9/6/06

VOLKSWAGEN

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August 31, 2006

Kathleen Demeter
Director, Office of Defects Investigation
US Department of Transportation
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, DC 20590

Subject: PE06-022 NVS-212-pco; Airbag Warning Light

Dear Ms. Demeter,

Attached is our response to your letter dated June 21, 2006 requesting information concerning alleged airbag warning light illumination on 2004-2005 Volkswagen Touareg models equipped with side-airbag systems.

For your convenience, each request is restated verbatim and then followed by our response.

Please contact me if you have any questions regarding this response.

Regards,

John Maddox
Compliance Officer
Volkswagen of America

Attachments

Request 1:

State, by model and model year, the number of subject vehicles Volkswagen has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Volkswagen, state the following:

a. Make;
b. Model;
c. Model Year;
d. Vehicle identification number (VIN);
e. Date of manufacture (in "yyyy/mm/dd" date format);
f. Date warranty coverage commenced (in "yyyy/mm/dd" date format); 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."

Response 1:

In response to this inquiry, Volkswagen has identified the following subject vehicle population:

	MY 2004	MY 2005
Touareg	**39,632**	**19,547**

Our response to this request including subparagraphs a. through g. is provided in a Microsoft Excel file entitled, "PRODUCTION DATA.xls" attached hereto as Exhibit to Request 1.

Source: Business Objects **Date Gathered: Through the date of the inquiry**

Exhibit to Request 1

PRODUCTION DATA

Data is provided in Microsoft Excel format on PE06-022 Data Collection Disc

Request 2:

State the number of each of the following, received by Volkswagen, or of which Volkswagen 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;
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 (including own vehicle); and
e. Third-party arbitration proceedings where Volkswagen is or was a party to the arbitration; and
f. Lawsuits, both pending and closed, in which Volkswagen 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). Identify reports that have a duplicate with either other mfg reports/claims or with ODI.

In addition, for subparts "d" through "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.

Response 2:

a. In response to your inquiry, Volkswagen has identified 264 consumer complaints from 231 unique vehicles, none of which are from fleet operators, that include allegations of the illumination of the airbag warning light on the multi-function display resulting with stored fault codes of 1217/1218 and/or the repair and replacement of the wiring harness or the side-airbag module(s). Volkswagen is also providing copies of consumer complaints in which the allegations do not allow Volkswagen to determine if they may or may not be related to the alleged defect in the subject vehicles.

b. In response to your inquiry, Volkswagen has identified 282 Field Reports from 262 unique vehicles, 40 of which are duplicative of consumer complaints, which include allegations of the illumination of the airbag warning light on the multi-function display resulting with stored fault codes of 1217/1218 and/or the repair and replacement of the wiring harness or the side-airbag module(s).
Volkswagen is also providing copies of Field reports in which the allegations do not allow Volkswagen to determine if they may or may not be related to the alleged defect in the subject vehicles

c. In response to your inquiry, Volkswagen has not identified any 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 the alleged defect in a subject vehicle, property damage claims, or field reports.

d. In response to your inquiry, Volkswagen has not identified any property damage claims.

e. In response to your inquiry, Volkswagen has not identified any third-party arbitration proceedings, where Volkswagen is or was a party to the arbitration.

f. In response to your inquiry, Volkswagen has identified four non-duplicative breach of warranty lawsuits, two of which are duplicative of consumer complaints, in which Volkswagen is or was a defendant or codefendant.

Source: LISTEN, PLE, FRED, TACS, HOTLINE CHANNEL, WTC **Date Gathered: Through the date of the inquiry**

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. Volkswagen'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 (in "yyyy/mm/dd" date format);
h. Report or claim date (in "yyyy/mm/dd" date format);
i. Whether a crash is alleged;
j. Whether property damage is alleged;
k. Number of alleged injuries, if any;
l. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA."

Response 3:

Responses to subparagraphs a. through l. are provided in REQUEST NUMBER TWO DATA folder attached hereto as Exhibit to Request 3.

Source, Date Gathered: See Response Two

Exhibit to Request 3

REQUEST NUMBER TWO DATA

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NON-SPECIFIC NUMBER TWO DATA

Data is provided in Microsoft Excel format in the REQUEST NUMBER TWO DATA folder on PE06-022 Data Collection Disc

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 Volkswagen used for organizing the documents.

Response 4:

In response to this inquiry, Volkswagen is providing copies of documents identified for each item in Response 2. The documents are provided in an Adobe Acrobat file entitled "REQUEST NUMBER FOUR DATA.pdf" attached hereto as Exhibit to Request 4. These cases are organized by source and in ascending case number order.

Volkswagen is also providing copies of consumer complaints in which the reason for the claim does not contain sufficient information for Volkswagen to determine if they may or may not be related to the alleged defect. Information on these claims is provided in an Adobe Acrobat file entitled "NON-SPECIFIC NUMBER FOUR DATA.pdf" attached hereto as Exhibit to Request 4. These cases are organized by source and in ascending case number order.

Source, Date Gathered: See Response Two

Exhibit to Request 4

REQUEST NUMBER FOUR DATA

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NON-SPECIFIC NUMBER FOUR DATA

Data is provided in Adobe Acrobat format in the REQUEST NUMBER FOUR folder on PE06-022 Data Collection Disc

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 Volkswagen 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. Volkswagen's claim number;
b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
c. VIN;
d. Repair date (in "dd/mm/yyyy" date format);
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; and
k. 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."

Response 5:

In response to this inquiry, Volkswagen has identified 10,062 warranty claims on 8,686 unique vehicles of which 436 VINs are duplicative of those mentioned in consumer complaints and field reports, which have been paid by Volkswagen to date that include allegations of the illumination of the airbag warning light on the multi-function display resulting with stored fault codes of 1217/1218 and/or the repair and replacement of the wiring harness or the side-airbag module(s). Volkswagen is also providing copies of claims, in which the allegations do not allow Volkswagen to determine if they may or may not be related to the alleged defect in the subject vehicles.

Our response to this request is provided in Microsoft Excel format in the REQUEST NUMBER FIVE DATA folder attached hereto as Exhibit to Request 5.

Source: Business Objects Warranty Claims Universe Date Gathered: Through the date of the inquiry

Exhibit to Request 5

WARRANTY DATA

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NON-SPECIFIC WARRANTY DATA

Data is provided in Microsoft Excel format in the REQUEST NUMBER FIVE DATA folder on PE06-022 Data Collection Disc

Request 6:

Describe in detail the search criteria used by Volkswagen 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 and model year, the terms of the new vehicle warranty coverage (including the subject component) offered by Volkswagen 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 Volkswagen 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:

In response to this inquiry, the following methods were used to identify claims in response to request number five.

1. **All model year 2004-2005 Volkswagen Touareg vehicles manufactured for sale or lease in the United States.**

AND

2. **All warranty claims containing the following part identifiers:**

Number	Description
6963	Front left side airbag unit
6964	Front right side airbag unit
9757	Electrically adjustable seat wiring loom
9766	Airbag wiring loom

Resultant claims were screened individually to identify conditions which relate or may relate to the alleged defect in the subject vehicles.

Volkswagen has identified, through screening the resultant claims, a list of all problem codes and problem code descriptions that were used in claims related to the alleged defect in the subject vehicles. The following overviews these findings:

Damage Codes with Description:

10 Mechanical defect
11 Incorrectly adjusted
15 Broken, cracked, torn
16 Ineffective
18 Loose
21 Crimping on contact
22 Contact/connector (incorrect poling)
23 Contact/connector (pushed back)
24 Wiring (trapped)
25 Wiring (abraded)
26 Wiring node
28 Connector housing/connector coupling
29 Wiring routing (too short, too long)
30 Unsatisfactory appearance
40 Electrical defects

Volkswagen notes that service personnel may not consistently use the appropriate Damage Code when entering a warranty claim.

The following is a list, by make and model year, of the terms of the new vehicle warranty coverage offered by Volkswagen on the subject vehicles:

Model Year	Warranty Terms and Vehicles	Coverage Type
2004	4 Years / 50,000 miles: Touareg	Bumper to Bumper
2005	4 Years / 50,000 miles: Touareg	Bumper to Bumper

Source: VWoA Date Gathered: Through the date of the inquiry

Request 7:

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

Response 7:

Volkswagen has identified two Technical Bulletins related to the alleged defect in the subject vehicles and is providing copies in Adobe Acrobat format attached hereto as Exhibit to Request 7. Volkswagen plans to conduct a customer satisfaction campaign on the subject vehicles within the next 120 days to address a number of customer satisfaction concerns including the repair to the subject airbag wiring harness. Volkswagen is providing the current preliminary draft work procedure for this customer satisfaction campaign. Volkswagen has not yet drafted the customer or dealer letter, but will provide them when available if requested.

Source: VWoA Product Support, VESIS Date Gathered: Through the date of the inquiry

Exhibit to Request 7

REQUEST NUMBER SEVEN DATA

Data is provided in Adobe Acrobat format on the PE06-022 Data Collection Disc

Request 8:

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, Volkswagen. 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 8:

The documents have been sorted chronologically according to the end date.

Action 1

a. Attachment 8_ Action 1 [German original and English translation where applicable]
b. August 7, 2003 / January 26, 2004
c. N/A
d. E-mail communications about consideration of possible causes / repair for DTC 1217
e. VWoA
f. Non-conclusive communications.

Action 2

a. Attachment 8_Action 2 [German original and English translation]
b. Unknown
c. March 24, 2004
d. Presentation from supplier Takata-Petri about incorrectly routed wiring in certain side airbag modules
e. Takata-Petri (supplier of the side airbag module)
f. Statistically approximately 21 modules worldwide (of which about half were supplied to Volkswagen) can show an electrical problem that may result in a non-deployment. Supplier recommended replacement in case of monitoring indicator lamp illumination and DTC "short to ground"

Volkswagen will be submitting this file under separate cover to NHTSA Office of Chief Counsel with Request for Confidentiality.

Action 3

a. Attachment 8_Action 3 [German original and English translation]
b. Unknown
c. May 18, 2004
d. Presentation/Analysis from Electrical Engineering about cause for airbag light illumination as a result of problems between Side Airbag (SAB) and the wiring harness with remedy
e. Electrical Engineering, VWAG
f. This document describes the remedies for service and series production.

The confidential portion of this file will be submitted by Volkswagen under separate cover to NHTSA Office of Chief Counsel with Request for Confidentiality. Volkswagen is providing a redacted version with this response.

Action 4

a. Attachment 8_Action 4 [German original and English translation]
b. CW31, 2004
c. CW33, 2004
d. Test report from comparative examination of old series standard (produced until CW19/2004) against service (Bulletin) and new series solution (as of CW19/2004)
e. Electrical Engineering, VWAG
f. The test approved the service and the new series solution to be more resistant against short contact interruptions than the old series solution.

Volkswagen will be submitting this file under separate cover to NHTSA Office of Chief Counsel with Request for Confidentiality.

Action 5

a. Attachment 8_Action 5 [German original and English translation]
b. July 13, 2006
c. July 13, 2006
d. Laboratory analysis / simulation of field return parts showing how the sporadic increase of resistance happens and measurement of the resistance values occurring in these cases - causing the DTCs
e. Quality Department, VWAG
f. Shock vibration may increase the circuit resistance above the threshold for monitoring indicator lamp illumination but resistance always remains below resistance limit for reliable airbag ignition, see also answer to question 12 and Action 6.

Volkswagen will be submitting this file under separate cover to NHTSA Office of Chief Counsel with Request for Confidentiality.

Action 6

a. Attachment 8_Action 6 [German original and English translation]
b. July 21, 2006
c. July 21, 2006
d. Theoretical analysis and test verification of the upper resistance where the side airbag will still reliably deploy as required in question 11d.
e. Bosch Automotive Electrics (supplier of airbag control module)
f. Please refer to the answer to question 11d.

Robert Bosch GmbH, Stuttgart, Germany will be submitting this file under separate cover with Request for Confidentiality.

Exhibit to Request 8

REQUEST NUMBER EIGHT DATA

Data is provided in Adobe Acrobat format in the REQUEST NUMBER EIGHT DATA folder on the PE06-022 Data Collection Disc

Request 9:

Describe all modifications or changes made by, or on behalf of Volkswagen, in the design, material composition, manufacturing, 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 identifiable by MY, date of build or VIN in the "PRODUCTION DATA" table of Request No. 1;
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 component;
e. The part number (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 Volkswagen is aware of which may be incorporated into vehicle production within the next 120 days.

Response 9:

In response to this inquiry, Volkswagen is providing an Adobe Acrobat file entitled "REQUEST NUMBER NINE DATA.pdf" attached hereto as Exhibit to Request 9.

Exhibit to Request 9

REQUEST NUMBER NINE DATA

Data is provided in Adobe Acrobat format on PE06-022 Data Collection Disc

Request 10:

Produce one each of the following:

a. Exemplar sample of each wiring harness/connector and the wire portion of the side-airbag module of the subject component of the subject vehicle;
b. Field return sample of the subject component exhibiting the subject failure mode; and
c. Any kits that have been released, or developed, by Volkswagen for use in service repairs to the subject component/assembly which relate, or may relate, to the alleged defect in the subject vehicles.

Response 10:

a. Volkswagen is providing an exemplar sample of each wiring harness/connector and the wire portion of the side-airbag module of the subject component of the subject vehicle.

b. Volkswagen is providing two field return samples of the subject component that were obtained from vehicles that had been repaired by the referenced Technical Bulletin (TB).

c. Volkswagen is providing an exemplar sample of the two kits that have been released for use with the TB. Volkswagen notes that the passenger side repair harness used in TB 69-04-02 is no longer available. Volkswagen is also providing one sample kit developed by Volkswagen for use in the upcoming customer satisfaction campaign.

Request 11:

Provide a summary description of the vehicle's side-airbag system including a detailed description of the wiring routing as identified in the TSBs in the subject vehicle, including:

a. Functional block/flow diagram; and
b. Picture/illustration of the components and component location including the side-airbag module and the wiring harness routing.
c. The nominal resistance, lower and upper resistance limits that will trigger the warning light.
d. The upper resistance in the side-airbag circuit that side-airbag will reliably initiate in the event of a crash (reference any supporting test, study or analysis).

Response 11:

a) In response to this inquiry Volkswagen is providing a functional block/flow diagram of the entire airbag system as Attachment 11a.pdf.

Volkswagen will be submitting this file under separate cover to NHTSA Office of Chief Counsel with Request for Confidentiality.

b) In response to this inquiry Volkswagen is providing schematics and illustrations of the components and wire routing attached hereto as Attachment 11b.pdf.

c) In response to question c) Volkswagen is providing a graph attached hereto as Attachment 11c.pdf, that demonstrates the triggering thresholds of the airbag monitoring indicator light.

The airbag monitoring indicator light is activated if the resistance in the entire ignition circuit between the control unit and the airbag module is below 1.2 Ohms (lower threshold) and will also be activated if the resistance is above 6.0 Ohms (upper threshold). The thresholds vary depending upon the temperature and on the voltage conditions (range of tolerance).

d) **In response to question d) Volkswagen refers to a report from the supplier of the airbag control unit (Robert Bosch GmbH), which is provided in response to request 8 named as action_6. This report shows that the ignition tablet of the airbag module will be reliably ignited up to a resistance of the entire ignition circuit up to 15 Ohms minimum. This limit was estimated by an analytic calculation, and then verified in a firing test.**

Exhibit to Request 11

REQUEST NUMBER 11 DATA

Data is provided in Adobe Acrobat format in the REQUEST NUMBER 11 DATA folder on the PE06-022 Data Collection Disc

Request 12:

Furnish Volkswagen'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 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.

Response 12:

Volkswagen believes that the alleged defect in the subject vehicles does not pose an unreasonable risk to motor vehicle safety, the safety of the driver, or the safety of other vehicle occupants.

Volkswagen has identified two different failure mechanisms that may lead to an illumination of the airbag monitoring indicator lamp together with the DTC 1217 or 1218 and/or the repair and replacement of the wiring harness or the side-airbag module(s). One affects the connector between seat wiring harness and side airbag module underneath the seat (first failure mechanism), the other results out of a possibly incorrect internal wire routing in the airbag module itself (second failure mechanism).

Regarding the first failure mechanism (connection underneath the seat), Volkswagen's investigations determined that the side airbag will always deploy as designed when triggered by the control module (in event of an adequately severe crash), even if the fault occurs and the airbag monitoring indicator lamp is illuminated. Volkswagen is convinced that this condition will not become more severe over time.

Regarding the second failure mechanism (incorrect wire routing in some modules), investigations from the supplier of the side airbag module determined that only an extremely limited *(de minimis)* number of Touareg vehicles may have been equipped with an affected side airbag module. However, any module affected by this fault will likely fail very early in vehicle life and will always result in the continued illumination of the airbag monitoring indicator lamp. Because of this, Volkswagen is convinced that all affected modules, if any, have already failed and have been replaced.

First Failure Mechanism: Wiring connector
The cause for the DTCs 1217_001 (igniter for side airbag driver side, upper limit exceeded) and 1218_001 (igniter for side airbag passenger side, upper limit exceeded) was traced back to a sporadic and temporary increase of the resistance of a plug-and-socket connection (connector) in the side airbag circuit below the seat. This temporary increase may occur due to the initial presence of foreign material on the contacts along with the connector being sporadically subjected to normal levels of movement and vibration.

In order to prevent this mechanism, contacts with a conductive Nyogel coating were implemented into series production in CW19/2004, and Technical Bulletin 69-04-02 was released as the corresponding field fix. For further improvement and simplification, the connector was completely eliminated in production as of CW45/2004.

The entire side airbag electrical circuit is continuously monitored with a pulsed, very low (milliamps) electrical current by the airbag control module. Thus, an increase of the circuit

resistance above the warning threshold is recorded by the airbag control module, resulting in the storing of a DTC. When a DTC is stored in the control module memory, the driver is warned by immediate and continued illumination of the yellow airbag monitoring indicator lamp. Even as the circuit resistance returns to normal after a temporary increase, the airbag monitoring indicator lamp remains activated and instructs the driver to immediately bring the vehicle into a workshop for airbag system inspection.

The airbag monitoring indicator lamp always illuminates if the circuit resistance exceeds the upper limit of 6 Ohms. Volkswagen has reproduced the failure mechanism with return parts from the field which have been subjected to significant shock impacts in that test. For very short durations a resistance level of approximately 8 Ohms maximum was measured, which would lead to monitoring indicator lamp activation in the subject vehicles. This resistance level dropped off significantly after this short duration peak. The resistance will not change significantly over time due to this condition, even over the entire lifetime of the vehicle, because the current of the pulsed test signal is extremely low.

Referring to an analysis conducted by the supplier of the airbag control module as a result of this inquiry (as referenced in question 11d) – the side airbag will reliably deploy up to a constant circuit resistance of 15 Ohms minimum. The highest resistances induced and measured with the field return parts of 8 Ohms, remains substantially below the limit where the ignition tablet may not receive enough energy for ignition of the side airbag. Additionally, without respect to the actual circuit resistance, the airbag control module will always send an ignition signal to the side airbag in case of an adequately severe accident, even if the monitoring indicator lamp is illuminated or the circuit resistance is above 6 Ohms.

Volkswagen is not aware of any report alleging that this failure mechanism caused a non-deployment in the case of an adequately severe accident. Nor is Volkswagen aware of any related inadvertent deployment.

For the above reasons – and because this failure mode will not prevent airbag deployment in the event of an adequately severe crash - Volkswagen is convinced that this failure mechanism does not pose an unreasonable risk to motor vehicle safety.

<u>Second Failure Mechanism: Airbag Module - Short to ground</u>

In 2004 Volkswagen was informed by the supplier of the side airbag module that in certain modules of a limited production period (October 22, 2003 – November 11, 2003) a possible internal short could occur. A wire may have been incorrectly routed inside the module, and could rub against an inadequately de-burred bracket edge. Such a short would lead to a change of the side airbag circuit resistance which would be immediately detected by the control module and brought to the driver's attention by illumination of the airbag monitoring indicator lamp. Similar to the DTCs 1217_001 / 1218_001 for temporarily increased resistance, the DTCs 1217_006 / 1218_006 or 1217_007 / 1218_007 would be recorded in the control module. The extension 006 means "short to live/signal", 007 stands for "short to ground".

According to the supplier, this potential short poses no risk of unintended deployment.

A number of these modules were immediately identified and replaced by the seat manufacturer or during the seat assembly into the vehicle. According to the airbag module supplier's estimation, 181 affected modules were installed in vehicles and distributed to the markets worldwide. The manufacturer's analysis estimated that only a small portion of the affected modules may show a failure with the possibility of non-deployment in case of an accident (short of the ignition signal to ground). Out of this small portion, half may have been built into Volkswagen Touareg vehicles worldwide, resulting in an extremely limited (*de minimis)* number of affected vehicles estimated for the U.S. market. (Volkswagen notes that this estimation is confirmed by the very small number (31) of airbag module replacements

under warranty in the subject vehicles due to shorts). In all other cases (e.g., short of the return circuit to ground), the side airbag would deploy as designed. In every case, the driver will be warned immediately about the occurrence of such a fault by the illuminated monitoring indicator lamp and is instructed to immediately take the vehicle to a workshop. In case of a short detected in the airbag circuit, the repair shop is instructed by the guided fault finding / repair instructions to replace the respective airbag module. This is standard repair procedure, without requirement for a special instruction (e.g. a Technical Bulletin), and is the only repair available.

For the affected modules which were not identified during production, Volkswagen believes that the incorrect wire routing would quickly result in fraying of the wire insulation and the monitoring indicator lamp would illuminate soon after vehicle delivery. Because the few vehicles that may have been equipped with one of those modules have been in service for at least 2 years, Volkswagen believes that those affected modules have already been serviced under warranty so that none are likely to be remaining in service today.

Volkswagen is not aware of any report alleging that this failure mechanism caused a non-deployment in the case of an adequately severe accident. Nor is Volkswagen aware of any related inadvertent deployment.

Volkswagen is convinced that this second failure mechanism does not represent a trend that poses a risk to motor vehicle safety as the number of possibly affected vehicles is extremely limited (*de minimis)* and it is highly unlikely that any of the affected airbag modules remain in service today.

<u>Assessment:</u>
Volkswagen is not aware of reports or other information alleging a side airbag failing to deploy in case of an adequately severe crash because of either identified failure mode. Because of this fact, and based on the outcome of the analysis of the attached documents, it is Volkswagen's evaluation that there is no unreasonable risk to motor vehicle safety. Nor is there any safety-related relevant defect trend due to the alleged defect in the subject vehicles.

All other airbags in the subject vehicles, including the supplemental head airbags, remain completely unaffected by both of these failure modes.

In the interest of customer satisfaction, Volkswagen had already decided prior to NHTSA's investigation to implement a customer satisfaction field program in which one item will be a repair similar to that outlined in the Technical Bulletin(s), i.e., revising the side airbag wiring by eliminating the connector. Volkswagen plans to start this program within the next 120 days and will notify the customers to visit a workshop where these repairs will be performed free of charge.