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ONE HUNDRED THIRTEENTH CONGRESS

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March 31, 2014

Ms. Mary T. Barra
Chief Executive Officer
General Motors Company
P.O. Box 33170
Detroit, MI 48232-5170

Dear Ms. Barra:

We are writing regarding new information we have obtained about the defective ignition switches in Chevrolet, Pontiac, and Saturn vehicles recalled by General Motors (GM) in February and March 2014. These defective switches have been identified as the cause of dozens of crashes and at least 13 deaths.

Information received by the Committee last week indicates that GM approved the defective ignition switch for use in these vehicles in February 2002 despite being presented with testing results showing that it repeatedly failed to meet the company's specifications. This information also reveals that the switch that was redesigned in 2006 for use in 2007 and later model year cars was also approved by GM despite again not meeting company specifications.

This information raises important new questions about what GM knew, when GM knew about the risks from this faulty ignition switch, and how the company has handled the recalls of affected vehicles, including the recall of the 2008 – 2011 model year vehicles that was announced just three days ago.

The GM Recall and GM Ignition Switch Specifications

GM has recalled 2.6 million Chevrolet Cobalts and HHRs, Saturn Ions and Skys, and Pontiac G5s and Solstices because of defective ignition switches. According to GM, "a condition with the ignition switch…may allow the key to unintentionally move or switch to the 'accessory' or 'off' position, turning off the engine and most of the electrical components on the

vehicle," causing air bag failure in the event of a crash.[1] The defect in the recalled vehicles has been associated with 31 frontal crashes, causing 13 fatalities.[2]

The specific defect in the switch involves low torque – the force required to turn the switch. During design and development of the switch in 2001, GM specified that the torque required to turn the switch from run to accessory is 20±5 newton centimeters (N-cm), meaning that the torque must be between 15 to 25 N-cm.[3] GM has acknowledged the importance of this specification in the recall notice, stating:

> If the torque performance is not to specification, and the key ring is carrying added weight or the vehicle goes off road or experiences some other jarring event, the ignition switch may inadvertently be moved out of the "run" position.[4]

In public filings with the National Highway Traffic Safety Administration (NHTSA), GM reported that the company first became aware of the problem in production vehicles in 2003 and that GM proposed changes to the ignition switch on April 26, 2006.[5] GM indicated that the changes proposed in 2006 "increased torque force in the ignition switch" and were installed in affected vehicles beginning with model year 2007.[6] Additional information provided by GM reveals that between 2003 and 2014, a series of internal company analyses, investigations,

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[1] General Motors, GM Expands Switch Recall (Feb. 25, 2014) (online at media.gm.com/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2014/Feb/0225-ion.html) (accessed on Mar. 29, 2014).

[2] General Motors, GM Expands Switch Recall (Feb. 25, 2014) (online at media.gm.com/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2014/Feb/0225-ion.html).

[3] General Motors Corporation, *Component Technical Specification* (Finalized Mar. 22, 2001).

[4] General Motors, GM Expands Switch Recall (Feb. 25, 2014) (online at media.gm.com/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2014/Feb/0225-ion.html).

[5] General Motors, Letter to Nancy Lewis, National Highway Traffic Safety Administration, re: NHTSA recall No 14V-047 (Mar. 11, 2014). GM's chronology also indicates that a 2001 report "during pre-production development of the Ion addressed an issue relating to the ignition switch's "passlock" system . . . include[ing] low detent plunger force in the ignition switch, and stated that an ignition switch design change had resolved the problem."

[6] General Motors, Letter to Nancy Lewis, National Highway Traffic Safety Administration, re: NHTSA recall No 14V-047 (Mar. 11, 2014).

reports, and lawsuits clarified that the problems with the ignition switch presented a significant safety risk and culminated in the recall of the vehicles.[7]

The recall occurred in three stages: February 7 (2005-2007 Chevrolet Cobalts and 2007 Pontiac G5s); February 25 (2006-2007 Chevrolet HHRs, 2006-2007 Pontiac Solstices, 2003-2007 Saturn Ions, and 2007 Saturn Skys), and March 28 (2008-2011 models of all affected vehicles).

GM in 2002 Approved an Ignition Switch that Did Not Meet Company Specifications

On March 27, 2014, Committee staff received a two-and-a-half-hour briefing on issues related to the faulty ignition switch from key staff with Delphi Automotive, the manufacturer of the original switch and its subsequent redesigns.[8] At this briefing, Delphi officials informed the Committee of important new information regarding the process by which production of the switch was approved and accepted by GM.

Delphi explained the general process – known as the Production Part Approval Process (PPAP) – used when the supplier works with large customers like GM. The purchaser provides a design and set of specifications; Delphi then builds the product and tests it against specifications and presents the results of this testing to the purchaser for final production approval.

In the case of the ignition switch for the recalled vehicles, Delphi told the Committee that the switch was designed, built, and then approved in February 2002 by GM via this PPAP process.[9] Delphi told the Committee staff that they had been unable to locate all documents associated with this PPAP, but that they had identified documents reporting the torque performance testing results conducted as part of the PPAP.

Delphi officials stated that it was "well documented" in 2002 that the switch did not meet the required minimum torque specifications.[10] The testing results were in fact far below GM's specifications. Delphi told the committee that there were 12 torque performance tests conducted on the switch at the time, that most tests showed a torque of between 4 and 10 N-cm, and that only two of the 12 tests showed the switch surpassing 10 N-cm. GM's specifications called for torque levels between 15 and 25 N-m, significantly above the results of the performance tests.

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[7] General Motors, Letter to Nancy Lewis, National Highway Traffic Safety Administration, re: NHTSA recall No 14V-047 (Mar. 11, 2014).

[8] Briefing of Energy and Commerce Committee Staff by Delphi Automotive (Mar. 27, 2014).

[9] Briefing of Energy and Commerce Committee Staff by Delphi Automotive (Mar. 27, 2014).

[10] Briefing of Energy and Commerce Committee Staff by Delphi Automotive (Mar. 27, 2014).

Delphi also told the Committee that despite these test results, GM officials approved the switch for production and that it was used in the recalled vehicles in model years 2003-2007.[11]

The Modified Switches Used in 2007–2011 Vehicles Were Also Approved by GM Despite Not Meeting Company Specifications

Delphi also told the Committee about the subsequent redesign of the switch that was produced beginning in April 2006. According to Delphi officials, GM began discussions with Delphi about the need to modify and re-test the switch in mid-2005, agreed to modify the design switch, approved a design with a longer spring, and had Delphi produce prototypes and conduct testing as part of a new PPAP that was approved by GM on April 26, 2006.[12] GM has provided the Committee with documentation verifying that a Ray DeGiorgio, lead design engineer for the Cobalt ignition switch, signed off on a Delphi ignition switch change on April 26, 2006.[13]

Delphi officials also indicated that they did not have complete documentation of this 2006 PPAP process, but that the company had recovered documented testing results for the April 2006 PPAP.[14] According to Delphi, most torque test results for the 2006 switches were in the 10 to 15 N-cm range, and while these switches had a higher average torque than the older models, they still did not meet GM's documented specification.[15]

Delphi confirmed that these testing results mean that the ignition switches currently in use in 2008–2011 vehicles do not meet GM performance specifications.[16]

As far as we know, GM has not publicly revealed that the company approved a switch in 2002 and again in 2006 that did not meet company specifications.

The company has also never acknowledged that switches that do not meet GM specifications were also installed in model year 2008–2011 vehicles. GM's recall notice for the 2008–2011 vehicles makes no mention of this fact. To the contrary, it states that the cars were

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[11] Briefing of Energy and Commerce Committee Staff by Delphi Automotive (Mar. 27, 2014).

[12] Briefing of Energy and Commerce Committee Staff by Delphi Automotive (Mar. 27, 2014).

[13] General Motors production, GMHEC000003128.

[14] Briefing of Energy and Commerce Committee Staff by Delphi Automotive (Mar. 27, 2014).

[15] Briefing of Energy and Commerce Committee Staff by Delphi Automotive (Mar. 27, 2014).

[16] Briefing of Energy and Commerce Committee Staff by Delphi Automotive (Mar. 27, 2014).

recalled because inadequate switches may have been used to repair these cars, not because inadequate switches were installed during production. According to GM:

> [F]aulty switches may have been used to repair the vehicles. The parts are at the center of the company's recently announced ignition switch recall … faulty switches were sold to dealers and aftermarket wholesalers. … Because it is not feasible to track down all the parts, the company is taking the extraordinary step of recalling 824,000 more vehicles in the U.S. to ensure that every car has a current ignition switch.[17]

Risks from Out-of-Specification Ignition Switches in 2008–2011 GM Vehicles

It is difficult to assess the risks from the ignition switches installed in the recalled 2008–2011 GM vehicles. Because the torque on these switches was higher than the torque on the older switches, problems could potentially be reduced.

GM has stated that it is "unaware of any reports of fatalities with this group of vehicles where a frontal impact occurred, the front air bags did not deploy, and the ignition is in the 'accessory' or 'off' position."[18] But an analysis of NHTSA Early Warning Report data shows that there are 14 fatal crashes in the recalled 2008–2011 vehicles involving a potential problem with an airbag, steering, electrical, or unknown component. The Center for Auto Safety has identified a similar set of crashes in earlier GM vehicles as those that "could indicate the ignition airbag defect."[19]

GM and GM engineers have also repeatedly stressed the importance of meeting the torque specifications of 15-25 N-cm. Company engineers, in depositions in a Georgia case involving the defective ignition switch in a 2005 Cobalt, were asked about this specification. Gary Altman, the program engineer for the Cobalt, was asked the following series of questions:

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[17] General Motors, GM Moves to Secure Recalled Ignition Switches (Mar. 28, 2014) (online at media.gm.com/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2014/mar/0328-ignition-service.html).

[18] General Motors, GM Moves to Secure Recalled Ignition Switches (Mar. 28, 2014) (online at media.gm.com/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2014/mar/0328-ignition-service.html).

[19] Letter from Clarence Ditlow, Executive Director, Center for Auto Safety to the Honorable David Friedman, NHTSA (Mar. 7, 2014) (online at www.autosafety.org/sites/default/files/imce_staff_uploads/Friedman%20Letter%20March%207%202014%20Full_3.pdf).

Q:	And the vehicle never should have been sold if it didn't meet GM's minimum torque performance requirements, should it? …
[Altman]:	That's correct.
Q:	And the reason is because that could be dangerous under certain situations because the key can move from run to accessory? …
[Altman]:	Yes.[20]

Similarly, Ray DeGiorgio, the lead design engineer for the Cobalt ignition switch was asked "Why do you have a minimum torque requirement from run to accessory?" He replied, "It's a design feature that is required. You don't want anything flopping around." He was asked if "the intent was also to make sure that when people were using the vehicle under ordinary driving conditions, that if the key was in the run position, it wouldn't just move to the accessory position?" He replied, "That is correct."[21]

Another GM engineer, Brian Stouffer, also indicated in a deposition that the torque values of the ignition switches on the later model vehicles were not significantly different from the torque values on the older models. According to Mr. Stouffer, "The values are not substantially higher on the '08s and '09s. . . . there's a slight trend upwards, but '08s and '09s are not drastically different. The highest was only – we were never higher than 20 newton centimeters. We never had one exceed that. . . . there is a slight trend upward [in torque values] from '07, but there's definitely not separation. They overlap. The ranges [of ignition torque in pre-2007 and post 2007 vehicles] overlap."[22] If true, this could indicate that there are significant risks from the ignitions switches in the 2008–2011 vehicles.

Documents provided to the Committee confirm that top GM officials were aware of the out-of-spec switches in 2008-2010 vehicles for at least several months before announcing the recall. A presentation for GM's December 17, 2013 high-level Executive Field Action Decision Committee meeting showed that torque performance measurements for five of 12 2008 – 2010 model year vehicles ignition switches were below the minimum GM required specifications.[23]

GM again acknowledged the importance of this specification in the March 28, 2014 recall notice, which stated:

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[20] Deposition of Gary Altman (June 12, 2013), *Melton v. General Motors* (Case No. 2011-A-2652).

[21] Deposition of Ray DeGiorgio (Apr. 29, 2013), *Melton v. General Motors* (Case No. 2011-A-2652).

[22] Deposition of Brian Stouffer (May 1, 2013), *Melton v. General Motors* (Case No. 2011-A-2652).

[23] General Motors, EFADC Presentation (GMHEC000002899).

If the torque performance is not to specification, and the key ring is carrying added weight or the vehicle goes off road or experiences some other jarring event, the ignition switch may inadvertently be moved out of the "run" position.[24]

Questions for GM

These new facts reveal that GM approved for production in 2002 and in 2006 an ignition switch that did not meet the company's design specifications. This raises a number of important questions:

1. Has GM informed NHTSA that GM approved for production ignition switches used in 2003-2011 Chevrolet Cobalts and HHRs, Saturn Ions and Skys, and Pontiac G5s and Solstices despite the knowledge that these switches did not meet minimum specifications?
2. How and why were these switches approved despite not meeting specification, and who at GM was aware of this approval?
3. Has GM conducted a detailed analysis of the recalled 2008–2011 model years to determine if the out-of-specification switches have caused crashes?
4. Why did GM wait so long to recall the model year 2008–2011 vehicles if the company was aware that they contained switches that did not meet company specifications?
5. Why has GM not informed the owners of these vehicles that their vehicles contain ignition switches that do not comply with company specifications? Why did the March 28 recall describe the reason for the recall as concern about replacement switches instead of concern about the switches that were originally installed in these vehicles?

We look forward to your testimony on April 1, 2014, and ask that you come prepared to address these and other important questions.

Sincerely,

Henry A. Waxman
Ranking Member

Diana DeGette
Ranking Member
Subcommittee on Oversight and Investigations

Jan Schakowsky
Ranking Member
Subcommittee on Commerce, Manufacturing, and Trade

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[24] General Motors, GM Expands Switch Recall (Feb. 25, 2014) (online at media.gm.com/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2014/Feb/0225-ion.html).