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NB-Rail Association

RECOMMENDATION FOR USE

NB-RAIL COORDINATION GROUP

Administrative Decision according to Interoperability Directive
(EU) 2016/797 art. 30.6



Co-funded by
the European Union

RFU-ENE-901

Issue 01

Date 13/03/2023

TITLE

TOUCH VOLTAGES IN MIXED AC/DC ENVIRONMENTS

ORIGINATOR

Ricardo Certification BV

SUBJECT RELATED TO

- Commission regulation (EU) No 1301/2014 (current ENE TSI)
- ENE TSI 2023 (revised TSI)

AMENDMENT RECORD:

01.03.2023 First issue

DESCRIPTION AND BACKGROUND EXPLANATION

The aim of this question is to clarify how assessments of touch voltages should take place in a mixed AC/DC environment. Such a mixed environment could exist where two railway lines of with different power supply voltages run in parallel or where two power supply systems meet, for instance at border crossings.

The question has standing on virtue of it being necessary to assess touch voltages in environments where AC and DC can be mixed, while EN 50122-1 refers to either AC or DC environments. No reference to EN 50122-3 is made in EN 50122-1 or the ENE TSI.

Background:

TSI 1301/2014 p. 4.2.18 “Protective provisions against electric shock”

Description of the situation:

ENE TSI clause 4.2.18 refers to EN 50122-1:2011, in which either AC or DC touch voltage limits are presented. In practice, situations appear where mixed AC/DC touch voltages occur. These are covered by EN 50122-3:2022 but neither ENE TSI nor EN 50122-1 refer to this part of the standard in case of a mixed AC/DC environment. Touch voltages are currently assessed based on a dynamic simulation, which not always takes mutual AC/DC influence into account. And if it does, the ENE TSI does not refer to the correct limits. How should we assess touch voltages in a mixed AC/DC environment?

RFU PROPOSAL

In the current situation, there is no TSI-requirement regarding mixed AC/DC touch voltages and this situation implies a hazard. The proposal is to assess the ENE TSI requirements relevant for the object of assessment (AC or DC part) and to file the risk related to the mixed AC/DC touch voltages as a recommendation in the NoBo-file, which can be then used by other bodies.

THIS RFU WAS AGREED ON

PLENARY MEETING 067



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THIS RFU ENTERS INTO FORCE ON

13/03/2023 (DATE OF PUBLICATION)

FROM THIS DATE ON THIS RFU CAN BE APPLIED INSTEAD OF THE PREVIOUS MANDATORY VERSION.

RFU APPLICATION IS MANDATORY STARTING FROM

13/03/2023

AT THIS DATE ANY PREVIOUS VERSIONS (*OR, ALTERNATIVELY, VERSION XX*) OF THIS RFU WILL BE WITHDRAWN.

RFUS SHALL BE APPLIED BY ALL NOBOS. PLEASE REFER TO RFU-STR-702, CHAPTER 3 OF THE SECTION "DESCRIPTION AND BACKGROUND EXPLANATION", FOR THE LEGAL BASIS SUPPORTING THIS OBLIGATION.

ERA COMMENTS

PM 067 – 01/03/2023: NO COMMENTS - OR SPECIFY IF ANY
ERA DISCLAIMER WILL BE INCLUDED