Post-crash REESS safety assessment and stabilization procedures

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Necessity of research

The necessity of research post-crash REESS safety assessment and stabilization procedures:

- REESS after crash accident still has a big amount of energy, which depends on the SOC before accident;
- The battery pack and other protection devices may be damaged, coolant may leak from REESS liquid cooling system, causing short circuit and fire right after or several days after the accident;
- Because the fire and dangerous situation was difficult to be predicated, it is necessary to assess and stabilize the safety status of the battery pack.

For battery safety after collision, there are two situations:

1. A serious collision, the severity is similar to the regulatory test (GTR20, 5.2 & 5.5). In this case, GTR 20 already has the safety requirement both at vehicle and REESS level.
For battery safety after collision, there are two situations:
2. A slight collision occurred and the battery or high voltage system may not be damaged directly. Although the battery system seems not be damaged and the parameters maybe still at normal status, the battery may have some potential damage, which may result in chronic failure of the battery and eventually cause a fire.

- Is this a problem that should be considered by regulations?
- If yes, what should be the criterial to assess whether a REESS is safe, and what should be done to stabilize the REESS if it is at an “dangerous” condition?
Thanks for your attention!