



May 9, 2018

Docket Management Facility, M-30
U.S. Department of Transportation
1200 New Jersey Avenue SE
West Building, Room W12-140
Washington, DC 20590

Submitted electronically via www.regulations.gov

RE: Docket No. NHTSA 2016-124, Notice 3. Notice of receipt of General Motors Third Petition for Inconsequentiality and decision denying request for deferral of determination.

The Center for Auto Safety (“the Center”) appreciates the opportunity to comment on the National Highway Traffic Safety Administration’s (“NHTSA”) notice of receipt of General Motors Third Petition for Inconsequentiality and decision denying request for deferral of determination. The Center, founded in 1970, is an independent non-profit consumer advocacy organization dedicated to improving vehicle safety, quality, and fuel economy. To that end, the Center questions whether the airbag inflators on the subject General Motors (GM) GMT900 vehicles can be proven safe throughout the useful life of the vehicle. Accordingly, on behalf of our members and all consumers staring down the barrel of an unrepaired Takata airbag inflator, the Center submits the following comments detailing our concerns with the current GM petition and GM’s previous submissions.

I. GM Petitions, Timeliness, Consumer Concerns

As an initial matter, the Center agrees NHTSA should have denied GM’s request for deferral of the agency’s decision on the petitions to March 31, 2018, however we note that NHTSA’s denial is virtually meaningless, as no decision has been reached by the agency to date. NHTSA has continually failed to act in a timely manner on the GM petitions for inconsequentiality. Throughout this process, NHTSA has delayed posting GM petitions, test results and other materials related to GM’s inconsequentiality petitions to the docket until months after receipt, at times only days before public comments were due. In the present instance, the relevant materials were not posted until well after the date of the requested deferral, and less than two weeks before the deadline for comments. This practice effectively serves as a grant of GM’s request for a deferral of decision and unnecessarily puts consumers in harm’s way. The agency’s statements to the contrary, claiming the deferral has been denied, are simply not consistent with its actions.

While NHTSA and GM perform this deferral and delay ballet, consumers are left to wonder if the airbag in their vehicle is a threat to the safety of themselves and other vehicle occupants. Thousands of complaints have been submitted to NHTSA regarding GM's refusal to remedy these vehicles, signaling great concern amongst owners. GM is not providing loaners to owners of GMT900 vehicles to alleviate their entirely legitimate fears while it tests these inflators and continues to delay a recall remedy.

Additionally, the Center continues to object to NHTSA allowing these petitions to proceed unanswered for so long given their subject matter and the lack of historical precedent for using this section of the Safety Act to consider petitions on safety matters. Even a cursory review of historical petitions for inconsequentiality reveals petitions under this section of the Safety Act invariably pertain to non-compliance with FMVSS labeling requirements and other truly questionable defects, that while potentially hazardous, have not involved the level of danger seen in Takata inflator explosions.

II. General Motors Tests and Analysis

The testing and analysis commissioned by GM in support of its petitions raises more questions than it answers, including: Do these tests actually prove what they claim? Is accelerated life testing reliable in this context? Can the temperature ranges used accurately approximate exposure in all climates?

The available information on the design of the accelerated life testing used in support of GM's petitions indicates that the testing casts doubt on a broad application of its conclusions. The design of the experiment appears to assume that only two variables impact inflator reliability, 1) enclosed water, and 2) elevated temperature. Typical accelerated life testing encompasses a wider range of environmental variables, and extends the testing beyond their normal range to discover incipient failure modes.¹ The cited Orbital ATK (OATK) experiments do not include either controlled environmental humidity nor vibration, nor temperature profiles representative of the entire country.

GM's submissions do not include the rationale for the temperature range selected for the accelerated life testing. It is also noteworthy that the temperature range does not fall below the ambient temperature, which appears to be 20°C, as found in Exhibit B to the petition. Assuming that the ambient temperature is representative of Florida or other tropical or subtropical areas then the analysis may not be applicable to any other climate, and in particular to areas where the temperature routinely falls below freezing. (Even in many parts of Florida, the temperature can fall below freezing in extreme weather.) Consequently, the petition should not be considered applicable to any other climate, where the temperature might fall below 20°C.² Therefore, the accelerated life testing

¹ See, e.g., Technical Report No. TR-2011-24 Design for Reliability Handbook, August 2011 at 9.2.1. [https://www.amsaa.army.mil/Documents/CRG/Design%20for%20Reliability%20Handbook%20\(TR-2011-24\).pdf](https://www.amsaa.army.mil/Documents/CRG/Design%20for%20Reliability%20Handbook%20(TR-2011-24).pdf)

² Inflator failures referenced by GM have occurred as far north as Pennsylvania and Idaho.

cited in the petition does not adequately support an assertion that these inflators do not pose an unreasonable risk to safety as they age.

Furthermore, there are issues with the environmental testing conducted by GM separate from the OATK study.³ In the GM accelerated aging study, field components that exhibited increased risk were removed from testing. The GM study notes that “during August 2016 the largest OD parts for each inflator type and temperature profile were deployed and they deployed normally. The remaining parts were put back into the environmental chamber to continue cycling.”⁴ In other words, GM removed the parts that were most likely to fail (assuming inverse correlation between increased OD wafer density) from the test population before resuming temperature cycling. This introduces a bias against failure in subsequent testing.

The GM study further notes, “After initial OD growth the rate of change has slowed.” Again, this result may be a consequence of prior removal from the test population of those inflators most likely to fail, so the test results do not provide evidence of long term inflator safety. The test design is flawed. Thermal cycle testing should include representative test samples, not cherry-picked units that are less likely to fail, as well as the full range of expected temperature, humidity, and vibration required to predict future performance.

Additionally, GM submitted a statistical assessment⁵ of the risk of energetic deployment (ED),⁶ as support for its assertion that the GMT900 inflators are “low risk.” Putting aside the relevance and questions about the design of experiment of the accelerated life testing, it isn’t clear how relevant the Barnett analysis is to the question of inflator safety.

There are two considerations, not considered by Barnett, that are more relevant to operational safety. They are 1) the probability that an ED will occur that will cause injury to vehicle occupants and 2) the probability that a normal inflation will fail to occur as intended when there is a crash, reducing occupant protection. It isn’t clear how the Barnett analysis of probability that at least one inflator will have an ED over the next 30 years bears on either of these two critical questions.

The expected result of a relevant analysis would include 1) the target levels of hazardous ED events, the probability and confidence that the target would not be exceeded, and 2) the target levels of successful inflations in a crash, and the probability and confidence that the target would be achieved. Those numbers are not evident in the analysis. In particular, the analysis does not include either the number of hazardous EDs that would be acceptable, or the number of failed safe inflations that would be acceptable. Accordingly, the analysis does not provide sufficient evidence that the petition may be granted with adequate assurance of public safety.

³ See Petition Exhibit B, GMT900 Investigation, Takata Front Passenger Airbag Inflators

⁴ See Exhibit B. at 96.

⁵ Petition Exhibit C - Statistical Assessment of Energetic Deployment Risk among GMT900 Inflators, Professor Arnold Barnett, MIT, August 16, 2017

⁶ ED stands for energetic deployment, a euphemism for catastrophic inflator explosion

III. Proving Safe Future Operation

The Center makes the following recommendations for data and additional quality measures that would be necessary to grant GM's petition and relieve GM of its responsibility to recall millions of GMT900 inflators.

- 1) Provide rationale for design of accelerated life testing that includes consideration of the full range of expected thermal, humidity, and vibration environments across all truck geographical sales areas and actual usage.
- 2) Verify validity of environmental data based on the environmental conditions within the full geographical range of operational GMT900 vehicles.
- 3) Design accelerated life testing to include representative population of inflators most likely to fail in full scope of test, and specifically not exclude or prematurely test inflators deemed likely to exhibit ED.
- 4) Show results of improved accelerated life testing that demonstrates such testing is suitable for estimating safe inflator operation over vehicle life.
- 5) Show that all manufacturing and composition of inflator mechanical and chemical components are within tolerances, and that there are no unresolved sourcing or quality control issues, particularly of the propellant material, and no unresolved engineering design or manufacturing issues.
- 6) Demonstrate that quality standards for chemical formulation and manufacturing were consistent with safety requirements.
- 7) Show that Takata quality control processes, including incoming inspections and supplier surveillance of materials and manufactured components, were adequate to assure required inflator conformance to quality standards.
- 8) Define expected ED rate.
- 9) Perform statistical analysis that provides estimated ED rate and confidence, based on corrected accelerated life testing of a representative inflator population.
- 10) Perform similar statistical analysis of expected inflator safe operation reliability and confidence.

IV. Future Considerations

The danger in granting GM's petition without a complete set of answers to the above questions is clear: it would leave potentially millions of unrepaired ticking time bombs on the road with no ability to predict when they might explode. Moreover, there is no indication GM, if its petition is granted, has put a plan in place to remove all remaining inflators from service to prevent future tragedies should these inflators begin to fail. If NHTSA grants this position it should do so only if it believes it retains the authority to order a recall on vehicles that are decades removed from the date of first purchase, if they become a deadly hazard to vehicle occupants. Put differently, NHTSA must be able to revisit a decision that could potentially put millions at risk based on data that is far from complete.

Before NHTSA decides to grant GM's petition, these issues must be addressed in a manner that ensures future consumer safety and allows the agency to take decisive action if these inflators begin to fail.

Conclusion

Petitions for inconsequentiality should be reserved for items that are just that – inconsequential. The process for petitioning for relief from the responsibility to remove millions of potential hand grenades, with their pins already pulled, in the dashboards and steering wheels of cars across the United States should be an open and transparent one – allowing for data to be reviewed in a timely fashion by those who put consumer interests above corporate profits. Neither of those conditions have been met in this case.

Based on the uncertainty, fear, and economic harm the delay in recalling these potentially defective inflators has caused for consumers and based on the failure to submit the type of data that could conclusively assure all concerned parties that these Takata airbag inflators are safe, the Center for Auto Safety urges NHTSA to formally deny GM's petition.

Sincerely,

A handwritten signature in black ink, appearing to read "Jason Levine". The signature is fluid and cursive, with a large initial "J" and "L".

Jason Levine
Executive Director