

McMicken Battery Investigation

November 5, 2019 Update

Background

Around 5 p.m. on April 19, there were reports of smoke from the building housing the energy storage system at APS's McMicken site in Surprise, Ariz. Hazardous Material units and first responders arrived on scene to secure the area. For reasons still unknown, approximately three hours after the reports of smoke and shortly after the door was opened, the site experienced a catastrophic failure. Injured first responders were transported to area hospitals. An investigation led by APS, with first-responder representatives, the system integrator, manufacturers and third-party engineering and safety experts, is underway to determine the cause of the incident.

The investigation is following a methodical and thorough process to determine exactly what happened. The pace of activity and timing for completing the investigation are secondary to safely conducting quality work. Periodic updates will be posted to report on the investigative process and progress being made. Until the investigation is completed, the parties involved cannot speculate about the cause of the incident. While the recovery of the first responders injured on scene during the incident remains top of mind for all involved with the investigation, their progress and status will not be included in these updates.

APS and the investigation team intend to share what they can of the ultimate findings, especially to the extent they are helpful to the industry and response agencies.

Investigation Update

- The battery modules believed to be where the event originated arrived at the forensics lab in Michigan and have undergone an initial investigation consisting of CT scanning, deconstruction and close examination. Another round of collaborative inspection will occur in late November to determine the cause of failure.
- As a result of evidence-gathering and modeling efforts, the APS investigation team met and arrived at the following:
 - A single rack of modules was compromised by the initiating thermal event; the fire did not spread to surrounding racks.
 - After the initiating event, the fire suppression agent was discharged.
 - The compromised modules emitted a mixture of explosive gases, which built up in the container.
 - The battery modules did not themselves explode; the gas mixture reached certain concentrations, came in contact with a thus far unidentified ignition source and subsequently exploded.
- This scenario will be further validated through modeling over the next several weeks.

- There are still many variables in the timing for completing all steps of this work, but the investigation team is targeting year-end to have more specific information important to recommending any precautions or modifications to other batteries on the APS system before returning them to service.