

TOYOTA
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Handwritten: JH 8/29/05

August 26, 2005

Mr. Jeffrey Quandt
Chief - Vehicle Controls Division
Office of Defects Investigation
National Highway Traffic Safety Administration
400 Seventh St., SW
Washington, DC 20590

Vertical stamp: Mr. Quandt PE05-029

Re: NVS-213car; PE05-029

Dear Mr. Quandt:

This letter is being sent in response to your June 8, 2005 letter regarding PE05-029. This submission is the final portion of our response. Attached you will find the updated response and a CD-ROM with updated warranty claims. Two copies of these materials are being provided for your convenience.

Please note that Attachments 10 and 11 are confidential and are being sent to Office of Chief Counsel under separate cover with a request for confidential treatment.

Should you have any questions about this response, please contact Mr. Chris Santucci or Mr. Tsuyoshi Yokoi at (202) 775-1707.

Sincerely,



Chris Tinto
Vice President
TOYOTA MOTOR NORTH AMERICA, INC.

CT:cs
Attachment

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

Provide the table in Microsoft Access 2000, or a compatible format, entitled "PRODUCTION DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Response 1

The number of MY 2004 and 2005 (until May 31, 2005) Prius vehicles Toyota has manufactured for sale or lease in the United States by model year and production facility is as follows:

Model	Production Facility	Model Year	Number of Vehicles
Prius	Tsutsumi Plant, Toyota Motor Corporation (Japan)	2004	48,025
		2005	75,435
Total			123,460

In addition, detailed information for each vehicle is provided electronically on CD-ROM, in Microsoft Access 2000 format entitled "Attachment 1-PRODUCTION DATA (PE05-029)".

2. State the number of each of the following, received by Toyota, or of which Toyota is otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:
- Consumer complaints, including those from fleet operators;
 - Consumer complaints, including those from fleet operators, where a vehicle stall was reported;
 - Field reports, including dealer field reports;
 - Field reports, including dealer field reports, where a vehicle stall was reported;
 - Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
 - Property damage claims;
 - Third-party arbitration proceedings where Toyota is or was a party to the arbitration; and
 - Lawsuits, both pending and closed, in which Toyota 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 "e" through "h," provide a summary description of the alleged problem and causal and contributing factors and Toyota's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "g" and "h," 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.

Response 2

Using the method for tabulation detailed in your question, there are 416 reported complaints that may relate to the alleged defect. There are no injuries, no fatalities, and no crashes reported in the complaints. Please note that Toyota did not include any consumer complaints where the customer did not actually experience the alleged defect, but had called to complain because they had heard about the issue from other sources.

There are 66 field reports that may relate to the alleged defect.

There are two legal related claims. One includes information on a buy-back claim, while the other alleges that the vehicle was damaged when it struck a curb.

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. Toyota's file number or other identifier used;
 - b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
 - c. Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
 - d. Vehicle's VIN;
 - e. Vehicle's make, model and model year;
 - f. Vehicle's mileage at time of incident;
 - g. Incident date;
 - h. Report or claim date;
 - i. Whether any warning lights were lit at the time the alleged defect occurred;
 - j. Whether the vehicle was towed into the dealership;
 - k. Whether the vehicle stalled as a result of the alleged defect;
 - l. Whether the driver was able to restart the vehicle, if the vehicle stalled;
 - m. If the driver was able to restart the vehicle after the vehicle stalled, the amount of time it took the driver to restart the vehicle;
 - n. Whether the subject system was reported to limit the vehicle speed as a result of the alleged defect;
 - o. The speed to which the vehicle was limited as a result of the subject system;
 - p. Diagnostic Trouble Code(s) (DTCs) indicated at the time of repair;
 - q. Repair dealer made to vehicle;
 - r. Whether a crash is alleged;
 - s. Whether property damage is alleged;
 - t. Number of alleged injuries, if any;
 - u. Number of alleged fatalities, if any, and
 - v. A summary of the incident.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a preformatted table which provides further details regarding this submission.

Response 3

The information for each item (complaint, report, claim, or matter) is provided electronically on CD-ROM, in Microsoft Access 2000 format entitled "Attachment 3-REQUEST NUMBER TWO DATA (PE05-029)."

It is important to note that the Requests "i" through "q" are difficult to respond due to limited information on the complaint, report, claim or matters. We selected (checked) the reported incidents which have a description in the customer comment that applies to Requests "i" through "q".

4. Produce copies of all documents, including all document attachments and vehicle service records, 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 Toyota used for organizing the documents.

Response 4

Copies of all consumer complaints (Attachment 2), and all field information (Attachment 4-Field Information) are provided electronically on CD-ROM.

5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Toyota 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. Toyota's claim number;
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. Repair date;
- e. Vehicle mileage at time of repair;
- f. Whether any warning lights were lit at the time the alleged defect occurred;
- g. Whether the vehicle was towed into the dealership;
- h. Whether the vehicle stalled as a result of the alleged defect;
- i. Whether the driver was able to restart the vehicle, if the vehicle stalled;
- j. If the driver was able to restart the vehicle after the vehicle stalled, the amount of time it took the driver to restart the vehicle;
- k. Whether the subject system was reported to limit the vehicle speed as a result of the alleged defect;
- l. The speed to which the vehicle was limited as a result of the subject system;
- m. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- n. Labor operation number;
- o. Diagnostic Trouble Code(s) (DTCs);
- p. Whether the vehicle had Special Service Campaign 40A performed prior to incident;
- q. Whether the vehicle had Special Service Campaign 40D performed prior to incident;
- r. Whether the vehicle had Technical Service Campaign EG047-04 performed prior to incident;
- s. Replacement part number(s) and description(s);
- t. Concern stated by customer; and
- u. Comment, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Response 5

Since the Prius vehicle architecture is complicated and the alleged defect is generic in nature, i.e. "gas engine stalling and/or electric motor failure," it is difficult to determine the affected components and identify the related warranty claims. Therefore, Toyota started the investigation by thoroughly reviewing the 68 NHTSA VOQ's (consumer complaints) to identify common aspects of the alleged defect. We found that almost half of the complaints could relate to the Engine Control Module (ECM). The other half of the complaints are difficult to classify as there is not enough information available at this time; however, Toyota is still investigating these cases. Since we found that the majority of the complaints were related to the ECM, Toyota started to investigate the associated warranty claims paid by Toyota, and are submitted the relevant claims with the previous response. Since that time, Toyota continued the investigation by reviewing the field information (technical reports) with all of the warranty information. Toyota set the criteria of an occurrence ratio of more than 0.01% (within all of the warranty claims) to examine all engine and/or electric motor stalling cases which had any tendency of occurrence, and listed all cases as described in Attachment 10.

The information for each of these claims is provided electronically on CD-ROM, in Microsoft Access 2000 format entitled "Attachment 6-WARRANTY DATA (PE05-029)". Toyota has updated this file since August 5 partial response. Please see the updated warranty data including with this submission.

All of the affected vehicles are within the original warranty coverage period; there were no extended warranty claims or good will claims.

6. Describe in detail the search criteria used by Toyota 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 model year, the terms of the new vehicle warranty coverage offered by Toyota 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 Toyota 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.

Response 6

Toyota searched the warranty database for those claims that replaced part numbers of 89661-***** (engine control ECM) with diagnostic code of P3191, P3090 or P0A0F on the all MY 2004-2005 Prius's. Toyota reviewed the comments in the claims to determine if they may be related to the alleged defect.

In the data, the following labor operation codes were found:

- 88399 (air conditioning others)
- 89000 (hybrid vehicle control computer remove and replacement)
- 89099 (hybrid vehicle system others)
- 89501 (engine control module remove and replacement)
- 89599 (EFI others)

Other than the engine ECM failure, Toyota searched the warranty database for those claims by the following condition:

Hybrid ECU

Toyota used the search key word of the diagnostic code P2128, and listed all of the cases.

Transaxle

Toyota used the search key part number of 30900-47040 (transaxle assembly, hybrid vehicle) and reviewed the warranty comments and/or investigated the recovered transaxles, and then listed all engine stall-related cases.

Inverter Diode

Toyota used the search key part number of G9200-471** (inverter assembly, with converter) and reviewed the warranty comments and/or investigated the recovered transaxles, then listed all Diode related engine stall cases.

Inverter Coolant Leakage

Toyota used the search key part number of G9200-471** (inverter assembly, with converter) and reviewed the warranty comments and/or investigated the recovered transaxles, then listed all Coolant Leakage related engine stall cases.

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

Response 7

Toyota issued a Technical Service Bulletin, titled "M.I.L ON, DTC P3191, P3190 and/or P0A0F" (EG047-04), which may relate to the alleged defect. A copy of the bulletin is included in Attachment 7, and is included on CD-ROM in PDF format.

8. Provide the following additional information related to Special Service Campaigns (SSCs) 40A and 40D and Technical Service Bulletin (TSB) EG047-04:
 - a. Chronologies of events related to Toyota's issuance of SSCs 40A and 40D and TSB EG047-04;
 - b. The number of related complaints and warranty claims Toyota received prior to issuing each SSC and TSB; and
 - c. Toyota's basis for conducting SSC's 40A and 40D as SSCs rather than safety recalls.

Response 8

Copies of SSC 40A and 40D owner notifications, as well as the TSB (EG047-04) are included as Attachment 7, and on CD-ROM in PDF format.

SSC 40A

On certain 2004 Model Year Toyota Prius vehicles, if the vehicle's Hybrid Vehicle Electronic Control Unit detects a system fault, the master warning light and/or the hybrid system warning light may illuminate, depending upon the error identified. If this should occur, the vehicle will enter a "fail-safe"

mode. Due to a programming error, if the vehicle is restarted in the "fail-safe" mode, a secondary condition may occur where the vehicle transmission may not operate smoothly. The total affected vehicle volume was approximately 3,500 units. This repair does not prevent gas engine stalling, only the transaxle operation upon restart after fail-safe mode.

<Chronology>

October 2003

Toyota found the condition wherein the transaxle may not operate smoothly during an in-house evaluation. If the vehicle experiences an engine control and/or hybrid system failure and enters the fail-safe mode, the transaxle may not operate smoothly due to a Hybrid ECU software problem. No field information or warranty claims were submitted related to this problem. Toyota decided to conduct an SSC to repair the problem on the affected vehicles.

SSC 40D

On certain 2004 Model Year Toyota Prius vehicles, the Hybrid Vehicle Electronic Control Unit (HV ECU) and Battery Electronic Control Unit (Battery ECU) may not conform to some portions of the diagnostic tool communication standard due to a programming error. If a repair facility's On-Board Diagnostic (OBD) scantool is used to diagnose a condition where the hybrid system warning light and/or master warning light is illuminated, the OBD scantool may not recognize the system fault.

<Chronologies>

Middle of January 2004 to Late April 2004

Toyota discovered a miscommunication with the scantool when receiving an MIL from the Hybrid ECU due to a software error in the Hybrid ECU. This condition was found during a Toyota in-house evaluation which tests the scantool communication for certain vehicle monitoring tests. No field information or warranty claims were submitted for this issue. As a convenience, Toyota decided to conduct an SSC to repair this problem on the affected vehicles.

TSB EG047-04

This Technical Service Bulletin (TSB) was introduced for the purpose of informing dealer repair facilities of a methodology to repair vehicles exhibiting a malfunction related to the engine ECM software which may result in vehicle operation by electric motor only (i.e. no gas engine start).

<Chronologies>

Middle of May 2004 to middle of October 2004

Toyota learned from field information that some vehicles were experiencing different engine ECM software issues. Toyota immediately started an investigation into the cause. Toyota discovered a software error within the engine intake air volume criteria that is mapped in the engine ECM. Toyota developed a revised software version, and introduced this software along with reprogramming methodology in a TSB in the middle of October 2004.

In all three instances, Toyota did not determine the existence of a safety defect, and therefore did not conduct a safety recall. As described above, 40A and 40D do not address any issues related to engine stalling. 40A addresses an issue with the transaxle upon engine start, while 40D addresses an issue with the scantool.

In regards to the TSB, Toyota's investigation indicated at the time that the issues addressed by the TSB occurred infrequently. Also, only one of the aspects of the failure modes addressed in the TSB included the possibility that the gas engine may fail to restart. To that point, one of the unique characteristics of the Prius Hybrid vehicles is the fact that there are two propulsion systems, which differentiates it from traditional internal combustion engine vehicles when it comes to stalling events. The Prius can operate in electric-only mode in order for drivers to be able to safely maneuver the vehicle (including propulsion), with full power assist to the steering and braking systems.

Furthermore, software revisions are of late becoming more and more frequent as a means of repair on vehicles, and can address many issues at one time. Toyota may sometimes issue a TSB to immediately address the limited number of customers that are currently experiencing an issue, much like a computer user when they receive a software "patch." Sometimes many different systems are improved or optimized in the software. Then, when a final release version is ready, incorporating improvements from multiple areas, a campaign may be initiated to repair all vehicles, whether or not they experience any or all of the issues addressed.

9. Provide a description of how the subject system functions within the subject vehicle. This includes, but is not limited to, the following:
- a. Describe how the subject system functions in all normal operating modes, including the lowest battery charge states associated with each;
 - b. List and describe all backup modes of operation that occur following a system fault (e.g., "fail-safe mode") and the conditions which cause the subject system to transition to each;
 - c. Describe all warning lights, messages, and diagnostic codes associated with each condition cited in 9.b;
 - d. State the maximum vehicle speeds possible in each backup mode cited in 9.b;
 - e. State the maximum vehicle ranges in miles that can be driven in each backup mode cited in 9.b - provide both a typical range and the minimum ranges associated with various combinations of the following: low initial battery charge state, full vehicle load, airconditioning operation, uphill driving, etc.;
 - f. With regard to 9.e, describe all indications available to the driver concerning how much further the vehicle can be operated in each backup mode;
 - g. For each condition identified in 9.b, identify the conditions necessary for the vehicle to return to normal operating mode (e.g., restarting the engine); and
 - h. Identify all SSC's and TSB's that involve conditions that may place the vehicle in a condition cited in 9.b.

Response 9

Please refer to Attachments 10 and 11.

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, Toyota. For each such action, provide the following information:
- a. Action title or identifier;
 - b. The actual or planned start date;
 - c. The actual or expected end date;
 - d. Brief summary of the subject and objective of the action;
 - e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
 - f. A brief summary of the findings and/or conclusions resulting from the action.

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

Response 10

Please refer to Attachment 11.

11. Describe all modifications or changes made by, or on behalf of, Toyota 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 numbers (service and engineering) of the original system;
 - e. The part number (service and engineering) of the modified system;
 - f. Whether the original unmodified system was withdrawn from production and/or sale, and if so, when;
 - g. When the modified system was made available as a service system; and
 - h. Whether the modified system can be interchanged with earlier production systems.

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

Response 11

Please refer to Attachment 10.

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

- a. The causal or contributory factor(s);
- b. The failure mechanism(s);
- c. The failure mode(s);
- d. The condition(s) under which the alleged defect can occur;
- e. The 12- and 24-month warranty rates associated with the alleged defect;
- f. The 5- and 10-year projected subject system failure rates;
- g. The percent of subject system failures that will result in a engine stalling incident;
- h. The percent of subject system failures that will result in a vehicle stalling incident;
- i. The percent of stalling incidents that will result in a delayed restart (greater than 5 minutes) condition; and
- j. The percent of stalling incidents that will result in a no restart condition.
- k. The risk to motor vehicle safety that it poses;
- l. 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 system was malfunctioning; and
- m. The reports included with this inquiry.

Response 12

Overview

After receiving the opening resume from NHTSA, Toyota began an investigation into the allegations of engine stalling on the 2004 and 2005 MY Toyota Prius vehicles. The opening resume noted that there were thirty-three (33) consumer complaints alleging that the engine stalled while driving in the NHTSA database. Using the methodology outlined in your letter, Toyota searched for similar complaints and found 416 records that could be related to the alleged defect. Those have been submitted to your office in our earlier response.

Toyota began an evaluation of all of the factors that could lead to engine stalling on the subject vehicles. These factors range from issues with engine and hybrid ECU software, individual diodes within the hybrid inverter, various connectors, customer driving habits, and even the possibility that the vehicle is operating as designed. A normal function of the Toyota gas-electric hybrid system, or "Hybrid Synergy Drive" (HSD), is to allow the gasoline motor to in fact shut down while in operation in order to conserve fuel. The HSD system consists of two propulsion systems: an Atkinson cycle gasoline engine and a 50 kW electric motor joined in parallel. With the gasoline engine running, the vehicle can be driven and the batteries can be charged via the generator. With the gasoline engine off, the vehicle can be propelled by the electric motor. Significant fuel savings can be achieved with the HSD system. Toyota is confident in the efficiency as well as the safety of the HSD system.

While, at this time, Toyota has not determined that a defect exists as it relates to motor vehicle safety, it understands the issues presented in the complaints from consumers. Toyota intends to demonstrate the Prius vehicle safety features to your office, and explain our position as it relates to stalling. Toyota also intends on addressing our customers concerns regarding vehicle software and software updates in the manner in which Toyota customers are accustomed.

Stalling

The HSD system in normal operation has the ability to stop, or stall, the gasoline motor. It is designed to do this to achieve the significant fuel savings offered by these vehicles as alternative to traditional vehicles.

With this in mind, the Prius was designed to safely start and stop the gasoline engine, and in the event of a problem, to:

1. warn the driver; and,
2. allow the vehicle to be safely driven from the road.

The Prius can do this because of HSD, traditional vehicles cannot. The Prius, in the event of a gasoline engine problem, can operate in electric-only mode unlike most other vehicles on the road today. In other portions of the response, you will find more information on testing performed to inform your office of the abilities of the vehicle in electric-only mode (i.e., range, acceleration). In addition, the Prius utilizes electric power steering and regenerative power-assisted brakes, both of which remain functional in a condition where the gasoline engine is not running.

Furthermore, as noted in some of the complaints, the Prius has the ability to warn the driver of a problem with the gas engine. A large red triangle illuminates on the dashboard, indicating that the driver should immediately stop the vehicle. The driver can do this safely because of the propulsion of the electric motor and the power assist to the steering and braking systems. It is for these reasons that Toyota believes that the HSD system is safe, and in fact, that it is safer than other non-hybrid vehicles on the road today.

Analysis

Toyota believes that a significant amount of the reported stalling failures are most likely related to an engine control module (ECM) software issue. This software issue was addressed via a countermeasure implemented in November 2004 for all production vehicles. The specific failure mode is related to a misjudgment of operating conditions for the gas engine. Under certain circumstances, the engine ECM incorrectly determines that the gas engine is experiencing a failure to start when the engine intake air volume is lower than the ECM's programming criteria. In this condition, the gasoline engine will not start (because the ECM believes it cannot) and the vehicle will go into a fail-safe mode of electric-only operation. In conjunction with the ECM misjudgment, the warning lights (master warning, Hybrid System warning, VSC warning, and brake warning) will be illuminated when this occurs. After warning the operator, Toyota believes that there is sufficient driving performance available by the electric motor. And since there is also normal operation of the steering and braking systems (including power assist), the vehicle can be safely driven from the road. Toyota described this scenario in the in the owner's manual, for an illumination of the Hybrid System Warning Lamp:

This light comes on if there is a problem in the electric motor, inverter unit, hybrid vehicle battery, etc. If this light is on, stop your vehicle in a safe place immediately and contact your Toyota dealer. Even if the hybrid system warning light comes on, you can temporarily increase the vehicle speed by depressing the accelerator pedal. Immediately pull up your vehicle to a safe place and contact your Toyota dealer.

Toyota described this scenario in the owner's manual, because it is possible that the driver may attempt to continue driving when in electric-only mode. Without the ability to recharge the onboard battery system, the system will eventually discharge and result in the loss of ability to propel the vehicle. We have provided information on the performance and range of the vehicle in this mode. Toyota considers that this scenario as a possibility for those owners that indicated in the VOQ's a complete loss of power.

As evidenced by those drivers that reported their vehicles entering electric-only mode, vehicle restart-ability is quite good once the driver safely stops the vehicle. In some cases, the conditions that existed that caused the ECM to misjudge the engine intake air volume may no longer exist, and the driver only has to push the start button to resume full functionality. As mentioned before, Toyota believes that the normal steering and braking performance are maintained, and this is evidenced in the VOQ's. Therefore, Toyota believes that this failure mode does not constitute an unreasonable risk to safety. As evidenced in the VOQ's, owners are reporting that once they stopped the vehicle, they were able to restart and resume normal driving functionality. Furthermore, unlike traditional vehicles that experience a stalling event, the Prius maintains a limited ability to accelerate and an ample range to allow the driver to safely get off the road. It is for the following reasons that Toyota believes the alleged defect does not constitute an unreasonable risk to safety:

1. Warning to driver through vehicle instrumentation
2. Full power assist to steering before and after stall occurs
3. Full power assist to brakes before and after stall occurs
4. Ability to accelerate vehicle maintained
5. Ability to drive vehicle safely off the road maintained
6. Restartability in some instances

While it would be incorrect for Toyota to state that all Prius vehicles identified in the 68 VOQ's and the 416 reports received are experiencing the same issue, in most cases they appear to be related to the ECM software described above. For those incidents where the failure mode is not as obvious, Toyota has described six other failure cases relating to gas engine stalling and/or electric motor failure in Attachment 10. However, we believe that the possibility of these failure modes occurring in the field is rare. Based on our internal investigation, Toyota does not believe that any significant number of the reports identified in your investigation or in this letter are indicative of a trend involving these other failure modes.

Summary

In summary, Toyota's position is that in the majority of the complaints received by your office, the drivers are describing incidents that most likely are related to the ECM software issue identified in this letter. As such, Toyota believes that this type of stalling incident does not constitute an unreasonable risk to motor vehicle safety because of the fail-safe functionality built into the Prius. This fail-safe functionality includes warning the driver, maintaining power assist to the steering and brakes, providing a limited ability to accelerate, and ample range to safely get off the road. Toyota looks forward to meeting with your office to demonstrate first hand this functionality, and discuss our next steps to address this issue and customer satisfaction.