

**Statement of the Honorable David L. Strickland  
Administrator, National Highway Traffic Safety Administration**

**House Committee on Oversight and Government Reform  
Subcommittee on Regulatory Affairs,  
Stimulus Oversight and Government Spending**

**January 25, 2012**

Good morning Mr. Chairman, Ranking Member Kucinich and members of the subcommittee. The National Highway Traffic Safety Administration's mission is to reduce deaths, injuries, and economic loss resulting from motor vehicle crashes. I appreciate this opportunity to testify before you today on the status of our Chevrolet Volt investigation. I am pleased to share that we have recently closed our investigation without finding evidence of an unreasonable risk to safety.

Before I walk you through the sequence of events that led to this determination, I would like to establish some context. One way we reduce traffic deaths and injuries is by setting and enforcing standards for motor vehicles. We test many of the vehicles on the road to ensure that they comply with these standards; however just because a vehicle complies with all Federal Motor Vehicle Safety Standards does not mean that there may not be an unreasonable risk to safety. The agency's ability to investigate and determine whether such a risk exists is key to getting defective vehicles recalled and remedied.

In addition to testing for compliance with our standards, we also conduct crash tests for our New Car Assessment Program, or NCAP. For over 30 years, NHTSA has helped consumers find safer cars through our 5-star safety-rating program. We measure how well a vehicle performs in crashworthiness tests and award more stars for safer cars. It was following an NCAP test that we discovered there was an issue with the Chevrolet Volt.

Last May, we conducted a side pole test on the Volt at a contractor's facility in Wisconsin. This test, like all of our other NCAP tests, evaluates how well the vehicle protects occupants inside the passenger compartment. The Chevy Volt earned 5-stars for its ability to protect occupants from injury in the event of a crash. After the test, the vehicle was parked outside in a salvage storage area in accordance with regular NHTSA procedures. Three weeks later, on June 6, the contractor found that the Volt and three other vehicles parked near it were completely burned. I was notified that same day. Since the fire occurred over a weekend, no one was on site to witness the incident or readily identify what caused the fire.

The local fire marshal focused on possible arson, but determined that was not the cause. NHTSA then contracted with battery and fire experts to investigate the case further. In July 2011, our contractor, Hughes Associates, developed preliminary findings indicating that the fire incident most likely originated in the Chevrolet Volt battery and the local fire marshal concurred with that assessment. However, the investigator was not able to explain exactly how the Volt caused the fire and NHTSA proceeded to investigate the matter further. The vehicle, along with the fire damaged battery, was shipped to NHTSA's Vehicle Research and Test Center in East Liberty, Ohio. Hughes Associates, NHTSA, and General

Motors (GM) representatives conducted a forensic inspection and battery teardown in August. The inspection revealed that there was penetration in the battery compartment that damaged the lithium-ion battery and ruptured the battery's liquid cooling system. A review of the crash test photographs and video confirmed that battery coolant leaked from the battery compartment. Hughes Associates later concluded that the damage to some of the Volt's battery pack cells and electric shorting precipitated the fire.

Once the Volt battery was identified as the source of the fire, NHTSA proceeded to determine whether the fire resulting from the May crash test was an anomaly and, if it was not, whether GM and other manufacturers had protocols in place for assessing or managing the risks. In September, we conducted a second side pole test of a Volt. The test vehicle was fitted with additional cameras and equipment to monitor post crash events. The vehicle was monitored for three weeks after the crash. This second side pole test did not produce any intrusion into the battery compartment and there was no battery damage, shorting, or coolant leakage. GM conducted a similar side pole test the same month and that also did not result in any intrusion into the battery pack or fire.

We rely on data to drive our decisions. In a review of all crash reports in the field involving Chevrolet Volt vehicles, we found no reports of post-crash fires. We looked at a variety of data sources, including all relevant Early Warning Reporting data, and Vehicle Owner Questionnaire data. NHTSA investigated two non-crash fire incidents involving Chevrolet Volts. In both cases the vehicles were parked in home garages where the garage caught fire, and it was determined that the fire did not originate in the vehicles.

Despite the initial negative results and the lack of real world events, NHTSA decided to continue investigating at the component level and shared our initial thoughts on this with the general public in November. NHTSA engineers analyzed the Volt to understand what caused the penetration into the battery compartment. We then created new component-level testing procedures, and designed and constructed a completely new and unique test mechanism to replicate the intrusion that occurred during the May crash test. Working with GM, the Department of Energy, and the Department of Defense, NHTSA conducted additional rigorous testing at the battery component level. In mid-November, NHTSA tested three Volt lithium-ion battery packs by damaging the battery compartment and rupturing the coolant system. After each impact, we rotated the battery 360 degrees in 90-degree increments, just like after the NCAP crash test, to see if there was any fluid leakage. The battery coolant is conductive and we found that it can cause electrical shorts. During one of these tests, the battery pack was rotated within hours after it was impacted and it began to smoke and emit sparks, but there was no fire. On November 24, one of the battery packs that was tested a week earlier caught fire at the testing facility, burning the shed that housed another battery pack that was being stored and monitored alongside it. The next day, NHTSA opened a formal safety defect investigation of post-crash fire risk in Chevrolet Volts.

It is important to note that the agency rarely opens a defect investigation without data from real-world incidents. By taking this uncommon step of opening a defect investigation with no available field data, NHTSA sought to ensure the safety of the driving public with emerging electric vehicle technology. In response to the defect investigation, GM proposed a field fix to mitigate intrusion by adding a reinforcement collar around the battery compartment. NHTSA observed the installation of the collar into a 2012 production Chevrolet Volt, and the vehicle

was then shipped to Wisconsin where an NCAP side pole test was performed on December 22. The vehicle was then monitored for three weeks. We confirmed that there was no intrusion into the battery compartment, no leakage of coolant, and no post impact fire.

As a result, we have concluded the agency's investigation and have found no discernible defect trend. The vehicle modifications recently developed by GM effectively address the issue of battery intrusion and they have included this modification as they manufacture new vehicles going forward. NHTSA continues to believe that electric vehicles show great promise as a safe and fuel-efficient option for American drivers. Based on the available data, NHTSA does not believe that Chevrolet Volts, or other electric vehicles, pose a greater risk of fire than gasoline-powered vehicles. In fact, all vehicles have some risk of fire in the event of a serious crash. However, electric vehicles have specific attributes that should be made clear to consumers, law enforcement, the emergency response community, and tow truck operators and storage facilities. NHTSA has been working with DOE and with assistance from the National Fire Protection Association and others to develop guidance for these groups to help them identify vehicles powered by a lithium-ion battery and taking appropriate steps in handling lithium-ion batteries following a crash. NHTSA has also been working with vehicle manufacturers to develop appropriate post-crash protocols for dealing with lithium-ion battery powered vehicles.

Thank you Mr. Chairman. I am happy to answer questions from the committee.



**David L. Strickland** is the fourteenth Administrator of the National Highway Traffic Safety Administration (NHTSA). As the country's top automotive safety official, Mr. Strickland is committed to supporting NHTSA's longstanding mission of reducing crash-related injuries and fatalities while ensuring the highest standards of safety on the nation's roadways. Since being sworn into office on January 4, 2010, Mr. Strickland has overseen the development of the first national fuel efficiency program, helped establish ejection mitigation requirements for automakers, and brought national public focus to child passenger safety issues including the threat of heat stroke from hot cars and back-over deaths and injuries.

Mr. Strickland oversees the broad range of vehicle safety and policymaking programs under NHTSA's jurisdiction — including setting vehicle safety standards, investigating possible safety defects, and tracking safety-related recalls; establishing and enforcing regulations on fuel economy; investigating odometer fraud and publishing vehicle theft data. He also leads the agency in its efforts to educate communities on the dangers of driving under the influence of alcohol, encouraging seat belt use, and addressing pedestrian safety concerns, among other issues. Under Mr. Strickland's leadership, NHTSA is spearheading innovative research and data analysis while providing states and community partners with a variety of resources critical to occupant protection and highway safety.

Prior to his appointment to NHTSA, Mr. Strickland served for eight years on the staff of the U.S. Senate Committee on Commerce, Science, and Transportation as the Senior Counsel for the Consumer Protection Subcommittee. In that role, he was the lead staff person for the oversight of NHTSA, the Federal Trade Commission, and the Consumer Product Safety Commission. His advice to Commerce Committee members during their work on NHTSA's reauthorization in 2005 led to the inclusion of several significant vehicle safety mandates, including the electronic stability control mandate for every passenger vehicle. Mr. Strickland advised Congressional members on safety reforms and funding increases for NHTSA's seat-belt and drunk-driving grant programs and earned national recognition from Mothers Against Drunk Driving, who named him Congressional Staffer of the Year in 2004 for his role in making the driving public safer.

Mr. Strickland is a certified CPS seat technician and carries a valid motorcycle endorsement. Originally hailing from Atlanta, Georgia, he earned his J.D. degree from Harvard Law School and his B.S. degree in communication studies and political science from Northwestern University.

Mr. Strickland and his wife Robin currently live in Alexandria, Virginia.