



Caterpillar Inc.  
100 NE Adams Street  
Peoria, Illinois 61629-9240

May 4, 2008  
CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Dan Smith  
Associate Administrator  
Office of Defects Investigation Enforcement  
National Highway Traffic Safety Administration  
400 Seventh St. S.W.  
Washington, D.C. 20590

Dear Mr. Smith,

In accordance with the requirements of the National Traffic and Motor Vehicle Safety Act and the procedure prescribed in 49 CFR 573, attached is our notification of a safety defect that may exist with the Variable Valve Actuation (VVA) Oil Line used on certain Caterpillar 2003-2009 C15 Diesel Engines.

Please contact me if there are additional requirements regarding this notification.

Very truly yours,

Thomas S. Lane  
Engine Product Safety & Compliance Manager  
Product Safety & Compliance

Phone (309) 675-6496  
Fax (309) 636-2911

Attached: OEM Contact List

TSLane  
Rev01 - 9/17/2009

1) MANUFACTURER

Caterpillar Inc.  
100 N.E. Adams St.  
Peoria, IL. 61629-7150

2) COMPONENT IDENTIFICATION

Model No.: C15 Diesel Engines produced by Caterpillar Inc.  
Serial No. Prefixes: BSX, MXS, NXS, TRB, KRA & JEP  
Manufacturing Dates: April 2003 to present (since 2007 MY year, production has been for military use only)  
Component Description: Variable Valve Actuation (VVA) Oil Line (“VVA Line”) used on 6 cylinder, 15L turbocharged and air-to-air aftercooled diesel engines of 435-625 Horsepower.

3) NUMBER OF ENGINES POTENTIALLY CONTAINING DEFECT

147,777 total engines in the US – see the OEM Contact list for a detailed breakout of the population

4) ESTIMATED PERCENTAGE OF ENGINES POTENTIALLY CONTAINING DEFECT

2% of the engine population identified in 3 above at 500,000 miles

5) DEFECT DESCRIPTION

The VVA Line may wear against the P-clips retaining the oil line, causing an oil leak, which may result in a fire hazard.

6) PRINCIPAL EVENTS THAT WERE THE BASIS FOR MAKING RECALL DETERMINATION

- a) This recall encompasses the same population Recall 05E-078 and expands the population.
- b) Despite an overall completion rate of 59% after 6 quarters, Caterpillar continued to monitor the population and identified oil leaks and a potential source for fires.
- c) A Continuous Product Improvement Team was assembled to review the line failures.
- d) After considerable failure mode analysis and testing a new failure mode was identified. The line carries oil from the supply gallery to the hydraulic valve actuators. The braided stainless steel encased rubber line is retained by 2 plastic coated P-clips. The pressure pulsations from the valve actuations caused the line to pulse, wear through the plastic coating and then the P-clip wore thru the metal braid and rubber.
- e) An entirely new line group was designed and validated to eliminate this failure mode.
  1. The check valve in the line was moved from the entrance end of the line (nearest the oil supply gallery) to the flow exit end of the line (nearest the cylinder head) to isolate the line from pulsations.

2. The vertical portion of the line is now solid steel and is retained with a 2 piece clamp.
  3. There is a braided stainless steel encased rubber line to allow flexibility in connecting to the block near the oil supply gallery, however, no fasteners are used on this portion of the line.
- f) On April 21, 2009 Caterpillar determined this failure mode should be declared a Safety Defect and recall undertaken to remedy this new failure mode.

7) PROGRAM TO REMEDY DEFECT

The program to remedy the defect is as follows:

- a) Caterpillar will issue the Recall to replace the line assembly with the new design.
- b) Caterpillar will issue the Recall using three (3) Safety Product Improvement Programs (the Caterpillar process used) in which owners will be notified in accordance with 49 CFR 577.
  - i. All OEM vehicles except Kenworth and Oshkosh (military).
  - ii. Kenworth vehicles where Kenworth installed an exhaust support bracket to the back of the block, which will required a modified fastener.
  - iii. The Oshkosh produced military vehicles.
- c) Vehicle Manufacturers (OEMs) will be notified of the possible safety defect and planned Recall.
- d) The first customer notification letter is expected to be mailed in June, 2009. No fewer than five (5) business days prior to publication of the Recall (Safety Product Improvement Programs) and distribution of the owner letters, Caterpillar will submit the proposed owner (customer) notification letter to the NHTSA Recall Analysis Division for input and approval.
- e) Caterpillar dealers will be notified of the Recall. Caterpillar will provide a representative copy of the Safety Product Improvement Programs to NHTSA.