

INF.6

1b – Design and construction of vehicles: specification method; functional/technical solutions

ITEM 2: 6.8.3.1.6_Risk Control Measures

Information from European Union Agency for Railways

Description of Risk Control Measures

JCGE #5 – 6 September 2022



- CSM ASLP will provide the applicable method to describe any kind of Risk Control Measures
- The description template allows both functional and technical description, including reference documentation
 - Part 1 – General information
 - Part 2 – Description of resulting events linked to an RCM (prevented or mitigated events)
 - Part 3 – Expected effectiveness of the Risk Control Measure
 - Part 4 – Management of the Risk Control Measure
- The RCM description method allows for referencing detailed technical documentation (e.g technical documents depending on the type of products used to comply with the functional description)
- A guide is under development for assisting the proper implementation of RCM descriptions

- It is foreseen that Reference RCMs are listed in one section of the CSM ALSP Regulation
- This 'List of Reference RCM' can be used as a legal 'interface document' btw RID and the TSIs, offering legal certainty
- The harmonized description approach of the CSM ASLP can be applied to
 - TE22 and TE25 safety measures
 - Derailment prevention and mitigation functions (DPF, DDF, DDAF)
 - DAC related safety measures
 - Any other risk control measures, as needed for harmonized reference
- It will help operators to access harmonized functional and detailed description of RCMs
- It will facilitate the implementation of well-defined safety measures, comprising:
 - High level safety objective in RID
 - Reference Risk Control Measures (RCMs) listed in the CSM ALSP
 - Technical Specifications for Interoperability of the RCM functions in the relevant TSIs
- RID and TSIs may refer to the list of reference RCMs, where needed.

Future CSM ASLP (excerpt) RCM description

Dataset for reporting the describing of a 'Risk Control Measure'				
1. General information				
Reporting Entity	Operator ID			
Risk Control Measure	RCM ID: RCM Name:			
General description of risk control measure aim and expected functioning of the RCM:	Type of RCM (*):			
	<input type="checkbox"/> Reduction of the frequency of occurrence of event(s) <input type="checkbox"/> Reduction of potential consequences (*) Tick the applicable box(es)			
Aim of the RCM: (free text)				
In accordance with Part D of Annex I–, the applicable RCMF code(s) and a summary description of the applicable functions:				
Code of applicable RCM function(s)	Name	Short description	technical documentation (optional)	
(code)	(free text)	(free text)	(reference)	
(add rows if needed)				
Note: Operators shall describe the applicable RCM functions. Optionally, a more detailed description of the subsystems containing the different RCM functions can be provided using a reference to technical documentation.				
Other technical documentation reference (if applicable, optional): (free text)				
Note: Content of reported free text shall be in accordance with Part B, Section 3.2 of Annex IV.				

2. Description of resulting events linked to an RCM		
<i>(in case multiple events, please provide this information for each event)</i>		
	Resulting event(s)	
Normal RCM functioning, as planned (prevented or mitigated resulting events)	Reference(s) of <u>each possible</u> resulting Event type (in accordance with the coding set out in Appendix 1 to Annex I)	(if not referenced yet) Name of the event Definition of the event Category of the event
In case of RCM failure (used only in case of failure reporting)	Reference(s) of <u>each possible</u> resulting Event type (in accordance with the coding set out in Appendix 1 to Annex I)	(if not referenced yet) Name of the event Definition of the event Category of the event

3. Expected effectiveness		
Expected effectiveness ratio	Ratio of expected number of RCM failure per number of triggering events	(in %)

4. Management of Risk Control Measures			
Provision type:		Description how provision is realized	
Risk analysis (see 3.2.2.a [Please provide a full reference.])		(References of relevant Risk assessments in SMS)	
Measuring/Monitoring (see 3.2.2.c [Please provide a full reference.])		(Leading indicators, and/or lagging indicators)	
Resource Management (see 3.2.2.d [Please provide a full reference.]) Expected - Life cycle costs		Setting/Operation/Maintenance	
		Setting-up	Operation
€ ...		€ ... per year	€ ... per year

1. → General information ☐				
Reporting Entity ☐	RID Committee ☐			
Risk Control Measure ☐	RCM ID: → RID_0001 ¶ RCM Name: → Protective Shield ☐			
General description of risk control measure aim and expected functioning of the RCM: ☐	Type of RCM (*): ☐ X: Reduction of potential consequences ¶ ¶ Aim of the RCM: ¶ To limit damage to the shell of tank-wagons carrying dangerous goods when buffers override. ¶ ¶			
	Code of applicable RCM function(s) ☐	Name ☐	Short description ☐	technical documentation ☐
	RCMF.1.0 ☐	TE25-PS ☐	The RCM does not incorporate a detect function. ☐	N/A ☐
	RCMF.2.0 ☐	TE25-PS ☐	The RCM does not incorporate a diagnose function. ☐	N/A ☐
	RCMF.3.1. ☐	TE25-PS ☐	The mere presence of the shield mitigates the risk of puncture of the tank shell, or the rupture of tank equipment potentially impacted by buffers overriding from a collision with other wagons. ¶ link to public documentation ¶ ☐	Applicable Specifications: ¶ TSI WAG ¶ (TE25 (d) and TE25 (e)) ¶ ☐
Note: When impacted, the protective shield may be damaged and RID provision 1.4.3.5(b) shall be applied. ☐				

<p>2. → Description of resulting events linked to an RCM¶</p> <p>→ <i>(in case multiple events, please provide this information for each event)</i>☐</p>		
☐	Resulting event(s)☐	
<p>Normal RCM functioning, as planned (prevented or mitigated resulting events)☐</p>	<p>Reference(s) of <u>each possible</u> resulting Event type¶</p> <p>Mitigated events:¶</p> <p>A.1.3 (Collision of one or more rail vehicle with another rail vehicle)¶</p> <p>¶</p> <p>Prevented events: A.6.4 (Other)¶</p> <p>– Rupture of the tank shell and/or tank equipment followed by a Loss of Dangerous Goods substance¶</p> <p>☐</p>	<p>(if not referenced yet)¶</p> <p>Name of the event¶</p> <p>Definition of the event¶</p> <p>Category of the event☐</p>
<p>In case of RCM failure¶</p> <p>☐</p>	<p>Reference(s) of <u>each possible</u> resulting Event type¶</p> <p>A.6.4 (Other)¶</p> <p>– Rupture of the tank shell and/or tank equipment followed by a Loss of Dangerous Goods substance¶</p> <p>☐</p>	<p>(if not referenced yet)¶</p> <p>Name of the event¶</p> <p>Definition of the event¶</p> <p>Category of the event☐</p>

3. → Expected effectiveness			
Expected effectiveness ratio	Ratio of expected number of RCM failure per number of triggering events	(in %)	
4. → Management of Risk Control Measures			
Provision type	Description how provision is realized		
Risk analysis	<p>(References of relevant Risk assessments)</p> <p>In accordance with RID experts' analysis, this RCM is one of the possible measures which can be applied to comply with RID TE25 for the carriage of applicable UN numbers.</p>		
Measuring/Monitoring	<p>(Leading indicators, and/or lagging indicators)</p> <p>An estimator of this RCM effectiveness could be approached by the ratio between the number of A6.4 event type as indicated above in part 2 and the number of A1.3 events involving TDG wagons equipped with this RCM.</p> <p>It could also be estimated with field experiments.</p>		
Resource Management Expected Life cycle costs	Setting/Operation/Maintenance		
	Setting-up	Operation	Maintenance
	€ ...	€ ... per year	€ ... per year



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