

8D Report #145850

Project : Multi-projects impacted
Platform :
Customer :
Supplier : HOPPECKE

Awareness date : 21/10/2019
Opening date : 28/11/2019
Update date : 06/10/2021
Closing date : //
Step : 4/8

Title :	Quality Alert Change of Ni-Cd cell case material - Hoppecke (battery)
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D1	Description
Created by GEBSKI Mirosław on 2019-11-28	
What, Where, How detected	Detected in Riyadh during testing and commissioning trains, by T&C team.. there is some leakage of electrolyte from plastic cell.
Why is it a problem	HOPPECKE had sent a quality alert to announce there is a risk with this plastic cell used since 2016 from supplier SCHULMAN : there is Flame retardant V0 into this plastic? and Ni-Cd attacks this flame retardant and creates crack. This crack is the cause of electrolyte leakage which some risks to be determined (safety ? functional ? etc...)
How Many	Until 28-11-2019 Detected 2 battery units in Riyadh Supplier of battery has provided informations on 27-11-2019 All Batteries 138 units installed on train + 2 spares. 140 total have to be sent back to Germany for complete rework.
Objective to be reached	Back to conformity
Impacted Product (PBS)	1. Trainset/Vehicles 1.H. Auxiliary Operation Equipment 1.H.C. Battery Device 1.C.F. External Additions 1.C. Vehicle Fitting out
FBS	



Picture showing the problem



Picture showing how it should be if OK

D2	Stakeholders		
Team leader	CHENG Sy-khieng	Safety leader	ROLAND Raoul
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Region Site Solving	France	Region Projet	
Reporting Unit in charge solving the issue	HQ ALSTOM Transport SA FR	Reporting Unit in charge of integration	TRA Katowice PL

D3	Problem characterization		
Provisional cost > 100K		OTP reference	
Kx classification	K1 Safety	Current score	3
Severity	Catastrophic	Frequency	

D4	Containment
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8D Report

Start Date (D4-KPI)	Containement action. 1. Rebuild complete system (battery unit) n case of defective cells detected (0 Volt, leakage confirmed) First recomendation provided by Supplier Hoppecke 2. Sent back all 140 (138+2) battery units to Hoppecke for complete rework
Target start Date	2020-05-31
Start Date (D4-KPI)	2020-05-31
End of deployment	2020-05-31
Progress / result / next steps for deployment	<p><i>Update by CHENG Sy-khieng on 2020-05-31T00:00:00</i></p> <p>31/05/20 : D4KPI had been performed for all project with colour code of black/Red/yellow colour. 31/03/2020 : All insulation measurement activities had been stopped because of COVID 19. PP regiolis had been started and no deviation found. For PP Algeria : found 1 batterie faile (some investigation is ongoing to determine the rootcause) 04/02/202 : Master 8D report had been requested to HPK to cover this quality alert. A dedicated 8D shall be set up if the rootcause is deviated from the master rootcause For Riyadh project : a retrofit will be started in week 6 with replacement of new cells 25/01/2020 : Priority high : refer to excel file called : "Projects ALSTOM PP-V0 Issue dated 24_01_20_TS" ==> an immediat insulation test must be performed for all project identified as RED or BLACK colour code in list of affected project ----- 1. Until 27-11-2019 two batteries NOK detected in RYI see enclosed report Battery damaged issue TS601 and TS603. 2. Action plan defined with supplier see enclosed last MoM from 27112019 3. Meeting in STO between Alstom and Hoppecke 2nd December 2019. 4 meeting is setup at riadh between HPK and AT to decide on containement action scenrio</p>

List of actions

No	Actions (what?)	Resp. action (who?)	Due date (when?)	Date of completion
1030218	Do the insulation testing per project	CHENG Sy-khieng	2020-02-29	2020-05-31

D5

Root causes

Progress / result / next steps for deployment	<p><i>Update by CHENG Sy-khieng on 2020-02-11</i></p> <p>Cell case material used for HOPPECKE battery cells HOPPECKE has been using for the plastic NiCd cell cases a flame-retardant polypropylene (PPV0) At a regular internal re-qualification of the material the test results showed that it cannot be ensured that the cell casing material is fulfilling the original specification for the whole lifetime of the battery This means that the resistance of the material against alkali / the electrolyte in the cell can decrease over a time of 4 to 5 years, with the result of possible leakage of the cells. Change from Polyflam to Thermofil in all Hoppecke production cell since Dec 2019</p>
Root causes Occurrence	
Root causes Non Detection	2 - Validation issues

List of actions to deploy the corrective solutions

No	Actions (what?)	Resp. action (who?)	Due date (when?)	Date of completion
1086116	perform new fire and smoke qualification testing of Thermofill plastic cell	TRAN Thanh-ha	2020-09-30	2021-09-28

D6	Solution
What does the solution consist of?	Change of battery case material from Polyflam to Thermofil, the retrofitment start with project identified and critical with colour code black and red.
Mod reference	
Target start Date	2020-05-31
Start Date (D6-KPI)	2020-06-08
% done	5% on

List of actions to deploy corrective solutions

No	Actions (what?)	Resp. action (who?)	Due date (when?)	Date of completion
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D7	Rex			
List of recommendations	Update by on			
Plateform concerned by Rex				
Metiers concerned by Rex				
Impacted projects have been notified ?				
List of actions to engrave the lessons learn				
No	Actions (what?)	Resp. action (who?)	Due date (when?)	Date of completion