

Summary of the 17th Plenary Special Committee 235 - Non-Rechargeable Lithium Batteries Active Status Meeting

Meeting Summary:

The 17th Plenary Meeting of Special Committee 235 (SC-235) was held on September 27, 2021. The meeting was conducted as a Virtual Meeting with the following attendees participating via WebEx:

John Trela (Chairman)	The Boeing Company
Norman Pereira (Government Authorized Representative)	Federal Aviation Administration
Jeff Densmore (Secretary)	Radiant Power Corporation
Karan Hofmann (Program Director)	RTCA, Inc.
Antonio Chiesa	Transport Canada
James Christo	NOAA
Nick Conquest	National Institute for Aviation Research
Claude Cresp	ECA Aerospace
Rodolfo Duran	Astronics DME
Bryan Easterwood	Federal Aviation Administration
Nazih Khaouly	Federal Aviation Administration
Chris Kusak	U.S. Air Force
Keith McKnight	Federal Express Corporation
Frederic Menard	Orolia
Kathryn Mulhollen	U.S. Air Force
John Neilson	Ultralife
Rodrigo Garro Pereira	Embraer
Fernando Menendez Rodriguez	EASA
Ray Rodriguez	U.S. Air Force
Jim Russell	The Boeing Company
Leire Segura Martinez de Ilarduya	Airbus
Adrian Sfetcu	Bell Helicopter Textron
Greg Smith	U.S. Air Force
Clayton Vondrasek	Garmin

Opening Plenary

- The 17th Plenary meeting of SC-235 was convened on September 27, 2021 at 11:00pm EDT by Chair John Trela (Boeing). Jeff Densmore (Radiant Power) was the SC-235 Recording Secretary.
- Norman Pereira was introduced as the Government Authorized Representative.
- An RTCA overview, including RTCA's Proprietary References Policy was read by Karan Hofmann, the Program Director.
- Welcoming remarks were made by John Trela. Each person in attendance was invited to introduce themselves.
- The meeting agenda was reviewed.
- The Meeting Summary for SC-235 Plenary #16 was reviewed and approved with one minor change. The title of Paragraph 4 under the Working Group Progress Report was changed from *5Whr Cell discussion* to *Less than 5Whr Cell discussion*. The meeting summary has been amended accordingly and uploaded to the AerOpus folder for Plenary #16 as revision R2.
- All documents and presentation material reviewed during Plenary #17 have been uploaded and are available on in the RTCA AerOpus documents folder. A link to this folder is provided below.
[Group - SC-235 Non-Rechargeable Lithium Batteries - AerOpus \(i3cloudservices.com\)](#)

Plenary #16 Action Item Review

There were three (3) action items assigned during Plenary #15. The status of each is reviewed below:

- (1) Summarize and forward comments to DO-227A based on previous and on-going testing efforts
Assigned to: Susanna Bruffett
Status: **OPEN**
Susanna was unable to attend Plenary #17. Therefore, she was unable to present any of their comments.
- (2) Summarize and forward comments to DO-227A based on previous and on-going installation efforts
Assigned to: Leire Segura Martinez de Ilarduya
Status: **OPEN**
Leire was unable to compile the list of comments prior to Plenary #17.
- (3) Submit a draft proposal for allowing mitigation of cell failures at higher levels.
Assigned to: Claude Cresp
Status: **CLOSED**
Claude submitted proposed wording changes to DO-227A along with rationale. This was reviewed during the Plenary Meeting.

Working Group Progress Report

Jim Russell has been leading the weekly Working Group meetings and provided an update on their activities as follows.

1. *Test Sequence*

The committee agreed to remove the conflicting language in the requirements and procedure paragraphs to clarify that the end item testing is not required to be performed in a sequence, but rather in parallel.

2. *Considerations for “Multi-Cell” Cells (such as 9V batteries)*

The Working Group has discussed multiple approaches for specifying the scope of “multi-cell” cells, such as 9V batteries. Each was discussed during this Plenary, with the committee agreeing to proceed with treating multi-cell products as a single cell battery as long as the sub-cells are not individually accessible. It was agreed that an improved definition is needed for insertion into DO-227B.

3. *Mitigation of Cell Failures at the Next Higher Level(s)*

Claude’s proposal (reference Plenary #16 Action Item 3) to allow mitigation of cell failures at the next higher level(s) was presented and discussed. Cell failures discussed included:

Open Circuit Voltage (OCV): variation of more than 2% below nominal voltages

Cell Capacity: variation of more than 5% below manufacturer’s rated capacity

Any Cell Failure causing Rupture or Fire

During the discussion, all the regulatory agencies in attendance rejected the proposal stating that any cell failure other than what is presently allowed would violate Special Condition #1 for installation approval.

Time did not permit discussion of the following items:

- EASA Comments
- Best Practices for measuring Vented Gas Temperatures and Constituency
- Improved Glossary Definitions (Capacity, Fuses, etc)

These topics will continue to be discussed during the Working Group meetings and added to the agenda for the next Plenary meeting.

Action Item Summary

- (1) Summarize and forward comments to DO-227A based on previous and on-going testing efforts

Assigned to: Susanna Bruffett

- (2) Summarize and forward comments to DO-227A based on previous and on-going installation efforts

Assigned to: Leire Segura Martinez de Ilarduya

Working Group Meetings

Weekly Working Group meetings will continue per the following schedule:

- Wednesday, 13 Oct at 10am (EDT) for 1 hour
- Monday, 18 Oct at 9:30am (EDT) for 1½ hour
- Monday, 25 Oct at 10am (EDT) for 1 hour



- Monday, 1 Nov at 10am (EDT) for 1 hour

Next Plenary

Plenary #18 has been tentatively scheduled as a Virtual Meeting on November 8, 2021. A detailed agenda and WebEx meeting information will be issued closer to this meeting date.

-S-
Jeff Densmore
Secretary

CERTIFIED as a true and accurate summary of the meeting.

-S-
John Trela
Chairman