

## 5 SAFETY RECOMMENDATIONS

### 5.1 Preventing congestion amongst RID transports

Existing information on the number of transports entering Finland was not used for the management of railway network capacity and, where necessary, the restriction of RID traffic coming from Russia. According to their own interpretations, the Finnish Transport Agency and VR had no means of restricting traffic. The Finnish Transport Safety Agency (Trafi) and the Ministry of Transport and Communications lacked information on the safety risk posed by congestion.

The Safety Investigation Authority recommends that the Finnish Transport and Communications Agency ensure the implementation of the following recommendation:

*Railway traffic operators, the Finnish Transport Infrastructure Agency and the competent authorities must develop means of preventing traffic congestion amongst transports with dangerous goods arriving from Russia. The acquisition and use of predictive information must be developed in particular. [2019-S1]*

For managing rail capacity, use should be made of the information held by the Finnish Transport and Communications Agency on the number of wagons in the country and rail transport operators' advance knowledge of transports.

### 5.2 Safety checks during the temporary preservation of RID wagons

Safety levels dramatically decrease during the temporary storage of RID wagons outside RID railway yards. There is no recognition of the risks associated with the temporary storage of RID wagons outside RID railway yards.

The Safety Investigation Authority recommends that the Finnish Transport and Communications Agency ensure the implementation of the following recommendation:

*Railway operators and infrastructure managers must perform a risk assessment of the temporary storage of RID wagons in locations other than designated RID railway yards, and the due care and attention required under RID legislation must be observed. [2019-S2]*

### 5.3 Development of the identification and management of risks related to rail traffic in safety management systems

The identification and management of risks related to normal rail traffic was deficient in the safety management systems of the actors. The Finnish Transport Agency's railway safety management system is focused on the management of risks in railway infrastructure management and construction projects. In VR's safety management system, the assessment of change-related risks is emphasised, while less attention is given to risks related to daily traffic.

The Safety Investigation Authority recommends that the Finnish Transport and Communications Agency ensure the implementation of the following recommendation:

*Railway operators and the Finnish Transport Infrastructure Agency must develop the identification and management of risks related to normal rail traffic in their safety management systems. [2019-S3]*

#### 5.4 Guidelines on ensuring that wagons remain in place

The railway operator's guidelines on the number of stop blocks failed to take account of the weight of the wagons or the longitudinal gradient of the track. The guidelines overestimated the holding power of the stop blocks. Guidelines on ensuring that wagons remain stationary should be drawn up by the infrastructure manager in order to ensure their consistency in a multi-actor environment.

The Safety Investigation Authority recommends that the Finnish Transport and Communications Agency ensure the implementation of the following recommendation:

*The Finnish Transport Infrastructure Agency will draw up guidelines on keeping wagons stationary in the Finnish state rail network. [2019-S4]*

The number of stop blocks must take account of the longitudinal gradient of the track, the weight of the wagons and the true holding power of the stop blocks.

#### 5.5 Clarification of the role of the infrastructure manager

Not all stakeholders are aware of the changed roles and responsibilities of operators in the railway sector. Neither practical procedures nor the parties responsible for environmental damage in the event of rail accidents have been defined with sufficient clarity.

The Safety Investigation Authority recommends that the Finnish Transport and Communications Agency ensure the implementation of the following recommendation:

*The Finnish Transport Infrastructure Agency will inform stakeholders of its role and responsibilities. [2019-S5]*

It would be particularly important to clarify the role of the railway accident rescue team.

#### 5.6 Guidance for and definition of remote management during rescue operations

The communication of a realistic situational awareness is very important in remote management situations. No qualitative requirements have been drawn up on the content and development of a situational awareness of an accident.

The Safety Investigation Authority recommends that the Ministry of the Interior ensure the implementation of the following recommendation:

*The rescue services define the principles underlying remote management and the communication of the situational picture at the scene of the accident, and draw up guidelines on remote management. [2019-S6]*

It would be important to identify situations for which remote management is unsuitable.

#### 5.7 The establishment of an operational area command by the authorities should be routine

The rescue authorities and other participants did not organise their activities, so cooperation was inadequate. The issue of post-accident preventative measures was left open after the rescue operation had ended. This was partly due to lack of clarity about what transferring the scene of the accident under the responsibility of the Finnish Transport Agency involved. In extensive accidents requiring cooperation between several operators, an operational area command (OAC) would create a basis for effective cooperation

For these reasons, the Safety Investigation Authority reiterates the recommendation issued in investigation report R2017-03:

*The Ministry of the Interior shall ensure that an operational area command (OAC) is set up by the public authorities in the case of long-term or exceptional multi-authority tasks. [2018-S23]*

An OAC is the only effective arrangement for managing a situation involving multiple authorities/actors.

#### 5.8 Measures that have been taken

According to its report, VR Group has carried out the following actions since the accident:

1. VR has decided to store RID wagons only in RID railway yards designated by Trafi for the time being.
2. VR has begun a comprehensive study on stop blocks. The study will take account of the effect on holding power of environmental conditions and the surface treatment of the block's material and contact surface; the result will be a calculation model on the basis of which the number of stop blocks needed in different conditions can be measured more precisely. The study is being completed in collaboration with an external expert body, and includes a theoretical review and practical trials in laboratory and field conditions.
3. Due to the Kinni accident, VR has adjusted its internal guidelines on ensuring that rolling stock remains stationary and increased its employee training and monitoring by supervisors.
4. Due to the Kinni accident, VR has – contrary to its previous practices – agreed a principle with its customers, on the basis of which the customers can leave orders from the Russian railway company RZD unconfirmed for the subsequent month, if the traffic and pace of the traffic's handling are not as planned.
5. In addition, with regard to urgent cases, VR has agreed with the Russian railway company RZD on principles regarding the sidelining of trains in Russia if congestion

unexpectedly occurs amongst traffic on the Finnish side of the border despite section 4 above.

6. Since the accident, VR has designated an internal coordination group to handle the environmental damage at Kinni. VR has completed extensive control measures and has regularly checked the progress of the situation and the effects of environmental damage. In addition, VR has actively kept parties in the vicinity of the accident informed, used external expert assistance (including Ramboll and the Finnish Environment Institute) and worked in close cooperation with the public authorities to minimise the environmental damage and its consequences.

The Ministry of Transport and Communications has initiated an overall reform of the Act on the Transport of Dangerous Goods. The aim of the reform is to create a coherent legislative whole that takes account of safety and international obligations, as well as automation and digitalisation. Another aim is to have the legislation fulfil the requirements of the Constitution more effectively.

In addition to the Act on the Transport of Dangerous Goods, the Ministry of Transport and Communications has submitted a proposal for the amendment of the decree on the transport of dangerous goods by rail. The draft decree includes a proposal to amend the obligation to report the temporary storage of railway transport involving dangerous goods. The aim of the proposal is to clarify who is responsible for reporting temporary storage. The draft decree proposes that an obligation to report apply to transport operators. In addition to the rescue authorities, such a report should be made to the municipal environmental protection authority and the Centres for Economic Development, Transport and the Environment.

The draft decree also proposes other changes, aimed at improving safety during the transport of dangerous goods. The draft decree proposes that the obligation also apply to infrastructure managers. It also proposes that private railway operators be provided with rapid and unimpeded access to certain RID information (transport of dangerous goods) during railway transports. In addition, the draft decree proposes that the infrastructure manager report hazardous situations to the Ministry of Transport and Communications and Safety Investigation Authority, Finland.

The Finnish Transport Safety Agency (Trafi) is currently preparing a railway safety programme for the years ahead, which will review the current status of railway safety and development needs. The programme also takes account of development needs with regard to the transport of dangerous goods.

Immediately after the acute response to the Kinni accident, the Finnish Transport Agency defined the measures the agency will take in its role in order to minimise similar accident risks and improve the processes during possible incidents. The following is a list of these measures:

1. Restriction of the temporary storage of RID wagons  
After the accident, the Finnish Transport Agency prohibited the storage of RID rolling stock elsewhere than in separately defined RID railyards. The Agency's decision was issued in writing to the different parties on 2 October 2018. After the accident, RID rolling stock has not been stored elsewhere than in separately defined RID railyards.
2. Holding rolling stock in the vicinity  
After the accident, an analysis was launched of the possibilities of rearranging the wagons so that the RID wagons standing on temporary holding tracks (Lelkola, Harju) could be moved to RID railyards. The rearranging helped, and the RID wagons were

moved away from their temporary holding locations on Tuesday 11 April, and the last wagons were moved away from Kinni on 12 April 2018.

3. Notifying the rescue department of temporary storage

After the accident, the Finnish Transport Agency and VR Group reviewed the instructions on reporting temporary storage.

Related to the notification obligation, the Finnish Transport Agency has clarified the matter in the Finnish Railway Network Statement that came into effect on 9 December 2018. The railway network usage agreements between the Finnish Transport Agency and the railway operators reference the Finnish Railway Network Statement, and a corresponding clarification has been made in the Finnish Transport agency's guidelines concerning the safety regulations of railway traffic and shunting.

4. Instructions for and risk management of temporary storage

After the accident, the Finnish Transport Agency initiated an update of the instructions concerning temporary storage. A draft version of the new instructions was sent to the stakeholders for statements in the end of May. The instructions committee discussed the draft in the autumn, finding that the matter requires the support of a more comprehensive risk assessment. The further work on the temporary storage of RID rolling stock, carried out jointly with railway transport operators, is slated to be complete in the spring of 2019.

The temporary storage of RID rolling stock will be integrated into the safety analysis programme of RID railyards designated by the Finnish Transport Safety Agency. In this way, the Finnish Transport Agency can ensure a consistent quality throughout the country.

Cooperation with railway transport operators is underway with respect to other than RID rolling stock in order to map out suitable temporary traffic locations. A more detailed risk assessment work for the whole has been started.

5. Safety studies of RID railyards

In January 2018, the Finnish Transport Agency started the update of safety studies and rescue plans for RID railyards. The work will be completed in its entirety by the end of 2018. The purpose of the update is to ensure that operations and storage of hazardous substances in RID railyards will be implemented safely, the risks related to the operations are identified, and sufficient preparations are made for accidents and incidents.

6. Railway network feature data

The Finnish Transport Agency has started compiling extensive data on the longitudinal gradients of side tracks. This data can be utilised for a variety of needs, including the temporary storage of rolling stock.

As part of the development of the railway network and the railyards, the Finnish Transport Agency is also examining the need and possibility of adding holding tracks for rolling stock, considering the possible needs of various operations.

The ELY Centre of South Savonia states that it has clarified its procedures after the Kinni accident with respect to the reporting of environmental accidents outside office hours.