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August 14, 2009

Ms. Kathleen C. DeMeter, Director  
Office of Defects Investigation  
National Highway Traffic Safety Administration  
1200 New Jersey Avenue, S.E. W45-302  
Washington, D.C. 20590

009 AUG 19 AM 11:51

Dear Ms. DeMeter:

Subject: DP09-004:NVS-213swmc

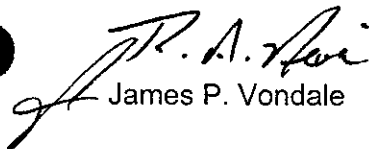
The Ford Motor Company (Ford) response to the agency's June 30, 2009, letter concerning reports of alleged engine stall due to water entering the Powertrain Control Module (PCM), PCM connector, and/or transaxle vent in 2004 model year Ford Freestar vehicles is attached.

Ford began monitoring water entry into the PCM on the subject vehicles in 2005 and has undertaken several actions to address this subject, including improved vehicle diagnostic and repair procedures, as well as design improvements for production and service components.

Water entry into the PCM has been found to result in a variety of symptoms depending on which PCM circuits, if any, are affected, including engine no start, rough idle, engine misfire, transmission performance degradation and lack of engagement, engine stall (while driving or parked), or simply illumination of the check engine light, and reports of engine stall are often accompanied with reports of driveability symptoms. Reports relating to water entry into the transaxle vent tube are few, and also result in a variety of symptoms. Yet, the overall complaint rate specifically for engine stall/vehicle disablement reports due to the subject of this information request, whether or not while driving, is low, and comparable to rates in other similar stalling related investigations that the agency has recently closed. Ford believes the information provided in this response supports the conclusion that water entry into the PCM or transaxle vent is a customer satisfaction issue. Customer complaint rates are low and primarily related to inconvenience with the repair process or overall vehicle dissatisfaction. In the event of a stall, the vehicles remain readily controllable, and can be safely maneuvered and stopped. Consideration of all of the factors relating to this subject supports a conclusion that this does not present an unreasonable risk to safety in these vehicles.

If you have any questions concerning this response, please feel free to contact me.

Sincerely,

  
James P. Vondale

Attachment



FORD MOTOR COMPANY (FORD) RESPONSE TO DP09-004

Ford's response to this Defect Petition information request was prepared pursuant to a diligent search for the information requested. While we have employed our best efforts to provide responsive information, the breadth of the agency's request and the requirement that information be provided on an expedited basis make this a difficult task. We nevertheless have made substantial effort to provide thorough and accurate information, and we would be pleased to meet with agency personnel to discuss any aspect of this Defect Petition.

The scope of Ford's investigation conducted to locate responsive information focused on Ford employees most likely to be knowledgeable about the subject matter of this inquiry and on review of Ford files in which responsive information ordinarily would be expected to be found and to which Ford ordinarily would refer. Ford notes that although electronic information was included within the scope of its search, Ford has not attempted to retrieve from computer storage electronic files that were overwritten or deleted. As the agency is aware, such files generally are unavailable to the computer user even if they still exist and are retrievable through expert means. To the extent that the agency's definition of Ford includes suppliers, contractors and affiliated enterprises for which Ford does not exercise day-to-day operational control, we note that information belonging to such entities ordinarily is not in Ford's possession, custody or control.

Ford has construed this request as pertaining to vehicles manufactured for sale in the United States, its protectorates and territories.

In a July 23, 2009, telephone conversation, Mr. Stephen McHenry of the agency informed Ford personnel that the scope of the investigation pertaining to peer vehicles in response to Request 3 includes 2002 through 2006 model year vehicles.

Ford notes that some of the information being produced pursuant to this inquiry may contain personal information such as customer names, addresses, telephone numbers, and complete Vehicle Identification Numbers (VINs). Ford is producing such personal information in an unredacted form to facilitate the agency's investigation with the understanding that the agency will not make such personal information available to the public under FOIA Exemption 6, 5 U.S.C. 552(b)(6).

Answers to your specific questions are set forth below. As requested, after each numeric designation, we have set forth verbatim the request for information, followed by our response. Unless otherwise stated, Ford has undertaken to provide responsive documents dated up to and including June 30, 2009, the date of your inquiry. Ford has searched within the following offices for responsive documents: Sustainability, Environment and Safety Engineering, Ford Customer Service Division, Marketing and Sales Operations, Global Core Engineering, Office of the General Counsel, Vehicle Operations, and North American Product Development.

Request 1

State, by model and model year, the number of subject and peer vehicles Ford has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Ford, 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 2003, 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.

#### Answer

Ford records indicate that the approximate total number of subject and peer vehicles sold in the United States (the 50 states and the District of Columbia) and its protectorates and territories (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and Virgin Islands) is 1,195,278.

The number of subject and peer vehicles sold in the United States by model and model year is shown below:

Model	1999 MY	2000 MY	2001 MY	2002 MY	2003 MY
Windstar	205,561	233,969	181,199	146,149	147,911

Model	2004 MY	2005 MY	2006 MY	2007 MY
Freestar	105,230	72,654	51,118	18,586
Monterey	20,635	6,700	4,013	1,553

Although parts a through g in Request 1 seek data only for the subject vehicles, Ford is providing the requested data for each subject and peer vehicle in Appendix A.

#### Request 2

State, by model and model year, the number of subject and peer vehicles Ford has manufactured for sale or lease in the United States for which Ford sold an extended service plan. Separately, for each vehicle, state the following:

- a. Vehicle Identification number (VIN);
- b. Make;
- c. Model;
- d. Model Year;
- e. Name of extended service plan;
- f. Mileage at which the extended service plan expires; and
- g. Number of months from warranty start date at which the extended service plan expires.

#### Answer

Ford records indicate that the approximate total number of subject and peer vehicles manufactured for sale or lease in the United States (the 50 states and the District of

Columbia) and its protectorates and territories (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and Virgin Islands) for which Ford sold an extended service plan is 186,412.

The number of subject and peer vehicles sold in the United States for which Ford sold an extended service plan by model and model year is shown below:

Model	1999 MY	2000 MY	2001 MY	2002 MY	2003 MY
Windstar	14,504	22,481	21,527	31,440	34,662

Model	2004 MY	2005 MY	2006 MY	2007 MY
Freestar	28,148	13,065	13,461	2,867
Monterey	227	1,519	2,165	346

The requested data for each subject and peer vehicle is provided in Appendix A.

### Request 3

State, by model, model year and alleged causal system/component, the number of each of the following, received by Ford, or of which Ford is otherwise aware, which relate to incidents of (1) engine stall or (2) vehicle stall/disablement due to transmission failure/malfunction in the subject and peer vehicles:

- a. Consumer complaints, including those from fleet operators;
- b. Field reports, including dealer field reports;
- c. Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
- d. Property damage claims; and
- e. Third-party arbitration proceedings where Ford is or was a party to the arbitration; and
- f. Lawsuits, both pending and closed, in which Ford is or was a defendant or codefendant.

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

In addition, for items "c" through "f" provide a summary description of the alleged problem and causal and contributing factors and Ford'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.

### Answer

For purposes of identifying reports of incidents that may pertain to this request and any related documents, Ford has gathered "owner reports" and "field reports" maintained by Ford Customer Service Division (FCSD), and claim and lawsuit information maintained by Ford's Office of the General Counsel (OGC). Ford notes that the available information for the type of

reports requested by the agency does not always include information pertaining to the alleged causal system or component. To the extent information sought regarding alleged causal system or component is available it is provided in the databases and appendices referenced below.

Descriptions of the FCSD owner and field report systems and the criteria used to search each of these are provided in Appendix B.

The following categories were used in the review of reports located in each of these searches:

Category	Allegation
A	Alleged engine stall due to water intrusion in the PCM or PCM Connector.
B1	Alleged vehicle stall/disablement due to transmission failure/malfunction due to water intrusion in the PCM, PCM Connector or Transaxle.
B2	Alleged engine stall, or vehicle stall/disablement due to transmission failure/malfunction, that is ambiguous if due to water intrusion in the PCM, PCM Connector or Transaxle.
B3	Alleged engine stall, or vehicle stall/disablement due to transmission failure/malfunction, that is not due to water intrusion in the PCM, PCM Connector or Transaxle.
B4	Ambiguous allegations of engine stall, or vehicle stall/disablement due to transmission failure/malfunction.

We are providing electronic copies of reports categorized as "B4" as "non-specific allegations" for your review because of the broad scope of the request. Based on our engineering judgment, the information in these reports is insufficient to support a determination that they pertain to this request.

Owner Reports: Records identified in a search of the Master Owner Relations Systems (MORS) database, as described in Appendix B, were reviewed for relevance and categorized in accordance with the categories described above. The number and copies of relevant owner reports identified in this search that may relate to the agency's investigation are provided in the MORS III portion of the databases contained in Appendix C1 for subject vehicles and Appendix C2 for peer vehicles. The categorization of each report is identified in the "Category" field.

When we were able to identify that responsive (i.e., not ambiguous) duplicate owner reports for an alleged incident were received, each of these duplicate reports was marked accordingly, and the group counted as one report. In other cases, certain vehicles may have experienced more than one incident and have more than one report associated with their VINs. These reports have been counted separately.

Legal Contacts: Ford is providing, in Appendix B, a description of Legal Contacts and the activity that is responsible for this information. To the extent that responsive (i.e., not ambiguous) owner reports indicate that they are Legal Contacts, Ford has gathered the related files from the Office of General Counsel (OGC). Non-privileged documents for files that were located that are related to the responsive owner reports are provided in Appendix D1 for subject vehicles and Appendix D2 for peer vehicles. Ford notes that it was unable to locate three files.

Field Reports: Records identified in a search of the Common Quality Indicator System (CQIS) database, as described in Appendix B, were reviewed for relevance and categorized in

accordance with the categories described above. The number and copies of relevant field reports identified in this search that may relate to the agency's investigation are provided in the CQIS portion of the databases contained in Appendices C1 and C2. The categorization of each report is identified in the "Category" field.

When we were able to identify that responsive duplicate field reports for an alleged incident were received, each of these duplicate reports was marked accordingly, and the group counted as one report. In other cases, certain vehicles may have experienced more than one incident and have more than one report associated with their VINs. These reports have been counted separately. In addition, field reports that are duplicative of owner reports are provided in Appendices C1 and C2 but are not included in the field report count.

VOQ Data: This information request had an attachment that included one Vehicle Owner's Questionnaire (VOQ). Ford made inquiries of its MORS database for customer contacts, and its CQIS database for field reports regarding the vehicle identified on the VOQ. Any reports located on the vehicle identified in the VOQ related to the alleged defect are included in the MORS and CQIS portions of the database provided in Appendix C1 and have been identified by a "Y" in the "VOQ Dup" field.

Crash/Injury Incident Claims: For purposes of identifying allegations of accidents or injuries that may have resulted from the subject of this request, Ford has reviewed responsive owner and field reports, and lawsuits and claims. No allegations of accidents or injuries relating to the alleged defect were identified on either the subject or peer vehicles. Five allegations of accidents related to alleged stalls that are ambiguous as to cause, all without any allegation of injury, were identified on peer vehicles. Based on a review of the available information, Ford believes that there is insufficient information to make a determination whether or not any of these five allegations relate to the alleged defect. Copies of reports corresponding to these alleged incidents are provided in the CQIS, MORS, and OGC Log portions of the database provided in Appendix C2.

Only one of these five alleged incidents has occurred within the past four years. The most recent report involved an incident that occurred in April 2009 on a 2006 Freestar (VIN: 2FMZA51626BA21374) in which the customer alleges that the engine shut down, that they had no gas, brakes or steering, and that they hit a guardrail because they could not steer the vehicle. However, as the agency is aware, this description is inconsistent with the vehicle design. In the event of an engine stall, steering function on the subject and peer vehicles is maintained, although steering efforts will be higher at slower speeds due to lack of power assist. Similarly, power assisted braking function is maintained for at least two, and most likely three, brake pedal applications.

In a report relating to an incident that occurred in 2003 (VIN: 2FMZA51442BB [REDACTED]) involving a 2002 Windstar, the customer alleges that the steering wheel wouldn't straighten out following engine stall, resulting in an accident. In another report relating to a 2002 incident involving a 2002 Windstar (VIN: 2FMZA50422BB [REDACTED]), the customer alleges a loss of both steering and brakes resulting in a rear end collision. As described above, there is no engineering rationale to explain why the steering wheel would not return or could not be turned or why the brakes would not still function while the vehicle is moving.

Two additional incidents were reported to have occurred in 2005 with minimal available details. One, involving a 2005 Freestar (VIN: 2FMZA50615BA [REDACTED]), states only that the vehicle was sideswiped following an engine stall. The other, involving a 2005 Freestar

(VIN: 2FMZA516X6BA[REDACTED]), mentions only that the vehicle "appeared" to stall, that the steering, brakes, gas, and electrical systems did not function properly and that there was a collision with another vehicle.

Claims, Lawsuits, and Arbitrations: For purposes of identifying incidents that may relate to the subject of this request, Ford has gathered claim and lawsuit information maintained by Ford's OGC. Ford's OGC is responsible for handling product liability lawsuits, claims, and consumer breach of warranty lawsuits and arbitrations against the Company.

Lawsuits and claims gathered in this manner were reviewed for relevance and categorized in accordance with the categories described above. Ford has also located other lawsuits, claims or consumer breach of warranty lawsuits, each of which is ambiguous as to whether it meets the criteria for the subject of this request. We have included these lawsuits and claims as "non-specific allegations" for your review because of the broad scope of the request. Based on our engineering judgment, the information in these lawsuits and claims is insufficient to support a determination that they pertain to the subject of this request.

We are providing the requested detailed information, where available, on the responsive and ambiguous lawsuits and claims in our Log of Lawsuits and Claims, provided in Appendices C1 and C2 in the Legal Claim/Lawsuits tab. The number of relevant lawsuits and claims identified is also provided in this log. To the extent available, copies of complaints, first notices, or MORs reports relating to matters shown on the log are provided in Appendix E1 for subject vehicles and Appendix E2 for peer vehicles. With regard to these lawsuits and claims, Ford has not undertaken to contact outside law firms to obtain additional documentation.

#### Request 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. Ford'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 make;
- f. Vehicle's model;
- g. Vehicle's model year;
- h. Vehicle's mileage at time of incident;
- i. Incident date;
- j. Report or claim date;
- k. Causal system alleged (e.g, engine, transmission);
- l. Causal component alleged (use "unknown" if no component is specified);
- m. Whether a crash is alleged;
- n. Whether property damage is alleged;
- o. Number of alleged injuries, if any; and
- p. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2003, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Answer

Ford is providing owner and field reports in the databases contained in Appendices C1 and C2 in response to Request 3. To the extent information sought in Request 4 is available for owner and field reports, it is provided in the databases. To the extent information sought in Request 4 is available for lawsuits and claims, it is provided in the Log of Lawsuits and Claims in Appendices C1 and C2.

Request 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, etc.) and describe the method Ford used for organizing the documents.

Answer

Ford is providing owner and field reports in the databases contained in Appendices C1 and C2 in response to Request 3. Copies of complaints, first notices, or MORS reports relating to matters shown on the Log of Lawsuits and Claims (Appendices C1 and C2) are provided in Appendix D. To the extent information sought in Request 4 is available, it is provided in the referenced appendices.

Request 6

State, by make, model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Ford to date that relate to the condition described in the subject bulletin (include all claims related to the symptoms and components identified in the bulletin, regardless of whether the bulletin labor operation was performed) in the subject and peer vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

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

- a. Ford'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;
- h. Problem code;
- i. Replacement part number(s) and description(s);
- j. Concern stated by customer;
- k. Comment, if any, by dealer/technician relating to claim and/or repair; and
- l. Whether the customer or dealer/technician concerns/comments indicate that the repairs were performed after a stall/disablement incident.



Provide this information in Microsoft Access 2003, 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.

Answer

The following categories were used in the review of reports located in each of these searches:

Category	Allegation
A	Alleged engine stall due to water intrusion in PCM or PCM connector.
B1	Alleged vehicle stall/disablement due to transmission failure/malfunction due to water intrusion in the PCM, PCM Connector or Transaxle.
B5	Allegation of other engine/transmission driveability symptoms due to water intrusion in the PCM, PCM Connector or Transaxle.
B6	Ambiguous allegation of water intrusion in PCM, PCM connector or transaxle.

We are providing electronic copies of reports categorized as "B6" as "non-specific allegations" for your review because of the broad scope of the request. Based on our engineering judgment, the information in these reports is insufficient to support a determination that they pertain to this request.

Records identified in a search of the AWS database, as described in Appendix B, were reviewed for relevance and categorized in accordance with the categories described above. The number and copies of relevant warranty claims identified in this search that may relate to the agency's investigation are provided in the AWS portion of the databases contained in Appendices C1 and C2. The categorization of each report is identified in the "Category" field.

When we were able to identify that duplicate claims for an alleged incident were received, each of these duplicate claims was marked accordingly and the group counted as one report. In other cases, certain vehicles may have experienced more than one incident and have more than one claim associated with their VINs. These claims have been counted separately.

Requests for "goodwill, field or zone adjustments" received by Ford to date that relate to the subject of this request that were not honored, if any, would be included in the MORS reports identified above in response to Request 3. Such claims that were honored are included in the warranty data provided.

Request 7

Describe in detail the search criteria used by Ford to identify the claims identified in response to Request No. 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used. Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to the alleged defect in the subject vehicles. State, by make, model, and model year, the terms of the new vehicle warranty and extended warranty coverage offered by Ford 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 Ford 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. Also, provide a method for identifying under which category, as stated in Request No. 6, each claim was paid.

Answer

Ford understands that the agency intended to request detailed search criteria used by Ford to identify the claims identified in response to Request 6, not Request 5. Detailed descriptions of the search criteria, including all pertinent parameters, used to identify the claims provided in response to Request 6 are described in Appendix B. Also provided in Appendix B, as requested by the agency, is a list of transaction codes to assist the agency in identifying under which category each claim was paid.

For 2004 model year Freestar vehicles, the New Vehicle Limited Warranty, Bumper-to-Bumper Coverage begins at the warranty start date and lasts for three years or 36,000 miles, whichever occurs first. Additionally, the Powertrain Control Module is covered by Ford's eight year, 80,000 mile emission warranty. Optional Extended Service Plans (ESPs) are available to cover various vehicle systems, time in service and mileage increments. The details of the various plans are provided in Appendix F. The number of subject vehicles covered under an optional ESP is provided in response to Request 2.

Request 8

Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that Ford 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 Ford is planning to issue within the next 120 days.

Answer

For purposes of identifying communications to dealers, zone offices, or field offices pertaining, at least in part, to engine stall due to water entering the PCM, the PCM connector, and/or the transaxle vent, Ford has reviewed the following FCSD databases and files: The On-Line Automotive Service Information System (OASIS) containing Technical Service Bulletins (TSBs) and Special Service Messages (SSMs); Internal Service Messages (ISMs) contained in CQIS; and Field Review Committee (FRC) files. We assume this request does not seek information related to electronic communications between Ford and its dealers regarding the order, delivery, or payment for replacement parts, so we have not included these kinds of information in our answer.

A description of Ford's OASIS messages, ISMs, and the Field Review Committee files and the search criteria used are provided in Appendix B.

OASIS Messages: Ford has identified no SSMs and two TSBs that may relate to the agency's request and is providing copies of them in Appendix G1. Additionally, although not specifically requested by the agency, Ford has identified one TSB that may relate to this subject in the peer vehicles and is providing a copy of it in Appendix G2.

Internal Service Messages: Ford has identified one ISM that may relate to the agency's request and is providing a copy of it in Appendix G1. Additionally, although not specifically requested by the agency, Ford has identified one ISM that may relate to the alleged defect in the peer vehicles and is providing a copy of it in Appendix G2.

Field Review Committee: Ford has identified no field service action communications that may relate to the agency's request.

#### Request 9

Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, Ford. 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.

#### Answer

Ford is construing this request broadly and is providing not only studies, surveys, and investigations related to the alleged defect, but also notes, correspondence, and other communications that were located pursuant to a diligent search for the requested information. Ford is providing the responsive non-confidential Ford documentation in Appendix H.

To the extent that the information requested is available, it is included in the documents provided. If the agency should have questions concerning any of the documents, please advise.

Ford is submitting additional responsive documentation in Appendix I with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR, Part 512.

In the interest of ensuring a timely and meaningful submission, Ford is not producing non-responsive materials or items containing little substantive information. Examples of the types of materials not being produced are meeting notices, raw data lists (such as part numbers or VINs) without any analytical content, duplicate copies, non-responsive elements of responsive materials, and draft electronic files for which later versions of the materials are being submitted. Through this method, Ford is seeking to provide the agency with substantive responsive materials in our possession in the timing set forth for our response. We believe our response meets this goal. Should the agency request additional materials, Ford will cooperate with the request.

#### Request 10

Describe all modifications or changes made by, or on behalf of, Ford in the design, material composition, manufacture, quality control, supply, or installation of the subject components, or

components which allow water contamination to occur to the subject components, 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 Ford is aware of which may be incorporated into vehicle production within the next 120 days.

Answer

A table of the requested changes is provided in Appendix J.

Request 11

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

- a. The causal or contributory factor(s);
- 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.

Answer

The Powertrain Control Module (PCM) in the subject and peer vehicles is attached to the upper dash area on the passenger side of the vehicle. The front of the PCM protrudes through the dash panel into the engine compartment to mate with the PCM connector. The rear of the PCM extends rearward through the dash panel into the passenger compartment underneath the dash.

Engineering Studies

In August 2005, Ford initiated an engineering study to investigate reports concerning water intrusion into the PCM on 1999 through 2006 model year Ford Windstar, Ford Freestar and Mercury Monterey vehicles. Customer reports to Ford indicated a variety of associated symptoms, including engine no start, rough idle, engine misfire, transmission performance degradation or lack of engagement, engine stall (while driving or parked), or simply illumination of the check engine light. These different vehicle symptoms can result from water

entry inside the PCM, depending on which of the many input or output signals within the PCM, if any, are affected by the water migration.

This engineering study found that the primary water leak path to the PCM originated at foam gaskets located under five clips in the cowl panel where water could then drip onto the PCM case and sometimes migrate inside the PCM. Technical Service Bulletin (TSB) 05-23-7 was issued in November 2005 to assist service technicians with diagnosis and repair. Technicians were instructed to inspect for evidence of water damage at the PCM and, if present, to seal the water leak paths in the cowl grille area. A more robust foam gasket under the cowl clips was also incorporated into production and released for service in May 2006. In July 2006, TSB 05-23-7 was superseded by TSB 06-14-10 to include inspection for excess body sealant that may interfere with proper sealing of the PCM cover, and to also include 2007 model year Ford Freestar and Mercury Monterey vehicles.

In March 2007 another engineering study was initiated to investigate reports of engine detonation concerns on 2006 and 2007 model year Ford Freestar and Mercury Monterey vehicles. Even though these vehicles were produced with an updated powertrain calibration intended to prevent excessive lean operating conditions, reports of melted spark plug electrodes continued to be observed in 2006 and 2007 model year vehicles. Water entry into the PCM was found to contribute to this spark plug electrode melting. Based on the results of this engineering study, TSB 07-14-1 was issued in June 2007 instructing technicians to apply sealer directly to the PCM to prevent water intrusion into the PCM and to drill a hole in each corner of the bottom of the PCM body to allow for water drainage.

#### Analysis of Reports

Ford's review of the field reports found that most relate to technicians seeking assistance with diagnostics and repairs. Review of the customer complaints found that most conveyed customer frustration relating to the repair process, or were requests or claims for financial assistance or compensation. Very few, only 3%, of the customer complaints of engine stall or transaxle related vehicle disablements due to water intrusion in the PCM express any safety related concerns with their vehicles.

As previously stated in our response to Request 3, Ford found no allegations of accidents alleged to result from water in the PCM in subject or peer vehicles. Though five reports were found that allege some type of "accident" resulting from vehicle stall, each is ambiguous whether they even relate to this subject. In addition, three of these "accidents" are alleged to have resulted from inability to control the vehicle, e.g. "...everything shut down, had no gas, brake or steering....." This is inconsistent with the vehicle design. Steering function is maintained even following engine stall. Steering effort will increase as vehicle speed decreases due to diminished power assist, but is still readily manageable. Similarly, power assisted braking is also maintained for a few brake pedal applications before vacuum assist is depleted from the system. Nevertheless, these few ambiguous allegations are from a population of over 1.1 million vehicles, some of which have been on the road for over ten years, and only one has occurred within the past four years.

The complaint rates in both the subject and peer vehicles are comparable to those of other stalling related investigations the agency has recently closed. The complaint rate for all engine stall and transaxle related vehicle disablements due to water intrusion in the PCM for the subject vehicles is approximately 1.2 complaints per 1,000 vehicles (1.2/K), and the complaint rates for peer vehicles range from 0.1/K (2002 Windstar) to 1.8/K (2005 Freestar/Monterey). In comparison, the complaint rate for the subject vehicles in PE08-061, which the agency closed in April 2009 with no action, was reported in the agency's closing

resume as 3.7 complaints per thousand vehicles (3.7/K). This is more than triple the complaint rate for the 2004 model year vehicles that are the subject of this defect petition, and more than double the rate for the highest of the peer vehicles (2005 Freestar/Monterey.) The agency's closing resume for that investigation states "...the SWD [stalls while driving] complaint and warranty rates for the subject vehicles are similar to rates observed in prior investigations involving similar categories of engine stall consequences that were closed with no action." Similarly, the agency also closed EA07-018 based on "relatively low rates .....when compared with prior investigations....." The vehicles that were the subject of that investigation had complaint rates averaging 5.3/K for 2002 through 2005 model year vehicles.

Furthermore, a review of the stalling related complaints due to water in the PCM included in this response found that customers also often reported symptoms such as running rough, bucking, jerking, or transaxle related shifting concerns associated with the alleged stalling events, and that relatively few reports allege that the engine stalled without warning.

#### Transaxle Vent

The agency also requested information and reports pertaining to water entry into the transaxle vent tube. Though the potential for water entry into the transaxle vent was identified in Ford's TSB 06-14-10, review of reports found very few that make any reference to water in the transaxle. Water in the transaxle will cause the fluid to turn to an unmistakable milky pink color. The lack of technician reference to milky pink colored transaxle fluid in the warranty claims and field reports implies that this condition, though possible, is uncommon. Likewise, this implies that the ambiguous transmission related records that are being provided to the agency are most likely also not related to water entry into the transaxle vent tube.

#### Conclusion

Ford began monitoring this subject in 2005 and has undertaken several actions to address water entry into the PCM, including improved vehicle diagnostic and repair procedures, as well as design improvements for production and service components.

Water entry into the PCM has been found to result in a variety of symptoms depending on which PCM circuits are affected, including engine no start, rough idle, engine misfire, transmission performance degradation and lack of engagement, engine stall (while driving or parked), or simply illumination of the check engine light, and reports of engine stall are often accompanied with reports of driveability symptoms. Reports relating to water entry into the transaxle vent tube are few, and also result in a variety of symptoms. Yet, the overall complaint rate specifically for engine stall/vehicle disablement reports due to the subject of this information request, whether or not while driving, is low, and comparable to rates in other similar stalling related investigations that the agency has recently closed. Ford believes the information provided in this response supports the conclusion that water entry into the PCM or transaxle vent is a customer satisfaction issue. Customer complaint rates are low and primarily related to inconvenience with the repair process or overall vehicle dissatisfaction. In the event of a stall, the vehicles remain readily controllable, and can be safely maneuvered and stopped. Consideration of all of the factors relating to this subject supports a conclusion that this does not present an unreasonable risk to safety in these vehicles.

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