



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

APR 17 2014

1200 New Jersey Avenue SE.
Washington, DC 20590

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Carmen Benavides
Director, Product Investigations
General Motors Corporation
Mail Code 480-210-2V
30001 Van Dyke
Warren, MI 48090-9055

NVS-213krh
PE14-010

Dear Ms. Benavides:

This letter is to inform you that the Office of Defects Investigation (ODI) of the National Highway Traffic Safety Administration (NHTSA) has opened Preliminary Evaluation PE14-010 to investigate allegations of inappropriate autonomous braking while driving in model year (MY) 2014 Chevrolet Impala manufactured by General Motors Corporation and to request certain information.

This office has received one complaint alleging inappropriate activation of the emergency braking system in a model year (MY) 2014 Chevrolet Impala vehicle (VOQ 10574799). The complaint alleges multiple incidents at different locations and road conditions where the driver assist system inappropriately activated emergency braking bringing the vehicle to a complete stop under what the driver considered to be full braking force. Additionally, ODI has identified field reports submitted as part of Early Warning Reporting data that relate to the alleged defect. A Preliminary Evaluation has been opened to assess the scope, frequency and potential safety consequences associated with the alleged defect. A copy of each of the reports is enclosed for your information.

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

- **Subject vehicles:** all MY 2014 Chevrolet Impala vehicles manufactured for sale or lease in the United States and federalized territories.
- **Peer vehicles:** All MY 2013 Cadillac ATS manufactured for sale or lease in the United States and federalized territories.
- **Subject system:** Driver assistance systems and all associated sensors, control modules, software, actuators, wiring and other components manufactured for use as original equipment or service replacement parts in the subject and peer 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 January 1, 2000, were involved in any way with any of the following related to the alleged defect in the subject vehicles:
 - a. Design, engineering, analysis, modification or production (e.g. quality control);
 - b. Testing, assessment or evaluation;
 - c. Consideration, or recognition of potential or actual defects, reporting, record-keeping and information management, (e.g., complaints, field reports, warranty information, part sales), analysis, claims, or lawsuits; or
 - d. Communication to, from or intended for zone representatives, fleets, dealers, or other field locations, including but not limited to people who have the capacity to obtain information from dealers.
- **Alleged defect:** any one or more of the following symptoms or conditions:
 - 1. Active emergency braking system failure or malfunction, including all associated fault codes;
 - 2. Automatic collision preparation system failure or malfunction, including all associated fault codes;
 - 3. Allegations of driver warnings due to false surveillance;
 - 4. Allegations of missed emergency braking activations; or
 - 5. Allegations of unnecessary autonomous braking.
- **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, bulletin, 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, engine and model year, the number of subject and peer vehicles GM has manufactured for sale or lease in the United States and federalized territories. Separately, for each subject and peer vehicle manufactured to date by GM, state the following:
 - a. Vehicle identification number (VIN);
 - b. Model;
 - c. Engine (displacement and engine code);
 - d. Installed driver assistance system feature package or option;
 - e. Installed driver assistance system sensors types, part numbers and suppliers;

- f. Installed driver assistance system controller part number and supplier;
- g. Driver assistance system software release number;
- h. Model Year;
- i. Date of manufacture;
- j. Date warranty coverage commenced; and
- k. The State in the United States, or the federalized territory, where the vehicle was originally sold or leased (or delivered for sale or lease).

Provide the table in Microsoft Access 2003, 2007, or a compatible format, entitled "PE14_010_PRODUCTION DATA."

2. State, by model, engine and model year, 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 in the subject and peer vehicles:
 - a. Consumer complaints, including those from fleet operators;
 - b. Field reports, including dealer field reports;
 - c. Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
 - d. 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. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

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

3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 3, state the following information:
 - a. GM's file number or other identifier used;
 - b. The category of the item, as identified in Request No. 3 (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 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 this information in Microsoft Access 2003 or 2007, or a compatible format, entitled "PE14_010_REQUEST NUMBER THREE DATA."

- 4. Produce copies of all documents related to each item within the scope of Request No. 3. 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, engine and model year, total counts for all of the following categories of claims, collectively, that have been paid by GM to date that relate to, or may relate to, the alleged defect in the subject and peer vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

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

- a. GM's claim number;
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. Repair date;
- e. Whether a claim for towing was made within five days of the claim date;
- f. Vehicle mileage at time of repair;
- g. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- h. Labor operation number and description;
- i. Problem code and description;
- j. Replacement part number(s);
- k. Replacement part supplier and description;
- l. Concern stated by customer;
- m. Cause and Correction stated by dealer/technician; and
- n. Additional comments, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2003 or 2007, or a compatible format, entitled "PE14_010_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).

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, bulletin, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that GM is planning to issue within the next 120 days.
8. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to the alleged defect 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.

The response to this request should include a detailed description of all past, present and future actions by any and all engineering working groups (e.g., vehicle dynamics control task force) of which GM is an active member or is otherwise aware. This includes, at a minimum, all of the information requested in items "a" through "f."

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

9. Describe all modifications or changes made by, or on behalf of, GM in the design, material composition, manufacture, quality control, supply, or installation of the subject 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 number(s) (service and engineering) of the original component;
 - e. The part number(s) (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

Also, provide the above information for any modification or change that GM is aware of which may be incorporated into vehicle production within the next 120 days.

10. For MY 2014 Chevrolet Impala and MY 2013 Cadillac ATS driver assist systems components, include in detail the following:
 - a. All active emergency braking systems function diagrams detailing system operation points such as Min/Max speed activation thresholds (mph), Min/Max braking g-force, brake pedal release threshold (mm or m/sec²), steering wheel release input threshold (°), acceleration pedal release threshold (mm or m/sec²), TTCs (audio/visual warning activation, restraint activation, brake activation), FORs (Field Occurrence Rates), and max brake pressure available on each wheel (FL, FR, RL, RR);
 - b. GM robustness testing related to road topology (e.g. metal bridges, Clothoid, S-shape curves...etc.), vehicle driving fluctuations (e.g. frequent steering, pitch change...etc.), vehicle direction (e.g. oncoming traffic, cross traffic, adjacent areas... etc.), vehicle size (e.g. a motorbike or a tricycle), radar signal reflections characteristics(e.g. material and shape), interference (e.g. shadow patterns, horizon glare, other radar sources...etc.), blockage (e.g. dirt, snow, heavy rain...etc.), and small body detection (e.g. infants, animals...etc.);
 - c. For each sensor and camera configuration, list end-to-end system suppliers, sensor type, camera type, specific vehicle locations, range, FOV (Field Of Vision) and all horizontal and vertical calibration procedures;
 - d. The algorithm strategy GM implemented relative to detected target position fluctuations, reflection points, monitoring time, modulation width of frequency, ghost objects, error correction, fusion architecture and overall system reaction planning and situation assessment specifically false positives and false negatives;
 - e. Radar Cross Section (RCS) measurement techniques, models, and curve shapes respective to distance and object levels from the ground including reflection strength thresholds and any image rectification timings;
 - f. All system diagnostic fault detection and DTC setting routines performed at runtime and power-up including telltale signals, test cycle time, and fail-soft actions; and
 - g. All system related controllers and sensors DRBFM, D-FMEA or IQ-FMEA.

11. Furnish GM's assessment of the alleged defect in the driver assistance systems of the subject and peer vehicles. Provide separate responses for each condition that may result in unnecessary autonomous braking. Include the following information for each condition:
 - a. The causal or contributory factor(s);
 - b. The failure mechanism(s);
 - c. The failure mode(s), including the specific operating conditions at which the unnecessary autonomous braking can occur (e.g., vehicle speed);
 - d. GM's assessment of the safety risk of each condition, including all incidents alleging complete stopping in traffic lanes and all incidents alleging crashes;
 - e. GM's assessment of factors affecting the operator's ability to resume safe operation of the vehicle, including reports alleging repeatable system malfunction after restarting the vehicle; and
 - f. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the system may be about to malfunction **before** the vehicle activates emergency braking.

Legal Authority for This Request

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.

Civil Penalties

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.) The Vehicle Safety Act, as amended, 49 U.S.C. § 30165(b), provides for civil penalties of up to \$7,000 per day, with a maximum of \$17,350,000 for a related series of violations, for failing or refusing to perform an act required under 49 U.S.C. § 30166. *See* 49 CFR 578.6 (as amended by 77 Fed. Reg. 70710 (November 27, 2012)). This includes failing to respond completely 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.

Confidential Business Information

All business confidential information must be submitted directly to the Office of Chief Counsel as described in the following paragraph and should not be sent to this office. In addition, do not submit any business confidential information in the body of the letter submitted to this office. Please refer to PE14-001 in GM's response to this letter and in any confidentiality request submitted to the Office of Chief Counsel.

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, to the Office of Chief Counsel (NCC-111), National Highway Traffic Safety Administration, Room W41-227, 1200 New Jersey Avenue, S.E., 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.** Please remember that the phrase "ENTIRE PAGE CONFIDENTIAL BUSINESS INFORMATION" or "CONTAINS CONFIDENTIAL BUSINESS INFORMATION" (as appropriate) must appear at the top of each page containing information claimed to be confidential, and the information must be clearly identified in accordance with 49 CFR 512.6. If

you submit a request for confidentiality for all or part of your response to this IR, that is in an electronic format (e.g., CD-ROM), your request and associated submission must conform to the new requirements in NHTSA's Confidential Business Information Rule regarding submissions in electronic formats. *See* 49 CFR 512.6(c) (as amended by 72 Fed. Reg. 59434 (October 19, 2007)).

If you have any questions regarding submission of a request for confidential treatment, contact Otto Matheke, Senior Attorney, Office of Chief Counsel at otto.matheke@dot.gov or (202) 366-5253.

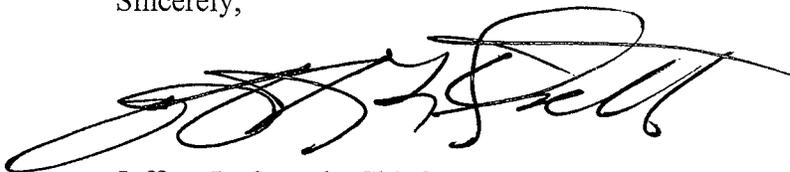
Due Date

GM's response to this letter, in duplicate, together with a copy of any confidentiality request, must be submitted to this office by June 6, 2014. 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.

Please send email notification to Kareem Habib at Kareem.Habib@DOT.gov and to ODI_IRresponse@dot.gov when GM sends its response to this office and indicate whether there is confidential information as part of GM's response.

If you have any technical questions concerning this matter, please call Kareem Habib of my staff at (202) 366-8703.

Sincerely,



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

Enclosure 1, one CD-ROM titled Data Collection Disc containing three Microsoft Access database template files and electronic copies of the subject report referenced above in the second paragraph of this letter identified by the following ODI reference number: 10574799.