

<p style="text-align: center;">45</p> <p>1 What that is is we as engineers or project 2 engineers sit down and review at the initial stages 3 of the design and look for, I want to say, high 4 risks or potential failure modes. 5 And based on, I want to say, the risk 6 level, we address changes or make changes to the 7 design to assess or reduce the high risk, so it 8 makes ultimately -- you're designing out all the 9 potential failures with a particular switch. 10 Q. Did you look at, as a potential failure mode for 11 this switch, the ease of which the key could be 12 moved from run to accessory? 13 MR. HOLLADAY: Object to the form. You 14 can answer. 15 THE WITNESS: No, because in our minds, 16 moving the key from, I want to say, run to 17 accessory is not a failure mode, it is an expected 18 condition. It is important for the customer to be 19 able to rotate the key fore and aft, so as long as 20 we meet those requirements, it's not deemed as a 21 risk. 22 Q. (By Mr. Cooper): Well, it's not expected to move 23 from run to accessory when you're driving down the 24 road at 55 miles an hour, is it? 25 MR. HOLLADAY: Object to the form. You</p>	<p style="text-align: center;">47</p> <p>1 was in the run position, it wouldn't just move to 2 the accessory position, correct? 3 MR. HOLLADAY: Object to the form. You 4 can answer. 5 THE WITNESS: That is correct, but it was 6 also -- it was not intended -- the intent was to 7 make the transition to go from run to off with 8 relative ease. 9 Q. (By Mr. Cooper): Why is the run position a 10 detented position? 11 A. In the run position, primarily, it's a detented 12 position because all the major, I want to say, 13 electronic modules, okay, are fed off of that 14 detent. If you look at this electric diagram on, I 15 want to say, page 4 of the drawing -- page 4 of the 16 drawing probably. Page 4 of the drawing. 17 Q. Page 4 of the drawing is fine? 18 A. Yeah. If you look at the run position, okay, and 19 you look at these traces down below, you have all 20 the electrical systems of the vehicle running off 21 of the run detent, okay? You got -- I want to say 22 off-run crank, you've got accessory features, and 23 you also have powertrain features, so all the major 24 electrical systems of the vehicle are ran off that 25 detent, so it's important to make sure you maintain</p>
<p style="text-align: center;">46</p> <p>1 can answer. 2 THE WITNESS: It is expected for the key 3 to be easily and smoothly transitioned from one 4 state to the other without binding and without 5 harsh actuations. 6 Q. (By Mr. Cooper): And why do you have a minimum 7 torque requirement from run to accessory? 8 MR. HOLLADAY: Object to the form. 9 Misstates the testimony. You can answer. 10 THE WITNESS: It's a design feature that 11 is required. You don't want anything flopping 12 around. You want to be able to control the 13 dimensions and basically provide -- one of the 14 requirements in this document talks about having a 15 smooth transition from detent to detent. 16 One of the criticisms -- I shouldn't say 17 criticisms. One of the customer complaints we have 18 had in the -- and previous to this was we had cheap 19 feeling switches, they were cheap feeling, they 20 were higher effort, and the intent of this design 21 was to provide a smooth actuation, provide a high 22 feeling of a robust design. That was the intent. 23 Q. (By Mr. Cooper): I assume the intent was also to 24 make sure that when people were using the vehicle 25 under ordinary driving conditions, that if the key</p>	<p style="text-align: center;">48</p> <p>1 the key in that position. 2 Q. And what happens when the key moves to the 3 accessory position? What does the driver lose? 4 A. Primarily you lose the off-run -- if you look at 5 this drawing, you can see that off-run crank 6 circuit may drop off. I take that back. Should 7 not drop off. The run crank position could 8 potentially fall off. There is that gray band in 9 there that is, I want to say, a tolerance. Again, 10 you have a tolerance in there that could 11 potentially fall off. 12 Q. And then if you look at page 17 of the 13 specification, there's the "Tactile 14 Characteristics," section at the very bottom of the 15 page. 16 A. Yes. 17 Q. What is being described here? 18 A. It says, "Refer to the force displacement curve. 19 Final switch tactile feel is subject to engineering 20 approval." 21 Q. Okay. So I assume you would have been the one to 22 actually feel the switch -- 23 A. Correct. 24 Q. -- tactilely to see if it was acceptable? 25 A. To basically see if it meets -- supports</p>

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1 Q. All right. Now ultimately GM's responsible for the  
2 design and performance of the ignition switch in  
3 the Cobalt?  
4 A. Yes.  
5 Q. And Delphi began supplying the ignition switches  
6 for the '05 Cobalt, and based on your testimony,  
7 you believe that Delphi continued to provide the  
8 ignition switches up through the 2010 Cobalt?  
9 A. That's correct.  
10 Q. And that there weren't any changes made -- or were  
11 there changes made to the switch between '05 and  
12 2010 that would have affected the torque values to  
13 move the key from the various positions in the  
14 cylinder?  
15 A. There was one change made to the resistor in '08,  
16 but that should not have affected the torque or the  
17 displacement of the switch.  
18 I can restate this way: There was an  
19 electrical change made in '08, but not a mechanical  
20 change -- at least there were no official changes,  
21 mechanical changes, made to the switch that I know  
22 of.  
23 Q. When you say no official, could there be unofficial  
24 changes made?  
25 A. I'm not saying that there was, I'm just saying if

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1 there was something changed at the supplier side,  
2 we were not aware of it and we did not approve it,  
3 okay?  
4 Q. Well, have you -- as part of this investigation --  
5 part of your involvements, you've been involved  
6 since '05 with this program of the key turning  
7 off -- turning from the run to the accessory  
8 position in certain Cobalts, correct?  
9 MR. HOLLADAY: Object to the form.  
10 THE WITNESS: I had heard of a couple of  
11 instances in '05, yes.  
12 Q. (By Mr. Cooper): Well, you were involved in an  
13 investigation back in '05?  
14 A. Yes.  
15 MR. HOLLADAY: Objection to form.  
16 Q. (By Mr. Cooper): And that investigation, there was  
17 a question as to the detent force in the ignition  
18 switch, correct?  
19 A. That's correct.  
20 Q. And since that date, have you or anyone at GM that  
21 you are aware of actually taken a look at the  
22 various ignition switches from '05 to 2010 to see  
23 if there are any differences?  
24 A. I recall back then I was approached to look into  
25 essentially enhancing the detent in the switch by

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1 adding, I want to say, another detent.  
2 There were a group of us that got together  
3 and we were asked what can we do to improve this  
4 ignition system. One of my tasks was to look into  
5 essentially adding, I want to say, a second detent  
6 in the switch. There was a second request made by  
7 the key cylinder engineer to eliminate the slot on  
8 the key itself and go with a hole and reduce the  
9 torque lever angle.  
10 In those discussions, we reviewed -- we  
11 reviewed those discussions, those tasks, and we  
12 deemed that it was a low risk and we left it at  
13 that. Shortly thereafter, there was an incident  
14 that occurred in Milford Proving Grounds, I  
15 believe, where an individual had, in aggressive  
16 driving, was able to shut the car off  
17 inadvertently.  
18 At that point, we all got back together  
19 and said, "Hey, guys, there may be a potential  
20 issue here. You know, what can we do here?" And  
21 we re-resurrected that initial study that we had  
22 done and a decision was made essentially to provide  
23 for any customers that may come in to service  
24 complaining about inadvertent actuation, to provide  
25 a service fix. And I believe the decision was made

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1 to provide, I want to say, a feature or a fix to  
2 eliminate the slot in the key.  
3 MR. COOPER: All right. Let's take a  
4 quick break.  
5 VIDEOGRAPHER: We are going off the video  
6 record at 2:18.  
7 (Whereupon a break was taken  
8 from 2:18 p.m. to 2:30 p.m.)  
9 VIDEOGRAPHER: We are back on the record  
10 at 2:30.  
11 Q. (By Mr. Cooper): I'm going to show you what we  
12 pulled from a Cobalt and ask if you've seen  
13 something like this before.  
14 A. Yes, I have.  
15 Q. All right. Can you tell us what this is?  
16 A. This appears to be the ION or Cobalt lock housing,  
17 I want to say, assembly, with the ignition switch.  
18 Lock housing assembly and key cylinder. It looks  
19 like it was done with the service key, I want to  
20 say.  
21 Q. And if you can explain to us, what is the function  
22 of the ignition switch as it relates to the ability  
23 or the force it takes to turn the key in the  
24 various positions?  
25 A. Initially the -- initially, everything is free

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1 to redesign the switch.  
2 Q. Do you know whether they made the decision to  
3 redesign the switch?  
4 A. I am not aware of any decisions made to design the  
5 switch.  
6 Q. Okay. And at the May 30th meeting, was there a  
7 presentation as far as -- sometimes I've seen in  
8 some of these documents a PowerPoint, an overview,  
9 talking points to --  
10 A. No, it was a lot of guys sitting in a room  
11 brainstorming ideas and what can and cannot be  
12 done.  
13 Q. Who was the leader of the meeting?  
14 A. I want to say Brian Stouffer.  
15 Q. Okay. Have you sat in on any meetings with Jim  
16 Federico?  
17 A. No, I have not.  
18 Q. Are you familiar with the Red X team that was  
19 assigned or formed to investigate this matter?  
20 A. I know of --  
21 MR. HOLLADAY: Object to the form. You  
22 can answer.  
23 THE WITNESS: I know of a Red X team, but  
24 not specifically assigned to this project.  
25 Q. (By Mr. Cooper): What is the Red X team?

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1 A. The Red X team is essentially a group of engineers  
2 that essentially evaluate or essentially try and  
3 identify, I want to say, a good part from a bad  
4 part and what potential design changes that can be  
5 made to enhance the design.  
6 Q. And just to be clear, as we sit here today, you  
7 don't even know whether the Red X team was assigned  
8 to this project?  
9 A. That's correct.  
10 Q. All right. Let's look at Bates No. 133153, which  
11 is a series of emails in October 2012. The subject  
12 is, "'05 through '07 Cobalt and Ignition Switch  
13 Effort." Do you see that?  
14 A. I'm sorry, I'm not sure I see where you're reading.  
15 Down here?  
16 Q. Subject.  
17 A. Oh, subject. Okay. Yes, yes.  
18 Q. Do you recall receiving this email from  
19 Mr. Stouffer?  
20 A. Yes.  
21 Q. It's directed to you on October 4th of 2012?  
22 A. Yes, yes.  
23 Q. And Mr. Stouffer writes you the email -- this  
24 email, and it says, "At today's Jim Federico  
25 update..." Have you ever met Mr. Federico?

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1 A. No, I have not.  
2 Q. "At today's Jim Federico update on the '05 through  
3 '07 Cobalt airbag investigation, our primary  
4 discussion was on what it would take to keep the  
5 SDM active if the ignition key was turned to the  
6 accessory mode. In addition to that, we also  
7 discussed other potential options. One mention was  
8 revising the ignition switch to increase the effort  
9 to turn the key from run to accessory. The torque  
10 value desired is to be determined."  
11 Did I read that correctly?  
12 A. Yes.  
13 Q. Okay. And then it says, "For our next Federico  
14 update, approximately two weeks, please develop a  
15 high-level proposal on what it would take to create  
16 a new switch for service with higher efforts." Did  
17 I read that correctly?  
18 A. Yep.  
19 Q. Okay. So you were brought back into the  
20 investigation to this extent?  
21 A. Yes.  
22 Q. And then you write back the next day, email back to  
23 Brian Stouffer. And you CC Brian Thompson. He's  
24 your --  
25 A. He's my manager.

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1 Q. -- manager. And then who is David DeFrain?  
2 A. He is my -- he is my director or Brian's director.  
3 Q. What's his title?  
4 A. He is the director of electrical controls.  
5 Q. Okay. You say, "Brian, in order to provide you  
6 with a high-level proposal, I need to understand  
7 what my requirements are. What is the torque value  
8 that you desire?" And why did you all cap high  
9 level and high and then torque?  
10 A. Well, he's asking me to provide him with a  
11 high-level, I want to say, estimate of what it  
12 takes to design a switch, and, you know, to me,  
13 it's like, okay, how high is high? What is high?  
14 I was trying to get some definition out of him. Do  
15 you want 100, 200?  
16 Q. Well, GM already has it -- as I understood you  
17 earlier, they already have torque value  
18 requirements, don't they?  
19 A. Yes, which are essentially outlined in that CTS.  
20 Q. Right.  
21 And to move it from run to accessory or  
22 accessory to run, you don't want it any more than  
23 25 and you don't want it any less than 15?  
24 A. But it can be higher.  
25 Q. Well, could it be 100? Would 100 be practical from

<p style="text-align: center;">149</p> <p>1 the same thing that we do on their side. 2 (Marked for identification: 3 Deposition Exhibit No. 13.) 4 Q. (By Mr. Cooper): All right. Let me show you what 5 I'll mark as Exhibit 13. Can you identify, does 6 this appear to be similar to what we were looking 7 at earlier, and that is, the cutout of a -- 8 A. Detent plunger. 9 Q. -- detent plunger for the Cobalt? 10 A. That looks like the detent plunger on the -- yes, 11 on the switch. 12 MR. COOPER: Okay. And I'll represent to 13 you this is the detent plunger for the '05 or '06 14 Cobalt. 15 (Marked for identification: 16 Deposition Exhibit No. 14.) 17 Q. (By Mr. Cooper): Let me show you what I'll mark as 18 Exhibit 14, which is the detent plunger for a -- 19 it's either an '08 Cobalt or a replacement switch. 20 Can you hold those up for the jury, 21 please? 22 A. (The witness complies.) 23 Q. The one on the right, Exhibit 13, is an '05 or an 24 '06, and the one on the left, Exhibit 14, is either 25 an '08 or replacement. Do you see the difference?</p>	<p style="text-align: center;">151</p> <p>1 Q. (By Mr. Cooper): Let me show you what I will mark 2 as Exhibit 15. Do you see this photograph, 3 Mr. DeGiorgio? 4 A. Yes. 5 Q. Can you hold that up for the jury, please? 6 A. (The witness complies.) 7 Q. The plunger and spring on the '05 is up top and 8 the replacement switch is down below. Do you see 9 that? 10 MR. HOLLADAY: Object to form, lack of 11 foundation, but you can answer. 12 THE WITNESS: Yes, I do. 13 Q. (By Mr. Cooper): And I'll ask the same question. 14 You were not aware before today that GM had changed 15 the spring -- excuse me -- the spring on the 16 ignition switch had been changed from '05 to the 17 replacement switch? 18 MR. HOLLADAY: Object to the form. Lack 19 of predicate and foundation. You can answer. 20 THE WITNESS: I was not aware of a detent 21 plunger switch change. We certainly did not 22 approve a detent plunger design change. 23 Q. (By Mr. Cooper): Well, suppliers aren't supposed 24 to make changes such as this without GM's approval, 25 correct?</p>
<p style="text-align: center;">150</p> <p>1 A. Yes. 2 Q. Have you noticed that before today, Mr. DeGiorgio? 3 A. No, sir. 4 Q. Were you aware of this before today, Mr. DeGiorgio? 5 MR. HOLLADAY: Object to the form. You 6 can answer. 7 THE WITNESS: No, sir. 8 Q. (By Mr. Cooper): It appears to be pretty clear 9 that the plunger and the cap is taller on 10 Exhibit 14 compared to Exhibit 13, isn't it? 11 A. That's correct. 12 Q. How is a taller cap going to affect the rotational 13 resistance? 14 A. It's hard to determine from these pictures exactly 15 if it is a taller cap or is it recessed inside the 16 housing or not. It's hard for me to assess, 17 really, what I'm looking at. 18 Q. You've taken apart a number of switches and you're 19 telling the jury you've never noticed the 20 difference in the plunger between the '05 and '06 21 versus the new resistor or switch? 22 MR. HOLLADAY: Object to the form. 23 THE WITNESS: I did not notice, no. 24 (Marked for identification: 25 Deposition Exhibit No. 15.)</p>	<p style="text-align: center;">152</p> <p>1 A. That is correct. 2 Q. And are you saying that no one at GM, as far as you 3 know, was aware of this before today? 4 MR. HOLLADAY: Object. Lack of predicate 5 and foundation. You can answer. 6 THE WITNESS: I am not aware about this 7 change. 8 Q. (By Mr. Cooper): You were here to testify as to 9 one of the subject matters, and that is changes to 10 the design of any of the 2005 through 2012 Cobalt 11 ignition switches. 12 What did you do to prepare yourself to 13 answer those questions today? 14 A. Primarily I reviewed the changes that took place 15 since the initiation of the switch, I looked at the 16 history of the changes that took place, I reviewed 17 the technical specification to familiarize myself 18 with that document. That's pretty much it. 19 Q. And as a design engineer of ignition switches, 20 Mr. DeGiorgio, would this -- if this change were 21 made in the plunger between '05 and '08, would that 22 explain why the torque value numbers are higher for 23 the '08 ignition switches versus the '05 ignition 24 switches? 25 MR. HOLLADAY: Object. Lack of predicate</p>