

Summary of the 37th Plenary Special Committee 235 - Non-Rechargeable Lithium Batteries

Meeting Summary:

The 37th Plenary Meeting of Special Committee 235 (SC-235) was held on August 13, 2024. 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
Nazih Khaouly	Federal Aviation Administration
Tom Maloney	Federal Aviation Administration
Frederic Menard	Safran Electronics and Defense Beacons
Paul Pfeifer	Textron
Ray Rodriguez	US Air Force
Alan Rudnai	Leonardo DRS

Opening Plenary

- The 37th Plenary meeting of SC-235 was convened on August 13, 2024 at 10:00am 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 #36 was reviewed and approved as written. The meeting summary has been posted on AerOpus.
- All documents and presentation material reviewed during Plenary #37 have been uploaded and are available in the RTCA AerOpus documents folder for this meeting.

Plenary #36 Action Item Review

There were two open Action Items following Plenary #36

- 1) Delegate resolution of the requirements rationale changes proposed by Antonio Chiesa
 - a. Assigned to: ~~Jim Russell~~ ~~Jeremy Zee~~ John Trela
 - b. Status: **OPEN**. These continue to be reviewed and closed, but some remain open
- 2) Create a DO-227A vs DO-227B comparison Table for Insertion into the document
 - a. Assigned to; Jeff Densmore and John Trela
 - b. Status: **OPEN**. This action cannot be completed until all of the FRAC comments have been resolved.

DO-227B Final Review and Comment

Plenary #37 was the fifth plenary of SC-235 following the second Final Review and Comment (FRAC) process for DO-227B. Entering Plenary #37, the status of all comments was as follows.

Comment Type	Total	Resolved	Percentage	Unresolved	Percentage
Non-Concur	1	1	100%	0	0%
High	30	30	100%	0	0%
Medium	124	117	94%	7	6%
Low	98	96	98%	2	2%
Editorial	98	97	99%	1	1%
	351	341	97%	10	3%

Comment Discussion and Resolution

High, Medium, Low, and Editorial Comments

The following table summarizes the comments reviewed and resolved during the Plenary meeting.

Id	Category	Section	Subject	Comment	Disposition	Resolution
68341	Low	Appendix D	Glossary of Terms	(1) The test procedure in line 306 does not belong in the Glossary. (2) The test procedure in line 421 does not belong in the Glossary.	accepted	5/16/24: need to look at putting the constant discharge method into test procedure sections. 7/22/24: Added it to cell and battery capacity test procedure and deleted from glossary. 8/13/24: Confirmed changes during plenary.
68354	Medium		Pre-Test Cell Capacity Test	Should the 4 standard headings for each test section — Test Setup, Test Procedure, Evaluation Criteria and Reportable Items — be present in all tests with N/A when not applicable? If that is the case: In section 2.4.1.1.1 Test Setup is missing; In section 2.4.1.1.6 is written Reportables instead of Reportable Items; In section 2.4.1.1.7 Test Setup is missing; In section 2.4.2.1.1 Test Setup is missing; In section 2.4.2.1.7 is written Repratables instead of Reportable Items; In section 2.4.2.2.7 Test Setup is missing; In section 2.4.3.3.2 there is the additional heading Test Conditions not found anywhere else. If such a heading is required here, why is it not required for other tests where the test conditions are different from the Standard Test Conditions for temperature, pressure and humidity? In section 2.4.3.3.3 Test Setup is missing	Accepted	5/16/24: overall scanning of the doc is needed to check for consistency. 6/20/24: Modified needs to be reviewed 8/13/24: Plenary moved to accepted.
68355	Medium		Sample x Test Article	Section 2.3.6 under the heading Requirement states "Test articles employed in the following test shall be conformed and ...". However, the word "sample" is used throughout the document in place of test article. I don't think they are interchangeable. Sample is a more generic expression that means one representative of a production batch or design P/N. Test article is a more precise and specific word that means the part or component being tested, which as we know may include changes that make it different from the representative of a production batch or design P/N.	Accepted	5/16/24: need to review offline. 8/13/24: Moved to accepted
68358	Medium		Test Setup Instruction	Organization of the Test Setup instructions are not written with consistent language throughout the test sections. Example 2.4.1.1.3 vs 2.4.2.1.3. Instrumentation instructions are missing in some sections. Example 2.4.1.1.2 (no accelerometers are required by the Test Setup). Is not clear if the instrumentation instructions only cover measurements during test or also before and after test. Some Test Procedures include instructions to perform measurements before and after others do not. Example 2.4.1.1.3 vs 2.4.2.1.3.	Accepted	5/16/24: overall scanning of the doc is needed to check for consistency. 6/20/24: Modified needs to be reviewed 8/13/24: Plenary moved to accepted.
68284	Medium	2.4.3.2.1	Clarification	The placement of the power resistor must be clarified to avoid excess loss of heat.	Rejected	8/13/24: Discussed in plenary and determined that the test as written is already conservative. No need to change the test set-up.
68285	Medium	2.4.3.3.1	Correct setup	Placement of the internal resistor is not sufficiently clear. Some tests have been conducted with the power resistor mounted against a metal exterior wall, allowing heat to escape easily.	Rejected	8/13/24: Discussed in plenary and determined that the test as written is already conservative. No need to change the test set-up.
68310	Medium	2.4.3.3.3	Load Profile Test	Test should change from discharge to reversal when the battery cutoff voltage is reached, not require discharge all the way to zero volts.	Rejected	8/13/24: Discussed in plenary and determined that the test as written is conservative. No need to change the test procedure.
68276	Low	2.4.2.2.6	consistency	temperature stabilization wording in test set-up is different in several sections - for example in 2.4.2.2.5 they do not say 55°C	Accepted	6/20/2024: Modified but still differences. On list of discussion topics 8/13/24: Accepted in plenary
68287	Editorial	2.4.3.3.1	consistency	temperature stabilization usually references 2.3.4	Accepted	6/20/2024: Modified but still differences. On list of discussion topics 8/13/24: Accepted in plenary

During Plenary #37, the committee successfully reviewed and resolved 9 comments. The resulting status of all comments is shown below.

Comment Type	Total	Resolved	Percentage	Unresolved	Percentage
Non-Concur	1	1	100%	0	0%
High	30	30	100%	0	0%
Medium	124	123	99%	1	1%
Low	98	98	100%	0	0%
Editorial	98	98	100%	0	0%
	351	350	100%	1	0%

Requirements Rationale

During the working group meetings, Antonio Chiesa from Transport Canada identified inconsistencies with the requirements rationale throughout the document. As a result, he submitted a proposal of suggested changes to improve the document.

These items continue to be reviewed during working group meetings. As of the close of this Plenary, 51 of the 56 additional items have been reviewed and resolved, leaving 5 open items. It was agreed that these rationale changes continue to be worked and resolved during future working group meetings.

DO-227B Final Review and Comment (FRAC) Schedule Update

John Trela reviewed the schedule progress towards closure of the FRAC process as summarized below. Because the committee was unable to resolve all comments during Plenary #37, it was agreed to continue to use the Working Group meetings to complete this task and schedule an additional Plenary in October with the objective of closing the FRAC. It was discussed that the new target for completion was the December PMC meeting.

- Second FRAC Start: 14 Nov 23
- FRAC Comments Due: 12 Jan 24
- Plenary #33 (WDC): 3-7 Mar 24
- Plenary #34 (WDC): 14-16 May 24
- Plenary #35 (Virtual): 26 Jun 24
- Plenary #36 (Virtual): 30 Jul 24
- Plenary #37 (Virtual): 13 Aug 24
- Plenary #38 (Virtual): 24 Oct 24 (FRAC Closure – Planned)
- DO-227B Transmitted to RTCA: TBD
- RTCA PMC Approval: TBD



Action Item Summary

There were no new actions generated during Plenary #37:

Working Group Meetings

Working Group meetings will continue generally on Mondays and Wednesdays from 10:00am to 12:00pm (Eastern).

Next Plenary

Plenary #38 was scheduled for 24 October 2024 as a Virtual Meeting.

-S-
Jeff Densmore
Secretary

CERTIFIED as a true and accurate summary of the meeting.

-S-
John Trela
Chairman