



RSC-G-015-C Guidelines for the Safety Assessment of New Heavy Rail Rolling Stock

1. Introduction

This guideline contains the Parameters for APIS of RST in Ireland. For each Parameter the relevant NTRs are provided. These are largely referring to the relevant TSIs, Mandatory and Voluntary Standards. RST will be authorised in the format of Vehicle APIS.

This guideline must be understood and applied in connection with RSC-G-009 Guideline for the Process of Authorisation for Placing in Service Structural Sub Systems and Vehicles.

Note for clarification: Within the context of the Railway Safety Act 2005, the definition of 'New' Rolling Stock includes new builds and existing rolling stock undergoing significant modification. Where modifications are proposed, the RSC shall be informed of the scope of such modifications for advice on whether they are deemed sufficiently significant as to require NRSA submissions. Art 20 of 2008/57/EC will apply also.

2. Testing

It is a fundamental safety management principle that, in order to validate any safety related design calculations, simulations and assumptions, that type testing is performed. Any deviation from this principle shall be justified.

Routine testing must cover a suitable subset of the type testing scope in order to demonstrate that a series production item complies with the parameters of the design.

The tests shall be of repeatable nature and be covered by retrievable test reports. A test report shall include (but is not limited to):

- identification of the tested item and description of its parameters,
- the method of testing,
- description of environmental parameters which may influence the result,
- all results of testing,
- any deviations from the test method,
- the determination of conformity made from these results,
- all information needed to understand and interpret the report.

All information shall be reported correctly, accurately, and clearly.

Type and routine testing should follow legislative requirements as well as current best industry practice where appropriate.

3. Independent Professional Review

All safety management approaches contain the fundamental principle of independent review. The Independent Professional Review (IPR) must be performed by independent and

competent professionals who are not involved in the aspects under review. The scope of the review shall be

- the effectiveness of the project safety management approach
- the resulting safety evidence
- the safety of the product during design, testing on the railway, operation, maintenance and eventual disposal.

These reviews are typically to be structured as a series of safety audits and safety assessments. Audits provide evidence that the planned safety management approach has been followed and is providing effective outputs. Assessments provide evidence that safety requirements are met.

Frequency, depth and level of independence of each type of review shall depend on the extent of the risk as well as novelty and complexity of the design.

As a general principle it is expected that the following design features (refer also to Part 2 of the attached matrix in Appendix 1) require independent professional review by a suitably independent, competent and qualified professional, who is a member of an organisation independent from those organisations involved in the design decisions and satisfies the principles of independence/ impartiality and absence of undue pressure defined in ISO 17020 Type A and ISO 17021:

- running dynamics,
- structural aspects,
- braking system,
- overall fire performance and concept of evacuation,
- train control functions,
- access and egress system.

This principle is driven by the magnitude of potential consequences of the related risks and any exemptions to this principle require justification.

The work carried out by the independent professional shall be covered by a retrievable report. The report shall include all the results of examinations and the determination of conformity made from these results as well as all information needed to understand and interpret them. All this information shall be reported correctly, accurately, and clearly. The report shall satisfy the mandatory and should satisfy the optional requirements on reports given by ISO17020. The report shall also contain a clear statement of the IPR's level of support for the NRSA submission

It should be noted that further independent professional reviews of specific scope or nature are mandated through legislation (e.g. Notified Body reviews with respect to EC directives, project-level Independent Assessment under the Railway Safety Act 2005 where directed by the RSC) or may be voluntarily applied on a project in accordance with good industry practice. In areas, where NoBo, DeBo or other Third Party assessment can be evidenced, these may be made available to the IPR and considered during their assessment activities to avoid unnecessary duplication of assessment work.

The full range of independent professional reviews may be carried out by a single organisation, or each individual review can be carried out by a different organisation. In each case, the requirement for independence of the reviewing organisation must be respected at all times.

4. Independent Assessor

In complex projects, the RSC may direct the railway undertaking (applicant) to employ a competent Independent Assessor (IA). The role of the IA shall be to undertake a review of all safety-related aspects of the project to a level that is consistent with the RSC's own review processes, thereby supplementing and supporting the role of the RSC in assessment of NRSA submissions. The evidence of system performance provided by the IA review shall enable the RSC's own scope and depth of review to be reduced, normally to spot checks. The selected IA should be advised to the RSC at an early point in the project for agreement that the individual's competence and independence is appropriate for the scope of the project.

Where employed, the IA shall issue reports at each staged NRSA submission. The reports shall include all the results of assessments performed and conclusions reached, as well as all information needed to understand and interpret these results and conclusions. All this information shall be reported correctly, accurately, and clearly. The report shall satisfy the mandatory and should satisfy the optional requirements on reports given by ISO17020. The report shall also contain a clear statement of the IA's level of support for the NRSA submission.

The RSC's decision on the acceptability of the safety and fitness for purpose of the new rolling stock, and thereby the decision on acceptance of each NRSA submission, shall be based on the findings within the IA report and the RSC's own conclusions from its review of the NRSA and spot checks undertaken.

5. Further Clarification

Further clarification on these Guidelines can be sought from the RSC.