December 08, 2023

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National Highway Traffic Safety Administration
1200 New Jersey Ave., SE
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VIA EMAIL

G242565

NEF-106-JAE
PE23-016

Subject: General Motors LLC's Responses to NHTSA's Information Requests in Investigation PE23-016

Dear Mr. Neff:

This letter contains General Motors LLC's ("**GM**") responses (the "**Responses**") to the information requests in your October 26, 2023, letter (the "**Requests**") relating to National Highway Traffic Safety Administration ("**NHTSA**") Preliminary Evaluation PE23-016. This NHTSA investigation involves "allegations of the 6L90 transmission valve body separator plate allegedly being incorrectly manufactured on certain General Motors Chevrolet Express and GMC Savana cutaway van chassis resulting in unintended wear to the valve body check ball resulting in a loss of motive power." Unless otherwise defined herein, GM's Responses rely on the defined terms in the Requests.

PRELIMINARY STATEMENT

GM prepared its Responses by: (i) identifying, in consultation with the appropriate GM business personnel, the primary electronic databases and document repositories in GM's custody and control that store potentially responsive documents and information in the ordinary course of business, as more fully identified in the Responses below; and (ii) conducting a reasonable search, as appropriate, of these databases and document repositories for responsive documents and information. GM objects to the definitions of "document" and "GM" in the Requests as overbroad, unreasonably burdensome, and not reasonably tailored to records that might be expected to bear relevant and responsive information. GM's document production does not contain: (i) attorney-client privileged information or information protected as attorney-work product; and (ii) documents generated or archived in these locations after the dates that GM conducted its final searches. GM construes the Information Request as pertaining to vehicles manufactured for sale in the United States and its territories.

GM's document production is contained in the folder titled G242565_1_GM. Certain

portions of these documents are exempt from public disclosure under the Freedom of Information Act (5 U.S.C. § 552(b)(4)) ("**FOIA**") and 49 CFR part 512, and have been redacted in the copy contained in the folder.GM has submitted the unredacted nonpublic copy of its document production (in the folder titled G242565_2_GM_CONF) to the NHTSA Office of Chief Counsel under 49 C.F.R. part 512. GM recently concluded an investigation that is responsive to Request 10. GM will promptly supplement these responses with the documents that relate to this investigation.

Some of the documents in GM's production contain personally identifiable information ("**PII**") (e.g., vehicle registration information or VIN, employee names, and customer/employee contact information). GM today submits documents with unredacted PII with the understanding that NHTSA (or GM, if NHTSA prefers) will redact any PII before disclosing these documents to the public.

REQUESTS AND RESPONSES

REQUEST 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 (17-character VIN);

b. Make;

c. Model;

d. Model Year;

e. Subject component part number(s) and design version installed as original equipment;

f. Date of manufacture (MM/DD/YYYY);

g. Date warranty coverage commenced (MM/DD/YYYY); and

h. The State in the United States where the vehicle was originally sold or leased, or delivered for sale or lease (postal abbreviation).

i. The Final stage manufacturer to which the vehicle was sold.

Provide the table in Microsoft Access 2010, or a compatible format, entitled "PRODUCTION DATA."

GM RESPONSE:

Table 1-1 summarizes the number of subject vehicles (as defined in the Requests, the "**Subject Vehicles**"[1]) that GM has manufactured for sale or lease in the United States.

			Model Year					
Make	**Model**	**Sales Package**	**2016**	**2017**	**2018**	**2021**	**2022**	**Total**
Chevrolet	Express	B3D_School Bus	6,947	8,486	3,653	2,871	3,635	25,592
		YF2_Ambulance	1,100	366	187	181	231	2,065
GMC	Savana	B3D_School Bus	100	124	60	2	22	308
		YF2_Ambulance	67	11	10	2	3	93
Total			8,214	8,987	3,910	3,056	3,891	**28,058**

TABLE 1-1: SUBJECT VEHICLES

GM has produced the information requested in subparts (a) through (i) in the G242656_1_GM folder in the subfolder labeled "Q_01". Refer to the Microsoft Access 2010 file labeled "Q01_PRODUCTION DATA."

In response to subpart (e), the subject component (as defined in the Requests, the "**Subject Component**") is not a traceable component in GM's business records; for this reason, GM does not have records that permit it to match individual part numbers to individual VINs. For information on the changes to the Subject Component, please see GM's Response to Request 11.

In response to subpart (i), GM identified the final BAC code and final stage manufacturer for the Subject Vehicles. For 799 out of 28,058 Subject Vehicles, additional information for the vehicle purchase could not be identified past the selling dealer code. For these vehicles, it was listed as unknown in the Q1_ PRODUCTION DATA file.

REQUEST 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;

[1] GM included all vehicles manufactured and sold with the B3D_School Bus and YF2_Ambulance sales packages. The final stage manufacturer, however, may have purchased cutaway vehicles with these packages for other applications, such as, for example, shuttle buses.

c. Reports involving a crash, injury or fatality;

d. Property damage claims; and

e. Third-party arbitration proceedings, both pending and closed, 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 "f" 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.

GM RESPONSE:

In response to subparts (a) through (f), GM provides the following table, which GM prepared by conducting a reasonable keyword search for potentially responsive claims[2].

		Subcategories					
Type of Report	*GM Reports*	*Corresponding to NHTSA Reports (VOQ)*	*Num with Property Damage*	*Num with Crash*	*Num with Fire*	*Num with Injuries*	*Num with fatalities*
Consumer Complaint	*1*	*0*	*0*	*0*	*0*	*0*	*0*
Field Reports	*52*	*1*	*0*	*0*	*0*	*0*	*0*
Not-In-Suit Claims	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Third Party Arbitration Proceedings	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Product Liability Lawsuits	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Reports (Including Duplicates)	*53*	*1*	*0*	*0*	*0*	*0*	*0*
Total Vehicles with Reports (Unique VIN)	***47***	***4***	***0***	***0***	***0***	***0***	***0***

TABLE 2-1: SUMMARY OF CLAIMS RESPONSIVE TO REQUEST 2A-2F FOR THE SUBJECT VEHICLES

[2] These databases include: Customer Assistance Center (CAC), Product Assistance Center (PAC), Business Resource Center (BRC), Technical Assistance Center (TAC), Field Information Network Database (FIND), COMPASS, Field Product Report Database (FPRD) and GM Legal records.

As summarized in Table 2-1, GM is aware of 47 unique claims involving the Subject Vehicles that may be responsive to Request 2. In determining the responsiveness of a claim, GM erred on the side of coding the claim as responsive, even if the evidence in GM's possession linking the claim to the alleged defect (as defined in the Requests, the "**Alleged Defect**") was implausible, inconclusive, or circumstantial. Accordingly, the claim totals in Table 2-1 are conservative.

In response to subparts "c" and "d," GM is not aware of any relevant incidents involving crash, injury, fatality or property damage claims. With respect to subparts "e" and "f," GM is not aware of any third-party arbitration proceedings or lawsuits related to the Alleged Defect in the Subject Vehicles.

There was 1 VOQ listed in the Request. This VOQ included five separate allegations involving four unique VINs. Please see GM's analysis of this report in the G242565_1_GM folder in the Q_02 subfolder.

REQUEST 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), email address and telephone number (please use distinct fields for each data type);

d. Vehicle owner or fleet street address, city, state (postal abbreviation), and ZIP code (please use distinct fields for each data type);

e. Vehicle's 17-Character VIN;

f. Vehicle's make, model and model year (please use distinct fields for each data type);

g. Vehicle's mileage at time of incident (numeric data type);

h. Incident date (MM/DD/YYYY);

i. Report or claim date (MM/DD/YYYY);

j. Whether a crash is alleged;

k. Whether property damage is alleged;

l. Number of alleged injuries, if any; and

m. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2010, or a compatible format, entitled "REQUEST NUMBER TWO DATA." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

GM RESPONSE:

GM has produced the requested information for the Subject Vehicles in the G242565_1_GM folder in the subfolder labeled "Q_03". Refer to the Microsoft Access 2010 file labeled "Q_03_REQUEST NUMBER TWO DATA."

REQUEST 4

Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method GM used for organizing the documents. Describe in detail the search methods and search criteria used by GM to identify the items in response to Request No. 2.

GM RESPONSE:

With respect to Request 4, GM CAC, PAC, TAC and Legal records are GM's primary repositories of potentially responsive documents in the ordinary course of business. GM identified responsive documents by conducting a keyword search of these records for potentially responsive claims and reviewed the associated claim file to confirm the responsiveness of the claim. GM is producing the responsive, nonprivileged documents associated with responsive claims listed in Table 2-1 in the Microsoft Access file labeled "Q_03_REQUEST NUMBER TWO DATA" in the subfolder labeled "Q_03" in the G242565_1_GM folder. GM has organized the records by the GM file number.

Additionally, this response was compiled and prepared upon review of documents produced by various GM locations. This response does not include documents generated or received at those GM locations after their searches.

REQUEST 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), street address, email address and telephone number (please use distinct fields for each data type);

c. Vehicle owner or fleet street address, city, state (postal abbreviation), and ZIP code (please use distinct fields for each data type);

d. 17-character VIN;

e. Repair date (MM/DD/YYYY);

f. Vehicle mileage at time of repair (numeric data type);

g. Repairing dealer's or facility's name, telephone number, city and state or ZIP code (please use distinct fields for each data type);

h. Labor operation number(s);

i. Problem code(s);

j. Diagnostic trouble code(s);

k. Replacement part number(s) and description(s);

l. Concern stated by customer;

m. Cause as stated on the repair order; and

n. Correction as stated on the repair order; and

o. Additional comments, if any, by dealer/technician relating to claim and/or repair.

p. Vocational use of vehicle. Identify if vehicle was unable to complete its intended function.

Provide this information in Microsoft Access 2010, or a compatible format, entitled "WARRANTY DATA." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

GM RESPONSE

To collect warranty data responsive to this request, GM conducted a reasonable keyword search of the GM Global Analysis and Reporting Tool ("**GART**"), GM's primary repository of potentially responsive warranty claim information in the ordinary course of business.

In determining the responsiveness of a claim, GM erred on the side of coding the claim as responsive, even if the evidence in GM's possession linking the claim to the Alleged Defect was implausible, inconclusive, or circumstantial. Accordingly, the claim totals in Table 5-1 are conservative.

Table 5-1 summarizes warranty claims for the Subject Vehicles that may relate to the Alleged Defect.[3] There are a total of 679 warranty claims (649 unique VINs) categorized as responsive.[4]

			MODEL YEAR					
MAKE	MODEL	SALES PACKAGE	2016	2017	2018	2021	2022	TOTAL
Chevrolet	Express	B3D-School Bus	4	479	2	149	0	634
		YF2-Ambulance	4	2	0	0	0	6
GMC	Savana	B3D-School Bus	0	39	0	0	0	39
		YF2-Ambulance	0	0	0	0	0	0
Grand Total			8	520	2	149	0	679

TABLE 5-1: SUMMARY OF SUBJECT VEHICLE WARRANTY CLAIMS

Tables 5-2 and 5-3 below summarize the incidents per thousand vehicles ("**IPTV**") for the Subject Vehicles at 36 and 60 months in service ("**MIS**") for the 2016-2018 model years and 2021-2022 model years, respectively.

Model Year	Sales Package	IPTV @ 36 MIS	IPTV @ 60 MIS
2016	B3D-School Bus	0.57	0.57
	YF2-Ambulance	0.86	1.72
2017	B3D-School Bus	19.75	56.31
	YF2-Ambulance	2.63	5.27
2018	B3D-School Bus	0.53	0.53
	YF2-Ambulance	0.00	0.00

TABLE 5-2: SUBJECT VEHICLE WARRANTY CLAIM RATE MY2016-2018

Model Year	Sales Package	IPTV
2021	B3D-School Bus	62.44 @ 30MIS
	YF2-Ambulance	0.00 @ 30MIS
2022	B3D-School Bus	0.00 @ 23MIS
	YF2-Ambulance	0.00 @ 23MIS

TABLE 5-3: SUBJECT VEHICLE WARRANTY CLAIM RATE MY2021-2022

[3] GART does not contain the vehicle owner's name or telephone number. Additionally, some replacement part numbers, part descriptions and customer concern code descriptions are not included in the GM warranty database. In response to subpart (j), the diagnostic trouble code (DTC) is not captured separately and, if available, is included in one of the verbatim fields.

[4] GM identified responsive records based on the information supplied to GM by the servicing dealerships, which can contain material errors and omissions. Warranty records, for example, do not always accurately or completely describe the condition of the allegedly defective part at the time of the warranty correction, and service personnel may not consistently classify warranty repairs using the correct labor and trouble codes.

As shown above, almost all of the warranty claims occurred during the 2017 and 2021 model years. Within model years 2017 and 2021, there were specific build months that primarily contributed to the higher warranty claim rates.

2017 Model Year Build Spike Period

For the 2017 model year, as shown in Table 5-4 below, there was an observed build spike period from October 2016 through April 2017. During these build months, the IPTV for the Subject Vehicles at 36 and 72 MIS was significantly higher than the IPTV for the rest of the build months in the 2017 model year combined.

Model Year	Sales Package	IPTV @ 36 MIS	IPTV @ 72 MIS
2017 Build Dates 10/2016 – 04/2017	B3D-School Bus	43.93	138.77
	YF2-Ambulance	2.63	5.27
Remaining 2017 Months	B3D-School Bus	1.39	4.96
	YF2-Ambulance	Only 1 Claim	

TABLE 5-4: 2017MY WARRANTY CLAIMS FOR VEHICLES BUILT DURING SPIKE PERIOD (10/2016 – 4/2017) AND THE REMAINING 2017MY BUILD MONTHS COMBINED

This build spike period within the 2017 model year is shown graphically in Figure 5-1 below, compared to the rest of the build months in the 2017 model year combined and the 2016 and 2018 model years.

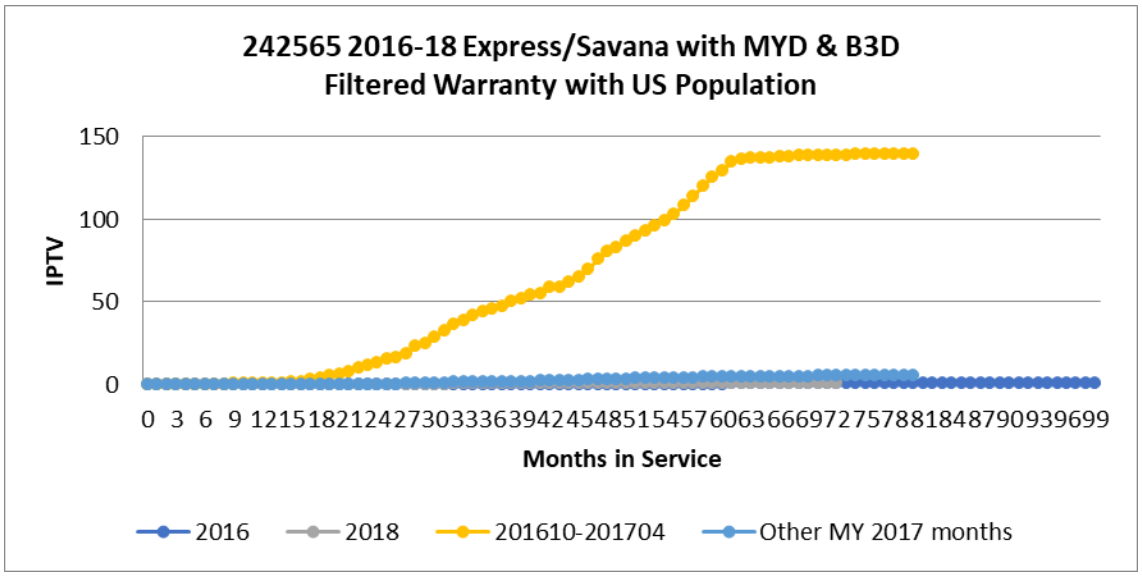

Figure 5-1: IPTV per MIS for 2016MY, 2018MY, 2017MY SPIKE PERIOD (10/2016 – 4/2017), 2017 MY REMAINING BUILD MONTHS COMBINED

2021 Model Year Build Spike Period

For the 2021 model year, as shown in Table 5-5 below, there was an observed build spike period from February 2021 through April 2021. During these build months, the IPTV for the Subject Vehicles at 36 and 72 MIS was significantly higher than the IPTV for the rest of the build months in the 2021 model year combined.

Model Year	Sales Package	IPTV
2021 Build Dates 2/2021 – 4/2021	B3D-School Bus	177.36 @ 30MIS
	YF2-Ambulance	0.00 @ 30MIS
Remaining 2021 Months	B3D-School Bus	4.66 @ 30MIS
	YF2-Ambulance	0.00 @ 30MIS

TABLE 5-5: 2021MY WARRANTY CLAIMS FOR VEHICLES BUILT DURING SPIKE PERIOD (2/2021 – 4/2021) AND THE REMAINING 2021 MY BUILD MONTHS COMBINED

This build spike period within the 2021 model year is shown graphically in Figure 5-2 below, compared to the rest of the build months in the 2021 model year combined and the 2022 model year. Outside of these build spike periods within the 2016 and 2021 model years, the IPTV for the Subject Vehicles is extremely low.

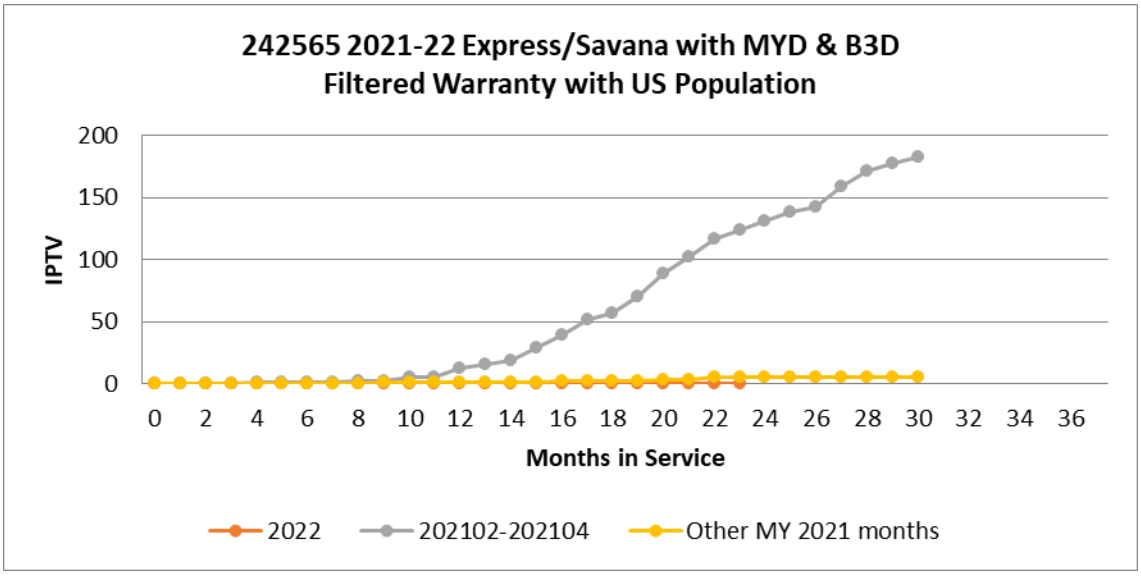

Figure 5-2: IPTV per MIS for 2022MY, 2021MY SPIKE PERIOD (2/2021 – 4/2021), 2021MY REMAINING BUILD MONTHS COMBINED

GM has produced the requested information in subparts (a) through (p) in the G242565_1_GM folder in the subfolder labeled "Q_05". Refer to the Microsoft Access 2010 file labeled "Q_05_WARRANTY DATA." In response to subparts (n) and (o), GM has included in these records all available dealer-provided "verbatim text" in the GART database relating to the responsive claims that are currently in GM's possession[5].

In response to subpart (p), the claim data does not provide adequate information to assess whether a vehicle was unable to complete its intended function. In addition, while GM has provided the sales package for the subject vehicles, GM cannot confirm whether the final stage manufacturer completed the vehicles as a school bus or ambulance.

[5] The verbatim text is provided to GM by the dealer that serviced the warranty claim and reflects both dealer- and customer-provided comments relating to the claim.

REQUEST 6

Describe in detail the search methods and search criteria used by GM to identify the claims in response to Request No. 5, including the labor operations, problem codes, diagnostic trouble codes, part numbers and any other pertinent parameters used.

GM RESPONSE:

To collect warranty data responsive to this request, GM conducted a reasonable keyword search of the GM GART, GM's primary repository of potentially responsive warranty claim information in the ordinary course of business.

In determining the responsiveness of the claim, GM erred on the side of coding the claim as responsive, even if the evidence in GM's possession linking the claim to the Alleged Defect was implausible, inconclusive, or circumstantial.

REQUEST 7

Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions, diagnostic trouble codes and diagnostic trouble code descriptions applicable to the alleged defect in the subject vehicles. State whether the diagnostic trouble codes are automatically reported to the warranty database electronically or manually entered into the warranty database by a claims administrator.

GM RESPONSE:

To populate Table 5-1, GM searched the GART warranty database for the labor codes that GM identified as potentially related to the Alleged Defect in the Subject Vehicles. These labor codes are summarized in Table 7-1. Each warranty record may have up to five verbatim fields. All verbatim claim fields were read, and a claim was determined to be responsive if the verbatim indicated that the claim may have been related to the Alleged Defect in the Subject Component. There are no diagnostic trouble codes that are relevant to the Alleged Defect.

LABOR CODE	LABOR CODE DESCRIPTION
8463870	Control Valve Lower Body and Upper Body Replacement
8463690	Control Valve Body Replacement
8463730	Control Solenoid Valve and Transmission Control Module Assembly Replacement

TABLE 7-1: LABOR CODES USED IN GART WARRANTY SEARCH

REQUEST 8

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.

GM RESPONSE:

Table 6-3 summarizes the terms of new vehicle warranty coverage offered by GM on the Subject Vehicles:

MODEL YEAR	MAKE	WARRANTY TYPE	POWERTRIAN WARRANTY TERMS	COMMERCIAL FLEET POWERTRAIN WARRANTY TERMS
2016-2018	Chevrolet	Limited Bumper-To-Bumper	5 year / 60,000 miles	5 year / 100,000 miles
2016-2018	GMC	Limited Bumper-To-Bumper	5 year / 60,000 miles	5 year / 100,000 miles
2021-2022	Chevrolet	Limited Bumper-To-Bumper	5 year / 60,000 miles	5 year / 100,000 miles
2021-2022	GMC	Limited Bumper-To-Bumper	5 year / 60,000 miles	5 year / 100,000 miles

TABLE 6-3: NEW VEHICLE WARRANTY COVERAGE OFFERED BY GM ON SUBJECT VEHICLES

Many different optional extended warranty plans were available for the Subject Vehicles through GM dealerships. These plans were offered at different prices and for varying lengths of time, based on a customer's preference.

REQUEST 9

Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that GM has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that GM is planning to issue within the next 120 days.

GM RESPONSE:

The one document that is responsive to Request 9 is in the G242565_1_GM folder in the subfolder labeled "Q_09".

REQUEST 10

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.

g. Identify all known school bus jurisdictions that may shift out of a drive gear to another gear, and back to a drive gear, at least one time, during a normal ignition cycle.

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

GM RESPONSE:

GM identified responsive production investigations by conducting a reasonable search in GM's Global Vehicle Safety-Case Observation Review and Evaluation ("**GVS-CORE**") database, which is the primary electronic records database for GM's Safety and Field Investigations organization. GM is aware of the following product investigations conducted by GM or at GM's direction that relate to the Alleged Defect:

Action 10-A: GM Internal Investigation N19-222135	
Start/End Dates	April 2, 2019 – April 16, 2019
Involved Engineering Groups	GM Emerging Issues, GM Global Engineering
Description	GM investigated claims of the 6L90 transmission not allowing vehicle forward motion due to an alleged defect of excessive wear of the #1 check ball embedded in the spacer plate in the Subject Vehicles.
Outcome	On April 16, 2019, upon review of the collected data, GM's Potential Investigation Review ("**PIR**") board recommended no further research at this time, based on the material presented. GM closed this investigation based on no emerging trend identified.
Associated Documents	Information and documents contained in GVS-CORE related to investigation N19-222135. The files are in the G242565_2_GM_CONF folders labeled as 10A-222135 in the index file.
Action 10-B: GM Internal Investigation N21-233293	

Start/End Dates	March 5, 2021 – June 16, 2021
Involved Engineering Groups	GM Global Safety and Field Investigations, GM Global Engineering
Description	GM investigated claims that the 6L90 transmission slips in drive, not allowing vehicle forward motion due to an alleged defect of excessive wear of the #1 check ball in the Subject Vehicles.
Outcome	On June 16, 2021, upon review of the collected data, GM's Safety Field Action Decision Authority ("**SFADA**") decided to close the investigation without field action. GM closed this investigation based on evidence of a low rate of occurrence and because the issue declares as a loss of forward propulsion only after a stop condition. GM determined that this condition was not a safety or compliance concern.
Associated Documents	Information and documents contained in GVS-CORE related to investigation N21-233293. The files are in the G242565_2_GM_CONF folders labeled as 10B-233293 in the index file.
Action 10-C: GM Internal Investigation N22-239880	
Start/End Dates	February 7, 2023 – May 10, 2023
Involved Engineering Groups	GM Global Safety and Field Investigations, GM Global Engineering
Description	GM investigated claims of loss of forward motion when shifting transmission from park or reverse into drive due to an alleged defect on the chamfer on the spacer plate not meeting specifications and causing wear of the #1 check ball in the Subject Vehicles.
Outcome	On May 10, 2023, upon review of the collected data, GM's SFADA decided to close the investigation with no field action. GM closed this investigation based on evidence of a low rate of occurrence and because the issue declares as a loss of forward propulsion only when changing from park or reverse to drive at zero speed. GM determined that this condition was not a safety or compliance concern.
Associated Documents	Information and documents contained in GVS-CORE related to investigation N22-239880. The files are in the G242565_2_GM_CONF folders labeled as 10C-239880 in the index file.
Action 10-D: GM Internal Investigation N23-242878	
Start/End Dates	October 30, 2023 – December 7, 2023
Involved Engineering Groups	GM Global Safety and Field Investigations, GM Global Engineering

Description	GM investigated claims of loss of forward motion when shifting transmission from park or reverse into drive due to an alleged defect on the chamfer on the spacer plate not meeting specifications causing wear of the #1 check ball in the Subject Vehicles.
Outcome	On December 7, 2023, upon review of the collected data, GM's SFADA decided to conduct a customer satisfaction field action for school buses and ambulances built during two distinct build spike periods in the 2017 and 2021 model years. GM determined that there was an extremely low rate of occurrence in the remainder of the population. GM determined that the issue declares as a loss of forward propulsion only when changing from park or reverse to drive at zero speed. GM determined that reverse remains functional and the vehicle can be placed in park. GM determined that this condition was not a safety or compliance concern.
Associated Documents	Information and documents contained in GVS-CORE related to investigation N23-242878. This investigation just recently closed. The files will be provided by January 08, 2024.
Action 10-E: GM Engineering Studies	
Start/End Dates	2019-2023
Involved Engineering Groups	GM Engineering
Description	Investigation activities involved root cause analysis of the failure, and remedy development.
Outcome	The conclusions are consistent with GM's Response to Request 13 as it relates to causal or contributory factors, failure mechanisms, and failure modes.
Associated Documents	Information, documents, PRTS (Problem Resolution Tracking System), and emails related to root cause analysis and testing. The files are in the G242565_2_GM_CONF folders labeled as 10E-ENGINEERING DOCS in the index file.
Action 10-F: Supplier Engineering Information	
Start/End Dates	2022
Involved Engineering Groups	ElringKlinger Automotive Manufacturing Inc.
Description	The supplier analyzed returned parts from the field, provided analysis and next steps.

Outcome	The supplier conclusions were consistent with GM's Response to Request 13 as it relates to causal or contributory factors, failure mechanisms, and failure modes.
Associated Documents	Supplier documents that GM has in its possession, custody, or control presented during GM meetings and reviews. The files are in the G242565_2_GM_CONF folder labeled as Supplier CBI in the index file.

TABLE 10-1: GM INVESTIGATIONS OF THE ALLEGED DEFECT IN THE SUBJECT VEHICLES

GM is producing the nonprivileged documents that are responsive to Request 10 in the G242565_2_GM_CONF folder in the subfolders labeled "Q_10". The index file PE23-016 Q10 Index provided is a directory of the files with the original file names and is labeled as listed in Table 10-1.

In response to subpart (g), General Motors does not inform customers on driving usage for the Subject Vehicles. General Motors provides an owner's manual, but it does not contain instructions regarding how to conduct school bus or ambulance operations. National standards exist regarding operation of school buses. For example, in the National School Transportation Specifications and Procedures document dated May 2015, which was adopted by the 16th National Congress on School Transportation, the Recommended Loading and Unloading Procedures states "[a]t all bus stops, whether loading or unloading, the bus should be secured by placing the transmission in neutral or park (if equipped) and applying the parking brake." See page 366, Section C. All Subject Vehicles are equipped with a park position in the transmission. General Motors does not have knowledge, however, regarding the operating procedures of particular school districts.

REQUEST 11

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 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

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.

GM RESPONSE:

A spreadsheet summary of GM engineering work order history on the Subject Component in the Subject Vehicles is provided in the G242565_2_GM_CONF folder; subfolder labeled "Q_11".

REQUEST 12:

State the number of each of the following that GM has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales if applicable):

a. Subject component; and

b. Add any further requests, including requests for similar or substantially similar components; and

c. Any kits that have been released, or developed, by GM for use in service repairs to the subject component/assembly.

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

GM RESPONSE:

The requested sales information for the Subject Component in both production and service versions is provided in the G242565_1_GM folder; subfolder labeled "Q_12." There are two files, one for non-warranty dealer repair orders and one for customer paid part ticket sales. The dealer RO file summarizes the sale volume by make, model and model year and date of sale. The make, model and model year are not provided in the customer paid file since VIN information is not available.

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 or, in the case of a dealer sale, whether the part was actually used to repair a customer vehicle or is being held as dealer stock. The Subject Component is released for sale on several other GM products with the same or similar transmission and may use the same spacer plate and check ball kit for repair of these vehicles. It could also be replaced due to accident damage. Therefore, it is difficult to draw any conclusions regarding the performance of the Subject Component from this data. A table of GM products using the same or similar transmission in which the same part was installed in production or in service is identified by make, model and model year and provided in the G242565_1_GM folder; subfolder labeled "Q_12." The Subject Component is produced for GM by ElringKlinger Automotive Manufacturing Inc. and the company address is 23300 Northwestern Highway, Southfield, MI 48075.

REQUEST 13:

Furnish GM's assessment of the alleged defect in the subject vehicles, including:

a. The causal or contributory factor(s) (i.e. frequency of shifting to a drive gear such as required by vehicle vocation or as a result of operating procedures);

b. The failure mechanism(s);

c. The failure mode(s);

d. The risk to motor vehicle safety that it poses;

e. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and

f. The reports included with this inquiry.

GM RESPONSE:

The main failure mode of the Alleged Defect in the Subject Vehicles is an inability to move forward under motive power after shifting the vehicle transmission into drive from a park or reverse position, only when stopped. The loss of forward motive power does not occur while the vehicle is being driven, and the vehicle can be placed in park. The reverse gear is almost always still operational, and the vehicle retains the ability to move in reverse.

This condition can occur if the spacer plate does not meet the required specification for the chamfer across the entire circumference of the coined check ball seat. This can cause burrs, dents, or dings on the plastic check ball, leading to premature wear and a decrease in the overall check ball diameter. There is a potential for the check ball to then become stuck or pass through the spacer plate, leading to a loss of forward motive power. This condition may be detectable to some

customers as a slipping gear condition before a loss of forward motive power. GM's field-data analysis supports the conclusion that a contributing factor is the high duty cycle use of school buses and ambulances.

The Alleged Defect does not pose a risk to motor vehicle safety. As shown in GM's Response to Request 5, the rate of occurrence of this condition in the Subject Vehicles outside of the identified build spike months is extremely low. The condition does not present itself while the vehicle is in motion and only occurs when the vehicle is stopped. It also only occurs when the customer is shifting the transmission to the forward drive gear, from a park or reverse position, and while at a stopped condition; therefore, it does not create a risk of a rollaway condition, and the vehicle can be placed in park. In addition, the Subject Vehicles retain reverse motive power. There have been zero reported accidents, injuries, or fatalities, and only a single VOQ regarding the Subject Vehicles has been reported to NHTSA.

On December 7, 2023, upon review of the collected data, GM's SFADA decided to conduct a customer satisfaction field action on a subset of the Subject Vehicles based on the observed manufacturing spill in certain build months. The population was determined using warranty claim data to include Subject Vehicles built during certain months of the 2017 and 2021 model years.

CONCLUSION

While GM will continue to monitor the performance of the Subject Component in the Subject Vehicles in the field, GM concludes, based on current data, that the Subject Component in the Subject Vehicles do not pose an unreasonable risk to motor vehicle safety. GM's Responses are based upon its investigation to date and reflect its current information and assessment. GM reserves the right to supplement or amend its Responses as appropriate.

Please contact me if you require further information about this response or the nature or scope of our searches.

Sincerely,

Sabrina E. Groshek

Sabrina Groshek, Executive Director
Global Systems and Product Investigations

cc: Mr. Jacob Ebert
ODI_IRresponse@dot.gov

Enclosures

G242565_1_GM – Public copy of GM's document production