889	2,105
Ultraview Plus (CF5)	14,450	15,482	29,912
TOTAL	14,858	17,181	32,017

TABLE 1

2. State the number of each of the following, received by GM, or of which GM is otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:
- Consumer complaints, including those from fleet operators;
  - Field reports, including dealer field reports;
  - 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;
  - Property damage claims;
  - Third-party arbitration proceedings where GM is or was a party to the arbitration; and
  - Lawsuits, both pending and closed, in which GM is or was a defendant or codefendant.

For subparts "a" through "d," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Also note those are airbag right illumination reports. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "d," provide a summary description of the alleged problem and causal and contributing factors and GM's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "e" and "f," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Table 2A below summarizes the total number of reports GM has received for the subject vehicles that either allege fracture of the moveable glass sunroof pane or may relate to the same.

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.

**REPORT BREAKDOWN**

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES			
		CORRESPONDING TO NHTSA REPORTS	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURED <sup>(1)</sup>
Owner Reports	14	1	0	0	8
Field Reports	3	1	0	0	1
Not-In-Suit Claims	3	1	0	0	3
Subrogation Claims	0	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	0	0
Product Liability Lawsuits	0	0	0	0	0
Total Reports (Including Duplicates)	20	3	0	0	10
Total Vehicles with Reports (Unique VIN)	14	3	0	0	5 <sup>(2)</sup>

TABLE 2A

<sup>(1)</sup> GM has no reports of fatality

<sup>(2)</sup> 14 people have alleged minor injuries

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

**DATA SOURCES**

SOURCE SYSTEM	LAST DATE GATHERED
Customer Assistance Center (CAC)	10/08/2005
Technical Assistance Center (TAC)	10/11/2005
Field Information Network Database (FIND)	10/05/2005
Company Vehicle Evaluation Program (CVEP)	10/07/2005
Captured Test Fleet (CTF)	10/07/2005
Early Quality Feedback (EQF)	10/07/2005
Field Product Report Database (FPRD)	10/05/2005
Legal / Employee Self Insured Services (ESIS) / Product Liability Claims and Lawsuits	10/06/2005

TABLE 2B

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 a crash is alleged;
  - Whether property damage is alleged;
  - Number of alleged injuries, if any; and
  - Number of alleged fatalities, if any.

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

GM is providing the requested information in 3(a-1) in Attachment 1 CD, folder labeled "Response for Q3;" refer to Microsoft Access file named "Request Number Two Data."

4. Produce hyper-linkable 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 Attachment 1 CD GM; folder labeled "Response for Q3," refer to the Microsoft Access file. GM has organized the records by the GM file number within each attachment.

5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by GM to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

Separately, for each such claim, state the following information:

- GM's claim number;
- Vehicle owner or fleet name (and fleet contact person) and telephone number;
- VIN;
- Repair date (in yyyy-mm-dd date format);
- Vehicle mileage at time of repair (in number format);
- Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- Labor operation number;
- Problem code;

- I. Replacement part number(s) and name(s) (if more than one part is listed, provide a separate list for each part number and its name);
- J. Concern stated by customer (hyper-linkable if not integrated); and
- K. Comment, if any, by dealer/technician relating to claim and/or repair (hyper-linkable if not integrated).
- L. Provide the table in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA."

GM has searched for regular and extended warranty claims associated with the replacement of the moveable glass roof panel that may relate to the subject condition for the subject vehicles. GM is providing the information requested in 5(a-k) for the responsive claims in Attachment 1 CD, folder labeled "Response for Q5;" refer to the Microsoft Access file named "Warranty Data."

Table 5 summarizes the total number of regular warranty claims GM is providing in response to this request. As of October 6, 2005 there were no extended warranty claims associated with the replacement of the moveable roof panel.

REGULAR WARRANTY DATA – CADILLAC SRX

MY 2004	MY 2005	TOTAL
8	3	11

TABLE 5

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 warranty claims that may relate to the replacement of the moveable glass roof panel for the alleged defect. The three specific labor codes searched are provided in Table 6. Labor codes B2780, B2180, and B2240 were released for the replacement of the front moveable glass roof panel assembly, middle glass roof panel, and rear glass roof panel respectively. From this broad list of claims, any claims processed under B2780 that involved a middle or rear glass roof panel part number were removed and are not being provided. In addition, only those warranty claims processed under B2180 and B2240 that involved a front moveable glass panel have been included. Any claims that clearly did not relate to the alleged defect based on a review of the dealer verbatim, customer code, trouble code and repair cost were also removed and are not being provided.

There were three additional warranty claims associated with the reports responsive to Question 2 that involved the replacement of the moveable glass roof panel under other, unrelated labor codes. These claims were added to the database and are being provided in response to Question 5.

**LABOR CODES USED FOR REGULAR WARRANTY CLAIMS SEARCH**

LABOR CODE	DESCRIPTION
B2760	PANEL, SUNROOF SLIDING EXTERIOR-REPL
B2180	GLASS, ROOF ASM (FIXED) - REPLACE
B2240	GLASS, VISTA VENT - REPLACE

TABLE 6

There were no extended warranty claims in the Motors Insurance Corporation (MIC-extended) and Universal Warranty Corporation (UWC-extended) data at all for the subject vehicles. Based on their age, nearly all of the subject vehicles are still within the regular warranty period.

GM covers all model years of the Cadillac SRX by a bumper-to-bumper new vehicle warranty for four years or 50,000 miles, whichever occurs first. 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 (including water seepage in and around the SRS components), that GM has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that GM is planning to issue within the next 120 days.

GM has issued several technical service bulletins to assist in the diagnosis and repair of squeaks and rattles associated with the Ultraview and Ultraview Plus sunroof modules as well as address isolated problems with the express operation on some vehicles, however none of these bulletins relates to the alleged defect or water seepage. GM has neither issued, nor plans to issue any service-related information regarding the alleged defect.

8. Describe the basic operation of the ultraview sunroof system including the size and weight of the glass piece, structure support assembly, control switches and logic flow/operation of the system. They should include the following detailed information:
  - a. Component description;
  - b. Component location/diagram;
  - c. Sunroof operation in the owner manual;
  - d. Preparation, attachment and adhesive techniques in the glass assembly (specify the primer and adhesive used); and
  - e. Component safety features of the glass design in the event of breakage (i.e. temper glass, laminate safety glass etc...).

Both sunroof options, the Ultraview and Ultraview Plus, consist of a moveable glass roof panel and two smaller stationary glass roof panels. The Ultraview Plus sunroof option provides additional overhead viewing through the rear glass roof panel located over the third row seats.

Both the Ultraview and Ultraview Plus sunroof modules come with power sunshades. The moveable roof and power sunshades can be opened to any desired position and are controlled by rocker switches located in the headliner between the driver and front passenger. Additional operational features include: express opening and closing, anti-pinch/auto-reverse, and sunroof/sunshade resynchronization. The information GM is providing in response to Question 8(c) provides additional detail on the basic operation of the Ultraview and Ultraview Plus sunroof systems and is located in Attachment 1 CD, folder labeled "Response for Q8;" refer to Adobe Acrobat file named "SRX Owners Manual Info."

Additional information regarding the size and weight of the glass roof panels, the structure support assembly, and questions posed in 8(e-e) are provided in Attachment 2 CD Supplier Confidential, subfolder labeled "Functional Description;" refer to Adobe Acrobat file.

Tempered glass was chosen for all three glass roof panels that are used in the Ultraview and Ultraview Plus sunroof modules for its superior strength and impact resistance as well as its injury reduction potential in the event of fracture. Tempered glass, which is the glazing material most often used in sunroof applications, is designed to break into small nuggets of glass that will generally cause little or no injury to a person upon contact. At 5.0mm thick, the tempered glass used in the moveable glass roof panel is among the thickest in the automotive industry and comparatively offers exceptional strength and impact resistance.

2. 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.

Table 8A below summarizes the actions performed by GM, the tier 1 supplier of the Ultraview and Ultraview Plus sunroof modules, and the tier 2 glass roof panel manufacturer during product development. Documents and additional supporting information are provided in the attachments as noted in the table.

**SUMMARY OF PRODUCT ANALYSIS, DEVELOPMENT AND VALIDATION ACTIONS – GM681**

<p><b>Action: Develop DFMEA</b>          Start Date: 12/20/1999          End Date: 07/21/2004          Engineering Group: Tier 1 Sunroof Supplier          Attachments: Attachment 4 CD Supplier Confidential, folder labeled "Webasto;" refer to table of contents file.          Description: Copy of DFMEA for sunroof module subassembly.          Summary of Action: DFMEA completed by Tier 1 sunroof module supplier.</p>
<p><b>Action: Develop PFMEA</b>          Start Date: 07/30/2002          End Date: 09/30/2005          Engineering Group: Tier 1 Sunroof Supplier          Attachments: Attachment 4 CD Supplier Confidential, folder labeled "Webasto;" refer to table of contents file.          Description: Copy of PFMEA for sunroof module subassembly.          Summary of Action: PFMEA completed by Tier 1 sunroof module supplier.</p>
<p><b>Action: Develop PFMEA</b>          Start Date: 7/1998          End Date: 10/2004          Engineering Group: Tier 2 Glass Supplier          Attachments: Attachment 4 CD Supplier Confidential, folder labeled "Sekurit;" reference table of contents file.          Description: Copy of PFMEA for glass panels          Summary of Action: PFMEA completed by Tier 2 glass supplier.</p>
<p><b>Action: Develop Process Control Plan</b>          Start Date: 07/30/2002          End Date: 09/30/2005          Engineering Group: Tier 1 Sunroof Supplier          Attachments: Attachment 4 CD Supplier Confidential, folder labeled "Webasto;" refer to table of contents file.          Description: Copy of process control plan for sunroof module assemblies.          Summary of Action: Process control plan completed by Tier 1 sunroof module supplier.</p>
<p><b>Action: Develop Process Control Plan</b>          Start Date: 11/1998          End Date: 02/2004          Engineering Group: Tier 2 Glass Supplier          Attachments: Attachment 4 CD Supplier Confidential, folder labeled "Sekurit;" reference table of contents file.          Description: Copy of Process Control Plan for glass panels          Summary of Action: Process Control Plan completed by Tier 2 glass supplier.</p>
<p><b>Action: Complete Initial Product (IP) Testing</b>          Start Date: 03/09/2004          End Date: 08/14/2004          Engineering Group: Tier 1 Sunroof Supplier          Attachments: 4 CD Supplier Confidential, folder labeled "Webasto;" reference table of contents file.          Description: Copies of IP testing reports for sunroof module subassemblies.          Summary of Action: IP testing completed without incident of glass fracture.</p>
<p><b>Action: Complete Production Part Approval Process (PPAP) Testing</b>          Start Date: 08/28/2001          End Date: 07/15/2003          Engineering Group: Tier 1 Sunroof Supplier          Attachments: Attachment 4 CD Supplier Confidential, folder labeled "Webasto;" reference table of contents file.          Description: Copies of PPAP approval testing reports for sunroof module subassemblies.          Summary of Action: PPAP approval testing completed.</p>
<p><b>Action: Complete Vehicle Level Validation Testing</b>          Start Date: 12/03/2001          End Date: 10/14/2003          Engineering Group: GM Engineering          Attachments: Attachment 2 CD GM Confidential, folder labeled "Response for Q3"          Description: Copies of vehicle level validation test reports          Summary of Action: Vehicle level validation completed without incident of glass fracture.</p>
<p><b>Action: FMVSS 205 Glass Certification Testing</b>          Start Date: various, see attached          End Date: various, see attached          Engineering Group: Tier 2 Glass Supplier          Attachments: Attachment 2 CD Supplier, folder labeled "Sekurit;" reference table of contents file.          Description: Copies of FMVSS 205 compliance testing reports submitted by Tier 2 to Tier 1 supplier.          Summary of Action: FMVSS compliance demorginated.</p>



<b>Action:</b> FMVSS 205 Glass Certification <b>Start Date:</b> various, see attached <b>End Date:</b> various, see attached <b>Engineering Group:</b> Tier 1 Sunroof Supplier <b>Attachments:</b> Attachment 1 CD GM, folder labeled "Response for Q9" <b>Description:</b> Copies of FMVSS 205 compliance letters submitted by Tier 1 to GM. <b>Summary of Action:</b> FMVSS compliance demonstrated.
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TABLE 9A

Table 9A below summarizes the additional actions performed by GM, the tier 1 supplier of the Ultraview and Ultraview Plus sunroof modules, and the tier 2 glass roof panel manufacturer during the course of this investigation. Documents and additional supporting information are provided in the attachments as noted in the table.

SUMMARY OF INVESTIGATION ACTIONS – GM681

<b>Action:</b> Analysis of float glass impurity standards and data <b>Start Date:</b> 11/10/2005 <b>End Date:</b> 11/10/2005 <b>Engineering Group:</b> GM Engineering <b>Attachments:</b> Attachment 1 CD GM, folder labeled "Response for Q9" <b>Description:</b> Comparison of impurity data for all runs of float glass with automotive standards <b>Summary of Action:</b> All runs of float glass met automotive standards.
<b>Action:</b> Analysis of glass panel tempering standards and data <b>Start Date:</b> 10/13/2005 <b>End Date:</b> 11/15/2005 <b>Engineering Group:</b> Tier 2 Glass Supplier <b>Attachments:</b> Attachment 3 CD Supplier, folder labeled "Sakurt" <b>Description:</b> Comparison of glass tempering data with temper standards <b>Summary of Action:</b> All batches of sunroof glass met temper standards
<b>Action:</b> Analysis of design failure modes and effects; relationship to field incidents <b>Start Date:</b> 10/13/2005 <b>End Date:</b> 11/15/2005 <b>Engineering Group:</b> Tier 1 Sunroof Supplier <b>Attachments:</b> Attachment 3 CD Supplier, folder labeled "Webasto" <b>Description:</b> Copy of document summarizing the analysis of field incidents. <b>Summary of Action:</b> Most likely cause of glass fracture is impact.
<b>Action:</b> Industry benchmarking (state of the industry) study MY2004-05 – glass roof systems <b>Start Date:</b> 10/13/2005 <b>End Date:</b> 11/15/2005 <b>Engineering Group:</b> GM Engineering & Tier 1 Sunroof Supplier <b>Attachments:</b> Attachment 1 CD GM, folder labeled "Response for Q9" <b>Description:</b> Summary documents relating to glazing materials used in automotive industry <b>Summary of Action:</b> Tempered safety glass is used in 88% of the sunroof applications surveyed.
<b>Action:</b> Analysis of field return part (WOQ 10139447) <b>Start Date:</b> 10/21/2005 <b>End Date:</b> 11/07/2005 <b>Engineering Group:</b> GM Engineering, Tier 1 & 2 Supplier <b>Attachments:</b> Attachment 1 CD GM, folder labeled "Response for Q9" <b>Description:</b> Copy of analysis report <b>Summary of Action:</b> Cats eye fragment indicates the cause for glass fracture was sharp impact (e.g. stone).

TABLE 9B

GM and its suppliers request that some of the information provided in response to Question 9, which is stamped "Confidential," and includes engineering drawings, material specifications, technical specifications, and validation plans, be afforded confidential treatment by the NHTSA. These documents, along with the required request for confidentiality letters and affidavits, are contained in Attachment 2 CD GM Confidential and Attachment 4 CD Supplier Confidential.

This information is not customarily made public by GM or its suppliers and contains trade secrets and commercial information which is privileged or confidential under 5 U.S.C. Section 552(b)(4), 49 CFR Part 512 and 49 U.S.C Section 30167(a).

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, 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:
- The date or approximate date on which the modification or change was incorporated into vehicle production;
  - A detailed description of the modification or change;
  - The reason(s) for the modification or change;
  - The part numbers (service and engineering) of the original component;
  - The part number (service and engineering) of the modified component;
  - Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
  - When the modified component was made available as a service component; and
  - 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.

GM is providing a summary of the GM product engineering information requested in 10(a-h), along with copies of the GM Engineering Work Orders in Attachment 1 CD, folder labeled "Response for Q10;" refer to the Microsoft Excel file named "NHTSAWorkOrderSummaryM" and related Adobe Acrobat files. GM has made no product engineering changes that relate to the alleged condition.

The Tier 1 Ultraview sunroof supplier is providing a summary of the product engineering and manufacturing process information requested in 10(1-h), along with copies of the related change documents in Attachment 2 CD Supplier Confidential, subfolders labeled "Product Changes" and "Process Changes" respectively, refer to the Adobe Acrobat files. The Tier 1 supplier has made no product engineering or manufacturing changes that relate to the alleged condition.

Neither GM, nor the Ultraview sunroof supplier are planning to incorporate any modifications or changes into production of the subject vehicles that relate to the alleged defect within the next 120 days.

11. State the number of ultraview sunroof glass components 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.

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 each of the three glass panels that are used in the Ultraview and Ultraview Plus sunroof module assemblies is provided in Attachment 1 CD GM, folder labeled "Response for Q11;" refer to the Microsoft Excel file named "GM-681SPOSalesInfo." This table contains service part numbers, part description, part usage information, part sales figures by month and calendar year and the supplier's name and address, contact name and phone number. The data was last gathered on October 12, 2005.

These sales numbers represent sales to dealers in the US and Canada. This data has limited analytical value in analyzing the field performance of a motor vehicle component because the records do not contain sufficient information to establish the reason for the part sale. 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.

**12. Furnish GM's assessment of the alleged defect in the subject vehicle, including:**

- a. The causal or contributory factor(s);
- b. The failure mechanism(s);
- c. The susceptibility to "small stones impact" at highway speed;
- d. The susceptibility to un-noticeable hairline stress cracks days prior to the final shattering event;
- e. The risk to occupant and motor vehicle safety that it poses; and
- f. The reports included with this inquiry.

GM believes these moveable glass roof panel fractures were caused by impacts with road debris while driving. On impact with road debris, such as a stone, the glass roof panel may be sufficiently damaged to fracture upon impact or sustain enough damage to result in a latent fracture. Not all damage to the glass will result in a latent fracture of the glass. Latent fractures can result when the damage produced in the glass (e.g. chip, scratch, small crack, bruise, scrape or edge crush) progresses through the tensile core of the glass as a result of additional stresses transmitted to the glass through road inputs and environmental exposure.

GM is confident in its assessment of the cause of the field incidents of glass fracture based on the results of analyses provided in response to Question 9:

- The analysis of a recent field return part indicates the cause of the incident was a sharp (e.g. stone) impact.
- The analysis of the float glass impurity data, glass panel tempering data and FMVSS 205 compliance data indicate that there were no quality issues with the glass used in the manufacture of the subject vehicles.
- The analysis of the VOCs and additional GM field reports and warranty information indicates there is no defect or defect trend in the field incidents.
- Information gathered during GM and NHTSA interviews of affected customers is consistent with GM's assessment.

Tempered glass will fracture in a sudden manner when stresses within the glass exceed its modulus of rupture. While it is theoretically possible to overstress tempered plate glass by general torsional or tensile loading, fracture is more likely to be caused by impact. Tempered glass, like other glazing materials, is more susceptible to sharp impacts than blunt impacts. "Hairline stress cracks" similar to those that may form and propagate on annealed glass used in windshields cannot be produced in finished tempered glass.

Contacts with stones and other road debris are virtually uncontrollable, random in nature and affect all motor vehicles. GM believes that the SRX moveable glass sunroof panel's susceptibility to "small stone impact" is low. The SRX moveable sunroof panel is constructed of tempered glass, which offers four times the strength and impact resistance when compared with some other automotive glazing materials, like laminated annealed glass. At 5.0mm thick, the SRX moveable sunroof panel is among the thickest used in industry and offers superior strength and impact resistance.

There is no defect in the Ultraview sunroofs installed in the subject vehicles. From a design standpoint, GM carefully chose the safety glass used in its Ultraview sunroof module assemblies in order to meet several safety and performance-related objectives.

For decades, NHTSA has regulated the use of glazing materials in motor vehicles. S2 of Federal Motor Vehicle Safety Standard No. 205 states: "The purpose of this standard is to reduce injuries resulting from impact to glazing surfaces, to ensure a necessary degree of transparency in motor vehicle windows for driver visibility, and to minimize the possibility of occupants being thrown through the vehicle windows in collisions." The Standard incorporates ANSI-SAE Z26.1-1996. Vehicle manufacturers are required to use glazing that meets various test requirements for specified locations. Each specification of permissible locations and associated test requirements is known as an item. Fundamental characteristics of glazing types and the different needs for glazing in different locations are reflected in the items and their associated test requirements.

The tempered glass used in these modules meets Federal Motor Vehicle Safety Standard (FMVSS) 205. GM chose "Item 3" tempered glass that is approved for use anywhere in a motor vehicle, except where driver visibility is required, because tempered glass is designed to possess mechanical strength substantially higher than other glazing materials and if broken at any point, because it breaks entirely into small nuggets of glass that have relatively dull edges. Tempered glass is being used in vehicle roofs by many manufacturers as it has for many years and continues to perform well in that application.

NHTSA provided four VOQs with information request PE05-052 (10133823, 10133342, 10127199, 10136791). All of these reports allege the moveable glass roof panel shattered while driving and are responsive to this information request. On October 18, 2005, NHTSA provided two additional VOQs (10081314 and 10139447). Only VOQ 10139447 is responsive to this information request. VOQ 10081314 is not responsive, because it alleges fracture of the rear window, not the moveable sunroof glass panel.

In summary, GM's investigation has shown:

- All the tempered safety glass used in the SRX Ultraview sunroof module glass meets or exceeds the applicable FMVSS 205/ANSI Z26.1 standards for Item 3 glazing material.
- Field data indicates a low frequency of occurrence, as is expected of the safety glazing material used on these vehicles.
- GM is aware of no crashes and only reports of minor injury.
- Field data indicates no defect trend exists.

\* \* \*

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 September 1, 2003, 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  
4 CDs



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

*GM-681*

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

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

OCT 3 2005

Ms. Gay P. Kent  
GM Product Investigations  
Mail Code 480-111-E18  
Engineering Building  
30200 Mound Road  
Warren, MI 48090-9010

NVS-212.pcc  
PE05-052

*Original  
Received 10-12-05*

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 (PE05-052) to investigate allegations of sunroof glass failures in MY 2004-2005 Cadillac SRX vehicles manufactured by General Motors Corporation, and to request certain information.

This office has received four reports alleging that the ultraviolet sunroof glass shattered while the vehicle was being driven at highway speed. These reports indicate injuries to the hand, arm and feet from the glass fragments. An electronic image of each Vehicle Owner's Questionnaire report has been e-mailed to your office. A list of the reference number of each report is shown at the end of this letter.

Unless otherwise stated in the text, the following definitions apply to this information request:

- **Subject vehicles:** all MY 2004-2005 Cadillac SRX vehicles equipped with the ultraviolet sunroof option and manufactured for sale or lease in the United States.
- **Subject component:** Ultraviolet sunroof system including the glass and its attaching/supporting structure members 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



DOT AUTO SAFETY HOTLINE  
888-DASH-9-000  
888-327-4200

September 1, 2003, 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:** shattering of the ultraviolet sunroof system resulting in glass fragments falling into the interior compartment of the vehicle can cause injuries to the occupants.
  - **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-built, changes, manuals, publications, work schedules, journals, statistical data, desk, portable and computer calendars, appointment books, diaries, travel reports, lists, tabulations, computer printouts, data processing program libraries, data processing inputs and outputs, microfilms, microfiches, statements for services, resolutions, financial statements, governmental records, business records, personnel records, work orders, pleadings, discovery in any form, affidavits, motions, responses to discovery, all transcripts, administrative filings and all mechanical, magnetic, photographic and electronic records or recordings of any kind, including any storage media associated with computers, including, but not limited to, information on hard drives, floppy disks, backup tapes, and zip drives, electronic communications, including but not limited to, the Internet and shall include any drafts or revisions pertaining to any of the foregoing, all other things similar to any of the foregoing, however denominated by GM, any other data compilations from which information can be obtained, translated if necessary, into a usable form and any other documents. For purposes of this request, any document which contains any note, comment, addition, deletion, insertion, annotation, or otherwise comprises a non-identical copy of another document shall be treated as a separate document subject to production. In all cases where original and any non-identical copies are not available, "document(s)" also means any identical copies of the original and all non-identical copies thereof. Any document, record, graph, chart, film or photograph originally produced in color must be provided in color. Furnish all documents whether verified by GM or not.

If a document is not in the English language, provide both the original document and an English translation of the document.

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

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

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

1. State, by model and model year, the number of subject vehicles GM has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by GM, state the following:
  - a. Vehicle identification number (VIN);
  - b. Make;
  - c. Model;
  - d. Model Year;
  - e. Date of manufacture (in yyyy-mm-yy date format);
  - f. Date warranty coverage commenced (in yyyy-mm-dd date format); and
  - g. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

Provide the table in Microsoft Access 2000, or a compatible format, entitled "PRODUCTION DATA."

2. State the number of each of the following, received by GM, or of which GM is otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:
  - a. Consumer complaints, including those from fleet operators;
  - b. Field reports, including dealer field reports;
  - c. Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that



a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;

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

For subparts "a" through "d," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Also note those are airbag light illumination reports. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "d," provide a summary description of the alleged problem and causal and contributing factors and GM's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "e" and "f," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:
  - a. GM's file number or other identifier used;
  - b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
  - c. Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
  - d. Vehicle's VIN;
  - e. Vehicle's make, model and model year;
  - f. Vehicle's mileage at time of incident;
  - g. Incident date;
  - h. Report or claim date;
  - i. Whether a crash is alleged;
  - j. Whether property damage is alleged;
  - k. Number of alleged injuries, if any; and
  - l. Number of alleged fatalities, if any.

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

4. Produce hyper-linkable copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method GM used for organizing the documents.
5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by GM to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and

warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

Separately, for each such claim, state the following information:

- a. GM's claim number;
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. Repair date (in yyyy-mm-dd date format);
- e. Vehicle mileage at time of repair (in number format);
- 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 name(s) (if more than one part is listed, provide a separate list for each part number and its name);
- j. Concern stated by customer (hyper-linkable if not integrated); and
- k. Comment, if any, by dealer/technician relating to claim and/or repair (hyper-linkable if not integrated).

Provide the table in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA."

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 (including water seepage in and around the SRS components), 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 the basic operation of the ultraview sunroof system including the size and weight of the glass piece, structure support assembly, control switches and logic flow/operation of the system. They should include the following detailed information:
  - a. Component description;
  - b. Component location/diagram;
  - c. Sunroof operation in the owner manual;

- d. Preparation, attachment and adhesive techniques in the glass assembly (specify the primer and adhesive used); and
  - e. Component safety features of the glass design in the event of breakage (i.e. temper glass, laminate safety glass etc...).
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, 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. State the number of ultraview sunroof glass components 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.

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

12. Furnish GM's assessment of the alleged defect in the subject vehicle, including:

- a. The causal or contributory factor(s);
- b. The failure mechanism(s);
- c. The susceptibility to "small stones impact" at highway speed;
- d. The susceptibility to un-noticeable hairline stress cracks days prior to the final shattering event;
- e. The risk to occupant and motor vehicle safety that it poses; 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.

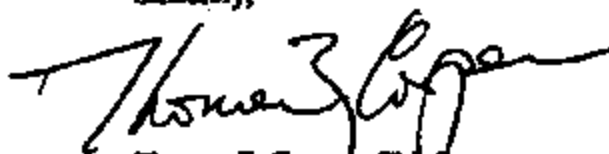
If GM cannot respond to any specific request or subject(s) thereof, please state the reason why it is unable to do so. If on the basis of attorney-client, attorney work product, or other privilege, GM does not submit one or more requested documents or items of information in response to this information 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 November 15, 2005. Please refer to FE05-052 in GM's response to this letter. If GM finds that it is unable to provide all of the information requested within the time allotted, GM must request an extension from me at (202) 366-5218 no later than five business days before the response due date. If GM is unable to provide all of the information requested by the original deadline, it must submit a partial response by the original deadline with whatever information GM then has available, even if an extension has been granted.

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

If you have any technical questions concerning this matter, please call Peter Ong of my staff at (202) 366-0583.

Sincerely,



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

VOQ List:

10127199
10133342
10133823
10136791

**GM681  
PE05-052**

## **Confidentiality Letter**

**CONFIDENTIALITY LETTERS  
HAVE BEEN REMOVED FROM THIS  
ATTACHMENT AND SUPPLIED TO  
THE OFFICE OF THE CHIEF COUNSEL**

**GM681**  
**PE05-052**

**ATTACHMENT "1"**  
**GM NON-CONFIDENTIAL MATERIAL**

**GM681  
PE05-052**

**ATTACHMENT "2"  
GM CONFIDENTIAL MATERIAL**

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



**GM681**  
**PE05-052**

**ATTACHMENT "3"**  
**SUPPLIER NON-CONFIDENTIAL MATERIAL**