Jaguar Land Rover P094

573.6 (c) (6) - Chronology of Events

Jaguar Land Rover received notification from Autoliv on December 6, 2016 regarding an issue with the Autoliv AI2 Initiator, where during Conformance of Production (CoP) testing on September 8, 2016 for another Original Equipment Manufacturer (OEM), the airbag did not deploy. It was identified that the same Autoliv Initiator is used in the front passenger airbag on certain Jaguar Land Rover model lines.

Jaguar Land Rover's Product Safety and Compliance Committee (PSCC) reviewed the investigation on December 13, 2016. The committee were informed that the initial supplier analysis immediately after the CoP test failure had found that the bridgewire resistance in the initiator (connector) of the inflator was infinite. Further analysis of the initiator at the suppliers showed that the reason for the infinite bridgewire resistance was that the bridgewire had melted as intended.

On December 12, 2016 Jaguar Land Rover's Solihull manufacturing facility issued a vehicle stop shipment for Range Rover and Range Rover Sport vehicles to address a concern with the front passenger airbag operation. In addition, on December 13, 2016 Jaguar Land Rover's Halewood manufacturing facility issued a vehicle stop shipment for Range Rover Evoque vehicles to also address the concern with the front passenger airbag operation.

On further investigation the supplier identified that the ratio between the ZPP substances Zirconium (Zr) and Potassium Perchlorate (Kp) in the primary charge was incorrect. It was reported to the PSCC that the machinery used to mix the ZPP substance was incorrectly reconfigured following maintenance operations. The incorrect ratio between the two ZPP substances in the primary charge resulted in a charge that would not ignite from the heat from the bridgewire. Consequently the bridgewire "burnt off" without igniting the primary charge.

The committee was informed that investigations conducted by the supplier during November 2016 involved a comprehensive review of the manufacturing process where it was identified that machinery used to mix the ZPP substance was incorrectly reconfigured following maintenance operations. After a maintenance cycle of the mixing machine a priming sequence is completed to purge the mixing machine. The priming sequence is controlled by a Programmable Logic Controller (PLC) and is designed to ensure that the complete slurry system is filled with material to the correct ratio for Zr/Kp and ready to build production parts. A programming error was identified that could allow the wrong step size to be sent to the Zr pump during the static mixer prime sequence after stoppage. This would result in the mix being at the incorrect ratio when the machine switches back into production mode. Autoliv identified that the next 30 production components built after the purge/priming process could have the incorrect ratio and as such, could experience a no fire condition.

The PSCC reviewed all the available data and concluded the issue be progressed to the Jaguar Land Rover Recall Determination Committee (RDC) for consideration.

The RDC reviewed all information on December 15, 2016 and concluded that the concern represented an unreasonable risk to safety and that a voluntarily safety recall be conducted.

There have been no reported accidents, injuries or fires as a result of this concern.