



INF. 3

17 October 2017

Original: German

RID: 8th Session of the RID Committee of Experts' standing working group
(Utrecht, 20 to 24 November 2017)

Subject: Measures to reduce the risks resulting from the import of chlorine into
Switzerland – Common Declaration II

Information and questions from Switzerland

1. At the 7th Session of the RID Committee of Experts in November 2016, Switzerland provided information about the Common Declaration II (see [OTIF/RID/CE/GTP/2016/12](#)).
2. Switzerland intends this document:
 - to provide information on the state of implementation of the Common Declaration II, and
 - to invite the RID Committee of Experts to discuss the possible extension of measures internationally.

Implementation of the Common Declaration II

3. In this year, the contractual parties have been working intensively to implement the individual measures. The Appendix shows the state of implementation of the measures in detail.
4. The objective of the measures is to continue to reduce the risks of transporting chlorine by rail and to keep them at an acceptable level in future as well, even taking into account the increasing housing development. Measures have been defined in such a way as to avoid risk shifting.

5. One measure in the Common Declaration is that Switzerland should commit to engaging within international bodies to ensure that safety standards for chlorine transport are further improved. Discussion at international level is also important for the following reasons:
 - In addition to safety, interoperability and the international harmonisation of safety measures are important fundamental principles of international rail transport.
 - Within the COTIF area there may be further situations with risks similar to those calculated for Switzerland.
 - Switzerland is happy to share her experience of the search for solutions to secure international freight transport by rail at a tolerable level of risk.
6. Switzerland has found that risks associated with the transport of dangerous goods are handled very differently in different countries. For one thing, several countries have not quantified these risks, and a harmonised methodology for the management of risks associated with the transport of dangerous goods is still under development. For another thing, there are no uniform risk acceptance criteria. This means that the basis for introducing additional safety measures at international level barely exists under present conditions. In addition, the effort required to examine the introduction of new safety measures at international level is very high.
7. However, since Switzerland has a great interest in further increasing the safety of chlorine transport by rail because of its extremely high potential for damage, we would like the first step to be to clarify the opinion of the RID Committee of Experts' standing working group regarding the international practicability of the individual measures.

Questions for the RID Committee of Experts' standing working group

- What is the standing working group's assessment of the risk of chlorine transport in the COTIF area?
- Which of the measures to improve safety, listed in the Appendix, represent a potential at international level?
- In what framework should these measures be discussed or implemented (voluntary implementation, regulations such as RID / ATMF / TSI, etc.)?
- What steps are necessary for reaching a decision on this implementation?
- Who is able to initiate these steps?
- What timescale is realistic for implementing the measures identified?

Appendix

Measures under the Common Declaration II	State of implementation	Potential for extension to the international level
<p>M2.1 – Chlorine supply from abroad</p> <p><i>The industry will continue its efforts to supply chlorine from Italy for operations in Valais with the goal of reducing the transport routes lengths and avoiding urban agglomerations.</i></p>	<p>Negotiations are under way with possible suppliers whose production facilities are close to Switzerland. Details are being clarified regarding the quality of the raw materials which can be delivered, and the transport concept. Test deliveries are planned.</p>	<p>It would be sensible to optimise the chlorine business throughout Europe so that it does not lead to unacceptable local risks, and to minimise the total risk resulting from chlorine transport. This would primarily require the active commitment of the chlorine industry together with the transport sector.</p>
<p>M2.2 – Using the safest tank wagons currently available</p> <p><i>The industry undertakes to only procure chlorine from suppliers who transport the goods using tank wagons that have the best safety features currently available.</i></p>	<p>The industry has set itself the target of at least 95% of transports being carried out using only such tank wagons, from 1 January 2019 at the latest. Suppliers have been informed of the requirements. The hire contracts are being amended. However, there still needs to be clarity on the supply concept, in order to know the precise number of tank wagons required.</p> <p>Approx. 50% of deliveries to the factories in Valais are already being made using improved tank wagons (voluntary commitment on the part of the suppliers). One further supplier is on the verge of changeover, so that in the coming months the proportion of deliveries using tank wagons that have the best safety features currently available will increase further.</p>	<p>The industry could theoretically enter into a voluntary commitment internationally to use only the safest wagons available on the market for particularly dangerous goods – in this case, chlorine (“responsible care”). The availability of such tank wagons is a relevant criterion.</p> <p>The individual technical measures in accordance with the Appendix to the Common Declaration II could also be made obligatory, via the international regulations RID and TSI/UTP, at least for newly constructed tank wagons (see below).</p>

<p>VEHICLE-RELATED TECHNICAL MEASURES</p>		
<p>Detection of derailments <i>Elements for detecting derailments (e.g. derailment detector)</i></p>		<p>Switzerland has already campaigned hard for this measure. We are awaiting the next steps, as agreed in the working group on derailment detection (adaptation of the relevant TSI, development of electronic derailment detection). (see documents OTIF/RID/CE/GTP/2016-A and OTIF/RID/CE/GTDD/2016-A)</p>
<p>TE 22 extended <i>Energy absorption elements (crash buffer) with optimised energy intake</i></p>		<p>Adoption at international level possible:</p> <ul style="list-style-type: none"> • Objective in the RID: Use of wagons with [optimised] energy absorption for tank wagons carrying particularly dangerous goods. • Technical specifications at the level of TSI/UTP.
<p>TE 25 combined <i>Buffer override protection according to TE25a or a combination of two measures for limiting damage caused by buffer override according to RID TE25b up to/including TE25e.</i></p>		<p>Adoption at international level possible:</p> <ul style="list-style-type: none"> • Objective in the RID: Use of wagons with [increased] buffer override protection for tank wagons carrying particularly dangerous goods. • Technical specifications at the level of TSI/UTP. <p>Alternatively, a “TE 25 optimised” could be evaluated, with a tank plate to the full height of the tank and including the floors (protection against side-on collisions).</p>

<p>Brakes with automatic load conversion</p> <p><i>This prevents brakes being incorrectly set manually.</i></p>		<p>Adoption at international level possible:</p> <ul style="list-style-type: none"> • Objective in the RID: Use of wagons with braking systems with [increased] safety for tank wagons carrying particularly dangerous goods. • Technical specifications at the level of TSI/UTP.
<p>Optimised wheelset axle</p> <p>Wheelset axle with higher load capacity: install 25 t wheelsets instead of 22.5 t. (Implement measures for new wagons. Existing wagons can be retrofitted.)</p>		<p>Adoption at international level possible:</p> <ul style="list-style-type: none"> • Objective in the RID: Use of wheel sets with [reduced] tendency to fracture for tank wagons carrying particularly dangerous goods. • Technical specifications at the level of TSI/UTP – e.g. reference to European Standard Freight Axle (ESFA).
<p>MEASURES ON THE TANK</p>		
<p>Valves</p> <p><i>Protective mechanism between the outer and inner valves (two-part valve with predetermined breaking point) so that, in the event that the outer top valve is torn, the inner bottom valve guarantees full leak-tightness of the wagon.</i></p> <p><i>Further safety-enhancing measures in addition to RID 6.8.2.2.1.</i></p>		<p>Adoption of the principle in the RID/ADR for particularly dangerous gases, at least for newly constructed tank wagons</p>

<p>No ladders</p> <p><i>Reduces the chance of the valves being opened by a third party.</i></p>		<p>Confirmation should be obtained from the companies responsible for loading and unloading that they do not depend on ladders. This measure cannot therefore be generalised at international level.</p>
<p>M2.3 a) – Examination and introduction of block trains</p> <p><i>The Federal Office of Transport (FOT) and the affected railway companies shall together investigate the extent to which chlorine can be transported in block trains (short special trains with chlorine wagons only) in Switzerland. Where safety- and security-related risks can be significantly reduced, the FOT will enforce this measure via the infrastructure managers.</i></p>	<p>An implementation plan for the carriage of chlorine in block trains is available in draft for the most important chlorine transport route. It is currently being developed by SBB and the industry, and extended to further routes.</p>	<p>Chlorine transport in short special trains from consignor to consignee enables the operational implementation of the following risk-reduction measures, and has the following effects:</p> <ul style="list-style-type: none"> • Reducing the speed of trains with chlorine tank wagons, either generally or specifically, e.g. in stations • Detecting incidents (derailments) using detectors • Preventing the influence of goods wagons in the same train that do not meet the same, raised standard • Minimising longitudinal forces when braking • Restricting trains with chlorine gas wagons to times outside the main peak hours (reduced risk of collision, and fewer potentially exposed passenger trains) • Limiting shunting movements of chlorine gas wagons to a minimum <p>A targeted, internationally harmonised implementation of this measure would be useful for railway operations.</p>

<p>M2.3 b) – Optimising transport routes; no double transit</p> <p><i>SBB Infrastructure shall optimize the transport routes in such a way that, where possible from an operational perspective, there is no double transit with chlorine tank wagons on the rail network. In this context, the risks linked to parking at the place of use must also be taken into account.</i></p>	<p>The optimisation potential has been investigated in detail, demonstrating the operational necessity of double transit with UN 1017 chlorine tank wagons between Visp and Brig.</p>	<p>No international harmonisation necessary; possible implementation should be settled at national level.</p>
<p>M2.4 – Speed reductions and operating times</p> <p><i>SBB Infrastructure shall ensure that block trains carrying chlorine will run at a reduced speed of 40 km/h at all times.</i></p> <p><i>The transport runs must therefore be scheduled in such a way that they do not interfere with other traffic and do not lead to any limitations in the capacity of the SBB network.</i></p>	<p>The criteria for exceptions to $v_{\max} = 40$ km/h for chlorine transports have been established.</p>	<p>Measure in combination with M2.3 a); see comment there. Local implementation should be settled at national level.</p>
<p>M2.5 – Removing obstacles</p> <p><i>SBB Infrastructure shall inspect the railway lines for obstacles that are not strictly necessary from an operational or technical standpoint but could increase the risk of chlorine being released during a derailment (damage to the tank wall) and shall remove these if in compliance with the principle of proportionality.</i></p>	<p>95% of the track measuring points on the SBB's routes with risks in the transitional field due to chlorine have been removed. The remainder will be removed by the end of 2017.</p> <p>Object verification based on video analysis was completed. Approx. 350 obstacles have been determined, some owned by the network, some with other owners. The implementation plan for removing these objects will be drawn up by the end of 2017. Effective removal of the objects will be subject to the following deadlines:</p>	<p>No international harmonisation necessary at RID level; possible implementation should be settled at national level.</p> <p>It should be noted that this subject has been taken up at EU level; see COMMISSION DELEGATED DECISION (EU) 2017/1474 of 8 June 2017 supplementing Directive (EU) 2016/797 of the European Parliament and of the Council with regard to specific objectives for the drafting, adoption and review of technical specifications for interoperability, recital 24 and</p>

	<ul style="list-style-type: none"> • Removal of the railway infrastructure's own objects by the end of 2019. • Removal of the objects belonging to other owners after 2019 (management still pending). 	<i>Article 3</i>
<p>M2.6 – Checking the emergency planning and response</p> <p><i>SBB shall check the emergency planning for routes bearing risks induced by chlorine transport in the transition area to ensure that they are suitable for accidents involving this substance. They will coordinate the planning with the relevant cantonal authorities.</i></p>	<p>In a first step, the emergency plans have been updated. In Switzerland there are about 100 route maps, which must be examined on site and updated as required. Emergency planning will be revised on the basis of these maps.</p> <p>It is intended to revise all plans by the end of 2017. Plans for the West Region (main focus for the carriage of chlorine) are treated as a priority.</p> <p>Emergency planning together with the cantonal authorities will take place at a later point and under leadership to be determined.</p>	No international harmonisation necessary; possible implementation should be settled at national level. If need be, the provisions in Chapter 1.11 RID "Internal emergency plans for marshalling yards" could be examined and amended.
<p>M2.7 – Further safety measures</p>	This measure has not yet been activated.	/
<p>M2.8 – Introduction of transport restrictions</p> <p><i>If the target "the middle of the transition area" (assessment criterion, see M2.10a) cannot be achieved even after the above-mentioned measures have been implemented, the FOT shall introduce restrictions on the quantities of chlorine (UN 1017) that can be transported in tank wagons, following consultation with the parties involved ... These limitations shall apply to import, export and domestic traffic as well as to transit traffic.</i></p>	This measure has not yet been activated.	One condition for introducing transport restrictions or other measures that may be expensive for the RUs is the availability of measures that prevent shifting this carriage to the roads. In Switzerland the transport of chlorine UN 1017 by road is restricted to max. 1000 kg net weight per container. This prevents the potential shift from rail to road in the case of more stringent or more expensive requirements for rail transport. Such limits could also be conceivable, or even necessary, at international level if restrictive and costly measures for rail have to be implemented.

<p>M2.9 – International communication of the measures</p> <p><i>The FOT shall notify the body responsible for international rail traffic (Intergovernmental Organisation for International Carriage by Rail, OTIF) of the introduction of quantity restrictions in good time.</i></p> <p><i>In order to make the RID signatory states aware of the other operational measures that are to be implemented (Clauses 2.3, 2.4 and 2.7), the FOT shall inform the OTIF of these in advance, indicating the necessity of the measures. It shall also inform the responsible authorities in the affected neighbouring countries directly.</i></p>	<p>Not relevant, as no quantity restrictions have as yet been introduced.</p> <p>OTIF and representatives of the member states were informed at the RID Committee of Experts' standing working group sessions in November 2016 (Prague) and November 2017 (Utrecht).</p>	/
<p>M2.10 a) – Assessment criteria for chlorine</p> <p><i>The FOEN shall work with the FOT and the affected stakeholders to draw up the “Assessment criteria for the transport of chlorine in tank wagons” by the end of 2017 (...), which will look at the risks of chlorine transport as a special case of hazardous goods transport due to its great potential for harm and will set out in a binding manner the objectives listed under Clause 1.</i></p>	<p>The assessment criteria have been developed and were subject to a national hearing launched on 9 October 2017.</p>	<p>The issue of assessment criteria can be considered within further developing the harmonised methodology for risk management (ERA Working Group).</p>

<p>M2.10 b) – User-based transport costs</p> <p><i>The FOT shall initiate the appropriate amendments to the ordinance so that the costs of the measures (Clause 2.3 - 2.7) undertaken by the infrastructure manager (SBB) in order to comply with the objectives listed under Clause 1 and with the safety requirements as well as the necessary preventive measures (including insurance premiums) along the infrastructure are mapped in the train-path pricing system.</i></p> <p><i>The industry acknowledges that the clearly identified costs of the safety measures (including insurance premiums) relating to the chlorine supply shall be passed on in full in the transport prices.</i></p>	<p>The foundations for implementing this measure are currently being developed.</p>	<p>No harmonisation necessary. Participants from outside Switzerland are recommended to reflect the full costs of safety measures in the transport or train path prices.</p>
<p>M2.10 c) – International regulations</p> <p><i>The FOT commits itself to rally within the bodies responsible for international safety regulations for tank wagons (RID) for further improving the standards according to Clause 2.2. SBB AG and the industry shall support the FOT in this regard.</i></p>	<p>The present document serves the implementation of this measure.</p>	<p>/</p>
<p>M2.10 d) – Liability</p> <p><i>The FOT shall evaluate possible amendments to the legislation, related to liability aspects, in order to take into account the division of roles between infrastructure managers, transport companies, keepers and entities in charge of maintenance (ECM) in</i></p>	<p>A possible amendment of the law has been drawn up and is currently in the preliminary consultation procedure.</p>	<p>Discussion necessary at international level. Any regulations should be harmonised internationally.</p>

<i>the future.</i>		
M3 Options for further reducing the risks		
Developing a new generation of tank wagons	The company for developing a design study has been identified; a written quotation for the design study has been received. Issuing a brief for a risk assessment is still under evaluation.	The project will be initiated together with partners in other countries. The participation of further stakeholders would be welcomed.
Creating the framework for the construction of a new chlorine production facility close to the major consumers.	<p>An external agency has been commissioned to work out possible changes to framework conditions and other possible sources of funding for a chlorine production facility close to major consumers.</p> <p>Two alternate solutions (medium term, up to 2025) for an on-site production facility will be pursued:</p> <ul style="list-style-type: none"> - private financing by the chemical industry - public-private cofinancing <p>To understand the framework conditions better, the work is based on two case studies:</p> <ul style="list-style-type: none"> - Comparison of a notional facility in Valais with a recently constructed facility in Basel (strategic orientation). - Comparison of the political context in the Netherlands and in Switzerland. 	See measure M2.1