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February 21, 2011

Mr. Claude H. Harris  
Acting Associate Administrator for Enforcement  
National Highway Traffic Safety Administration  
1200 New Jersey Avenue SE, Room W45-231  
Washington, DC 20590

Dear Mr. Harris:

**Subject:** Ford Motor Company (Ford) Recall No. 11S18 - Certain 2005 and 2006 Model Year Ford F-150 Vehicles built at the Norfolk Assembly Plant from November 1, 2004, through June 30, 2005, for potential inadvertent driver side frontal airbag deployment

### Summary

- **Ford Action** - Ford is conducting a voluntary safety recall involving certain 2005 and 2006 model year Ford F-150 vehicles produced at the Norfolk Assembly Plant from November 1, 2004, through June 30, 2005, to replace the clockspring jumper wire.

As the agency is aware, Ford has not determined that these vehicles contain a safety defect. Based on the technical analysis, inspections of vehicles, and data obtained from vehicles that have had deployments, it is clear that there is sustained warning that the airbag system requires service for a prolonged period of time prior to any deployment. Furthermore, based on data available to Ford concerning other agency investigations that have led to recalls, we believe that when like, available data are compared, the rate of occurrences on F-150 vehicles is lower than that of other vehicles that have been recalled as a result of these agency investigations. Nevertheless, to avoid a protracted dispute with the agency, Ford has decided to recall these vehicles because they exhibit a marked higher potential for inadvertent deployment than vehicles manufactured at the other assembly plants producing vehicles at the same time.

- **Number of Vehicles Involved** - Approximately 135,000 vehicles in the United States and federalized territories are potentially affected.
- **Effect on Vehicle Operation** - If the clockspring jumper wire comes in contact with the driver side frontal airbag lower horn plate, the wire insulation may become chafed, creating the potential for a short circuit. If this occurs the airbag warning lamp will illuminate indicating that service is required.

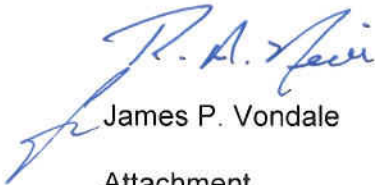


If the airbag warning lamp is ignored and a unique set of circumstances occur, a driver side frontal airbag could inadvertently deploy. The field data indicate drivers maintain vehicle control.

- Service Procedure - Owners will be notified and instructed to take their vehicles to a Ford or Lincoln/Mercury dealer to have a new clockspring jumper wire installed that incorporates a protective mesh cover.

The detailed information required by the applicable portions of 49 CFR Part 573 - Defect and Non-Compliance Information Report is attached.

Sincerely,



James P. Vondale

Attachment

49 CFR Part 573 -- DEFECT INFORMATION REPORT  
11S18 -- CERTAIN 2005 AND 2006 MODEL YEAR FORD F-150 VEHICLES -- POTENTIAL  
INADVERTENT DRIVER SIDE FRONTAL AIRBAG DEPLOYMENT

Pursuant to Part 573 of Title 49 of the Code of Federal Regulations, Defect and Non-Compliance Reports, Ford Motor Company submits the following information concerning a safety recall action that it is voluntarily initiating.

573.6 (c) (2) - Potentially Affected Vehicles

Vehicles potentially affected are certain 2005 and 2006 model year Ford F-150 vehicles built at the Norfolk Assembly Plant (NAP) from November 1, 2004, through June 30, 2005.

Because these vehicles are not produced in VIN order, information as to the applicability of this action to specific vehicles can best be obtained by either calling Ford's toll-free line (1-866-436-7332) or by contacting a local Ford or Lincoln/Mercury dealer who can obtain specific information regarding the vehicles from the Ford On-line Automotive Service Information System (OASIS) database.

As the agency is aware, Ford does not believe that these inadvertent deployments present an unreasonable risk or that these vehicles contain a safety defect. Based on the conditions required to obtain an inadvertent deployment, and data obtained from vehicles that have had deployments, it is clear that there is sustained warning that the airbag system requires service for a prolonged period of time prior to any deployment. Furthermore, based on data available to Ford concerning other agency investigations that have led to recalls, we believe that when like, available data are compared, the rate of occurrences on F-150 vehicles is lower than that of other vehicles that have been recalled as a result of these agency investigations. Nevertheless, to avoid a protracted dispute with the agency, Ford has decided to recall these vehicles because they exhibit a marked higher potential for inadvertent deployment than vehicles manufactured at the other assembly plants producing vehicles at the same time.

The only accident alleged in any of the reports submitted to the agency during the course of EA10-001, which involves 1.3 million vehicles that have been on the road for an average of over six years, involves an operator who chose to jump from the vehicle after the deployment had occurred.

573.6 (c) (3) - Estimated Population of Vehicles Potentially Affected

Approximately 135,000 vehicles in the United States and federalized territories are potentially affected.

573.6 (c) (4) - Estimated Percentage of Affected Vehicles with the Defect Condition

Unknown.

573.6 (c) (5) - Description of the Defect

During vehicle assembly the clockspring jumper wire may be oriented such that it contacts the lower horn mounting plate. In this position the wire insulation may chafe, exposing bare copper, and creating the potential for a short circuit. If this occurs the airbag warning lamp will be

illuminated indicating service is required. The airbag warning lamp will be illuminated for that key cycle and on any subsequent key cycle where the condition is present.

If the driver ignores the airbag warning lamp, a unique set of conditions are required for an inadvertent driver side frontal airbag deployment to occur. The first condition requires the chafed clockspring jumper wire to intermittently contact the lower horn plate, resulting in a short circuit during a specific 65 – 115  $\mu$  second time span, when the airbag circuit firing test is conducted. The second condition results from the gradual formation of an oxide film on the exposed copper wire. Initially, the thin oxide film provides little resistance and the restraint control module can detect the short circuit condition and will illuminate the airbag warning lamp. As the oxide film layer progresses to a point where it masks the short circuit condition, the restraint control module (RCM) will conduct the airbag circuit firing test that may result in an inadvertent deployment.

#### 573.6 (c) (6) - Chronology of Events

January 2006: Ford engineering received and analyzed two reports alleging inadvertent driver side frontal airbag deployments on F-150 vehicles. Pictures relating to those reports indicated that the clockspring jumper wire had chafed on the edge of the lower horn mounting plate, potentially leading to a short to ground. On January 24, 2006, protective tape was added to the driver side frontal airbag lower horn mounting plate flange in vehicle production to address this potential chafe condition.

Engineering review found that if the clockspring jumper wire insulation chafes resulting in bare copper wire in contact with the lower horn mounting plate, as was observed on the two F-150 vehicles, the RCM would detect a short circuit condition and set a corresponding diagnostic trouble code (DTC). The airbag warning lamp would also illuminate. The RCM would not proceed to the airbag circuit firing test.

During Ford's investigation, a search of Ford's data systems identified 21 allegations of inadvertent driver side frontal airbag deployment in 2004 and 2005 model year F-150 vehicles. Engineering examined seven RCMs from vehicles associated with these allegations and found the airbag warning lamp on six of the vehicles had been illuminated for at least 256 key cycles (the maximum number stored by the RCM) prior to deployment and the remaining vehicle had 46 key cycles with the airbag warning lamp illuminated prior to deployment.

Following extensive analysis, Ford closed its investigation in June 2006 because the rate of reports was low, the airbag warning lamp would illuminate alerting the driver that the vehicle needed to be serviced, that the incidents predominantly occurred at vehicle start-up during the system diagnostic check, which is typically completed within two seconds, and that the system would command the frontal airbags to deploy if required in a crash.

September 24, 2009: NHTSA opened a Preliminary Evaluation (PE09-046) investigation concerning an airbag wiring chafing/shorting condition resulting in the inadvertent deployment of the driver side frontal airbag and/or the illumination of the airbag warning lamp on 2004 through 2006 model year Ford F-150 vehicles. Ford provided its response to the agency on November 11, 2009, citing that the RCM detects the short circuit and illuminates the airbag warning lamp, a unique set of circumstance are required for an inadvertent deployment to occur, there was a low incident rate based on field reports, and only one questionable, alleged minor accident.

January 13, 2010: NHTSA upgraded the PE investigation to an Engineering Analysis (EA10-001) investigation concerning the illumination of the airbag light or the inadvertent deployment of the driver side frontal airbag on the following subject vehicles: 2004 through 2006 model year

F-150/F-150 Heritage/Mark LT vehicles, 2002 through 2005 model year Explorer/Explorer Sport Trac/Mountaineer vehicles, and 2003 through 2004 model year Aviator vehicles. The agency also included the following peer vehicles: 2007 model year F-150/Mark LT vehicles and 2004 through 2006 E-150, E-250, E-350, Escape, Escape HEV, Excursion, Expedition, F-250, F350, Freestar, Freestyle, Ranger, Navigator, Mariner, Mariner HEV, Montego, and Monterey vehicles. In its May 14, 2010 response to the agency, Ford emphasized the RCM detects the fault and illuminates the airbag warning lamp, providing clear warning as evidenced by the hundreds of reports of customers who brought their vehicles in for a clockspring repair. Ford also noted that it continued to see a low incident rate, that the system provides multiple airbag system warnings, and that any alleged injuries associated with an inadvertent driver side frontal airbag deployment were minor in nature, including the same single accident allegation addressed in the PE.

July 16, 2010: During a telephone call, NHTSA requested information concerning the number of supplier plants that produced the F-150 driver side frontal airbag, incident rates, and airbag deployment performance. Ford provided its response to the agency's questions on July 28, 2010.

July 28, 2010: NHTSA requested information concerning the driver side frontal airbag deployment signal characteristics. Ford responded on August 6, 2010.

August 30, 2010: NHTSA hosted a WebEx to review incident rate data from prior inadvertent airbag deployment investigations, including PE97-046/EA98-006.

September 9, 2010: NHTSA emailed questions concerning how to identify the number of key cycles with an illuminated airbag warning lamp and which diagnostic trouble code indicated a short circuit. Ford provided its response to the agency in a phone call on September 30, 2010, and in writing on October 9, 2010.

September 21, 2010: NHTSA provided additional details concerning the nature of the reports for PE97-046/EA98-006 and a new incident rate comparison chart.

October 14, 2010: NHTSA submitted follow-up questions concerning how the RCM detects faults, the module's counter strategy, and various scenarios that may illuminate the airbag warning light. Ford emailed its response to the agency on November 19, 2010.

December 2, 2010: Ford hosted a WebEx to present its analysis of data provided by NHTSA concerning comparator investigations PE97-046/EA98-006. Electronic copies of the presentation were provided to the agency on December 3, 2010.

December 10, 2010: NHTSA submitted additional questions concerning the driver side frontal airbag configuration on other Ford vehicles and details on the addition of protective tape. Ford emailed its response to the agency on December 22, 2010.

December 16, 2010: NHTSA requested a history of component changes and additional details concerning protective tape. Ford emailed its response to the agency on January 14, 2010.

January 26, 2011: NHTSA sent a letter requesting Ford conduct a recall of 1.3 million F-150 vehicles subject to EA10-001. In its February 10, 2011, response to the agency, Ford's analysis of the population of trucks under investigation shows that the rate of reports varies substantially between assembly plants, production shifts, and by build months. The build period of November 2004 through June 2005 at the Norfolk Assembly Plant exhibited the highest report rate which was five times the rate for trucks built at the Kansas City Assembly Plant and 29 times the rate for trucks built at the Dearborn Truck Plant. Ford also described the conditions which have resulted in inadvertent driver side frontal airbag deployments and that these conditions will always be preceded by multiple airbag warning light illuminations indicating that the airbag system

requires service. This warning has proven to be effective in causing owners to seek service, while an extremely small population habitually ignored the multiple warnings.

We continue to believe that the facts indicate the condition does not present an unreasonable risk to motor vehicle safety. However, to avoid a protracted discussion with the agency and to provide repair to those vehicles most likely to exhibit the condition, Ford is recalling those vehicles produced at the Norfolk Assembly Plant from November 1, 2004, through June 30, 2005.

573.6 (c) (8) - Service Program

Owners will be notified and instructed to take their vehicles to a Ford or Lincoln/Mercury dealership to have a new clockspring jumper wire installed that incorporates a protective mesh cover. There will be no charge to owners for this service.

Mailing of owner notification letters will occur the week of February 28, 2011. Notification to dealers will occur on February 22, 2011.

Ford's general reimbursement plan for the cost of remedies paid for by vehicle owners prior to notification of a safety recall was provided to the agency on February 28, 2009.

573.6 (c) (10) - Press Statement and Dealer/Owner Letters

National media attention is likely as with most Ford recalls when posted to NHTSA's safecar.gov website. Ford will provide public comments when requested. A news release will not be issued. A copy of the notification letters to dealers and owners from Ford will be forwarded to the agency when available.

573.6 (c) (11) - Recall Number

Ford has assigned recall number 11S18 to this action.

573.13 (c) (2) - Ending Date for Reimbursement Eligibility

The ending date for reimbursement eligibility for cost of remedies paid for by vehicle owners per Ford's general reimbursement plan is March 14, 2011.