CHRYSLER

December 12, 2014

Mr. Jeff Quandt, Chief
Office of Defects Investigation, NVS-213
U.S. Department of Transportation

National Highway Traffic Safety Administration (NHTSA)
Office of Defects Investigation (ODI)
Room W48-312
1200 New Jersey Avenue SE
Washington, D.C. 20590

Reference: NVS-213krh; DP14-004

Dear Mr. Quandt:

Attached is Chrysler Group LLC's ("Chrysler") amended response of the referenced inquiry for questions 3, 4, 5, 6, 7 and 10. As agreed during our November 6, 2014 discussion, Chrysler submitted questions 1, 2, 8, and 9 on November 25, 2014. The attached submission constitutes the complete response to DP14-004.

Chrysler is submitting to the Chief Counsel's Office, via courier for Monday delivery with a request for confidentiality, and additional detailed information responsive to DP14-004.

By providing the information contained herein, Chrysler is not waiving its claim to attorney work product and attorney-client privileged communications.

Sincerely,

Philip S. Hartnagel
Sr. Manager – Product Investigations and Campaigns

Attachment and Enclosures

Preliminary Statement

On April 30, 2009 Chrysler LLC, the entity that manufactured and sold the vehicles that are the subject of this Information Request, filed a voluntary petition for relief under Chapter 11 of Title 11 of the United States Bankruptcy Code.

On June 10, 2009, Chrysler LLC sold substantially all of its assets to a newly formed company now known as Chrysler Group LLC. Pursuant to the sales transaction, Chrysler Group LLC assumed responsibility for safety recalls pursuant to the 49 U.S.C. Chapter 301 for vehicles that were manufactured and sold by Chrysler LLC prior to the June 10, 2009 asset sale.

On June 11, 2009, Chrysler LLC changed its name to Old Carco LLC. The assets of Old Carco LLC that were not purchased by Chrysler Group LLC, as well as the liabilities of Old Carco that were not assumed, remain under the jurisdiction of the United States Bankruptcy Court – Southern District of New York (In re Old Carco LLC, et al., Case No. 09-50002).

Note: Unless indicated otherwise in the response to a question, this document contains information up to October 20, 2014, the date the information request was received.

Consistent with a November 6, 2014 agreement with the National Highway Traffic Safety Administration ("NHTSA") Office of Defect Investigations ("ODI"), on November 25, 2014 Chrysler Group LLC submitted a partial response to the Information Request ("IR") in this matter (NVS-213krh/DP14-004). This submission contains Chrysler Group LLC's responses to IR Questions 3 – 7, and 10.

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1. State the number of subject vehicles sold by model, model year, and TIPM part number.

A1. The subject vehicles are noted in Table 1.

Vehicle Type	Model Years
Ram 1500 (DS)	2009 – 2012
Ram 2500 (DJ)	2010 – 2012
Ram 3500 (D2/DD)	2010 – 2012
Ram 4500 (DP)	2011 – 2012
Ram 5500 (DP)	2011 – 2012
Dodge Journey (JC)	2009 – 2010
Dodge Grand Caravan / Chrysler Town and Country (RT)	2008 – 2014
Jeep Wrangler (JK)	2007 – 2014
Dodge Nitro (KA)	2007 – 2011
Jeep Liberty (KK)	2008 – 2012
Jeep Grand Cherokee (WK)	2011 – 2013
Dodge Durango (WD)	2011 – 2013

Table 1: Subject vehicles with models and model years (model code).

The Totally Integrated Power Module ("TIPM") -7 is a specific type of Body Control Module. TIPM part numbers are not necessarily unique to any model and model year combination, and TIPM part numbers do vary within any particular vehicle program based upon hardware and software versions. A dealer technician can use a diagnostic tool to determine what TIPM part number is present in a specific vehicle. Chrysler does not relate specific TIPM part numbers to vehicles after production. Over the production range of a vehicle program there were numerous changes in TIPM part number. The exact dates in which a new part number was implemented in production varied slightly based on a number of unplanned factors including production interruptions. TIPM volume has been noted by part number based on planned implementation dates for each TIPM part number. There is approximately 2% of part numbers for which Chrysler continues to validate TIPM part numbers within the above vehicle population. The detailed response of the production data listed by TIPM-7 part number, as requested, is provided in ENCLOSURE 1- TIPM-7 PART NUMBERS and is titled Volume by part number.xlsx.

2. Provide the following information for each subject complaint vehicle:

a. Vehicle identification number (VIN);
b. Model;

c. **Model Year;**
d. **Engine;**
e. **TIPM part number;**
f. **Date of manufacture;**
g. **Date warranty coverage commenced;**
h. **Applicability and completion date for all TIPM-related recalls; and**
i. **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 2010, or a compatible format, entitled "DP14 004 PRODUCTION DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

A2. The subpart (a) through (i) is located in ENCLOSURE 2 and titled DP14 004 PRODUCTION DATA.accdb.

3. State the number of each of the following, received by Chrysler, or of which Chrysler is otherwise aware, which relate to, or may relate to , the subject component in the subject complaint vehicles:

a. Consumer complaints, including those from fleet operators;
b. Field reports;
c. Reports involving a crash, fire, injury or fatality;
d. Property damage claims;
e. Third-party arbitration proceedings where Chrysler is or was a party to the arbitration; and
f. Lawsuits, both pending and closed, in which Chrysler is or was a defendant or codefendant.

For each subpart, separately state the total number of each item (e.g., consumer complaints, field reports, etc.). 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).

A3. The following summarizes the number of reports identified by Chrysler that may relate to the subject component in the subject complaint vehicles. Chrysler has conducted a reasonable and diligent search of the normal repositories of such information.

Chrysler has identified a total of 709 reports which relate, or may relate to the subject component in the subject complaint vehicles, which represent 199 unique VINs.

a. Chrysler identified 605 consumer complaints (Customer Assistance Inquiry Request or CAIR and Customer Promoter Score or CPS) which relates, or may relate to the subject component in the subject complaint vehicles, which represent 189 unique VINs.

b. Chrysler identified 104 Field Reports which relates, or may relate to the subject component in the subject complaint vehicles, which represent 65 unique VINs.

c. Chrysler identified 0 reports of crash, fire, injury, or fatality which relates, or may relate to the subject component in the subject complaint vehicles.

d. Chrysler identified 0 reports of property damage claims which relate, or may relate to the subject component in the subject complaint vehicles.

e. Chrysler identified 0 reports of Third-party arbitration proceedings where Chrysler is or was a party to the arbitration which relates, or may relate to the subject component in the subject complaint vehicles.

f. Chrysler identified 2 reports of Lawsuits, both pending and closed, in which Chrysler is or was a defendant or codefendant which relates, or may relate to the subject component in the subject complaint vehicles, which represent 2 unique VINs.

4. 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. Chrysler'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 a stall while driving incident is alleged;
k. Whether an airbag non-deployment or other airbag malfunction is alleged;
l. Whether an unintended acceleration incident is alleged;
m. Whether a fire is alleged;
n. Whether a thermal incident (e.g., smoking or heat damage) is alleged;
o. Whether property damage is alleged;
p. Number of alleged injuries, if any;
q. Number of alleged fatalities, if any; and

r. Whether the TIPM module was returned for analysis by Chrysler or the TIPM supplier.

Provide this information in Microsoft Access 2010, or a compatible format, entitled "DP14 004_ INCIDENT DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

A4. The subpart (a) through (r) is located in ENCLOSURE 4 and titled DP14 004_INCIDENT DATA.accdb.

5. 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, event data recorder reports, police reports, etc.) and describe the method Chrysler used for organizing the documents. Describe in detail the search methods and search criteria used to identify the items in response to Request No.3.

A5. The response information is located in ENCLOSURE 5 and titled DP14 004 Narrative data.pdf.

6. State, for each subject complaint vehicle, a total count for all of the following categories of claims related to repair or replacement of the TIPM module, collectively, that have been paid by Chrysler to date in the subject complaint 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. Chrysler's claim number;
b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
c. VIN;
d. Repair date;
e. Vehicle mileage at time of repair;
f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
g. Labor operation number and description;
h. Problem code, DTC codes and description;
i. Replacement part number(s);
j. Replacement part supplier and description;

k. Concern stated by customer;
l. Cause and Correction stated by dealer/technician; and
m. 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 "DP14 004 — WARRANTY DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

A6. The response information is located in ENCLOSURE 6 and titled DP14 004 - WARRANTY DATA.accdb, and Extended Warranty.xlsx.

Chrysler identified 207 paid claims which are related to repair or replacement of the TIPM-7 module 126 unique VINs.

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 Chrysler 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 Chrysler is planning to issue within the next 120 days.

A7. Chrysler's response to Question 7 is located in ENCLOSURE 7 and contains the results of the search for all documents that Chrysler has issued externally that relate to, or may relate to, the alleged defect in the subject vehicles. Chrysler has conducted a reasonable and diligent search of the normal repositories of such information. Chrysler identified one Star Case (file name S1308000399.pdf) relating to the subject component that may relate to the alleged defect of *engine stall while driving* in the subject vehicles. The Star Case was issued for the symptoms of no start and intermittent fuel pump operation due to the fuel pump relay within the TIPM-7. It was not issued in response to *engine stall while driving*. The Star Case was issued in May, 2013. Chrysler did not identify any documents which relate to, or may relate to the following alleged defects. *TIPM-7 module failure or malfunction resulting in*: *airbag non-deployment*; *unintended acceleration*; *or vehicle fire*.

8. Provide the following information for the subject components:

a. TIPM-7 assembly drawings including PCB (printed circuit board) electrical schematics, stencil, layout, and BOM (Bill of Material) in PDF; and

b. Describe, and provide copies of all documents relating to, all return part analyses that relate to, or may relate to, the alleged defect in the subject complaint vehicles.

A8. Chrysler's response to subpart (a) is located in ENCLOSURE 8 – CONF BUS INFO, which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment. The TIPM-7 is an Outside Design and Development ("ODD") component. Much of the detailed documents and information relating to the design and development of this ODD component, including some of the information requested in Q8, is (or once was) in the possession of the supplier and not Chrysler. Chrysler has searched its available records and does not possess PCB electrical schematics, stencil, layout, or BOM data. Chrysler has located and provided both 2-dimensional part engineering drawings as well as a computer-aided design ("CAD") rendering of the TIPM-7 Exterior, which is generally representative of all TIPM-7 part numbers found in all subject vehicles. The 2-dimensional drawings are found in subdirectory TIPM-7 and titled 68217404AA_2D CONF BUS INFO.pdf and 68217405AA_2D CONF BUS INFO.pdf. The 3-dimensional drawings found in subdirectory ENCLOSURE 8 - PUBLIC and titled TIPM7 - Exterior CAD PUBLIC.pptx. In addition, Chrysler has located and provided a schematic of the Fuel Pump relay circuits reviewed in the 14V-530/P54 investigation which can be found in subdirectory TIPM-7 and titled TIPM 7C - Fuel Pump Circuit schematic CONF BUS INFO.pdf and TIPM7S_Fuel_Pump_Relay_Mission_Profile_revF CONF BUS INFO.pdf.

Chrysler's response to subpart (b) is located in ENCLOSURE 8 – CONF BUS INFO within the subdirectory PART ANALYSIS. Chrysler reviewed all available returned part analysis reports and identified three of the subject complaint vehicles in which a TIPM-7 was returned to either Chrysler or the supplier. The three returned parts were all tested on the bench simulator. A summary of the part analysis reports can be found in the PART ANALYSIS directory and is titled Returned Part Analysis Summary CONF BUS INFO.pdf. Of the three reports, there are two which may be related to the alleged defect conditions. The failure mode of the first module (report 14D1456AC) does not appear to be related to the alleged defect. The failure mode of the second module (report 14H09632AA) appears to be related to the alleged defect; however, the cause was noted as assembly process, not module durability. The failure mode of the third module (report 14G15077AA) appears to be related to the alleged defect, however, the returned module passed all testing.

9. Provide the following information regarding the subject recall:

a. State the numbers of consumer complaints, field reports and warranty claims related to the recall condition in the subject components used in the recalled population that were received by Chrysler at the time of the recall decision;

b. Provide a Pareto chart of the failure modes/effects associated with the fuel pump relay defect condition (e.g., stall while driving, no start, etc.); and

c. Describe, and provide copies of all documents relating to, all field data analyses, testing, returned part analyses and design reviews performed by Chrysler to determine the root cause and scope of the fuel pump relay defect condition.

A9. The following summarizes the number of reports identified by Chrysler that may relate to the recall condition in the subject components used in the recall population known at the time of the recall decision. Chrysler has conducted a reasonable and diligent search of the normal repositories of such information. In the 14v-530/P54 recall there were four fuel pump relay conditions stated: 1. Crank, No start, 2. Start, then immediately stall, 3. Stall while driving, 4. Fuel pump runs after ignition off. Only one of the conditions is related to motor vehicle safety (stall while driving). Chrysler issued the recall to remedy the safety condition. Below are the total numbers of reports related to the four fuel pump relay conditions, as well as the specific items related to the stall while driving condition.

a. Chrysler identified 342 consumer complaints (Customer Assistance Inquiry Request or CAIR and Customer Promoter Score or CPS) relating to the four fuel pump relay conditions in the subject vehicle population, which represent 290 unique VINs. Chrysler identified 68 related consumer complaints to vehicles stalling while driving in the subject vehicle population, which represent 66 unique VINs. These reports were categorized based upon a review of each narrative for the relevant fuel pump relay conditions.

Chrysler identified 608 field reports relating to the four fuel pump relay conditions in the subject vehicle population, which represent 600 unique VINs. Chrysler identified 15 field reports related to vehicles stalling while driving in the subject vehicle population, which represent 14 unique VINs. These reports were categorized based upon a review of each narrative for the relevant fuel pump relay conditions.

Chrysler identified 5,230 warranty claims relating to the four fuel pump relay conditions in the subject vehicle population, which represent 5,096 unique VINs. Chrysler identified 71 warranty claims related to vehicles stalling while driving in the subject vehicle population, which represent 71 unique VINs. To identify the warranty claims, a search was conducted by Labor Operation (“LOP”) and TIPM part numbers. Chrysler applied search terms reasonably related to the four fuel pump relay conditions. These search terms were used to categorize the reports into one or more of the four fuel pump relay conditions.

b. Chrysler has provided a Pareto analysis of the four fuel pump relay conditions noted above associated with the 14v-530/P54 recall, including the above three data sources from question 9, subpart (a). Chrysler's response to subpart (b) is located in ENCLOSURE 9 – CONF BUS INFO in the file named Conditions pareto CONF BUS INFO.pdf.

c. In October 2013, Chrysler's Vehicle Safety Office conducted a preliminary review of field narratives, which appeared to indicate the fuel pump circuit in the TIPM-7 body controller was not energizing the fuel pump and potentially resulting in a vehicle stall while driving. The TIPM-7 service part usage had increased sharply, causing a national backorder of TIPM-7 body controllers, preventing timely repair of numerous vehicles.

Chrysler conducted a review of dealer technician warranty narratives which indicated that the fuel pump on some 2011 Jeep Grand Cherokee and Dodge Durango vehicles were not energizing, which resulted in a no start condition. Some of these narratives include variations of the following details:

- Measuring 0 volts at the fuel pump and/or TIPM-7 fuel pump relay output pin while cycling the ignition to the "RUN" position;
- Measuring 0 volts at the harness pins leading into the fuel pump with the pump disconnected while cycling the ignition to the "RUN" position; and
- Measuring 0 volts at the upstream TIPM-7 fuel pump relay fuse holder terminal with the fuel pump relay fuse removed while cycling the ignition to the "RUN" position.

In an effort to understand the root cause and scope of the potential issue, Chrysler conducted a number of testing and data analysis activities. Chrysler developed a cross functional issue investigation team which held no less than weekly meetings, design reviews, field data reviews, as well as numerous test activities. In this section, Chrysler is providing key documents that memorialize this activity that ultimately led to the identification of root cause as well as the recommendation to issue the 14V-530/P54 campaign for the identified vehicles.

In November 2013, the TIPM-7 supplier and the fuel pump relay supplier each performed a teardown analysis on 10 of 2011 Jeep Grand Cherokee and Dodge Durango fuel pump relays from TIPM-7 modules returned due to field failures. These analyses showed relay spring deformation and relay contact erosion. The teardowns revealed that the relay failure was a durability, or end-of-life type failure, which was occurring prematurely. The reports detailing TIPM Fuel pump relay teardown can be found in ENCLOSURE 9 – CONF BUS INFO.

During the period of December 2013 through February 2014, the supplier conducted relay cycle testing to analyze the effect of inductance and current at the fuel pump relay. This testing failed to recreate TIPM-7 fuel pump relay conditions that were

observed in the field. Relay testing data and results can be found in ENCLOSURE 9 – CONF BUS INFO.

The cross functional team continued to analyze the testing results as well as the field data. The team reviewed data related to vehicles reported to have exhibited the fuel pump relay conditions in question. Data sources included, but were not limited to, vehicle feature content, months in service, mileage at time of event, as well as location and region of sale. Multiple combinations of vehicle features were compared in an effort to identify relevant trends and potential root causes. Significant data analysis and collection of vehicle characteristics were obtained from multiple vehicle lines equipped with TIPM-7 body controllers. The analysis of the field data indicated certain trends:

- There was a significant difference in occurrence rate between 2011 MY Jeep Grand Cherokee and 2011 MY Dodge Durango vehicles when compared with all other TIPM-7 vehicles.
- There was no identifiable trend for vehicle content.
- Incident rate increased at approximately 18 months in service.
- Incident rate increased at approximately 20,000 miles.
- Suspected fuel pump relay failures were occurring at a higher rate in southern states with higher mean ambient temperatures.

A presentation containing the above analysis can be found in ENCLOSURE 9 – CONF BUS INFO, as well as materials previously produced on October 8, 2014 titled TIPM Overview (Bates numbers: 10.8.14 TIPM Overview Presentation -Voluntary- - Chrysler – 01 through 22).

Based on prior testing and analysis, additional testing was conducted in March and April 2014. In this testing, steady state loads were passed through the relay to analyze the effect of continuous high ambient temperature combined with high current at the fuel pump relay. This data was used to develop more precise conditions in future testing of the fuel pump relay. Relay testing data and results can be found in ENCLOSURE 9 – CONF BUS INFO.

In May through August 2014, three types of fuel pump relays were tested in simulated vehicle environments, including the 2011 WK/WD. The three relays tested were: 1. TIPM-7 body controller PCB mounted fuel pump relay, 2. Power Distribution Center (“PDC”) body controller PCB mounted fuel pump relay, and 3. a 4-wire external relay. Test factors held constant were ambient temperature and duty cycle. Variable factors adjusted were the relay type, the relay manufacture, as well as the simulated fuel pump current and inductance levels representative of multiple TIPM-7 vehicles. All relays were tested at an accelerated duty cycle. During the test, the TIPM-7 relays failed in a way that was representative of the field failures. The TIPM-7 relays tested in the 2011 WK/WD environment failed after fewer test cycles than all other relays in the test. In addition, the 4-wire external relay was tested in these same conditions in

order to confirm the reliability of the relay as a potential service remedy for 14v-530/P54. This relay lasted substantially longer in the same test conditions. Testing was suspended after the relay lasted beyond three times its vehicle defined life cycle. Description of the test setup and results, as well as the effectiveness of the external relay can be found in ENCLOSURE 9 – CONF BUS INFO.

Chrysler identified the root cause of the premature relay failure to be the deformation of the contact spring due to the heat caused by contact power, ambient temperature around the fuel pump relay, and battery voltage. These factors, present in combination and in high amounts lead to premature fuel pump relay failure. Chrysler's investigation into the fuel pump relay determined that the mechanical relay in question within the TIPM-7 was not able in all cases, to function to the defined vehicle life cycle within the 14V-530/P54 subject vehicles. An examination of the relay specification documentation from the Tier 2 supplier appears to support the conclusions of the investigation. The Tier 2 relay specification sheet can be found in ENCLOSURE 9 - PUBLIC and titled relay_ex1_ex2_e PUBLIC.pdf.

Based on the field data analysis, the rate of premature relay failures of the 2011 WK/WD vehicles appears to be unique within the TIPM-7 population. Chrysler determined at the August 26, 2014 meeting of the Vehicle Regulatory Committee to issue a recall for the 2011 WK/WD vehicles. It has been verified through multiple reviews, that in the case of a stall event, the vehicle maintains power and functionality for certain features, such as hazard indicators, seat belt pretensioners and airbags. Chrysler continues to review design changes made in the WK/WD vehicles after the 2011 MY to determine what, if any, design changes positively affected the occurrence rate of stalling while driving among the 2012 and 2013 MY WK/WD vehicles.

10. Furnish Chrysler's assessment of the field data relating to, and the technical basis for, each of the alleged failure effects identified in the defect petition (i.e., stall while driving, airbag non-deployment, unintended acceleration and fire) in the subject complaint vehicles.

A10. Chrysler's response to Question 10 is located in ENCLOSURE 10, titled Engineering Assessment - 231 VINs.xlsx, and contains the assessment of the available field data relating to the subject complaint vehicles. For each subject complaint vehicle, Chrysler has conducted a reasonable and diligent search of the normal repositories of such information.

Assessment Summary

Unintended acceleration

In the subject complaint vehicle population there were no allegations or evidence of unintended acceleration attributed to any vehicle system or component including the TIPM-7. This assessment is based on a thorough review of the Vehicle Owner

Questionnaire ("VOQ"), the complaints from the Center for Auto Safety ("CAS"), as well as Chrysler's field data. As Chrysler has informed ODI during TIPM-7 design reviews, this component does not control engine torque input from the driver or elsewhere in the vehicle. There is no engineering design logic, or technical explanation to support that unregulated engine torque/unintended acceleration could be the result of a TIPM-7 failure or malfunction.

Airbag non deployment

In the subject complaint vehicle population there were no allegations or evidence of airbag non deployment attributed to any vehicle system or component including the TIPM-7. This assessment is based on a thorough review of the Vehicle Owner Questionnaire ("VOQ"), the complaints from the Center for Auto Safety ("CAS"), as well as Chrysler's field data. As Chrysler has informed ODI during TIPM-7 design reviews, this component does not play any role in airbag deployment decisions. Only a complete TIPM failure could affect all vehicle power, including the redundant power feeds to the Occupant Restraint Control ("ORC") module, therefore potentially affecting airbag deployment. Chrysler is not aware of any incidents of this scenario in the subject complaint vehicles. Chrysler's response on September 15, 2014 to the ODI request of September 3, 2014 regarding TREAD EWR in the file named *DI Responses to 24 Crashes re TIPM.pdf*, further supports that there is no record of non-deployment due to TIPM-7 failure or malfunction.

Fire

In the subject complaint vehicle population there was one allegation of a fire (VIN: CG142166). This assessment is based on a thorough review of the Vehicle Owner Questionnaire ("VOQ"), the complaints from the Center for Auto Safety ("CAS"), as well as Chrysler's field data. The customer alleges a fire which originated from the TIPM-7 module. This customer was using this 2012 Ram 5500 up-fitted to a flatbed tow truck, and has had two incidents where the TIPM-7 had thermal damage. Chrysler has an inspection report as well as numerous inspection photos for this vehicle. Inspection and assessment has confirmed that the cause of this incident was improper installation of aftermarket equipment. There are two aftermarket wire bundles extending from the B+ cable, which are secured using a non OEM aftermarket nut. There was significant aftermarket wiring throughout the vehicle that was not installed, or connected in accordance with the Chrysler provided 2012 Ram Body Builders Guide[1]. The Body Builder's Guide contains truck safety, emissions and electrical data, as well as dimensional graphics. These specs will aid corporate and aftermarket up-fitters when making individual and commercial modifications. Chrysler creates and posts publically this document yearly for specific vehicles. The 2012 Ram Body Builders Guide can be found online with a simple search. The 2012 Ram Body Builders Guide contains a large section focused on Electrical and Wiring information. This portion provides instructions and diagrams to correctly install, and power aftermarket equipment. Please refer to

[1] 2012 Ram Body Builders Guide: http://www.rambodybuilder.com/2012/intro.pdf

ENCLOSURE 10 and the file titled 5500 Thermal.pdf. These events are not a malfunction or failure caused by the TIPM-7.

Engine stall while driving

In the subject complaint vehicle population there were 92 allegations of an engine stall while driving. This assessment is based on a thorough review of the Vehicle Owner Questionnaire ("VOQ"), the complaints from the Center for Auto Safety ("CAS"), as well as Chrysler's field data. None of these stalling complaints involved a loss of control, crash, injury, or fatality.

Chrysler reviewed the VOQ and CAS complaints for each subject complaint vehicle, examining each for an allegation responsive to the DP14-004 alleged defects. There are a significant number of the subject complaint vehicles which do not have an allegation related to the alleged defects.

- There were 102 subject complaint vehicles with no allegation whatsoever that the TIPM-7 was related to any of the alleged defects or additional NHTSA categories.
    - Of the 102 subject complaint vehicles, Chrysler has provided its assessment of the field data as well as indicated the reasoning for no allegation.
    - 62 of these vehicles are 14V-530/P54 subject vehicles that will be included in the recall campaign.
        - The vast majority of these vehicles have documented starting issues which are likely related to the TIPM-7 fuel pump relay.
    - 40 of these vehicles are not in the 14V-530/P54 population.
        - 15 relate or may relate to the TIPM-7;
        - 18 do not relate to the TIPM-7; and
        - 7 are without sufficient information to determine whether or not they relate or may relate to the TIPM-7.

- There were 129 subject complaint vehicles where an allegation was made in either the VOQ or CAS complaints or the Chrysler vehicle history.
    - It is important to note that not all of the 129 subject complaint vehicles have an allegation included in the DP14-004 alleged defects;
    - Many of these vehicles note a condition(s) which is not related to, or likely not related to the TIPM-7; and
    - Further, a number of the reports are unclear as to the condition being caused or related to the TIPM-7.

- 84 of these vehicles are 14V-530/P54 subject vehicles.
    - Vast majority of the customer issue in question on these vehicles appear to be related to TIPM fuel pump relay condition
- 45 of these vehicles are TIPM-7 vehicles which are not included in 14V-530/P54 vehicles.
    - Note: the total U.S. market population of TIPM-7 vehicles not included in 14V530-P54 is approximately 4.6 million.

- It is clear that very few vehicles not included in P54 have exhibited the alleged defect of engine stall while driving. For the vehicles that have indicated an engine stall while driving, there are a number of different explanations why specific vehicles had these issues. Where appropriate, recall campaigns have already been issued.
- 33 of the 45 allege an engine stall while driving
  - 9 relate, or may relate to the TIPM-7 fuel pump relay;
  - 18 do not relate to the TIPM; and
  - 6 are without sufficient information to determine whether or not they relate or may relate to the TIPM-7.
- Of the 33, 12 vehicles have no record of any stall condition made to Chrysler

Closing

The review of the subject complaint vehicle histories and the VOQ and CAS allegations corroborates Chrysler's position relating to the TIPM-7 and the alleged defects. Chrysler is aware of, and has been investigating an issue related to TIPM-7 failure leading to engine stall while driving due the stated failure of the fuel pump relay. This defect was identified and recall 14V-530/P54 has been issued for the affected vehicles.

There is no engineering design logic, or technical explanation to support that unintended acceleration could be the result of a TIPM-7 failure or malfunction.

There is no evidence of air bag non-deployment that can be attributed to the TIPM-7 in the subject complaint vehicles. The TIPM-7 does not control airbag deployment.

There is only one incident of fire in the subject complaint vehicles. Chrysler's investigation and analysis of the fire deemed the cause to be improper aftermarket vehicle modification

There is evidence that engine stall while driving can occur due to a failure or malfunction of the fuel pump relay within the TIPM-7. To determine this defect, Chrysler has conducted more than 12 months of investigation to identify the issue, consequence, root cause, and affected vehicle scope. During this investigation Chrysler has not determined any other safety related conditions are present related to the TIPM-7. It is important to note that at this time, among the approximately 4.7 million Chrysler vehicles in the United States with a TIPM-7, Chrysler has identified zero fatalities, zero injuries, and zero documented crashes that can be attributed to the TIPM-7.

The TIPM-7 is a complex component which distributes power to a number of different systems in the vehicle. It is susceptible to other system malfunctions that are not caused by the TIPM but may present themselves at the TIPM. For this reason, it is often misdiagnosed as the cause of an issue. This was observed during the review and assessment of the subject complaint vehicles, where a TIPM-7 was installed as the first attempted remedy and the customer stated issues continued to occur. Chrysler has, and

continues to monitor any and all conditions identified by our customers and takes appropriate actions to ensure the safety of our customers.

Chrysler believes its twelve month investigation, which led to recall 14V-530/P54, has identified the proper scope, consequence and remedy for vehicles with a malfunctioning TIPM-7. The facts and data obtained during this investigation have already been shared with the agency. Accordingly, Chrysler believes that it would be an unnecessary allocation of agency resources to open a formal investigation and the petitioner's request should be denied.