



August 20, 2021

N212343880 Chronology of Defect / Noncompliance Determination

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Describe the chronology of events leading up to the defect decision or test data for the noncompliance decision:

GM launched the final remedy campaign in Recall 20V701 in late April 2021. This safety recall covered 2017 to 2019 model year vehicles built with design level N2.1 battery cells produced at LG's Ochang, Korea plant. The recall remedy for these vehicles involved (a) performing diagnostic procedures to identify and replace potentially defective battery cell-module assemblies and (b) installing advanced onboard-diagnostic software designed to detect and warn owners regarding potential issues related to changes in battery-module performance over time.

After launching the remedy campaign, GM and LG continued to investigate the underlying root cause and monitor the effectiveness of the final remedy program by analyzing field data for new potential battery fires. On July 2, 2021, GM became aware, through a media report, of an alleged battery fire in a vehicle that had the final recall remedy performed. While GM worked to inspect this vehicle and confirm the origin and cause of the fire, GM became aware, on July 13, 2021, of a second alleged battery fire involving a 2019 Bolt EV that had received the final remedy.

On July 14, 2021, as a precaution while it completed its investigation into these two incidents, GM advised owners of vehicles in the recall population to park their vehicles outdoors immediately after charging and to not leave their vehicles charging overnight. GM also updated NHTSA regarding the status of its investigation.

On July 16, 2021, a preliminary examination of the vehicle identified in the July 2nd article confirmed that the vehicle's battery was the likely source of the fire. The second vehicle identified on July 13, 2021 is not available for inspection; the cause of that fire remains unknown. On July 17, 2021, GM's Safety and Field Action Decision Authority decided to conduct a second safety recall on the same population covered by NHTSA Recall 20V701, while engineering teams from GM and LG continued to investigate the root cause. On July 21, 2021, experts from GM and LG identified the simultaneous presence of two rare manufacturing defects in the same battery cell as the root cause of the battery fires.

GM continued to monitor field data and investigate potential battery fires. On July 26, 2021, GM became aware, through its Customer Assistance Center, of an alleged battery fire in a vehicle outside of the recall population. GM conducted an inspection on this vehicle on August 6, 2021. Based on the physical evidence, GM determined that the probable origin of the fire was the vehicle's high-voltage battery pack, and GM shipped the vehicle's Hybrid Propulsion Control Module 2 (HPCM2) to its Milford Proving Grounds for further analysis.

In parallel, LG continued to conduct teardowns and physical inspections on high-voltage battery cells. This work included used cells returned from the field and new cells never installed into vehicles; cells of different design levels; and cells produced and assembled into cell-module assemblies at different LG facilities. On August 3 and August 12, 2021, LG provided GM with updated teardown data and analysis indicating that both defects could be present in cells installed into vehicles outside of the original recall population.



On August 16, 2021, after GM's safety engineering team conducted a detailed analysis of this new data, GM's Safety and Field Action Decision Authority decided to expand NHTSA recall 21V560 to all 2019 model year Chevrolet Bolt EV vehicles not covered by the prior recall.